

The background of the slide is a repeating pattern of two types of beetles: ladybugs and buckthorn beetles. The ladybugs are shown from a dorsal view, and the buckthorn beetles are shown from a lateral view. The pattern is arranged in a grid that covers the entire slide area.

Lady Beetles, Buckthorn, and Bees

Answering Ecological Research Questions in Your Own Landscape.

Mary Gardiner, Chelsea Smith, Ian McIlvaine, and Scott Prajzner

Exotic Lady Beetles in North Central U.S.

Exotic lady beetles released into the U.S. for over 100 years both accidentally and to control agricultural pests.

To date, over 100 species of exotic lady beetles have been released

Currently, four species of exotic lady beetles are found in the North-Central U.S.



Coccinella septempunctata



Harmonia axyridis



Hippodamia vareigata



Propylea quatuordecimpunctata

Native Lady Beetle Species

Ohio has many species of native lady beetles; in this study we are interested in 10 species which are found within agricultural habitats. Many native species have declined following the introduction of exotic species. As a volunteer, your efforts will contribute to understanding the extent of this decline and the development of conservation strategies.



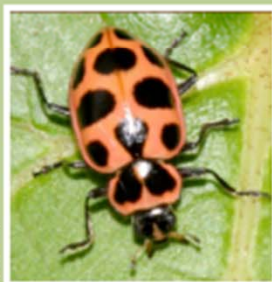
Convergent

Oval, red. Pronotum with **two white dashes angled towards each other forming a "V" pattern**. Each wing cover with 6 spots; fewer may be present.
Decreasingly common



Parenthesis

Oval, red to orange. Pronotum black with white along the front edge. **Parenthesis-shaped spot** on hind portion of each wing cover. Sometimes parenthesis does not completely connect.
Somewhat common



Pink

Oval and somewhat flattened, bright red to pink. **Pronotum has two black triangular spots. Six spots on each wing cover.**
Common



Thirteen-spotted

Oval and **somewhat flattened**, red to orange. **Pronotum is mostly black with red along edges. Each wing cover has six spots, with a central spot at the base of the pronotum.**
Rare



Two-spotted

Round and red. **Wing covers each with one black central spot.**
Rare



Polished

Small and round. Pronotum black with a white border and two white lobes which extend back. **Red to orange wing covers with no spots.**
Common



Three-banded

Round, red to orange. Pronotum black with white along front edge. **Wing covers each with three black bars.**
Rare



Twice-stabbed

Very small and round with a black pronotum and **black wing covers. Each wing cover has a central red spot.**
Rare



Orange-spotted

Very small and easy to miss on sticky cards! Pronotum black with orange spot on each side. **Black wing covers each with 5 orange spots.**
Rare



Nine-spotted

Round, orange to red. Very similar to 7-spotted lady beetle but with **4 spots on each wing cover and one central spot.**
Exceedingly rare

Mystery Lady Beetle?

If you find a lady beetle on your sticky trap that is not shown here, please mark it as "other lady beetle" on the data sheet. If you would like to view additional lady beetle images, as well as lady beetle "look-alikes," or would like to learn more about these beneficial insects, check out our web site: ladybeetles.osu.edu

Thank you for your participation!

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Project Objectives:

1. **Evaluate** the current status of native and exotic lady beetles across Ohio
2. **Examine** the influence of patch and landscape scale variables on coccinellid communities found in residential gardens
3. **Educate** the public about the importance of conserving and enhancing lady beetles and other beneficial insects in our landscapes.



<http://ladybeetles.osu.edu>

BLBB Program



Fence post

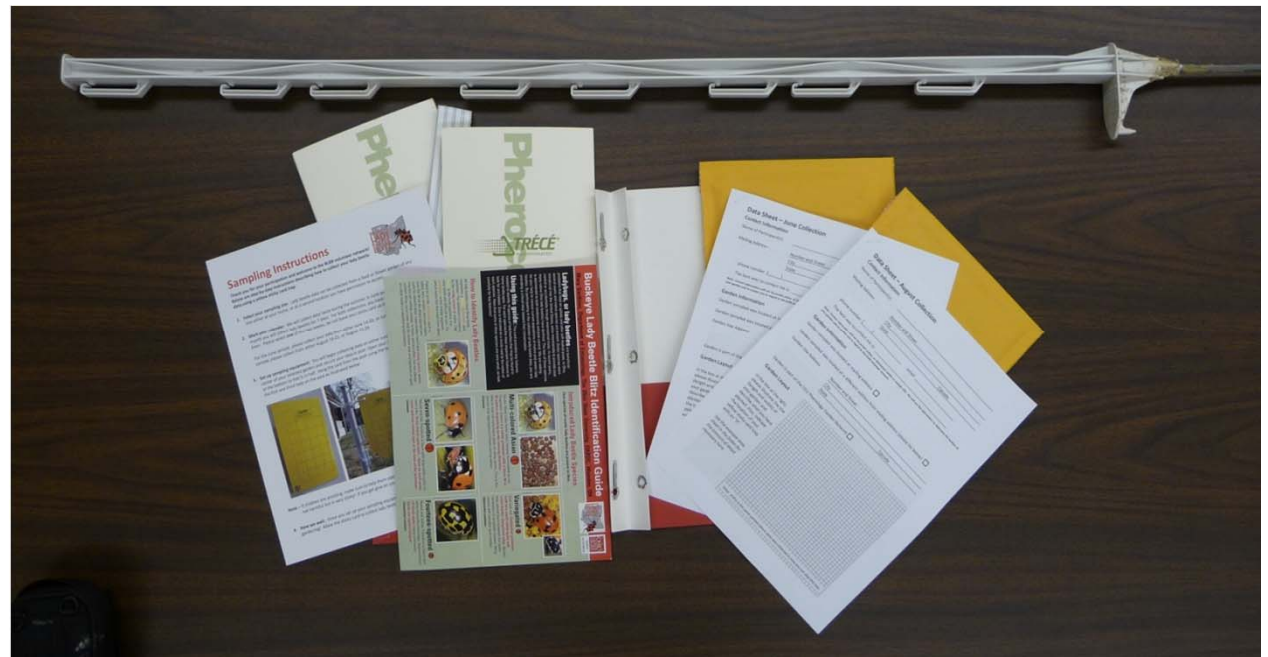
2 Sticky Card Traps

Instruction Card

ID Card

Data Sheets

Mailing Envelopes



BLBB Data Collection

Select a sampling site –food or flower garden of any size

Mark your calendar: 2 sampling periods (2011 dates below)

June (12-18) or (19-25)

August (15-21) or (22-28)

Approximate center of garden space

Open the sticky trap and attach to step-in fence post

Allow to collect insects for 7 days



BLBB Data Collection and Analysis

Data Sheet – June Collection

Contact Information

Name of Participant(s) _____

Mailing Address: _____
Number and Street
City _____
State _____ Zipcode _____

phone number (____) _____ email _____

The best way to contact me is: _____

Note: Contact information will not be posted online, or distributed within or outside Ohio. We will use this information to determine the location of your garden and coordinate your report to the state volunteer network.

Garden Information

Garden sampled was located at mailing address:

Garden sampled was located at a different address from mailing address (please list below)

Garden Site Address: _____
Number and Street
City _____
State _____ Zipcode _____

Garden is part of the OSU Phenology Garden Network

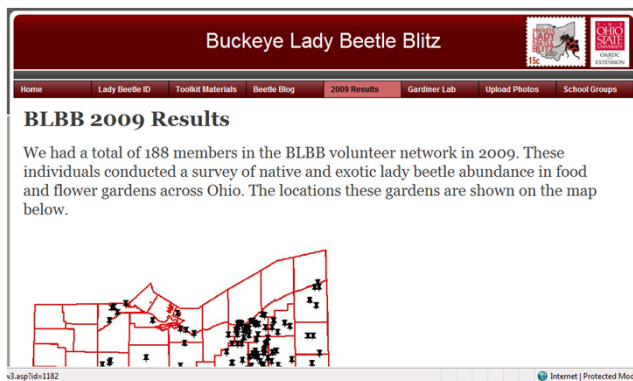
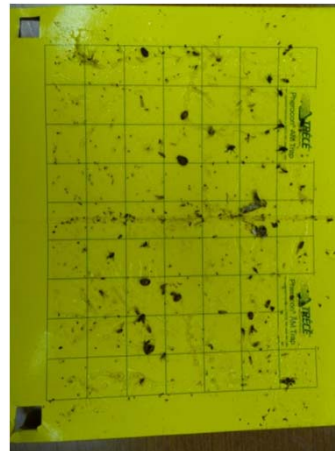
Garden Layout

In the box at the right, please illustrate the site (length and width) of your garden and describe what you have planted. Also, indicate the location of your yellow sticky card trap with an "X".

See the example data sheet in the folder for the amount of detail necessary here.

_____ of June.
_____ beetles collected on your _____ species. For example if _____
_____ by card of each of _____ square _____ location as close _____

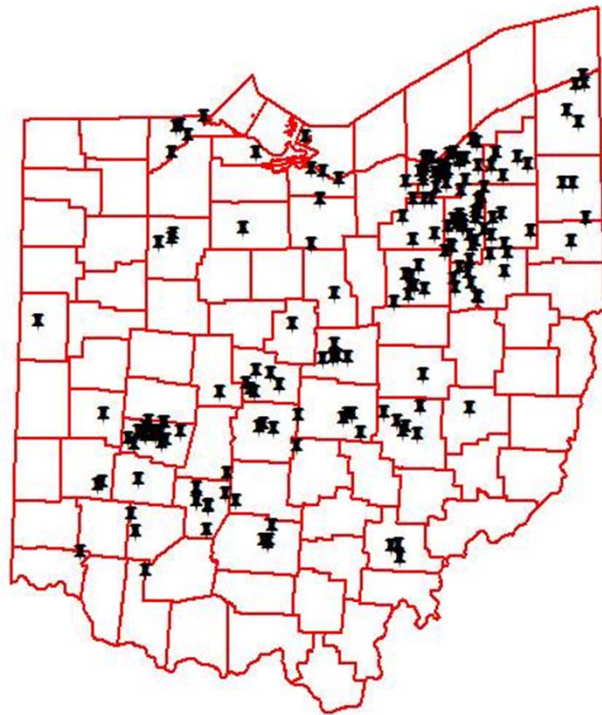
1	2	3	4	5	6	7	8	9
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BLBB Program

