

# Taking it up a notch:

Expanding invasive species efforts statewide



Chris Evans

Extension Forester

University of Illinois NRES

# RUSSIAN-OLIVE

For Wildlife and Other Conservation Uses



U.S. DEPARTMENT OF AGRICULTURE

Leaflet No. 517

LEAFLET NO. 458



# Autumn Olive

FOR WILDLIFE AND OTHER  
CONSERVATION USES

UNITED STATES DEPARTMENT OF AGRICULTURE

Crest Orchard Nat'l Wildlife Refuge  
Carbondale, Illinois

# Multiflora Rose



for Living  
Fences  
and Wildlife Cover

LEAFLET No. 256  
U. S. DEPARTMENT OF AGRICULTURE

# SERICEA LESPEDeza



ITS  
USE AND  
MANAGEMENT

U. S. DEPARTMENT OF AGRICULTURE • FARMERS' BULLETIN NO. 2245



# How Illinois Kicked the Exotic Habit

## Fran Harty, 1997

### HOW ILLINOIS KICKED THE EXOTIC HABIT

Francis M. Harty  
Illinois Department of Conservation  
2005 Round Barn Road  
Champagne, IL 61821

#### Introduction

For the purpose of this paper, an exotic species is defined as “a plant or animal not native to North America.” The history of folly surrounding the premeditated and accidental introduction of exotic animals has been well-documented (De Vos et al. 1956, Elton 1958, Hall 1963, Laycock 1966, Ehrenfeld 1970, Bratton 1974/1975, Howe and Bratton 1976, Moyle 1976, Courtenay 1978, Coblenz 1978, Iverson 1978, Weller 1981, Bratton 1982, Vale 1982, and Savidge 1987).

In 1963, Dr. E. Raymond Hall wrote, “Introducing exotic species of vertebrates is unscientific, economically wasteful, politically shortsighted, and biologically wrong.” Naturalizing exotic species are living time bombs, but no one knows for sure how much time we have. For example, the ring-necked pheasant (*Phasianus colchicus*), touted as the Midwestern example of a good exotic introduction, has recently developed a nefarious relationship with the greater prairie chicken (*Tympanuchus cupido*) in Illinois. Parasitism of prairie chicken nests by hen pheasants and harassment of displaying male chickens by cock pheasants are contributing to the decline of prairie chickens in Illinois (Vance and Westemeier 1979). The interspecific competition between the exotic pheasant (which is expanding its range in Illinois) and the native prairie chicken (which is an





**Oriental  
bittersweet**

**Japanese  
honeysuckle**

**Autumn olive**



# Background

- River to River CWMA Coordinator
  - 2007-2012
- Expanded to statewide efforts in 2012
  - Invasive Species Campaign
    - All taxa



# Illinois Wildlife Action Plan

## Illinois Comprehensive Wildlife Conservation Plan & Strategy





# 7 Priority Action Campaigns

- Streams Campaign
- Forests Campaign
- Farmland & Prairies Campaign
- Wetlands Campaign
- Land & Water Stewardship Campaign
- Green Cities Campaign
- **Invasive Species Campaign**







Bugwood.org



<http://ferrebeekeeper.ws.cpress.com>



AsianCarp.us

Whitenosesyndrome.org





# Invasive Species Campaign

- Challenge #1– Go from general broad action statements to on-the-ground results
- Challenge #2- Get people to buy into (and then act upon) the need to implement the actions necessary to see those results
- Challenge #3 – Tracking the results and adapting as needed

# Invasive Species Campaign

- Structured, partner-driven approach
- Agencies, NGOs, business, education...
  - Subject matter/Ecosystem experts
  - Management experts



# Invasive Species Campaign

Prioritizes actions and species

- Actions
  - Universal management recommendations
  - Targeted actions
- Species
  - Species impactful to rare and declining wildlife
  - Species by habitat type
  - Native, rare wildlife impacted by NNIS

# ISC Examples

## Action #10 – Increase capacity for invasive species management in Illinois

- *Sub-action a.* – Create and enhance existing platforms to increase access to technical and financial resources to private landowners...
- *Sub-action b.* – Identify opportunities to establish additional Regional Invasive Plant Strike Teams... in the state



# ISC Examples

Action #14 – Enhance land managers', land owners', and citizens of Illinois' knowledge and awareness of invasive species

- *Sub-action b.* – Maintain an updated and comprehensive invasive specie website for Illinois
- *Sub-action d.* – Further incorporate invasive species into Master Naturalist/Master Gardener program curriculum

# ISC Examples

## Forest and Woodlands Campaign Focal Invasive Species:

- Exotic invasive shrubs, such as bush honeysuckle, autumn olive, common buckthorn, and burning bush
- White-nose syndrome
- Garlic mustard
- Feral swine
- Forest insect pests



# Invasive Species Campaign

- Vehicle for a structured statewide effort
  - Resource for funding requests
- Guide efforts across agencies and regions
- Invasive species considerations built into other natural resource work
  - Invasive species actions with other campaigns

# Illinois Statewide NNIS Efforts

- Education/Awareness
- Regulations
- Mapping/Data Collection
- Control

*Illinois  
Invasive Species*



*Awareness  
Month*









# Illinois Invasive Species Symposium



2014-2018

5 years – 50 presentations



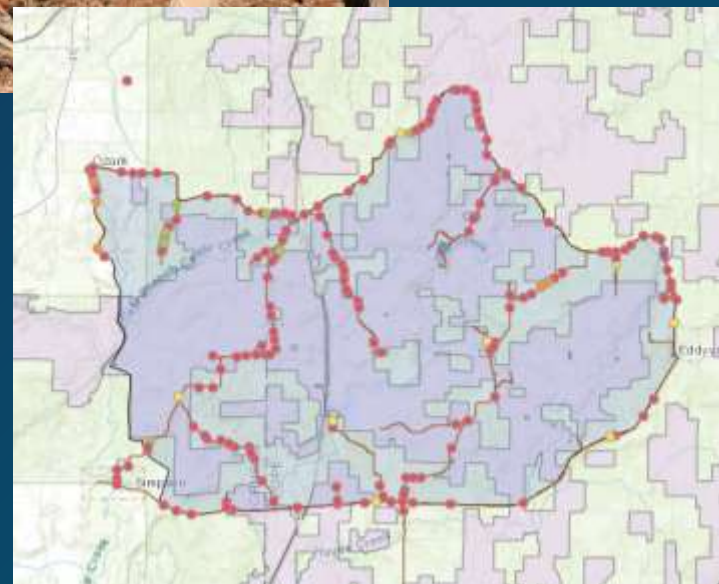
# Terrestrial Plants (20)



# Terrestrial Plants (20)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Oriental Bittersweet												
Fallopia Kankakee												
Prinoselinia												
Purple Loosestrife												
Reed Canadapagan												
Saxifraga												
Senecio integerrima												
Teasel												
Tree of Heaven												
Winged Scouring Rush												
Wintergreen												





# Terrestrial Animals (4)



Craig Hicks, Bugwood.org

# Aquatics (9)



Asiancarp.us



Randy Westbrooks, Bugwood.org



# Forest Health (6)



Debbie Miller, Bugwood.org



Troy Kimoto, Bugwood.org

# Animal Diseases (3)



Wildlife Epidemiology Lab, UIUC



Wildlife Epidemiology Lab, UIUC



Al Hicks, Bugwood.org

# General (8)





# ILLINOIS FIRST DETECTOR



EDRR Program – Educate public on new invaders,  
survey, reporting, management

- Invasive plants
- Forest pests
- Plant diseases

# Regulations

- 2005 - Illinois Injurious Species Rule added three Asian carp species
- 2006 – Emerald Ash Borer Internal Quarantine (\*dropped in 2015)
- 2008 - USEPA amended rules for ballast water discharge to help prevent introduction of new aquatic invasive species in the Great Lakes
- 2012 - External quarantine to prevent introduction of causal agents of Thousand Cankers Disease
- 2013 – Illinois Injurious Species Rule added 27 invasive aquatic plant species
- 2013 - Boat Registration and Safety Act amended to make it illegal to operate a vehicle, seaplane, or watercraft if it has any aquatic plants or aquatic animals attached
- 2014 - Wild Swine Admin Rule created
- 2015 – Illinois Exotic Weed Act added 16 new species to regulated list

