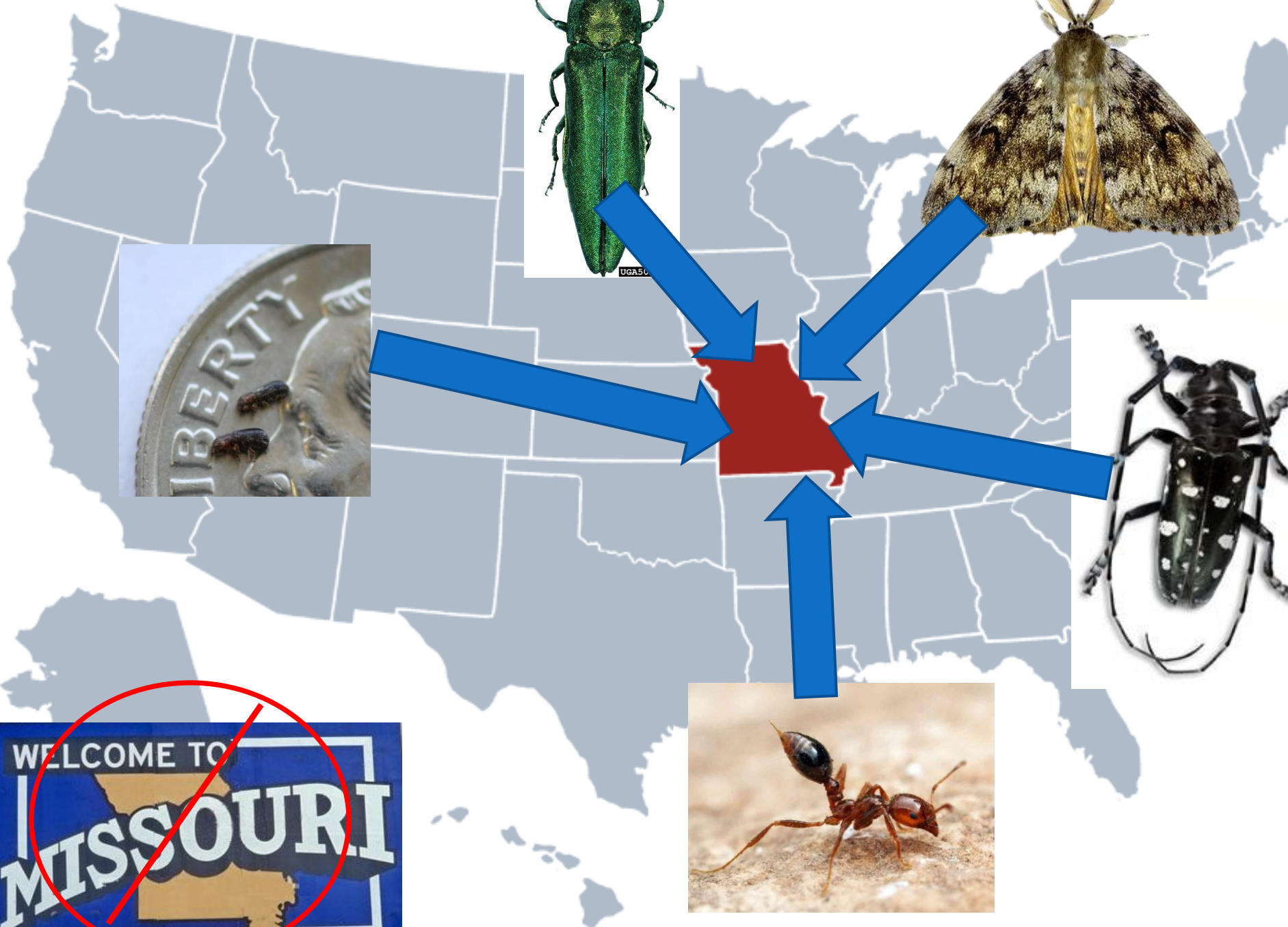




# MISSOURI GYPSY MOTH SURVEY

Sarah Phipps  
Forest Pest Program Coordinator  
Missouri Department of Agriculture