2009: 193 collection sites,
89% return in June and 84% in Aug

2010: 258 collection sites,
84% return in June and 77% in Aug

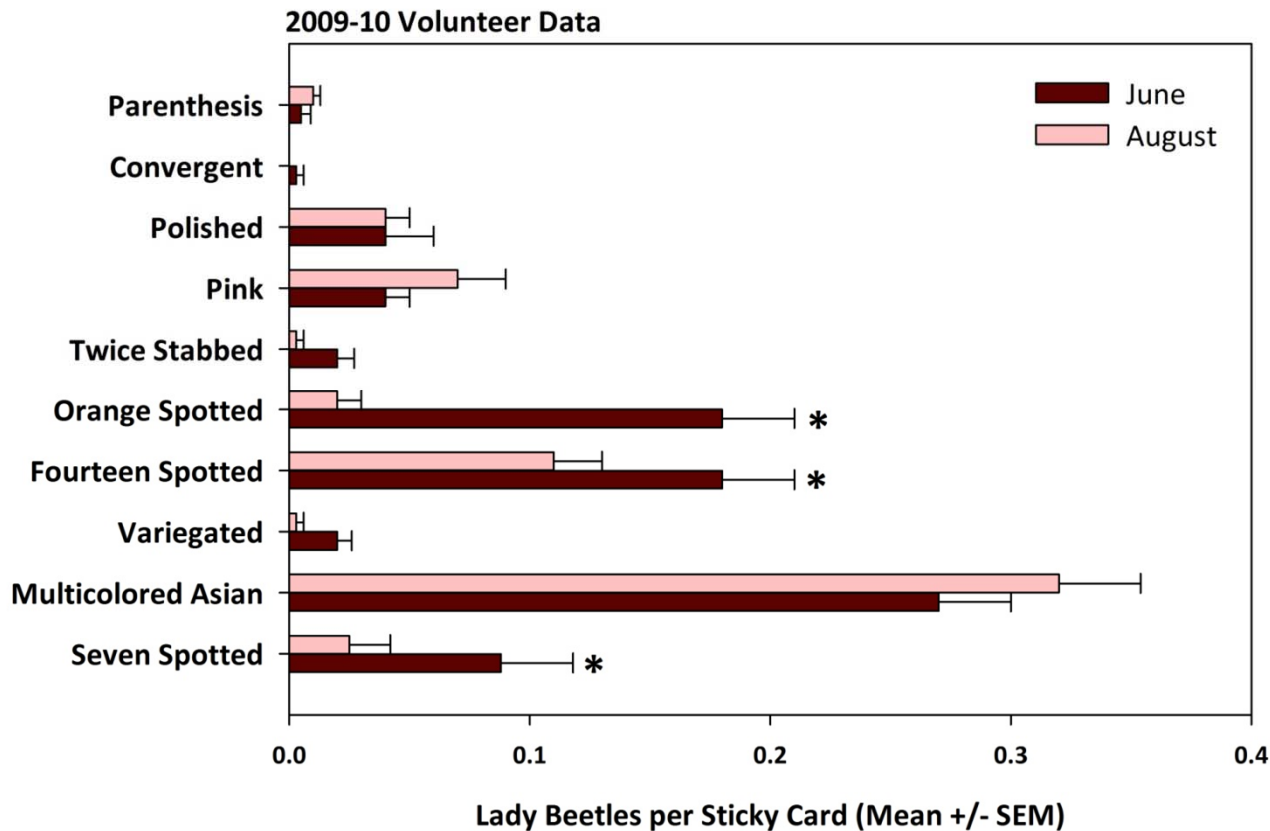


BLBB Program 2009-10



Ten species found in BLBB gardens

Exotic Multicolored Asian Lady Beetle & Fourteen spotted, Native Orange Spotted most common species collected.

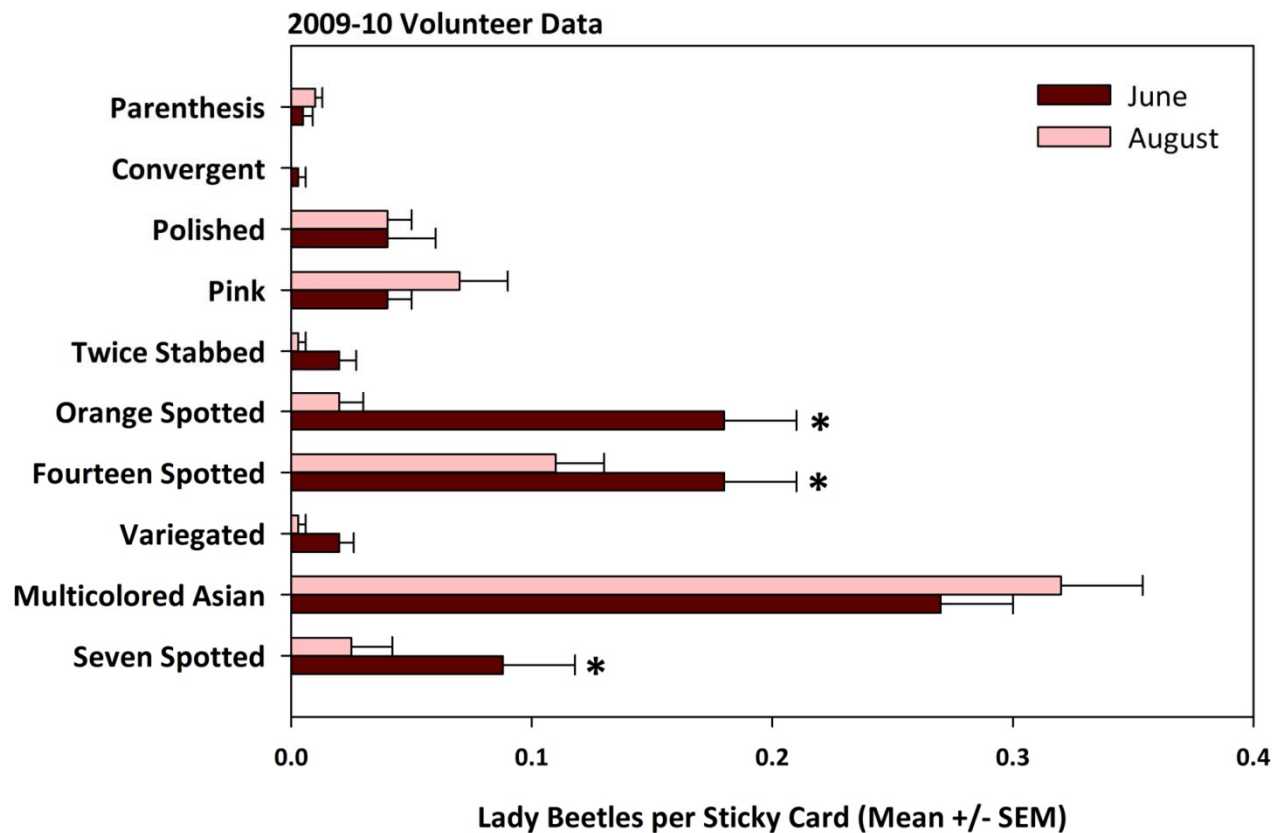


BLBB Program 2009-10



Three species more common in June versus August:

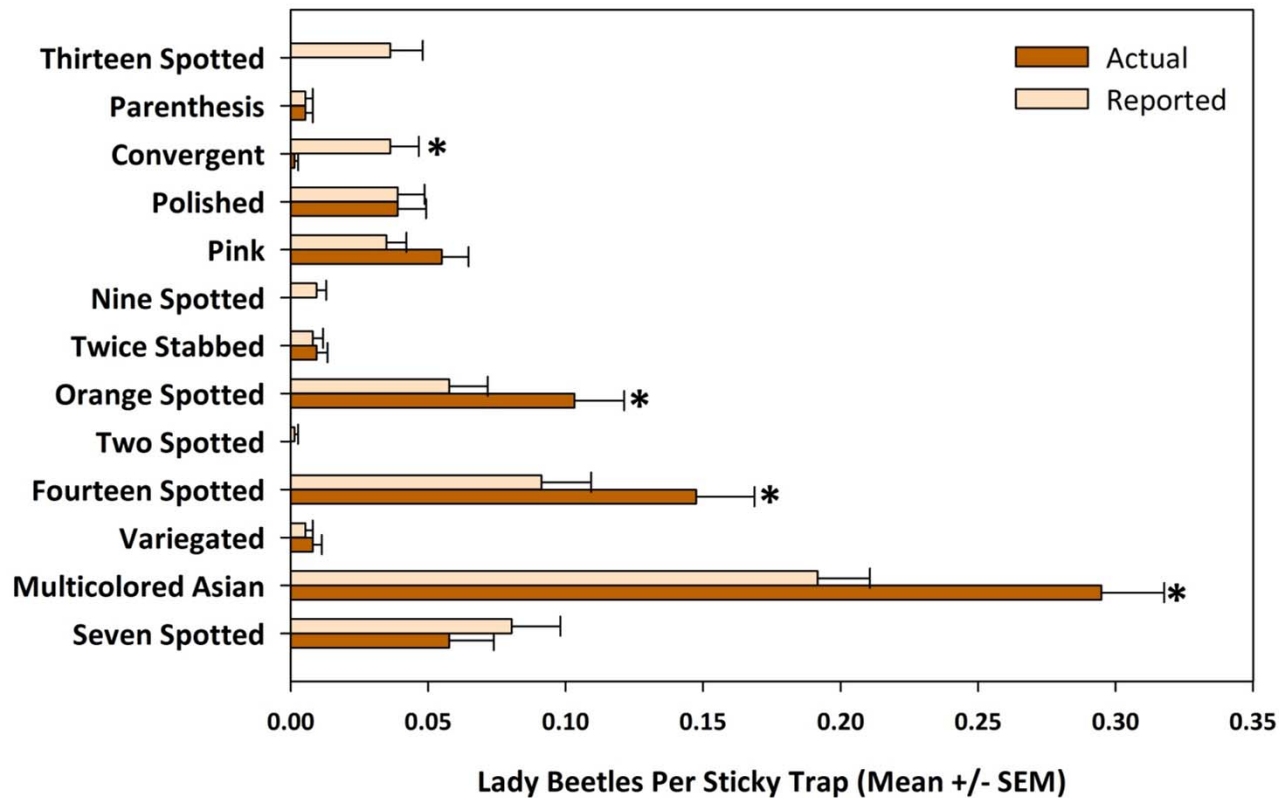
Native Orange Spotted, Exotic Fourteen Spotted and Seven Spotted



BLBB Program Actual versus Reported



Under estimation of exotics and over estimation of native species



** Data analyzed using a generalized linear model, negative binomial distribution

BLBB Program Rare Species

Since the introduction of exotics some native species are in decline

Two-spotted and nine-spotted lady beetles, from common to rare



Convergent lady beetle appears to be declining

State Insect of Ohio!



Loss of Native Coccinellidae – WHY?

Rapid decline since the 1980's possibly due to:

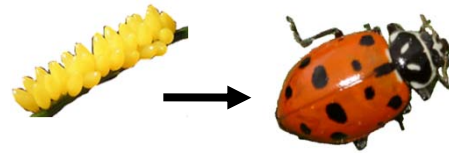
- Land use change
- Pesticide use practices
- Disease
- Increased competition with exotic Coccinellidae

Hypotheses

1. Exotic Lady

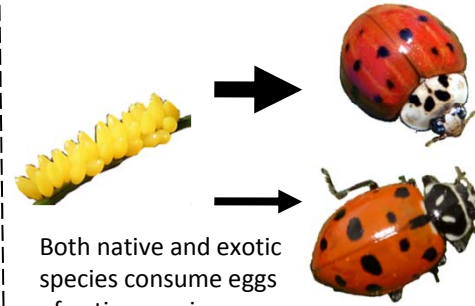
Beetles are eating the eggs of native species

Prior to Exotic Introduction



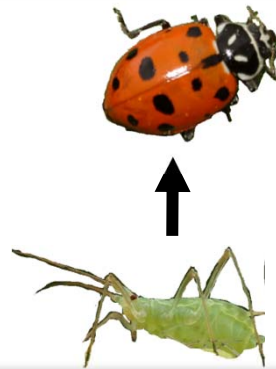
Native egg predation by native coccinellids

Exotic Introduction



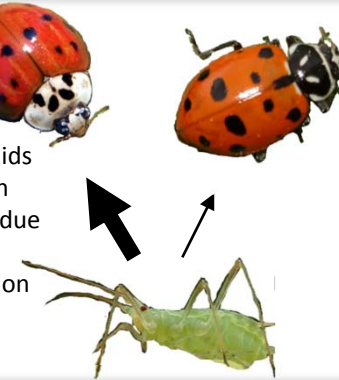
Both native and exotic species consume eggs of native species.

2. Exotic lady beetles are out-competing native species for prey

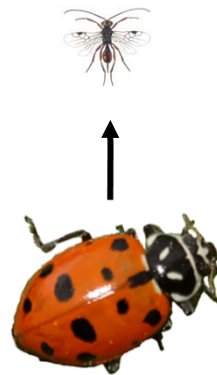


Native species feed on pest aphids within croplands

Fewer aphids available in croplands due to exotic consumption of shared prey



3. The presence of exotic lady beetles has increased shared parasitoids and diseases.



Native species are attacked by parasitoids

Presence of exotics allow parasitoid populations to build, increasing parasitism of native species.