# Illinois Exotic Weed Act 1988



Multiflora Rose



Purple Loosestrife



Japanese Honeysuckle



# Illinois Exotic Weed Act (525 ILCS 10/)

## Previous Regulated List

- Japanese honeysuckle
- Purple loosestrife
- Multiflora rose
- Glossy buckthorn
- Kudzu
- Saw-toothed buckthorn
- Common buckthorn
- Dahurian buckthorn
- Japanese buckthorn
- Chinese buckthorn

*Lonicera japonica*

*Lythrum salicaria*

*Rosa multiflora*

*Frangula alnus*

*Pueraria montana*

*Rhamnus arguta*

*Rhamnus cathartica*

*Rhamnus davurica*

*Rhamnus japonica*

*Rhamnus utilis*



Partnership to facilitate species  
assessments and recommendations for  
regulation

# Update to Illinois Exotic Weed Act

- **Exotic bush honeysuckles** (*Lonicera maackii*, *Lonicera tatarica*, *Lonicera morrowii*, and *Lonicera fragrantissima*)
- **Exotic olives** (*Elaeagnus umbellata*, *Elaeagnus pungens*, *Elaeagnus angustifolia*)
- **Salt cedar** (all members of the *Tamarix* genus)
- **Poison hemlock** (*Conium maculatum*)
- **Giant hogweed** (*Heracleum mantegazzianum*)
- **Oriental bittersweet** (*Celastrus orbiculatus*)
- **Lesser celandine** (*Ficaria verna*)
- **Teasel** (all members of the *Dipsacus* genus)
- **Japanese, giant, and Bohemian knotweed** (*Fallopia japonica*, syn. *Polygonum cuspidatum*; *Fallopia sachalinensis*; and *Fallopia x bohemica*)







# Mapping/Data Collection

# Invasive species new to Illinois since 2005\*

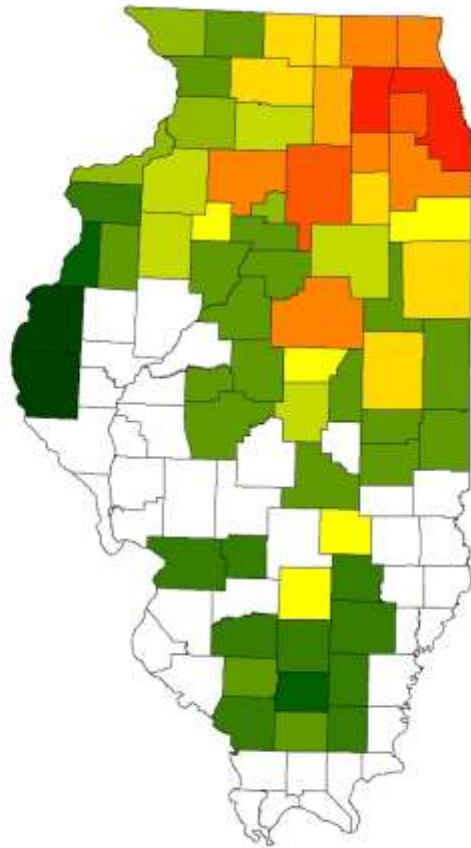
\* Partial list

- Quagga mussel (2005)
- Reed mannagrass (2006)
- Emerald ash borer (2006)
- Giant hogweed (2006)
- Japanese chaff flower (2008)
- Brown marmorated stinkbug (2009)
- Small flower saltcedar (2012)
- Ranavirus (2012)
- White-nose syndrome (2013)
- Jumping worms (2015)



# Emerald Ash Borer

Year	Confirmed counties
2006	2
2007	2
2008	6
2009	1
2010	6
2011	5
2012	5
2013	4
2014	19
2015	9
2016	1
2017	2
Total	62



EAB confirmed counties  
as of 1/9/2018

**\*62 counties  
in 12 years**

# Brown Marmorated Stinkbug

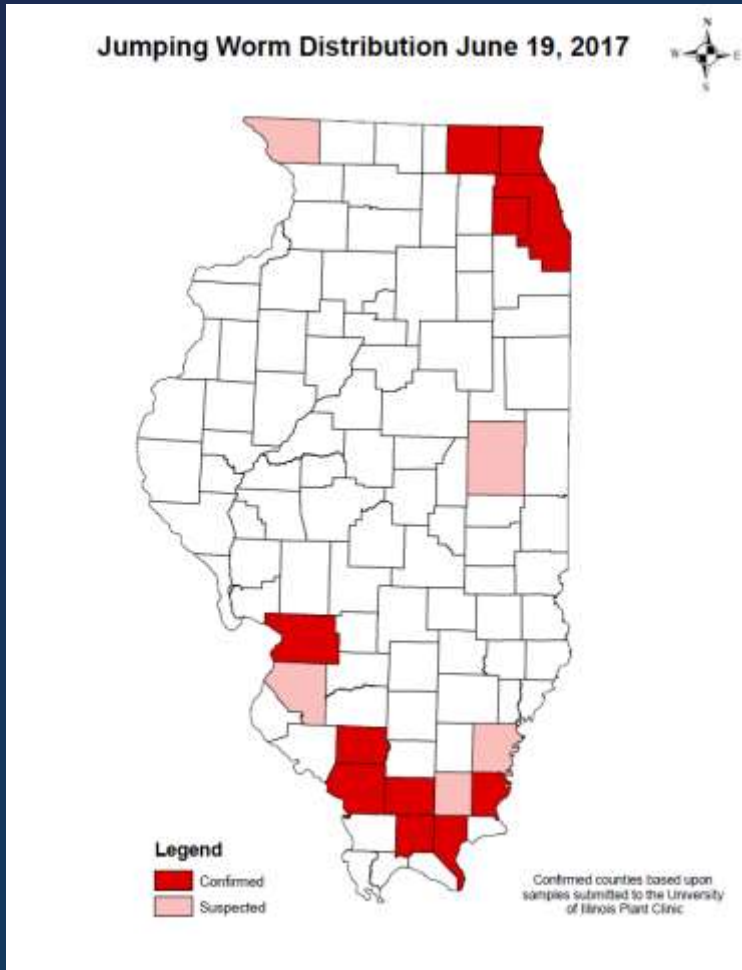
Brown Marmorated Stinkbug  
Progression in Illinois  
2010-2017