TOTAL DEFOLIATION

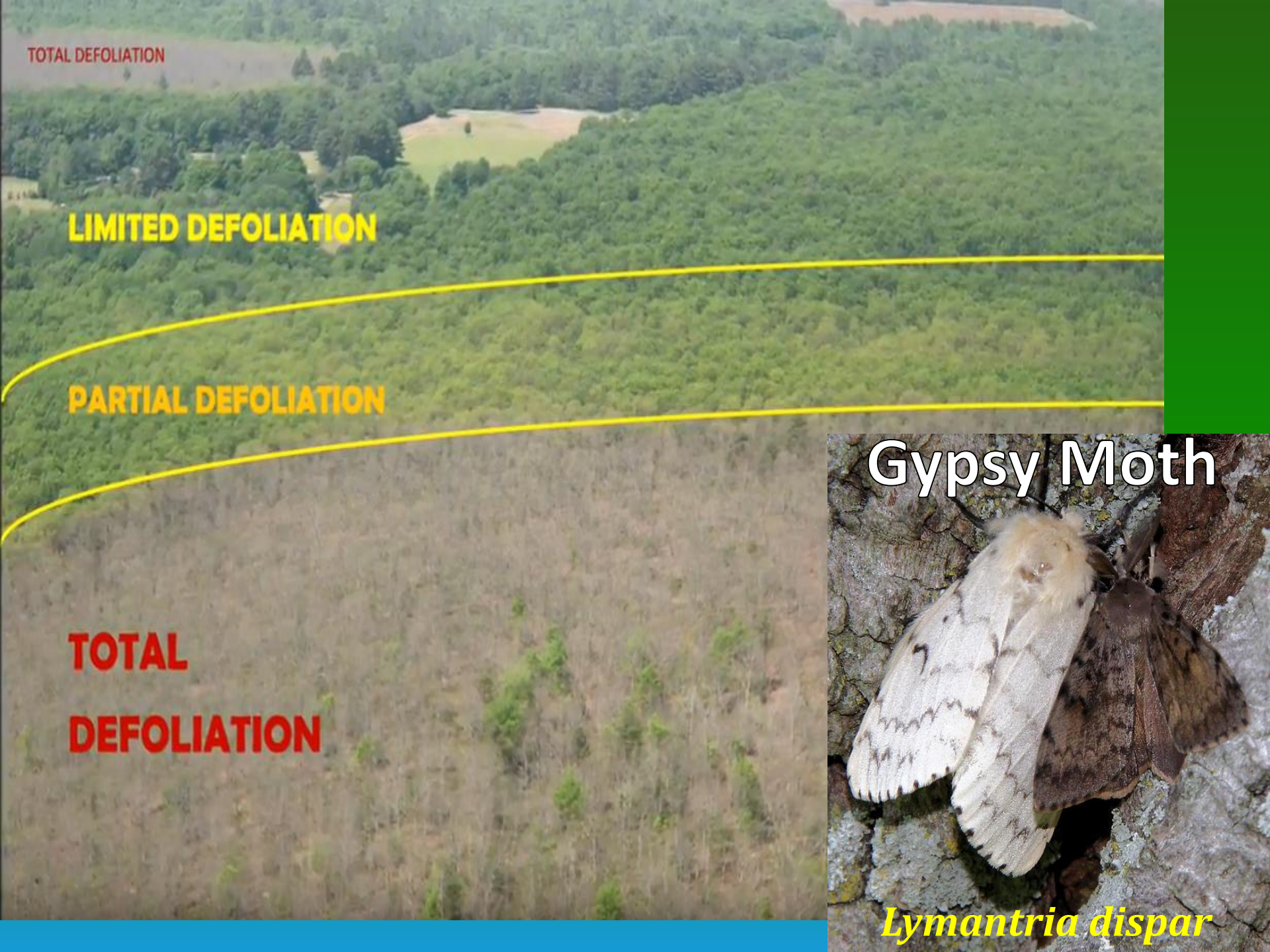
LIMITED DEFOLIATION

PARTIAL DEFOLIATION

TOTAL  
DEFOLIATION

Gypsy Moth

*Lymantria dispar*





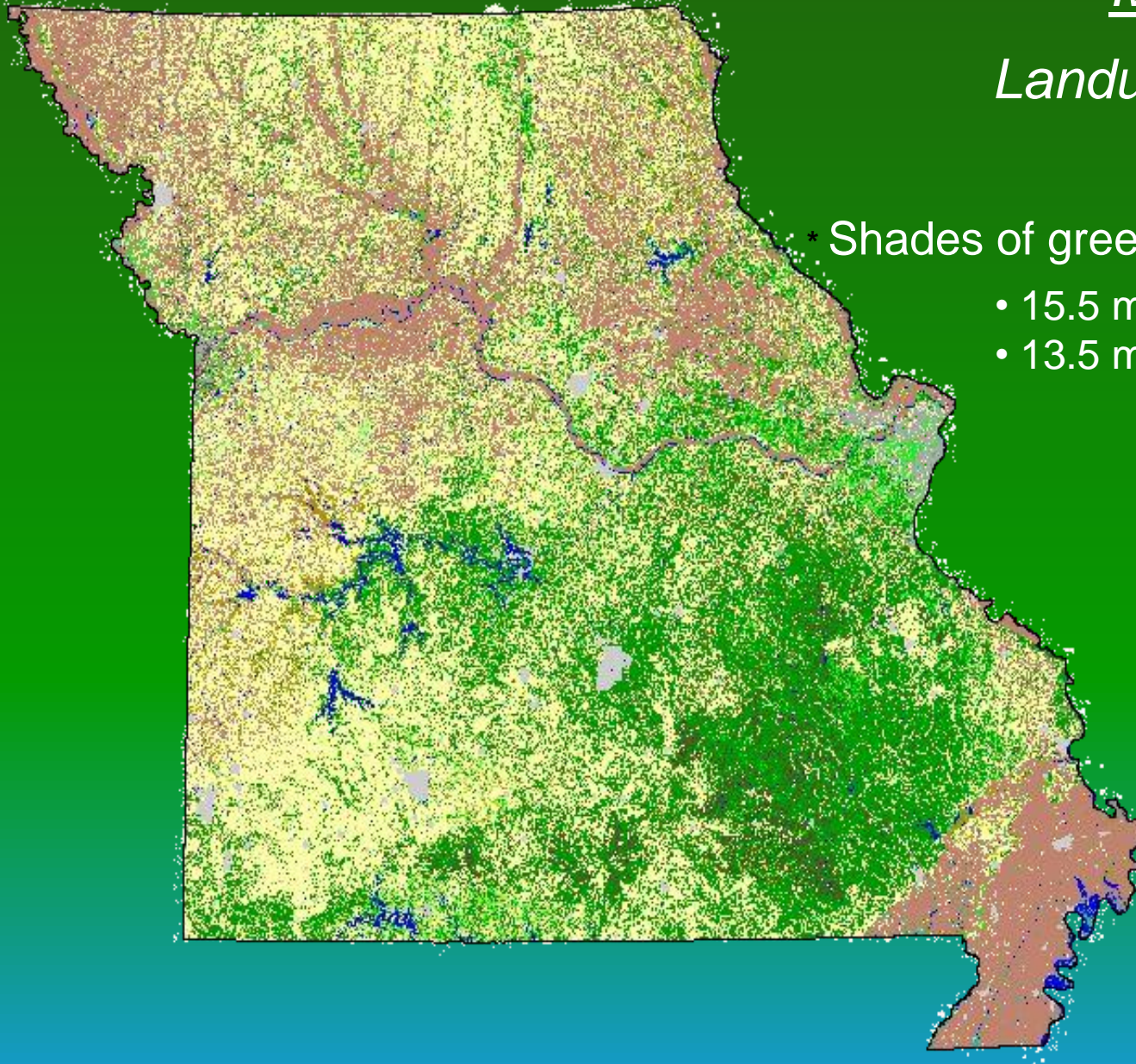
# Biology: Larva





# Missouri

## *Landuse/Landcover*



\* Shades of green are forested areas

- 15.5 million acres forested
- 13.5 million acres oak



“...big new GM outbreak is brewing in the northeast. Cape Cod is experiencing defoliation for the first time in over a decade. So this could be “the big one” that several of us have been anticipating. The implications are not just limited to the northeast however – historical data shows that in the years following a big outbreak, trap catch in the uninfested states increase also as do numbers of eradication projects – could be a wild time ahead.”





# Early Detection- Surveying

- Multi-Agency Program (MDC, MDA, USDA, MO Guard, Army)
- Annual detection surveys
- Delimiting surveys
- Eradication may be possible if populations are detected early