We knew this is happening in the lab.....





Chelsea Smith, M.S.

Do exotic lady beetles eat native lady beetle eggs in the field?

Does this explain the decline in native lady beetles?

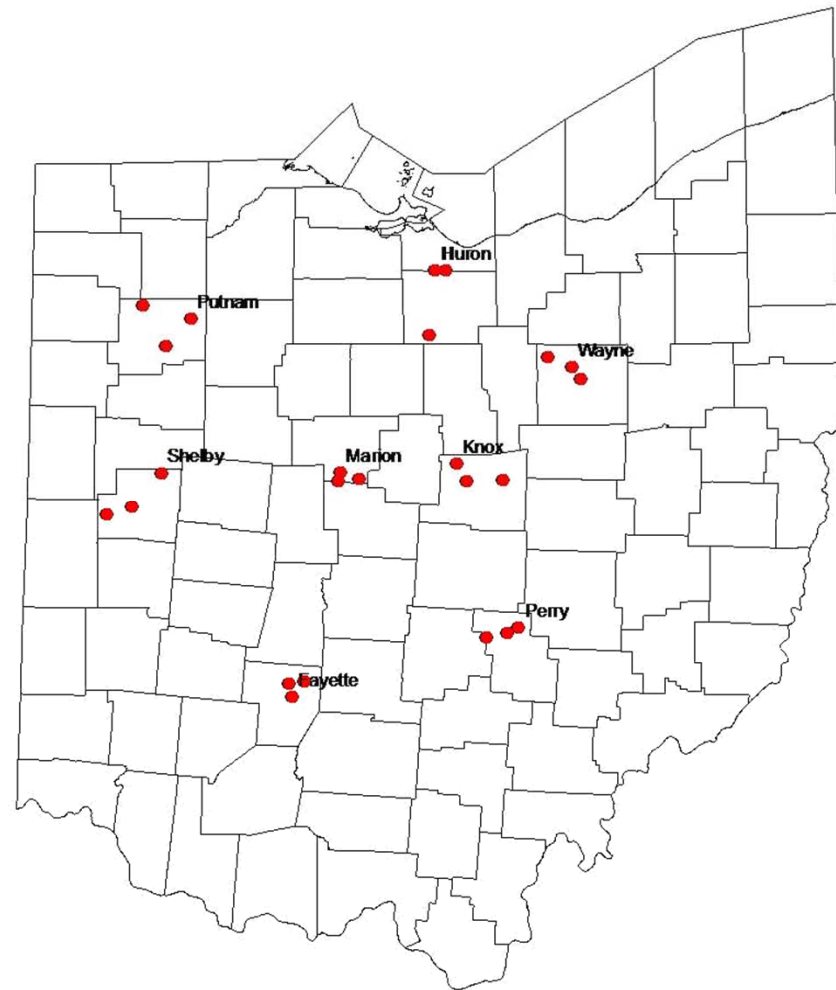
Study Species:

- Exotic
- Declining Native
- Common Native

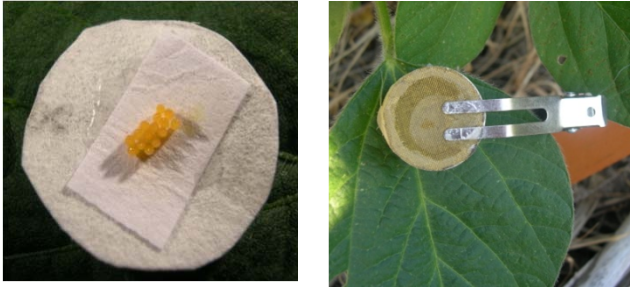


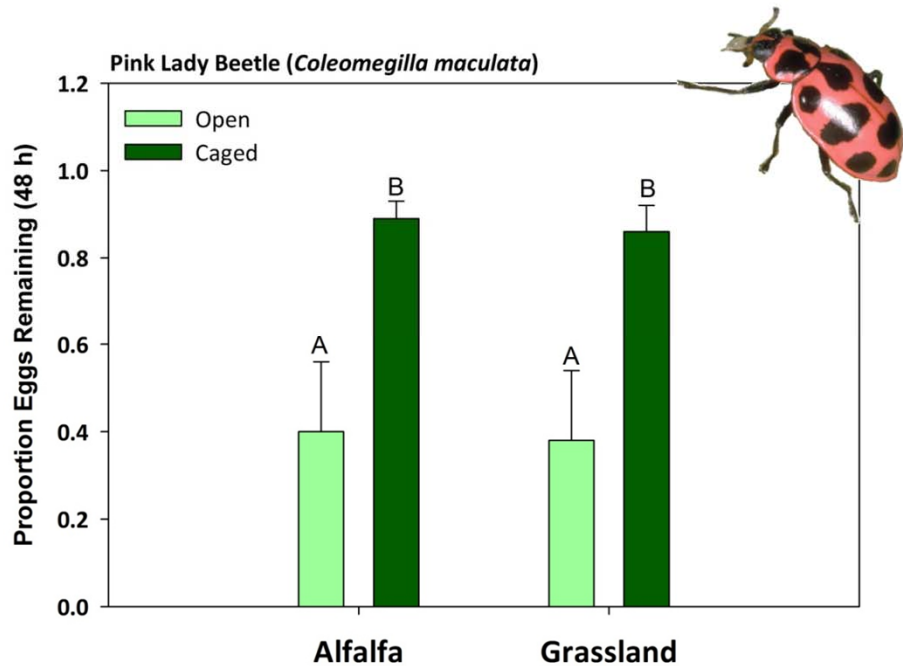
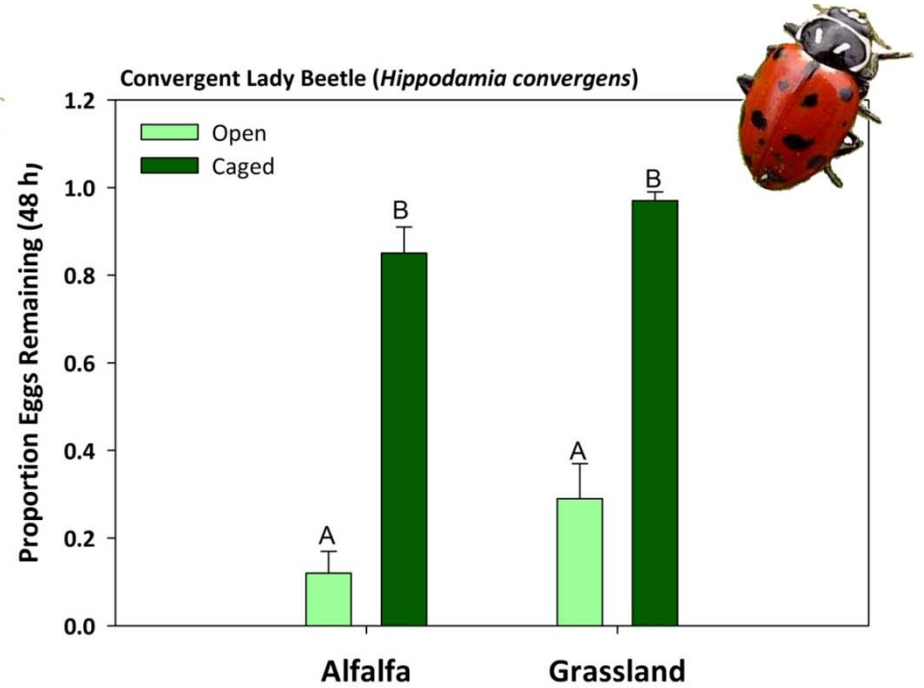
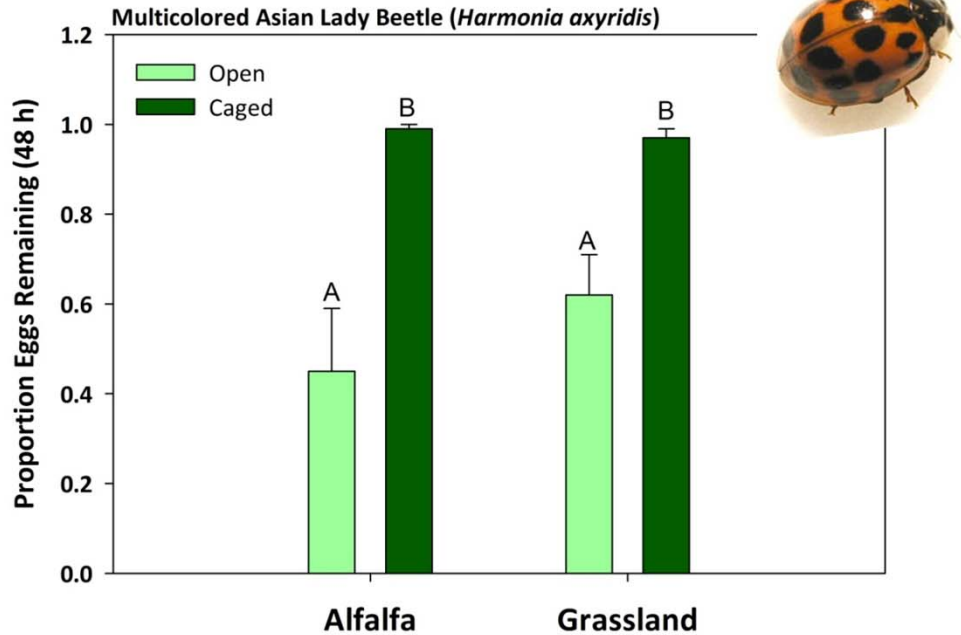
Habitats (N=24):

- Alfalfa
- Grassland
- Soybean



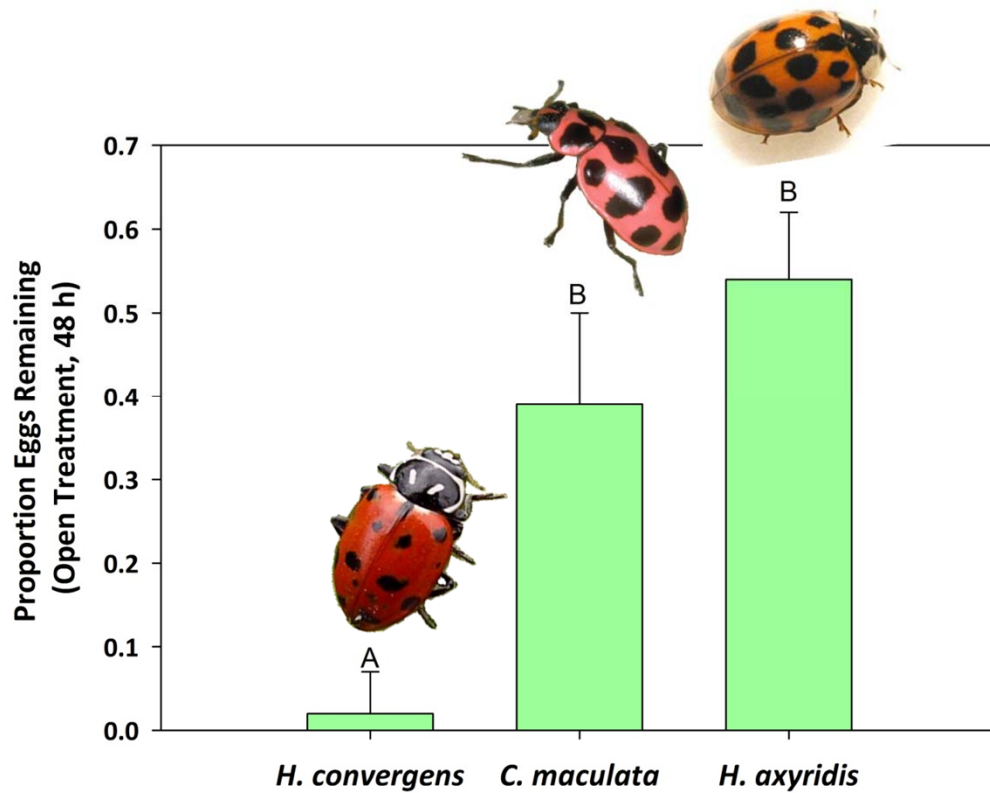
Experimental Procedure:

- Two photographs showing the experimental procedure. The left photo shows a ladybug on a leaf with a small yellow object (likely a seed or egg) on the leaf. The right photo shows a ladybug on a leaf with a small metal object (likely a seed or egg) on the leaf.
- Treatments remained in field for 48 h, number of eggs remaining determined.
- Experiment was carried out twice during the summer of 2010: mid-June: 6/8-6/11 (in alfalfa and grassland only) and the end of July: 7/26-7/29 (in all habitats).