**2017**



**\*38 counties  
in 7 years**

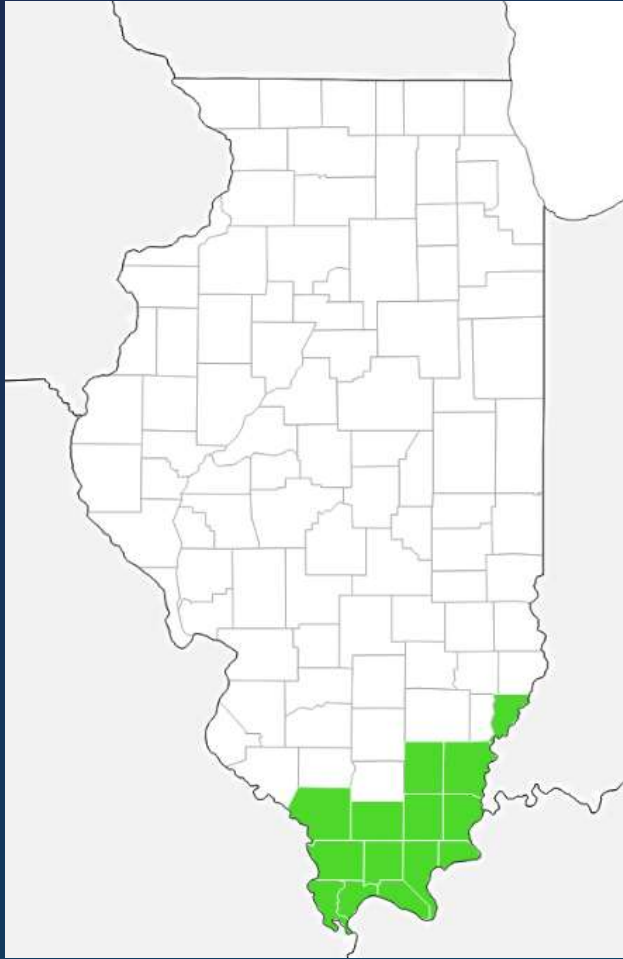
# Jumping Worms



**\*11 counties  
in 3 years**



# Japanese Chaff Flower

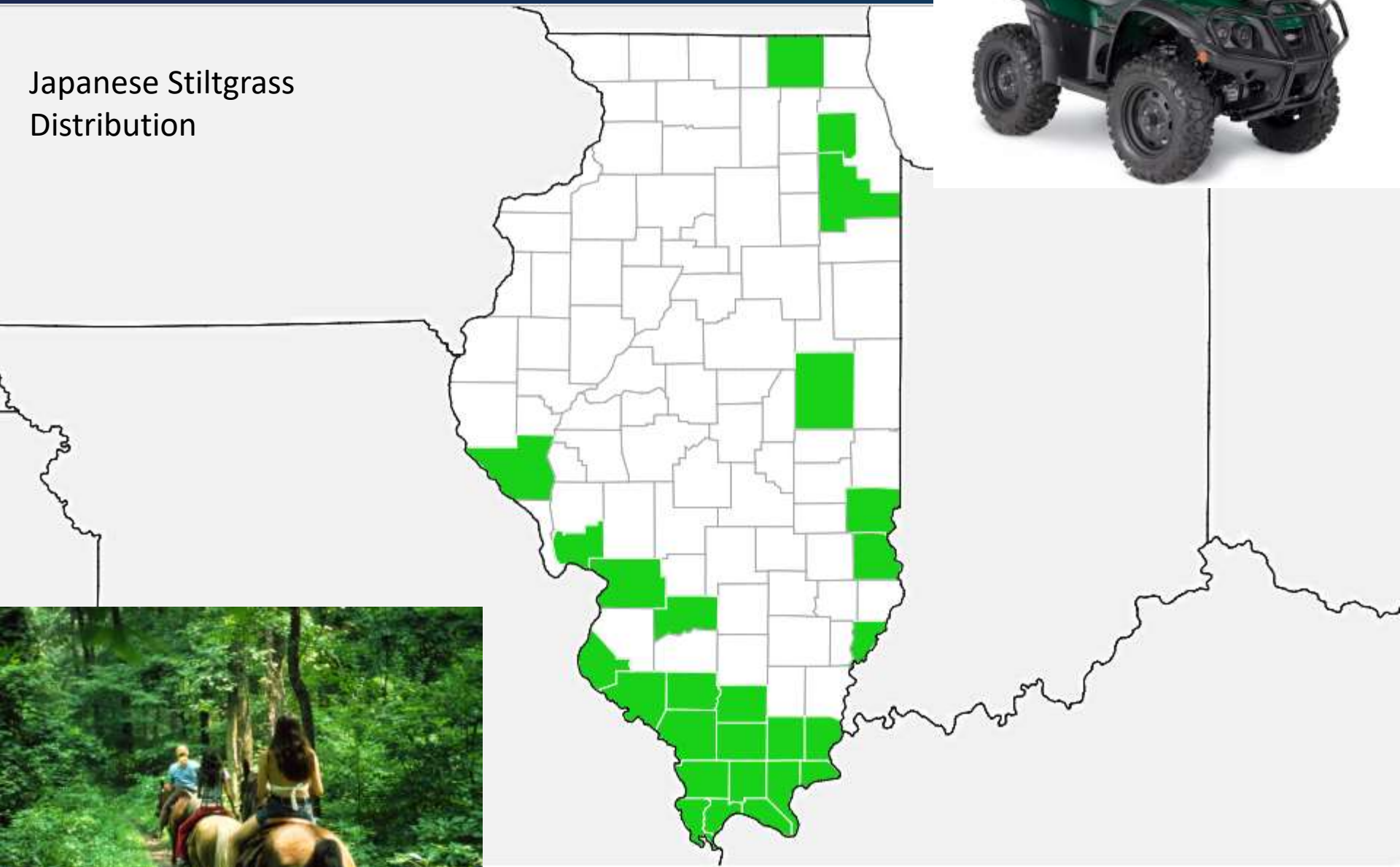