**The purpose of surveying is to catch this pest early—when populations are low.**

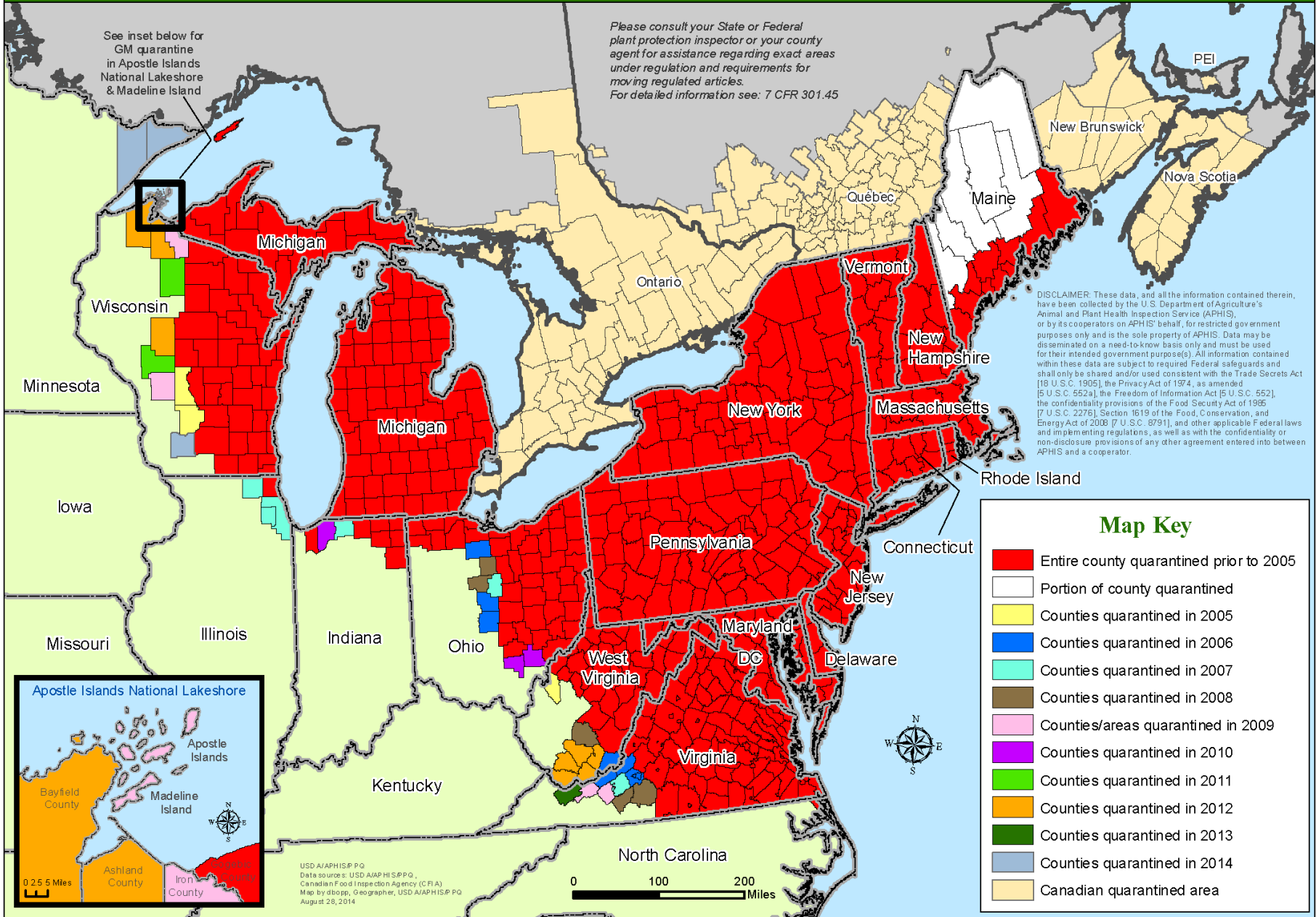


# European Gypsy Moth (*Lymantria dispar*) North America quarantine

See inset below for GM quarantine in Apostle Islands National Lakeshore & Madeline Island

Please consult your State or Federal plant protection inspector or your county agent for assistance regarding exact areas under regulation and requirements for moving regulated articles. For detailed information see: 7 CFR 301.45

DISCLAIMER: These data, and all the information contained therein, have been collected by the U.S. Department of Agriculture's Animal and Plant Health Inspection Service (APHIS), or by its cooperators on APHIS' behalf, for restricted government purposes only and is the sole property of APHIS. Data may be disseminated on a need-to-know basis only and must be used for their intended government purpose(s). All information contained within these data are subject to required Federal safeguards and shall only be shared and/or used consistent with the Trade Secrets Act [18 U.S.C. 1905], the Privacy Act of 1974, as amended [5 U.S.C. 552a], the Freedom of Information Act [5 U.S.C. 552], the confidentiality provisions of the Food Security Act of 1985 [7 U.S.C. 2276], Section 1619 of the Food, Conservation, and Energy Act of 2008 [7 U.S.C. 8791], and other applicable Federal laws and implementing regulations, as well as with the confidentiality or non-disclosure provisions of any other agreement entered into between APHIS and a cooperator.