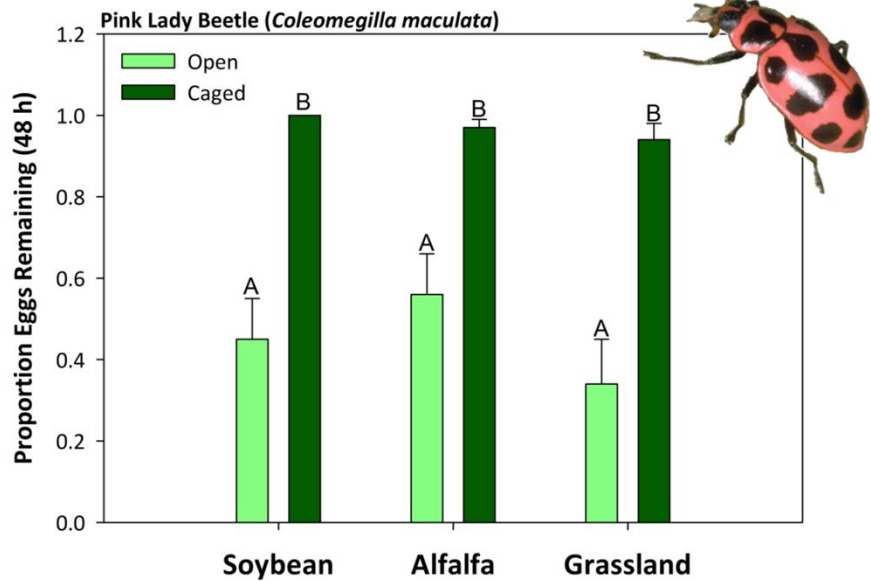
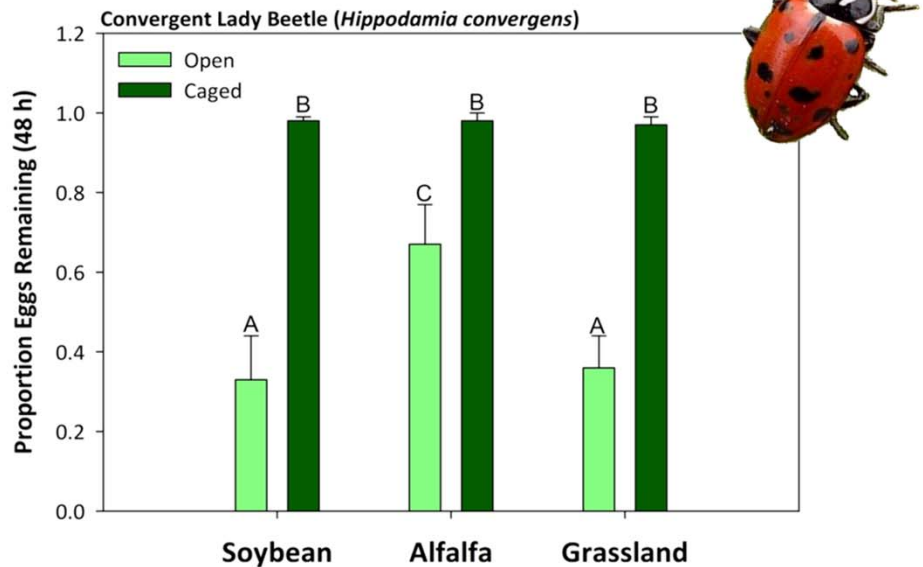
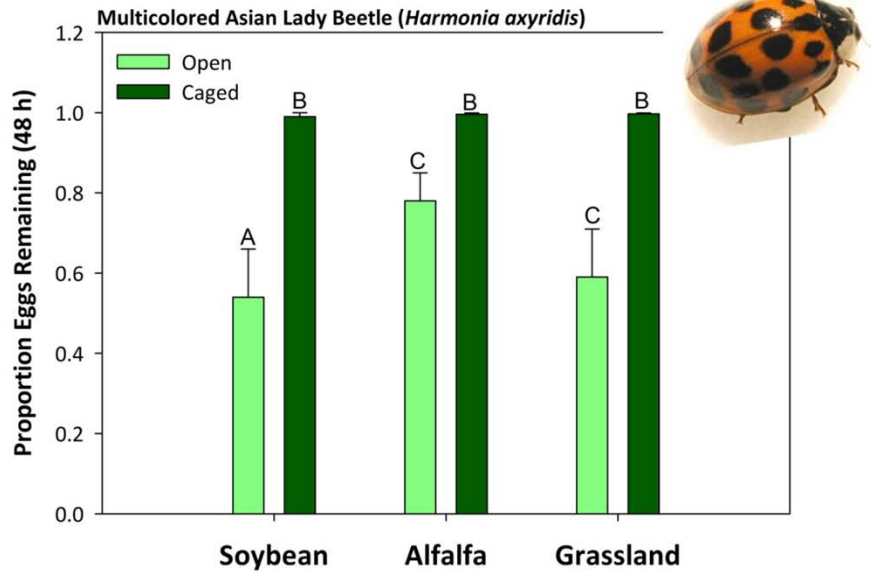
Experiment 1: Key Findings

1. All species experienced significant egg predation in alfalfa and grassland (open treatment had fewer eggs remaining compared with caged treatment) (Figures A-C).
2. The amount of predation incurred in alfalfa and grassland sites was not significantly different (Figures A-C).



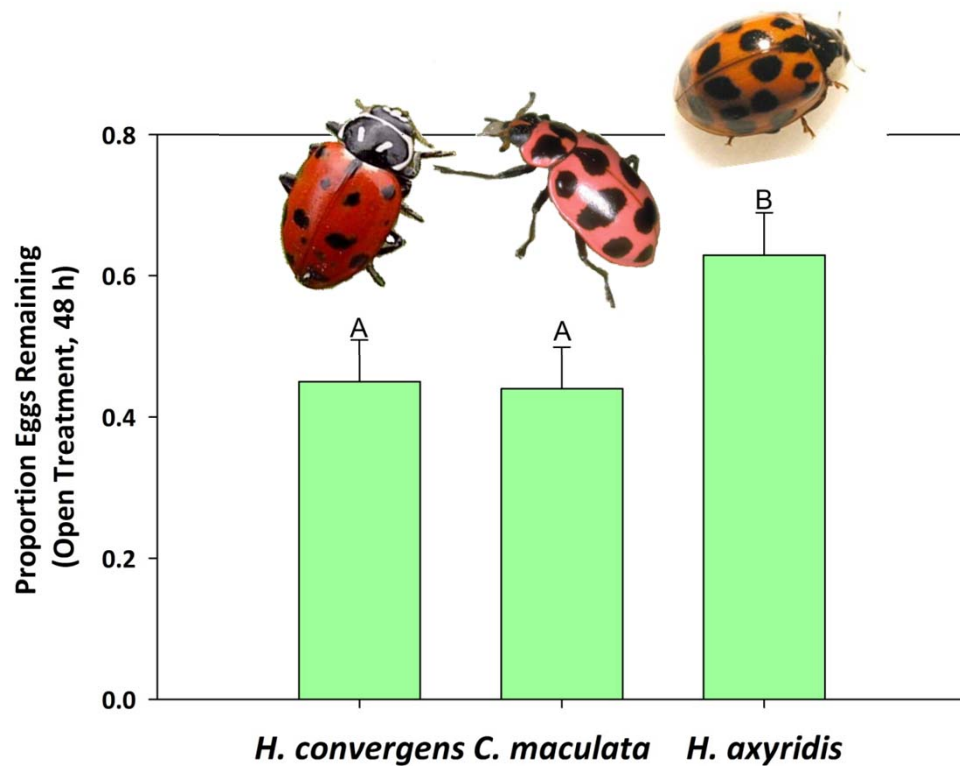
Experiment 1: Key Findings

1. All species experienced significant egg predation in alfalfa and grassland (open treatment had fewer eggs remaining compared with caged treatment).
2. The amount of predation incurred in alfalfa and grassland sites was not significantly different.
3. *H. convergens* experienced significantly more predation than the other two focal species.



Experiment 2: Key Findings

1. All species experienced significant egg predation in all crops (open treatment had fewer eggs remaining compared with caged treatment).
2. There was variation in the amount of predation incurred by *H. convergens* and *H. axyridis* in soybean alfalfa and grassland habitats.



Experiment 2: Key Findings

1. All species experienced significant egg predation in all crops (open treatment had fewer eggs remaining compared with caged treatment).
2. There was variation in the amount of predation incurred by *H. convergens* and *H. axyridis* in soybean alfalfa and grassland habitats.
3. Across study habitats, predation of *H. convergens* and *C. maculata* did not differ. Both incurred significantly greater egg predation compared with *H. axyridis*.

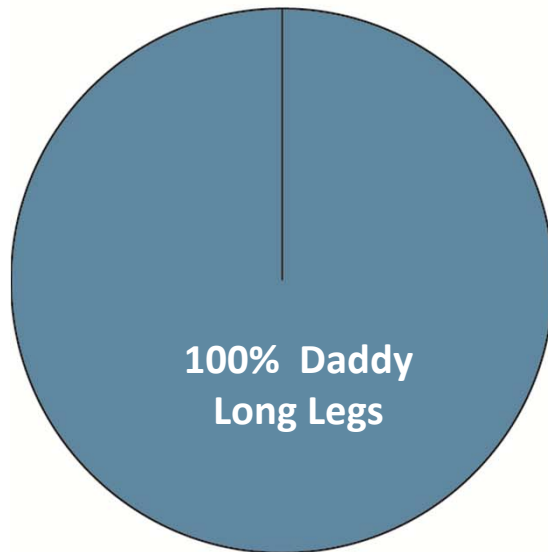
IGP surveillance using video systems

Data was collected from 18 fields (4 soybean, 5 alfalfa, and 9 grassland) between 6/18/2010 and 8/13/2010.