**\*14 counties  
in 10 years**

# “Explosion of common species”



Japanese Stiltgrass  
Distribution

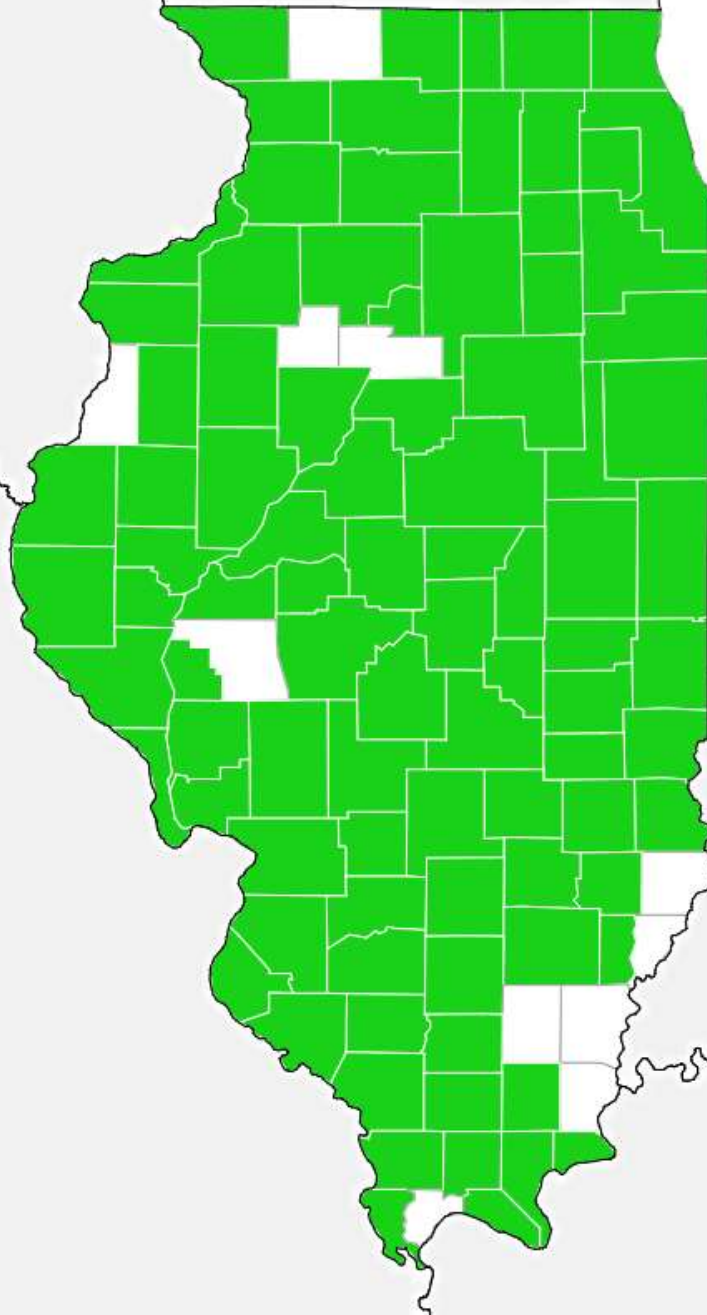








# Amur Honeysuckle Distribution

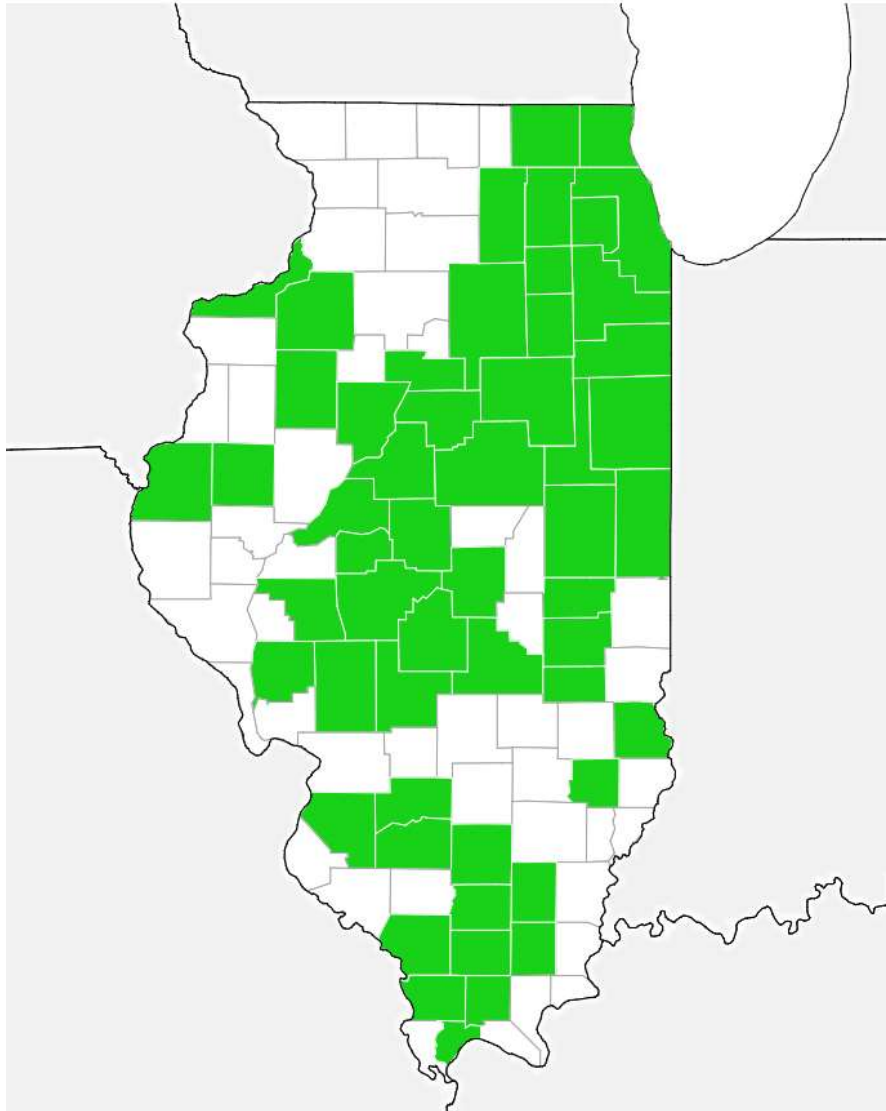