### Map Key

- Entire county quarantined prior to 2005
- Portion of county quarantined
- Counties quarantined in 2005
- Counties quarantined in 2006
- Counties quarantined in 2007
- Counties quarantined in 2008
- Counties/areas quarantined in 2009
- Counties quarantined in 2010
- Counties quarantined in 2011
- Counties quarantined in 2012
- Counties quarantined in 2013
- Counties quarantined in 2014
- Canadian quarantined area





AS





# STS

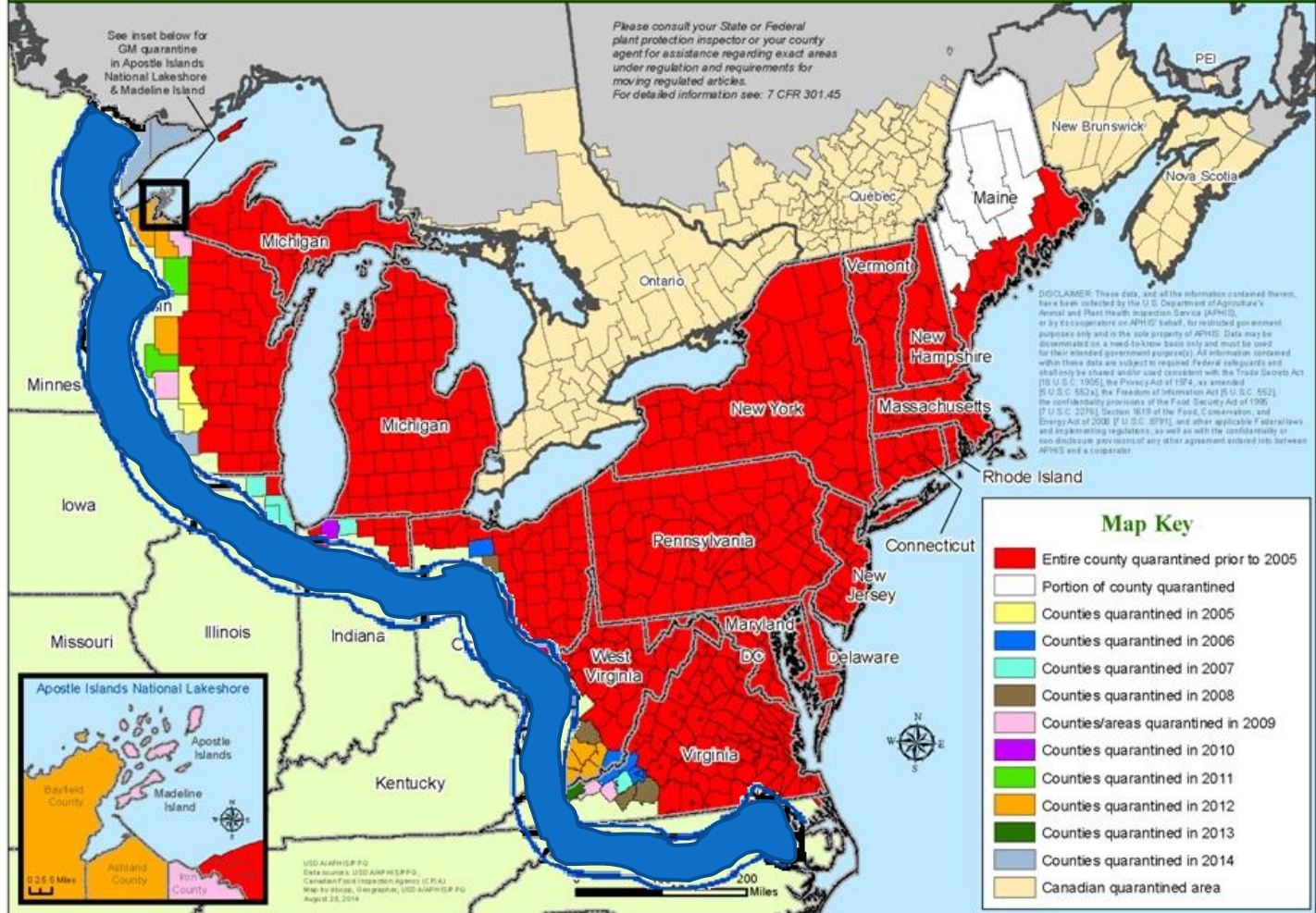
## Slow the Spread of the Gypsy Moth

Slow the Spread Foundation, Inc.