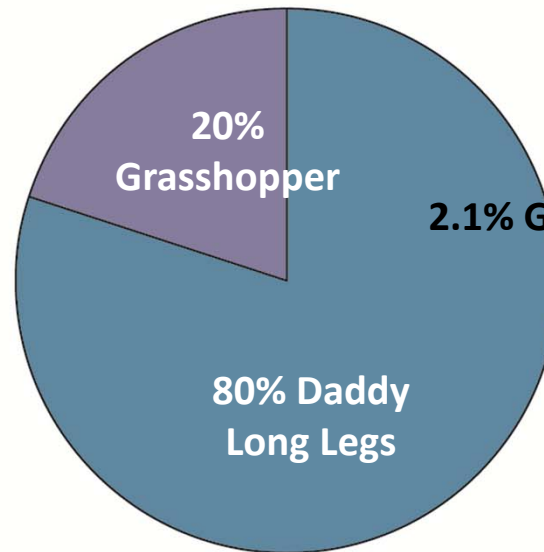


Camera system designed by Matt Grieshop, MSU

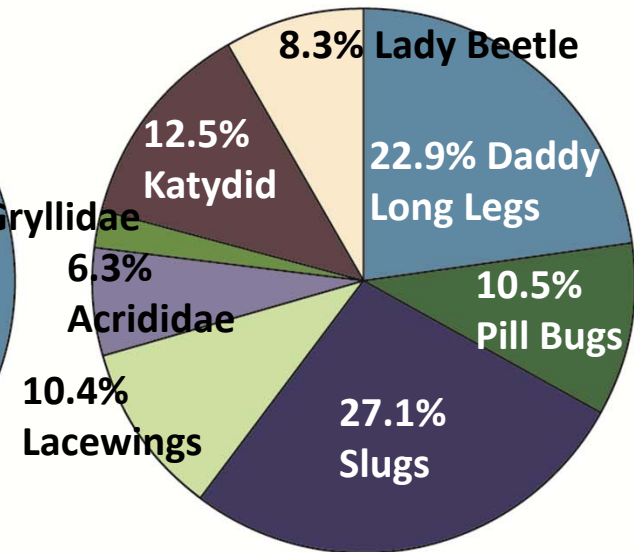
Guild of Egg Predators



Soybean



Alfalfa



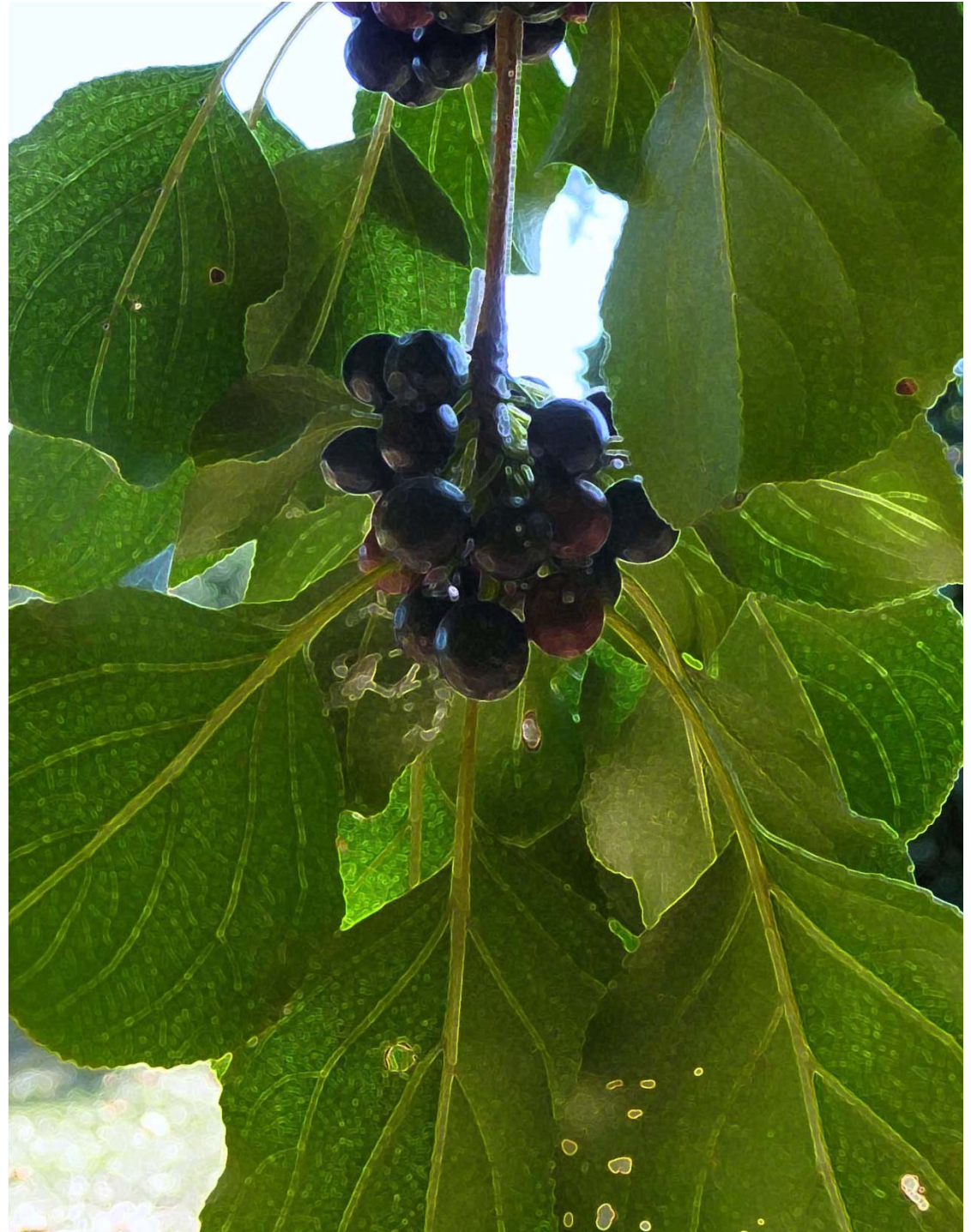
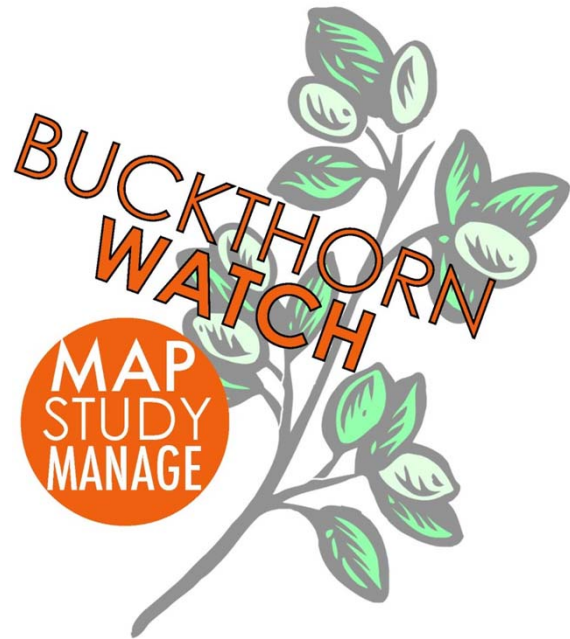
Grassland

Future Studies....

1. Determine how the group of egg predators varies by exotic and native lady beetle species and by foraging habitat.
2. Learn more about the guild of predators attacking eggs, have their populations changed in recent decades?
3. Examine additional competitive interactions between native and exotic lady beetles.



Why are exotic lady beetles so abundant?



Common Buckthorn Impacts



Soybean Aphid. Invasive pest first detected in U.S. in 2000. Common Buckthorn provides food source and overwintering site.



Soil Earthworms: Buckthorn litter provides a rich source of nutrients and increases soil moisture. High earthworm populations and rapid litter decomposition have negative impacts on soil biota.

Forest Understory: Reduced diversity of native herbivores often replaced by exotic species.

Loss of Native Biodiversity: The presence of introduced Asian lady beetles has resulted in a decline in native lady beetle species.



Public Support for Biological Control: Household fruit in late summer is covered with multicolored Asian lady beetle and introduced predator.

Control: Household fruit in late summer is covered with multicolored Asian lady beetle and introduced predator. In addition, some have reported allergic reactions to the beetles.



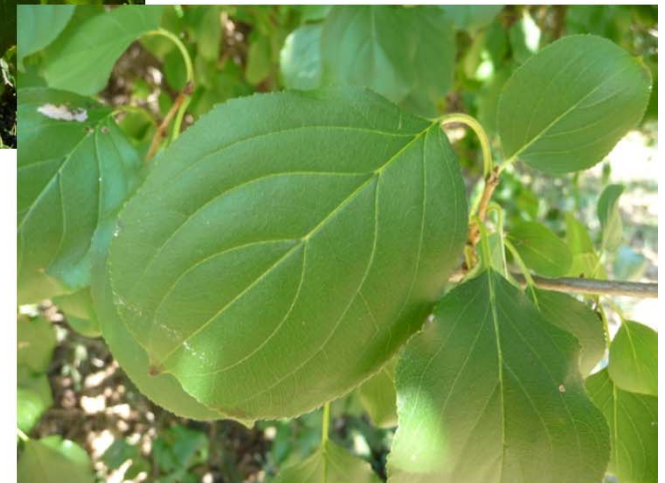
Common Buckthorn Invasion

Shrub/small tree

Introduced in early 1800's as a landscape/hedge plant

Naturalized throughout northern Midwest and Northeast.

Fast growing, tolerates diversity of growing conditions, lacks natural enemies, high reproductive and dispersal capacity.

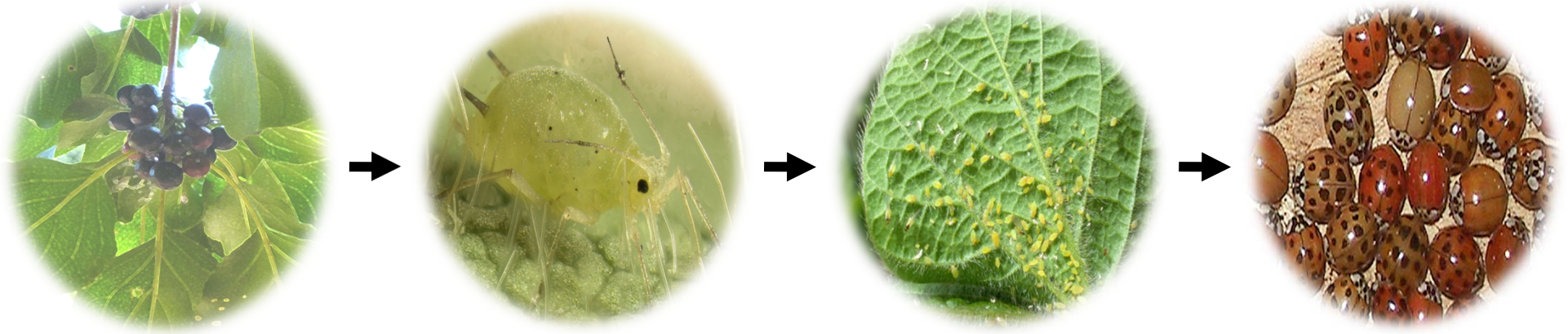


Common Buckthorn Identification

- ➔ **Appearance:** Up to 25 ft height, multiple stems at base
- ➔ **Leaves:** Oval with pointed tip, margins finely toothed (3-5 pair upward-curved veins) Glossy, hairless and smooth.
- ➔ **Branches:** Buds and leaves are opposite. End in short spines.
- ➔ **Bark:** Rough, grey to brown with light-colored lenticels. Inner bark yellow and heartwood orange or pink.
- ➔ **Flowers:** **Early spring.** Dense clusters, 4-petaled, yellow-green.
- ➔ **Fruit:** ¼ inch purple/black in color. Present in fall.