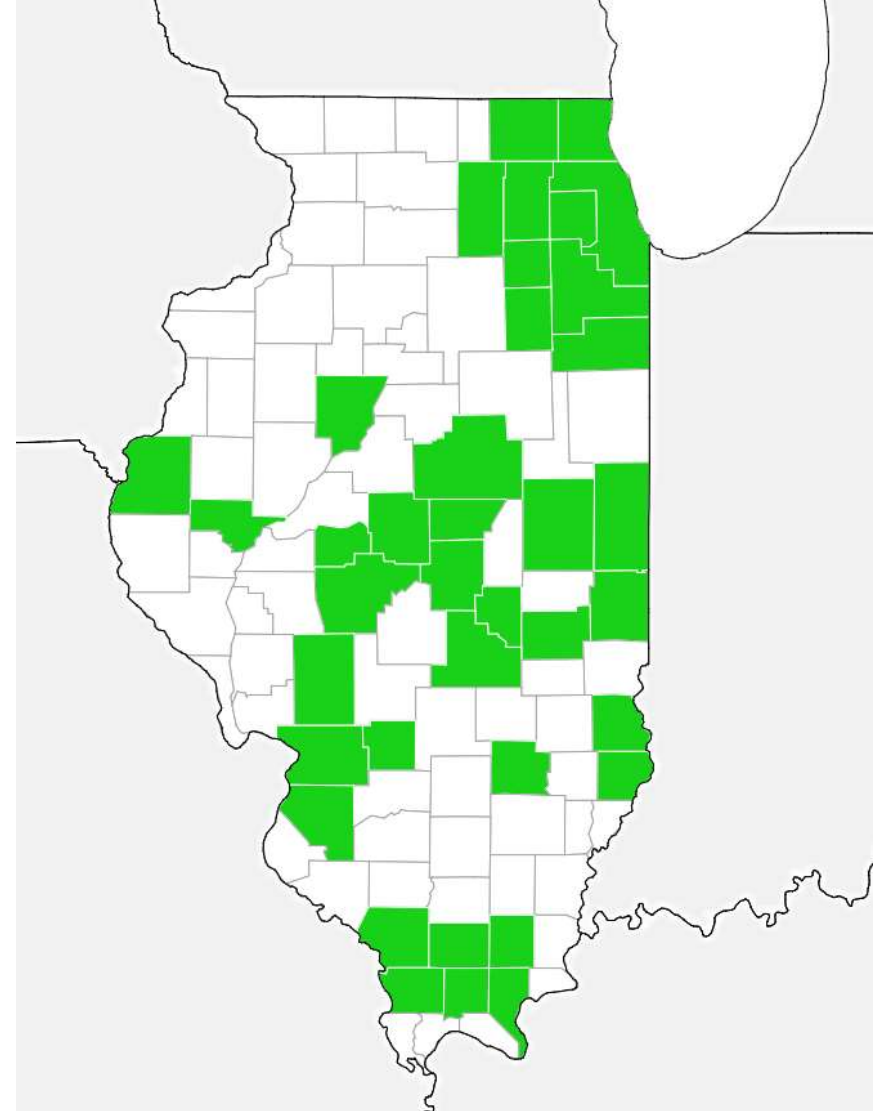
UGA2124055

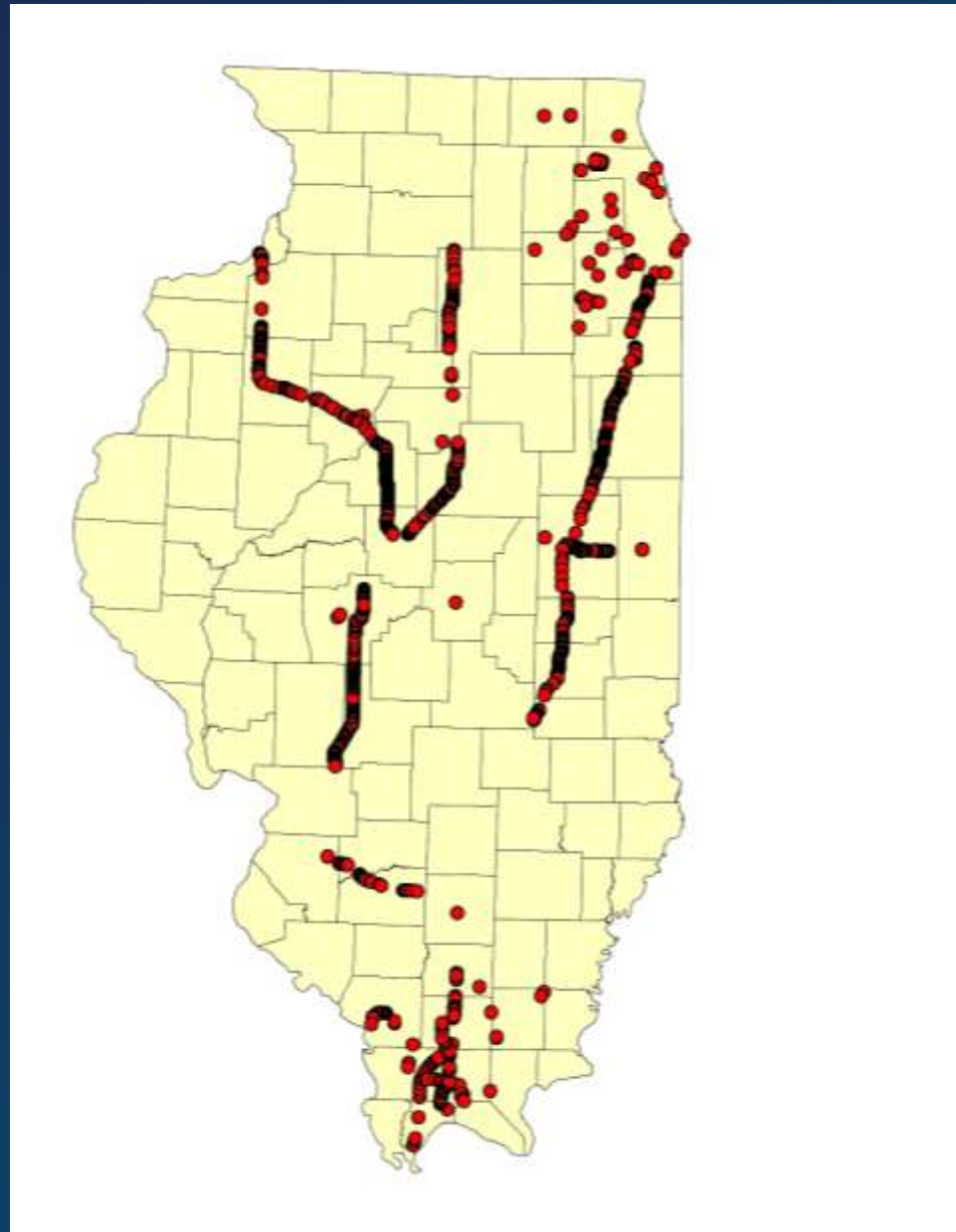


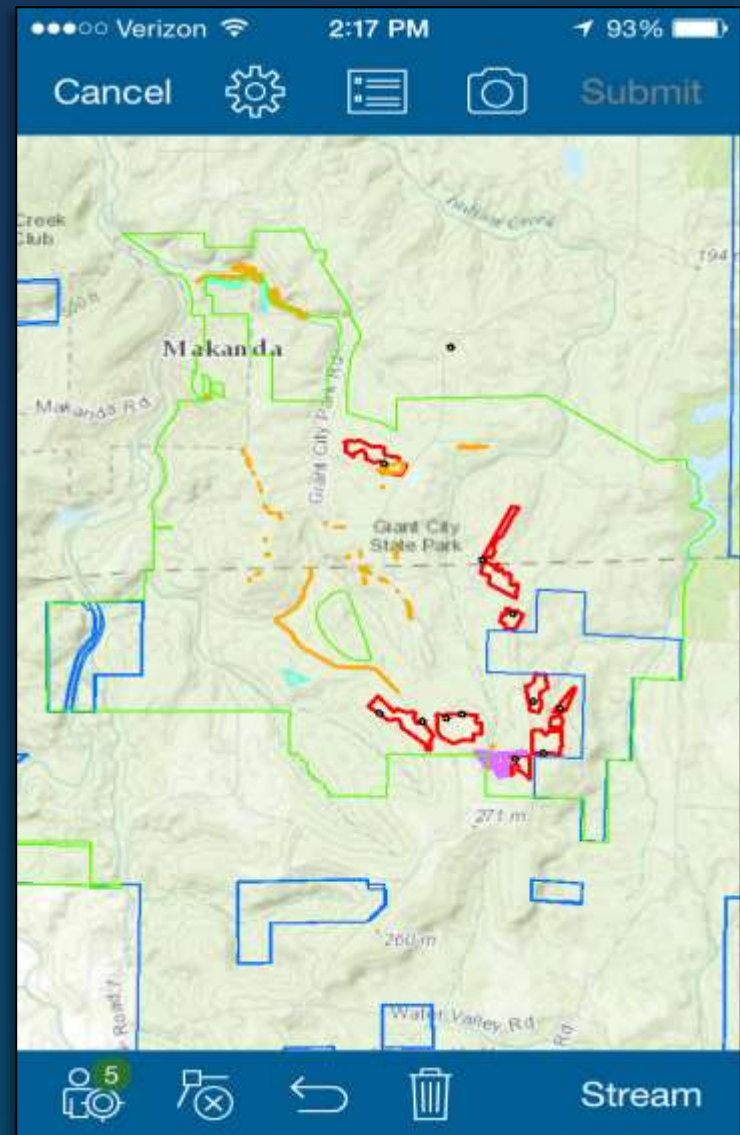
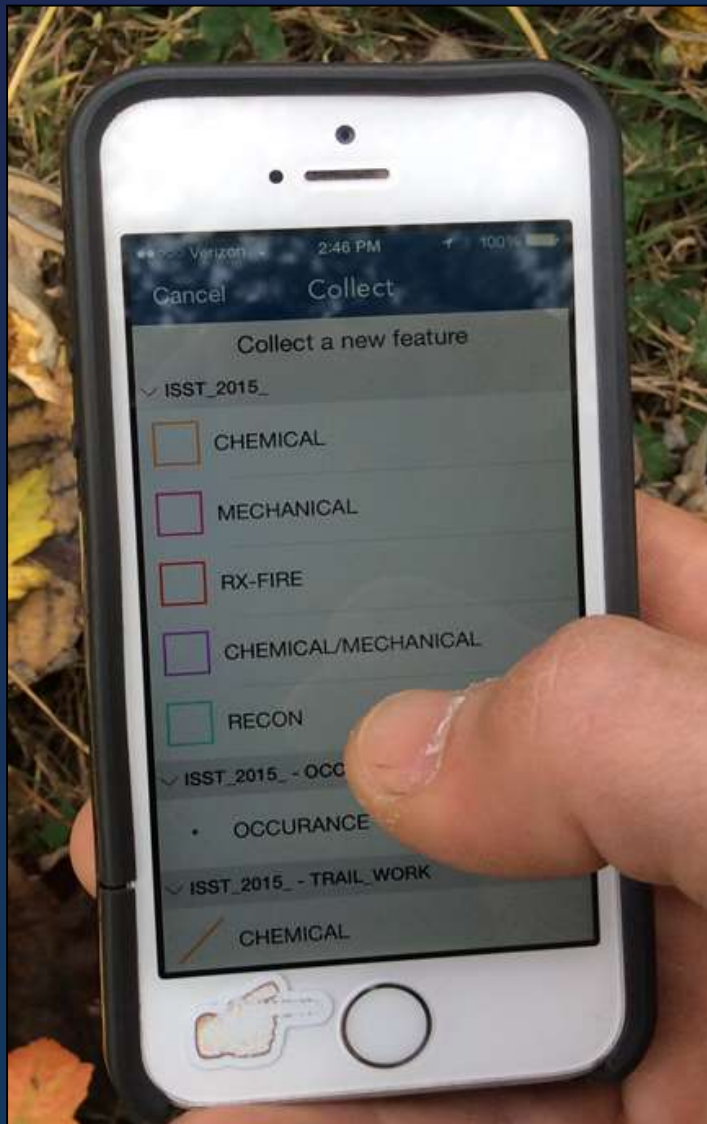
# Cutleaf teasel