Project Goals



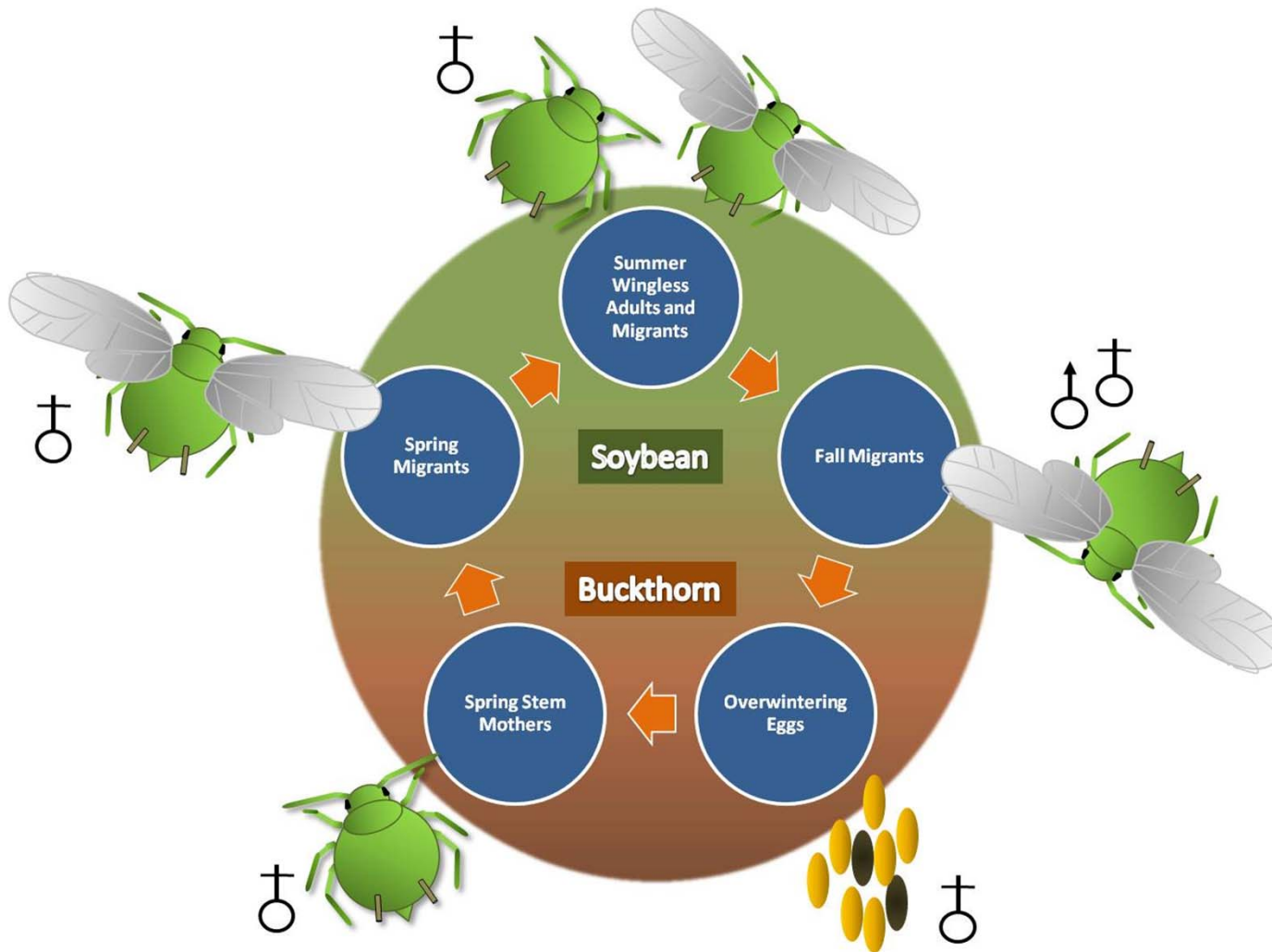
USDA NIFA Funded in 2009, Biology of Weedy and Invasive Species Program

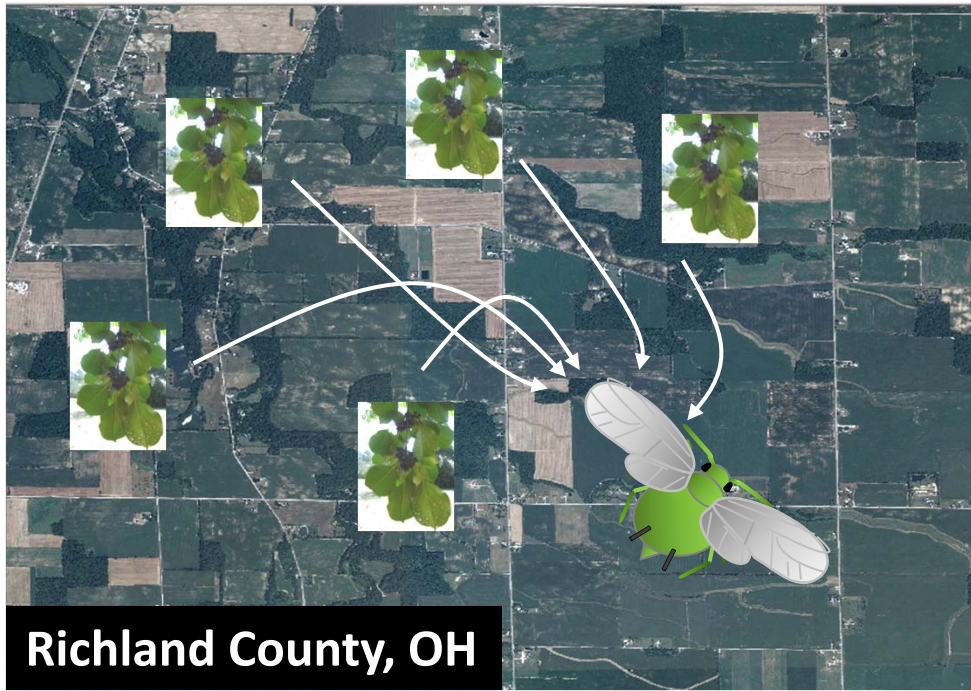
(Mary Gardiner, Andy Michel, Doug Landis, Dave Lusch, and Matt O'Neal)

Our goal is to examine whether reducing common buckthorn abundance at landscape scales will reduce the impacts of those species it supports.

Soybean Aphid and Common Buckthorn

Common buckthorn supports soybean aphid in the fall, winter, and spring:



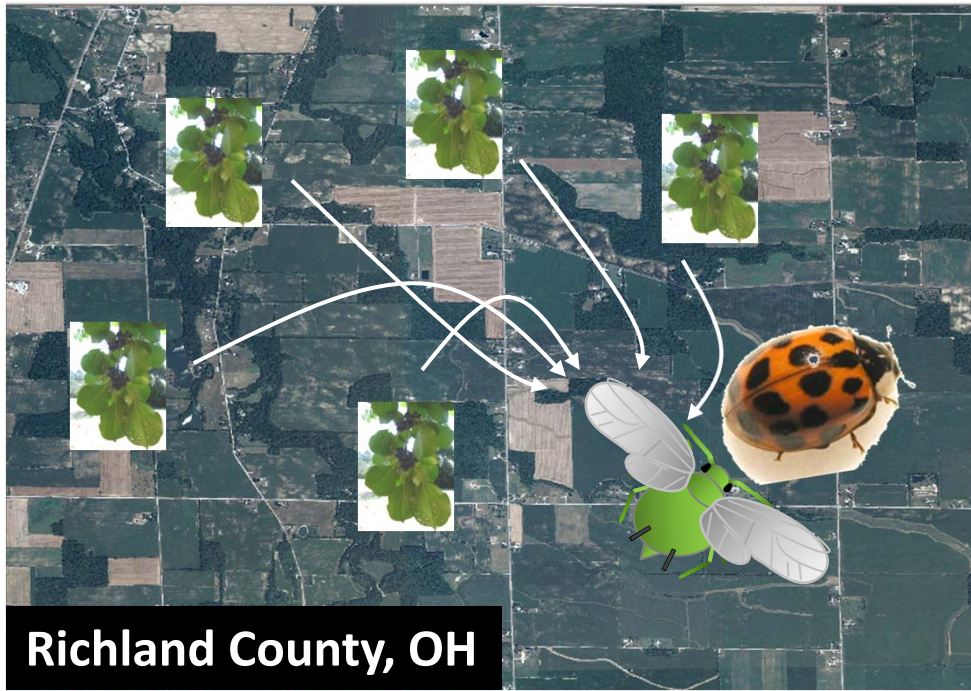


Our Research Questions

- 1. Does the amount of buckthorn in the landscape influence colonization of soybean fields by soybean aphid?**
- 2. If so, at what spatial scale does buckthorn abundance influence colonization of fields?**

(miles, tens of miles, hundreds of miles?)

Are Ohio aphids migrating from local buckthorn infestations or moving much longer distances from Michigan or Ontario?



Our Research Questions

1. Does the amount of buckthorn in the landscape colonization of soybean fields by soybean aphid?
2. If so, at what spatial scale does buckthorn abundance influence colonization of fields?
3. Are landscapes with significant buckthorn invasion a source of multicolored Asian lady beetles?

Understanding the scale of aphid movement from common buckthorn to soybean will inform regional management of all species.

Mapping Common Buckthorn

Our first step is to map the distribution of common buckthorn across the north central U.S.

Combination of modeling and on-the-ground survey techniques

Using **satellite images** we are estimating the distribution of common buckthorn across the north central states. (Dr. Dave Lusch, RSGIS, MSU)

Common buckthorn holds its leaves late into the fall. We look for late season “greenness” in satellite images along fencerows, forest edges as an indicator of possible buckthorn presence.

Buckthorn distribution also predicted using **ecological niche modeling**, identify areas with conditions most likely to support common buckthorn.



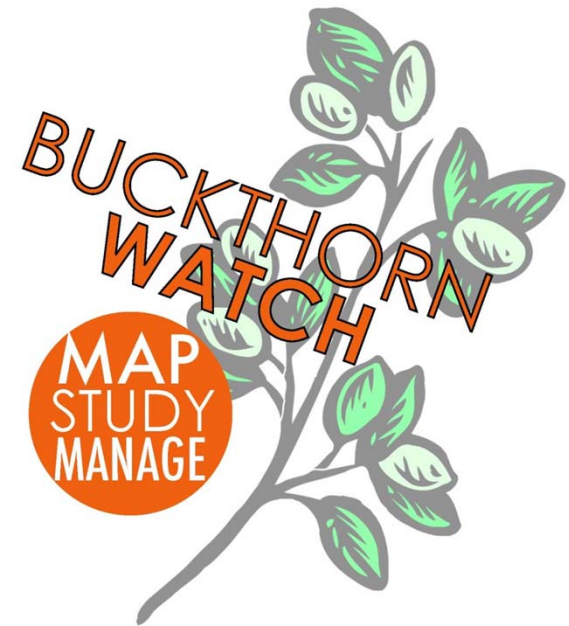
common buckthorn green after overstory leaf drop.

Our modeling efforts must be done in conjunction with on-the-ground surveying!

The Buckthorn Watch Program

Current Projects:

- 1. Common Buckthorn Mapping:** Volunteers report sightings of common buckthorn across the north central U.S.
- 2. Aphid Hunt:** Surveying common buckthorn stands for soybean aphid.



<http://buckthornwatch.org>

Buckthorn Watch - Mozilla Firefox

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BUCKTHORN WATCH



BUCKTHORN WATCH

MAP STUDY MANAGE

HOME

IDENTIFICATION

IMPACTS

REPORT

APHID HUNT

CONTACT US

WELCOME TO BUCKTHORN WATCH

Common buckthorn has been present in the U.S. since the early 1800's when it was introduced by settlers through landscaping. Unfortunately this fast-growing plant which can spread by both roots and seeds has become a widespread invasive species. Common buckthorn has negative ecological and economic impacts across both natural and agricultural lands. Learn more about these by viewing the **IMPACTS** page on this website.

The Buckthorn Watch program was formed through a collaboration between researchers at The Ohio State University, Michigan State University, and Iowa State University to study the relationship between common buckthorn invasion the negative impacts it has on our environment. Interested in becoming a volunteer? **Visit the REPORT page to learn how to get involved today!**

<http://buckthornwatch.org>

The **WHAT, WHEN, WHERE** and **WHO** of Buckthorn Watch:

WHAT do Buckthorn Watch volunteers do?