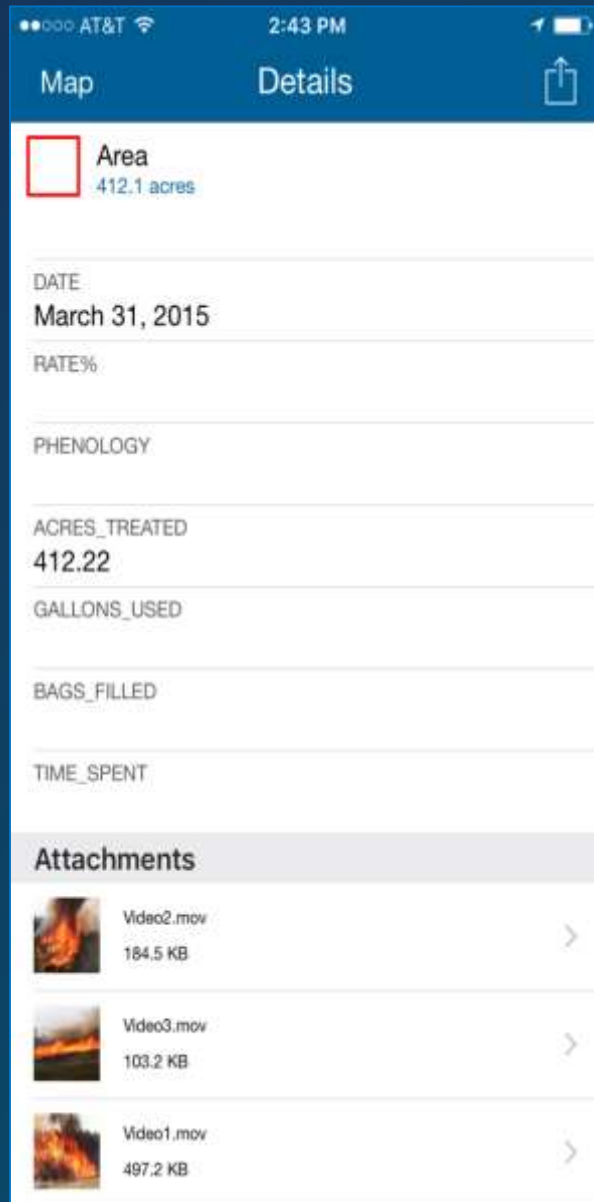
# Common teasel

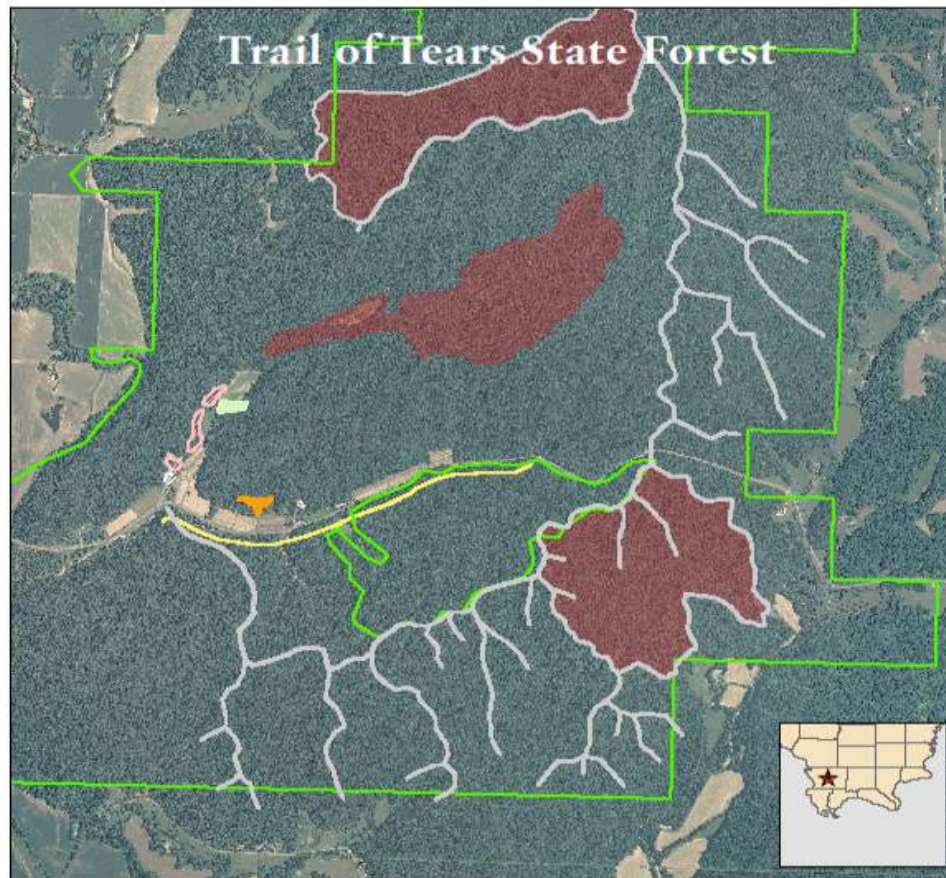






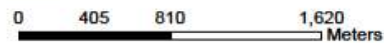






**Legend**

- IDNR Managed Lands
- Rx-Fire
- Dioscorea oppositifolia*
- Lonicera maakii*
- Microstegium vimineum*
- Pueraria montana*
- Celastrus orbiculatus*, *Elaeagnus umbellata*, *Euonymus alata*



December 6, 2014

Map Created by:  
Nick Sexton & Caleb Grantham  
Invasive Species Strike Team

Data Sources  
Imagery: National Agriculture Imagery Program  
(NAIP) Compressed County Mosaic (10140)

Imagery: C:\WIMS\NAIP\imagery\NAIP\_Union\ortho\_imagery

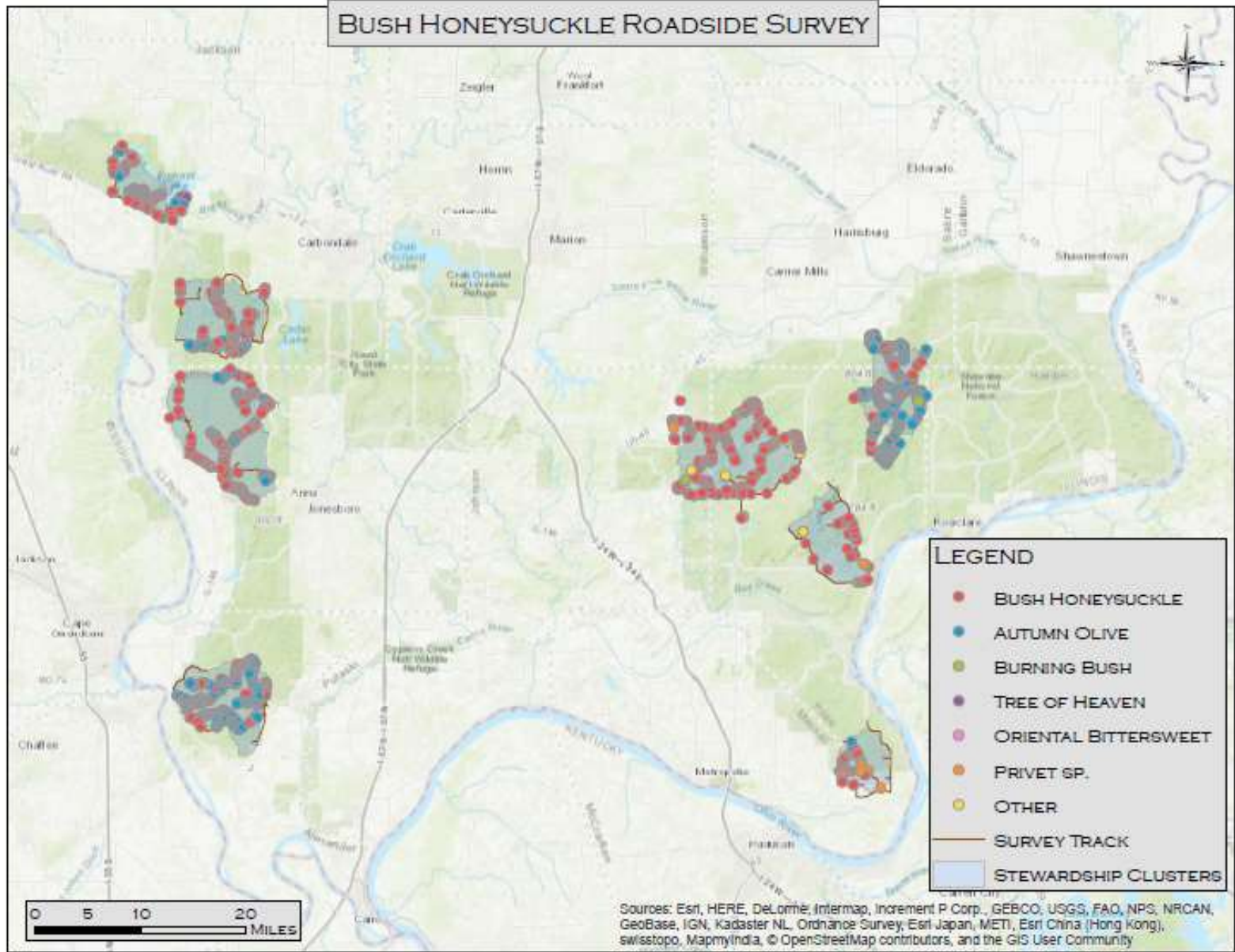
Map Projection: UTM Zone 16, NAD -1983-

TNC Disclaimer: The Nature Conservancy  
provides the information "as is." TNC makes  
no guarantee or warranty concerning the  
accuracy of information contained in the  
geographic data.

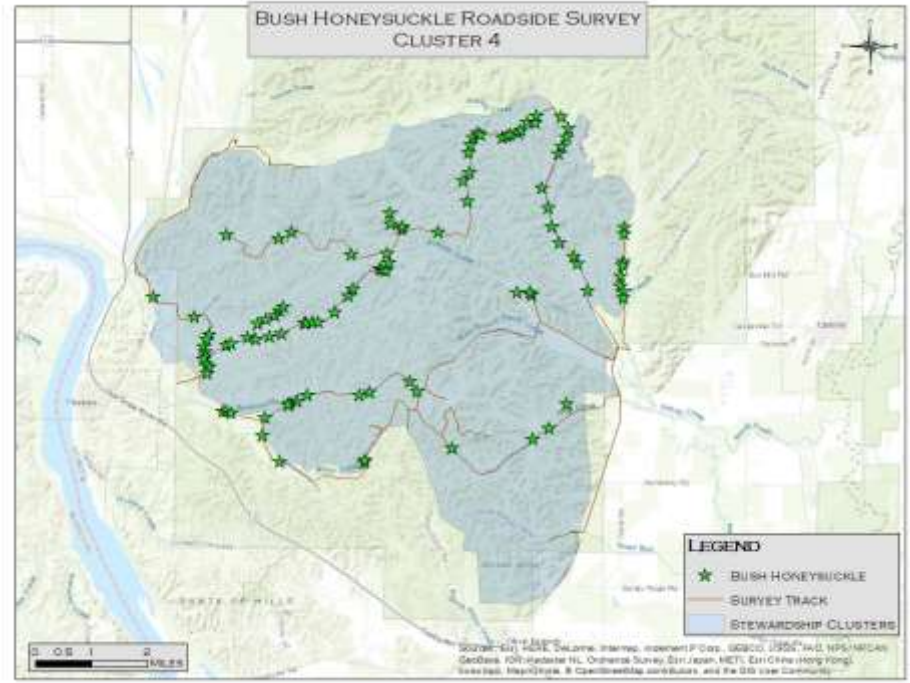
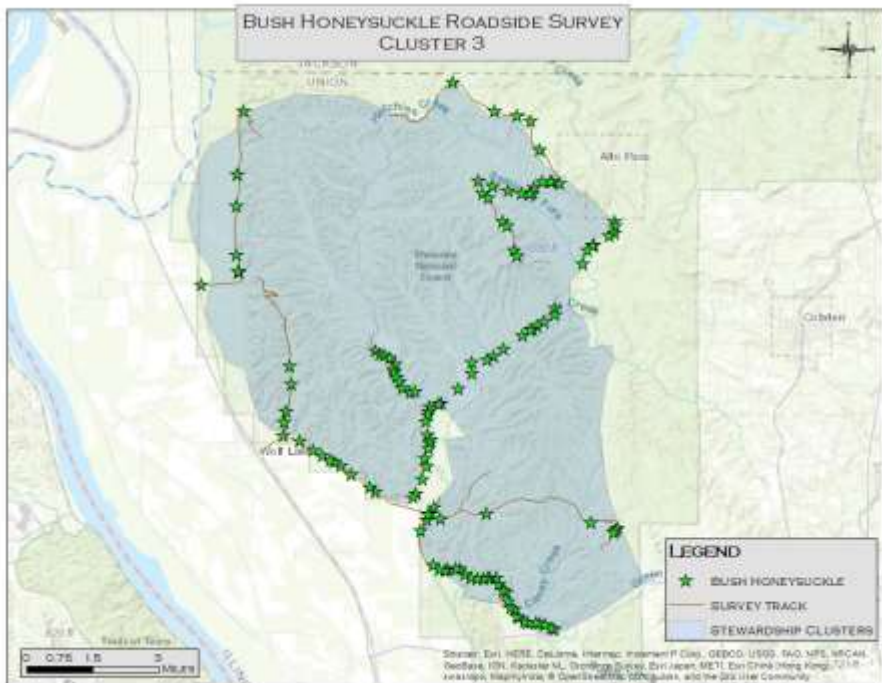
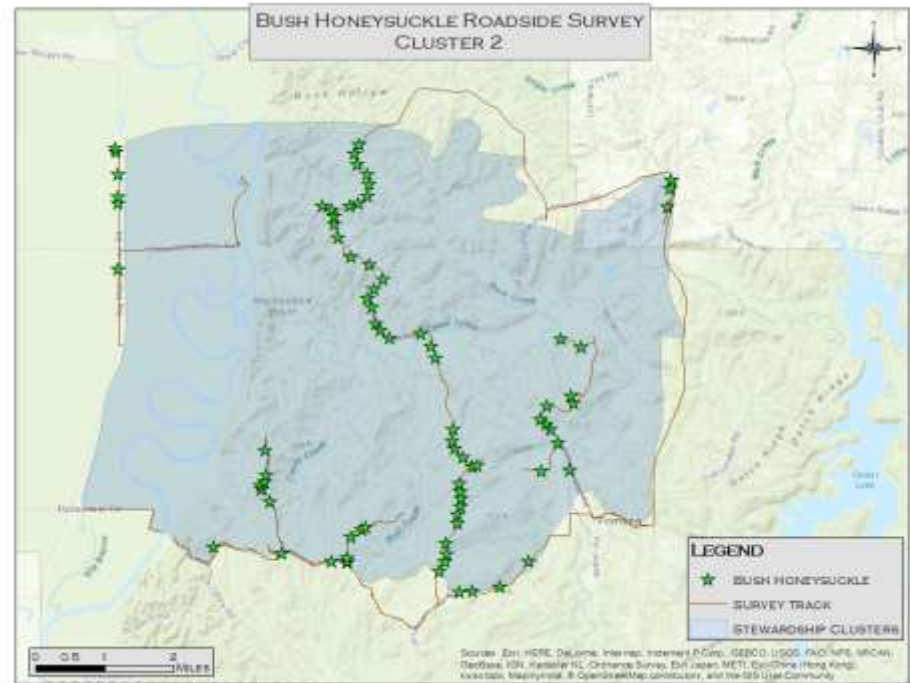
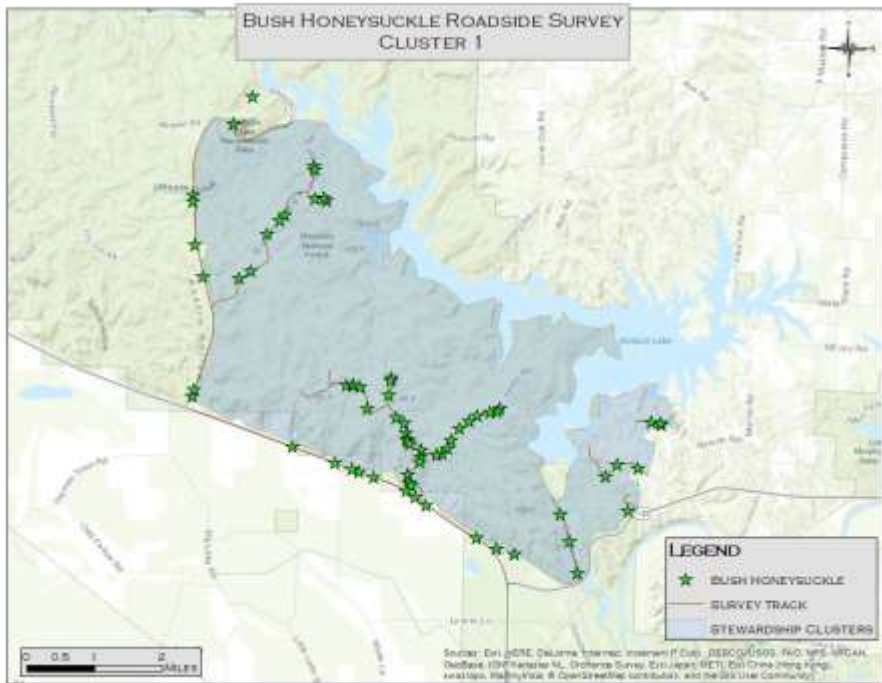




# BUSH HONEYSUCKLE ROADSIDE SURVEY







# Illinois Invasive Plant Phenology Observation Project









# Phenology reports

- Observations are compiled each month and summarized by region
- Monthly report





# Invasive Plant Phenology Report

## September 2016

Christopher W. Evans, Extension Forestry and Research Specialist  
Department of Natural Resources and Environmental Sciences



This University of Illinois Extension Technical Forestry Bulletin series provides monthly reports on the development of invasive plant species in Illinois. Reports are summarized by region and produced from field observations collected between the 8th and 14th of each month.