Find and report common buckthorn infestations

Location

Size of patch

Density of patch

The WHAT, WHEN, WHERE and WHO of Buckthorn Watch:

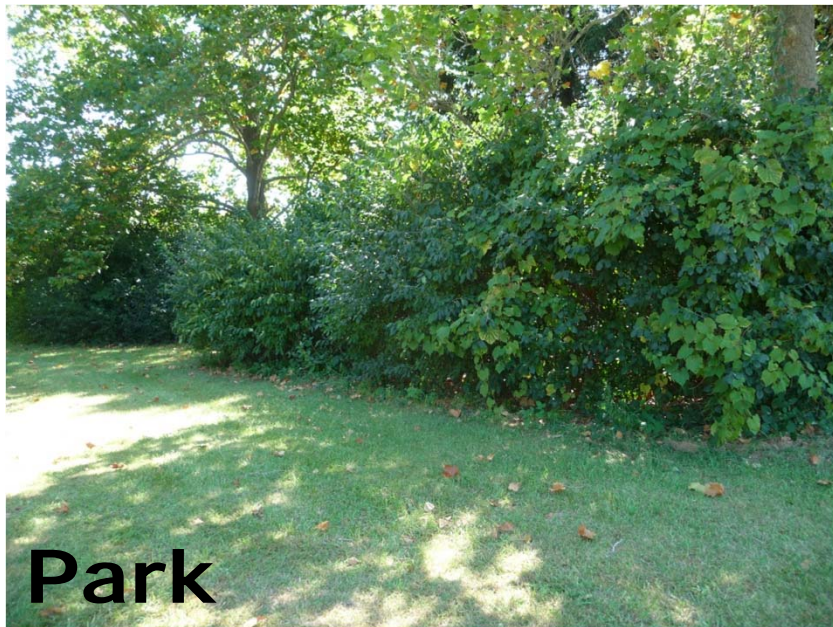
ANYTIME: You can identify common buckthorn any time of year. However, its easiest to identify in the spring (flowers) or fall (fruits)

**Take these
pictures with
you to the
field, on the
ID bookmark!**



The WHAT, WHEN, WHERE and WHO of Buckthorn Watch:

ANYWHERE: Parks, woodlot edges, urban areas, along roadsides, hiking trails, railroad right-of-ways, fencerows between crop fields, maybe even your neighbor's yard!



Park



Along HW 250

The WHAT, WHEN, WHERE and WHO of Buckthorn Watch:

ANYONE: We are all negatively impacted by the presence of these species and must work together to reduce their impacts.

Farmers, master gardener groups, natural areas stewards, school groups; any individuals willing to help are encouraged to participate in Buckthorn Watch.



Sign up as a member of Buckthorn Watch, visit the Report page of our website today!



- HOME
- IDENTIFICATION
- IMPACTS
- REPORT
- APHID HUNT
- CONTACT US

HOW TO REPORT COMMON BUCKTHORN

Buckthorn Watch is partnering with the Midwest Invasive Species Information Network (MISIN) to develop a map of the distribution of common buckthorn across the north-central U.S. You can help in this effort by reporting infestations of common buckthorn you find while inspecting your property or exploring your neighborhood parks, trails, and roadsides.

Becoming a Buckthorn Watch volunteer only takes a few minutes. All you have to do is register with MISIN and complete a short tutorial about common buckthorn identification. When you register you will be asked if you are affiliated with any program, be sure to select Buckthorn Watch.

Where to look for common buckthorn: Watch for common buckthorn in disturbed sites. This includes the edges of forests, unmanaged hedges, fencerows separating crop fields, and along roads and highways, and power line and railroad right-of-ways.

What information will you be asked to report?

Location: When you find common buckthorn, note your location. When you make your report you will be able to pin-point the location of the infestation using Google Maps.

Area: The reporting site has five categories for area, all in acres. An acre is approximately 200 x 200 feet. The categories are: less than 1 acre, 1-10 acres, 10-50 acres, 50-100 acres, and more than 100 acres. Most common buckthorn patches will be less than 10 acres.

Density: You will select from four density categories to categorize your common buckthorn sighting. These are: sparse (less than 10 total plants), patchy (two or more isolated groupings of 20 or fewer plants), Dense (dense stand of 20-50 plants), or Monoculture (dense stand of 50 or more plants).

Photo: If you have a digital camera or camera phone we would really like a photo of your site! You can email photos of your site to the Buckthorn Watch team when you file a report.

Aphid Hunt: We are also studying the distribution of the soybean aphid on common buckthorn. If you are interested in learning more about this project you can sign up to receive more information when you file a buckthorn report. To learn more about Aphid Hunt **CLICK HERE**.

CLICK HERE to register as a member of BUCKTHORN WATCH

Already Registered? CLICK HERE to login and make a report

HOME	ABOUT	NEWS	REPORT SIGHTINGS	SPECIES INFORMATION	BROWSE DATA	HELP
AIS News	Blogs	Meetings	News Highlights	Partners	What's New	

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Buckthorn Watch

October 11, 2010

Welcome to Buckthorn Watch!



[Register Now!](#) We are partnering with the Midwest Invasive Species Information Network to map the distribution of common buckthorn across the north central U.S.

If this is your first visit, you can [become a member of the Buckthorn Watch network](#) by registering with the MISIN site and completing a short tutorial to assist with common buckthorn identification.

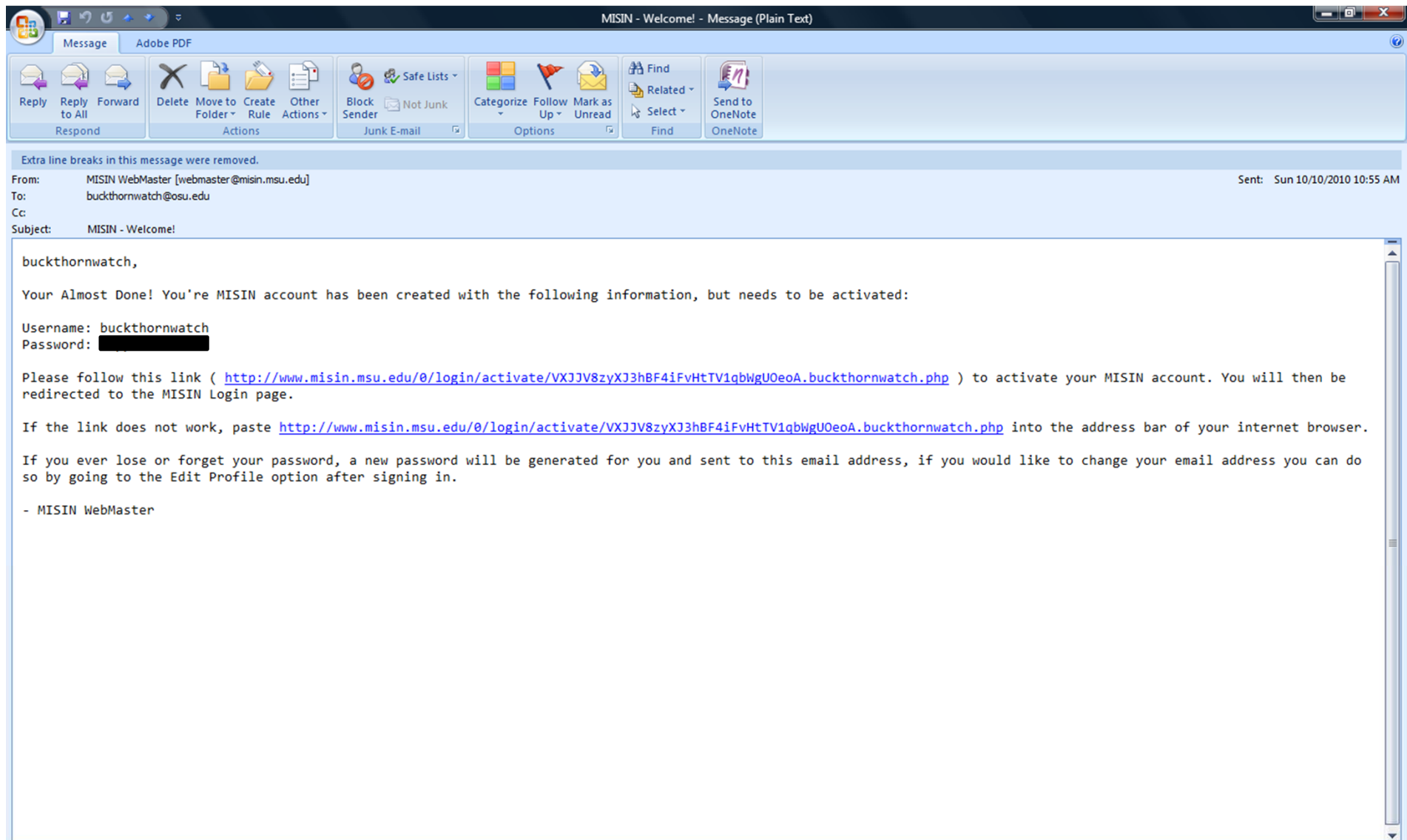
Once you have completed this you will receive a login and password via email which will allow you to report common buckthorn infestations.

Tags: [Aphids](#), [Lady Beetles](#), [OSU](#), [Soybean](#)

Written by Amos Ziegler - Filed Under [AIS News](#)

We partnered with the Midwest Invasive Species Information Network to collect data on the distribution of common buckthorn. You will be transferred to their website where you register as a member of Buckthorn Watch.

After you register you will receive login information by email





MISIN Michigan Invasive Species Information Network

Furthering early detection and distribution mapping

SUNDAY, OCTOBER 10, 2010

SEARCH:

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HOME	ABOUT	NEWS	REPORT SIGHTINGS	SPECIES INFORMATION	BROWSE DATA	LINKS	HELP	CONTACT US
AIS News	Blogs	Meetings	News Highlights	Partners	What's New			

Welcome to the MISIN!

Account Login

Username:

Password:

Remember me

[\(Forgot Your Password?\)](#)

Create an Account

In order to complete the necessary training modules and record an invasive species observation, you will need to register. All information will be kept confidential. If you are already registered to use MISIN, you may login using your existing username and password.



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Report Sightings: **OSU Buckthorn Watch**

Welcome to Buckthorn Watch!

We are partnering with the Michigan Invasive Species Information Network to map the distribution of common buckthorn across the north central U.S.

If this is your first visit, you will need to complete a short tutorial to assist with common buckthorn identification. Proceed to [Step 2 \(Species Training\)](#) below and select the "Common Buckthorn" training module from the list of "Available Training Modules". Once completed you will be able to proceed to Step 3 (Report Sighting).

If you are a returning network member and have already completed the Common Buckthorn training module then proceed to [Step 3 \(Report Sighting\)](#).



[Common Buckthorn / Learn More...](#)



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Common Buckthorn (*Rhamnus cathartica*)

Habit: Deciduous, woody shrub to small tree ranging from 3-7.5 m (10-25 ft) in height and reaching 25 cm (10 in) in diameter.

Leaves: Simple, opposite to sub-opposite, oval, dark green, smooth and shiny; small teeth along margins; veins that curve from base towards leaf tip; early leaf out, long growing season.

Stems: One to several stems from the base; stems branch towards the crown; twigs with thorns often found near the tips; bark is brown to gray, peeling with age, dotted with vertical light-colored lenticels; inner bark is orange.

Flowers: Small, green-yellow, four-petaled, clustered in leaf axils; bloom May-June; fragrant.



Photo: John M. Randall, TNC



Photo: Elizabeth Czarapata



Photo: Wisconsin DNR



Species Summary

Common Name:	Common Buckthorn
Scientific Name:	<i>Rhamnus cathartica</i>
Family:	Rhamnaceae (Buckthorn Family)
Duration:	Perennial
Habit:	Shrub
USDA Symbol:	RHCA3

How Do I Report
An Invasive Species
Sighting?



Michigan Invasive Species Information Network (MISIN)

Educational Module and Assessment:
Common Buckthorn, *Rhamnus cathartica*

Outline Thumbnails Search

- 1. Title
- 2. Introduction
- 3. Directions
- 4. Description
- 5. Leaves
- 6. Leaves
- 7. Leaf Margin
- 8. Leaf Margin
- 9. Flowers
- 10. Petal Number
- 11. Fruit
- 12. Additional Information
- 13. Common Buckthorn Quiz



articulate POWERED PRESENTATION SLIDE 1 OF 13 PLAYING 00:04 / 00:05 [Navigation icons]

Volunteers complete a short ~10 minute module and assessment to learn more



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[Common Buckthorn / Learn More...](#)



Report Species Observation

Locate by Search:

Enter your Lat/Lon coordinates to verify location. Or search for a street address, intersection, or city/state.

Locate by Map:

[CenterOnMarker](#) | [DeleteMarker](#) | [FullExtent](#)



Map Zoom:

Zoom level must be 15 or greater for location to be accepted when verified.
Leave map zoomed in after you establish your final location.

How Do I Report An Invasive Species Sighting?

[Garlic Mustard / Learn More...](#)



eNews & Updates

Sign up to receive the latest MISIN news, as well as daily postings from our network partners!



Find us on
Facebook

Tags

FAR CoastalEPA Great Lakes

Step 1: Locate your common buckthorn patch.

This patch is next to where I park my car at my apartment!

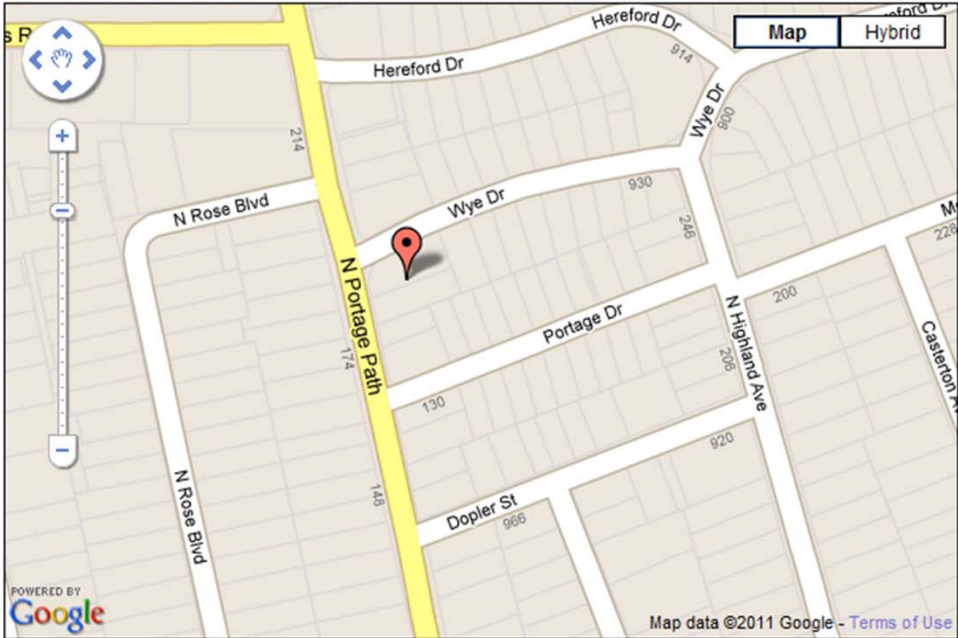
Locate by Search:

190 N Portage Path, Akron, OH

Enter your Lat/Lon coordinates to verify location. Or search for a street address, intersection, or city/state.

Locate by Map:

[CenterOnMarker](#) | [DeleteMarker](#) | [FullExtent](#)



Map data ©2011 Google - [Terms of Use](#)

Map Zoom: Zoom level must be 15 or greater for location to be accepted when verified. Leave map zoomed in after you establish your final location.

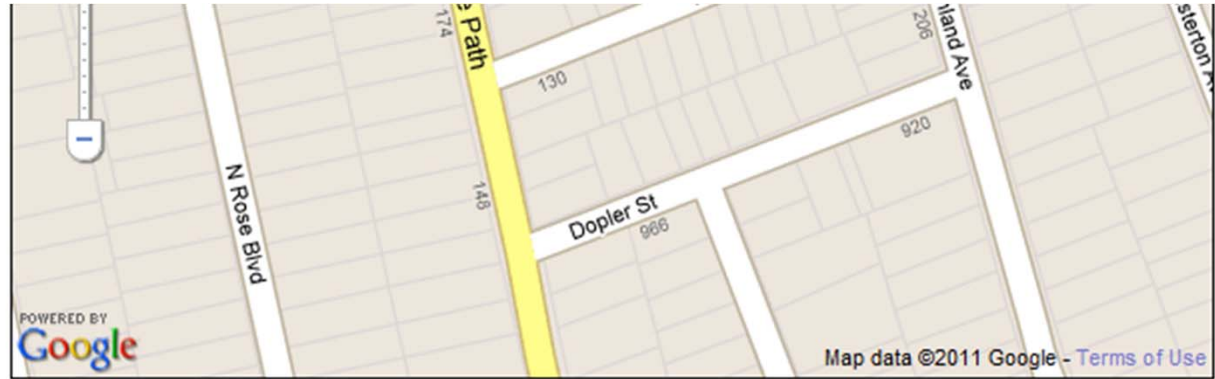
Observer:

Project:

Latitude:

Taskbar: box - Microsof..., SARE proposal d..., Presentations, Microsoft Power..., Buckthorn Watc..., Midwest Invasiv...

Step 2: Enter some information about the patch.



Map Zoom:

17

Zoom level must be 15 or greater for location to be accepted when verified.
Leave map zoomed in after you establish your final location.

Observer:

Project:

Buckthorn Watch

Latitude:

41.10255788715

Longitude:

-81.54650330543518

Common Name:

Common Buckthorn

Date:

January

/ 16

select

Area:

<1

(acres)

Density:

Sparse

Comments:

Three plants in a hedge adjacent to the sidewalk on Wye road.

Submit

Clear

**Step 3:
Submit your
report!**



You will be able to review your submission

Below is a submission summary for your records:

Observation ID: 2364
Common Name: Common Buckthorn
Latitude: 41.10255788715
Longitude: -81.54650330543518
Date: 16-Jan-2011
Area: < 1 acre
Density: Sparse
Comments: Three plants in a hedge adjacent to the sidewalk on Wye road.



More Buckthorn Watch Options

Aphid Hunt

Interested in Joining Aphid Hunt? Click the **Participate** button to send an email to the Aphid Hunt project with your Buckthorn Watch observation data included.

Have Site Photos?

You can send us your Buckthorn Watch site photos by using the form below. Your Name and Email will be taken from your MISIN profile. You can upload jpg, jpeg, gif, and bmp files and the file size should be less than 2 megabytes (MB).

Select A Photo To Email:

Aphid Hunt

If you report a common buckthorn infestation and are willing to return to your site to survey it for aphids we would greatly appreciate your help.

Aphid Hunt participants will receive an email in the spring and fall that indicates a 2 week “open season” to survey their reported buckthorn patches for aphids.

During spring and fall hunts, 200 leaves are inspected and the number of winged and wingless aphids recorded and collected in a zip-close bag.

Any aphids found will be mailed to the Buckthorn Watch team (postage and shipping materials provided).





APHID HUNT

The Buckthorn Watch program is collecting data on soybean aphid populations. As described on the **IMPACTS** page of this website, the presence of common buckthorn has facilitated the invasion of the soybean aphid, a damaging crop pest. We will survey the abundance of this pest on common buckthorn in the spring and fall.

Interested in participating in this Aphid Hunt? Review the information below for details on how you can get involved!

Soybean Aphid Life Cycle: The soybean aphid overwinters on common buckthorn in the egg stage. In the spring aphids feed on common buckthorn for 1-3 generations, then winged forms are produced that migrate to soybean fields. Multiple generations can occur during the summer on soybean. Wingless aphids will be produced within soybean fields when plants are in good condition. When plants begin to deteriorate, winged aphids are produced that migrate to other soybean fields. In the fall when soybean plants begin to dry out and the temperature declines, soybean aphids migrate from soybean to common buckthorn. This is the only time that both male and female aphids are present. During the rest of the year all aphids are female and reproduce clonally, or without mating. The male and female aphids mate on common buckthorn in the fall and females lay eggs near leaf buds. **CLICK HERE** to examine a diagram of this life cycle.

Identifying Soybean Aphid: Soybean aphids are small (about the size of a pin head). They are light green to yellow soft bodied insects. They are

Mapping Common Buckthorn



Common Buckthorn / Learn More...



Interested in joining the Aphid Hunt? Click the Participate button to send an email to the Aphid Hunt project with your Buckthorn Watch observation data included.

Participate

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Select A Photo To Email:



Send us your pics!

eNews & Updates

Sign up to receive the latest MISIN news, as well as daily postings from our network partners!

Enter your email address...

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Tags

Great Lakes

Large scale invasive plant removal?

Its been done before!

Beginning in early 1900's widespread and successful removal of Barberry to reduce black rust in wheat.

“Help us locate every bush..”

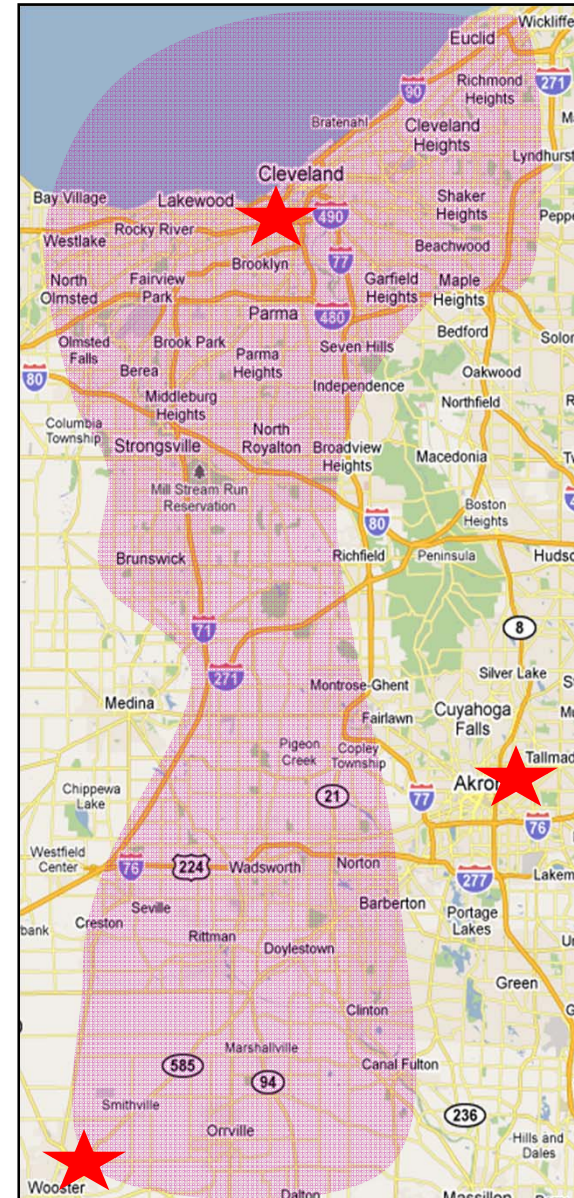


Volunteers Needed for Bumble Bee Study – Scott Prajzner

Help us study bumble bee health in your own backyard!



Our research will help with understanding how different residential environments affect bumble bee health.





Bee Healthy Landscapes





Scott Prajzner



Caitlin Burkman



Chelsea Smith



Ben Phillips



Ian McIlvaine



Shanae Davis



Bethany Hunt



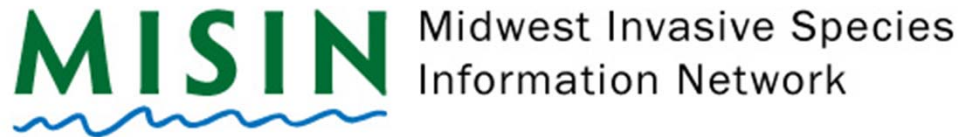
Kojo Quaye

Acknowledgements:

All Our Volunteers!

Denise Ellsworth and Pam Bennett

Amos Ziegler



The Stewardship Network

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USDA NIFA AFRI Program**