Phenology is the study of seasonal natural phenomena. This observational project tracks the phenology of invasive plant species in Illinois throughout the growing season, noting when plants initiate growth, start flowering, ripen seeds, become dormant, etc. Data on the phenology of invasive plants is critical information for the development of effective management programs.

### September 2016 General Summary

For September, across Illinois the transition into fall is ongoing with most of the invasive plants we are tracking either already dormant or in seed. The common invasive shrubs, such as bush honeysuckle, autumn olive, and common buckthorn all have ripe fruit and, in some sections, the fruit are starting to fall. Very few invasive plants are actively in bloom, with purple loosestrife and sericea lespedeza being the main exceptions.

### Regional Reports

#### South

- Japanese chaff flower (*Achyranthes japonica*) - Flowering spikes elongating and only a few flowers remain at the tip. Most of the spike has immature green fruit
- Mimosa (*Albizia julibrissin*) - Seed pods full size and starting to turn brown
- Garlic mustard (*Alliaria petiolata*) - Second year plants completely dry and dormant. Fruit are dry and open and seeds have fallen
- Poison hemlock (*Conium maculatum*) - Plants dormant, seeds have fallen
- Queen Anne's lace (*Daucus carota*) - Plants completely dry
- Teasel (*Dipsacus spp.*) - Plants completely dry and dropping seed

- Autumn olive (*Elaeagnus umbellata*) - Fruit fully ripe and starting to fall
- Sericea lespedeza (*Lespedeza cuneata*) - Past peak flower with most plants having only a few flowers remaining. Immature, green fruit forming
- Privet (*Ligustrum spp.*) - Fruit still green and immature
- Japanese honeysuckle (*Lonicera japonica*) - A few flowers can still be found on plants



- Amur honeysuckle (*Lonicera maackii*) - Most plants with fully ripe fruit. Some plants fruit are not yet fully ripe and bright red. Some leaves starting to drop.
- Birdfoot trefoil (*Lotus corniculatus*) - Past flowering, mature seed pods
- Sweet clovers (*Melilotus albus* and *M. officinalis*) - Second year plants of both yellow and white sweet clover are completely dry and dormant and seeds have fallen. First year plants actively growing
- Japanese stiltgrass (*Microstegium vimineum*) - "Boot stage" flowers forming but not erupted from stem yet
- Paulownia (*Paulownia tomentosa*) - Fruit pods still green and unopened
- Reed canary grass (*Phalaris arundinacea*) - Seed completely

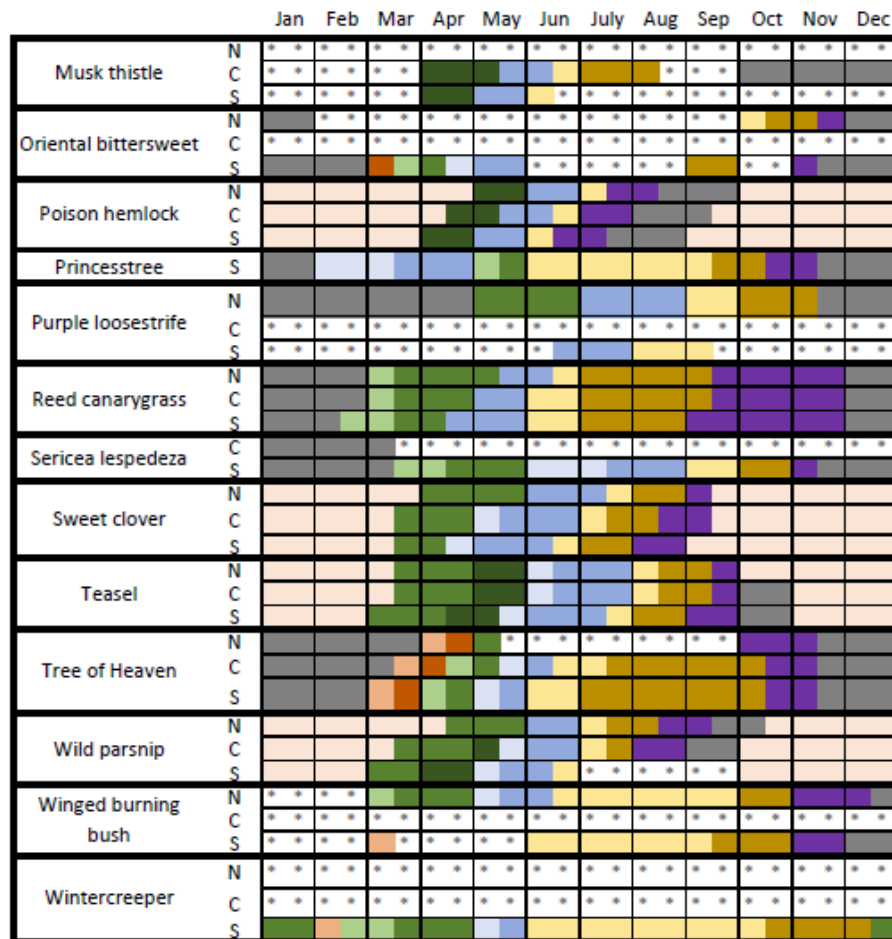
### Interested in becoming an invasive plant phenology observer?

The University of Illinois Extension Forestry Program relies on observations from volunteers to produce the monthly invasive plant phenology report. Anyone interested in becoming a volunteer observer should contact Chris Evans, Extension Forester at (618) 695-3383 or cwevans@illinois.edu. Volunteers are asked to make monthly observations on three to four invasive species in their area.





# Phenology Calendar



† - Fruit of the other bush  
honeysuckle species  
mature 6-8 weeks earlier

- \* - No data
- - Dormant
- - New Germinates
- - Rosette
- - Bud swell
- - Bud break
- - Leaf Emergence
- - Vegetative Growth
- - Bolting
- - Flower bud
- - Flower
- - Seed/Fruit Immature
- - Seed/Fruit Mature
- - Leaf color/senescence

N- Northern, C- Central, S- Southern

Note: Some species not included in calendar due to insufficient phenology data

# Control Efforts

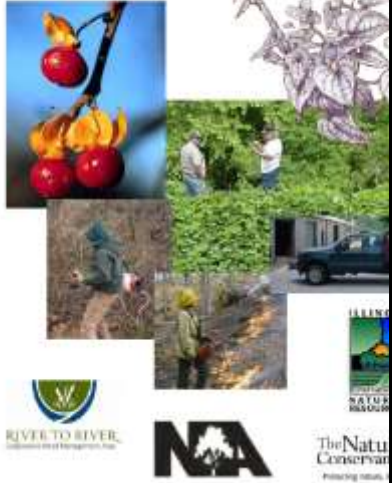
# Strike Teams





Southern Illinois  
Invasive Species Strike Team

2009 Annual Report



Southern Illinois  
Invasive Species Strike Team

2010 Annual Report



Southern Illinois  
Invasive Species Strike Team  
2014 Annual Report



Southern Illinois  
Invasive Species Strike Team

2011 Annual Report



Southern Illinois Invasive  
Species Strike Team

A science-based  
collaborative effort to  
manage invasive  
species on a regional



Southern Illinois Invasive Species Strike Team  
2012 Annual Report





## Aerial Control Efforts











MANAGEMENT OF  
INVASIVE PLANTS  
AND PESTS OF  
ILLINOIS

**Regional Conservation Partnership Program  
2016 Proposal**

*Improving Oak/Hickory  
Forestland Health in Illinois.*



RCPP Project – \$2.3 Million  
Forest Management  
Including Invasive Species

# Taking it up a notch

- Find the best scale to do the work
- Plan ahead, involve many groups
- Focus statewide efforts on most impactful projects
  - Coordination, data sharing, education
- Share resources to reduce redundancy
- Find ways to get the data you need









# Questions