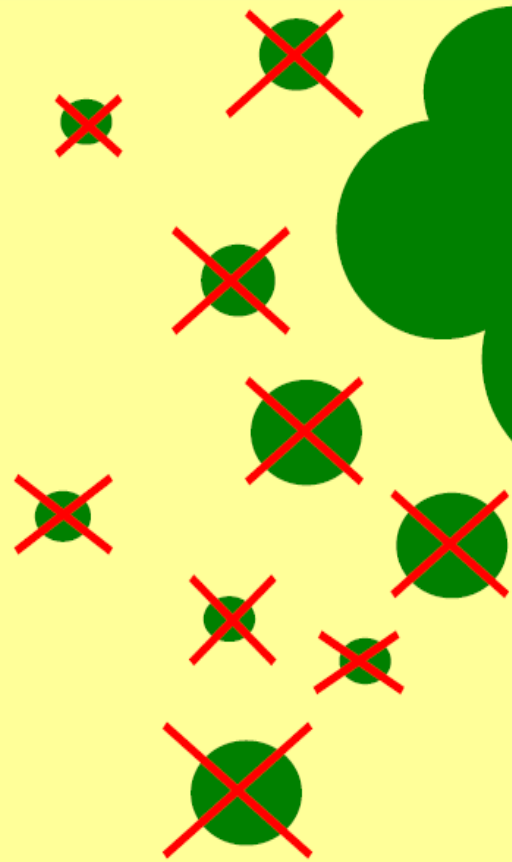
United States  
Department of  
Agriculture

### European Gypsy Moth (*Lymantria dispar*) North America quarantine





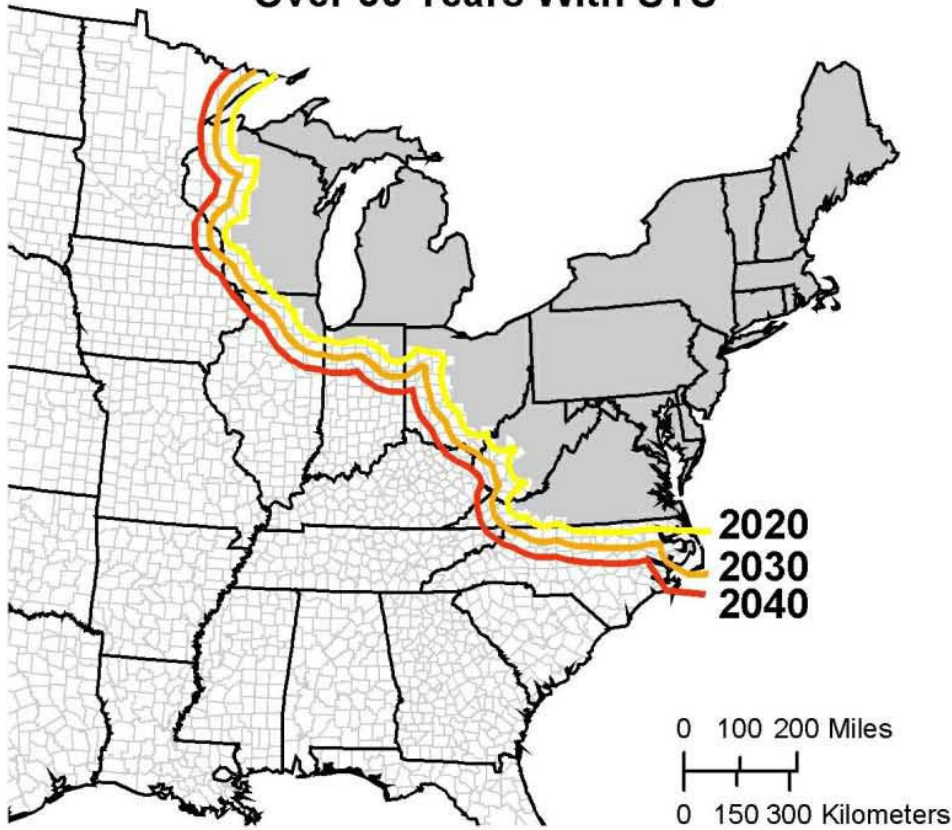
# Slow the Spread



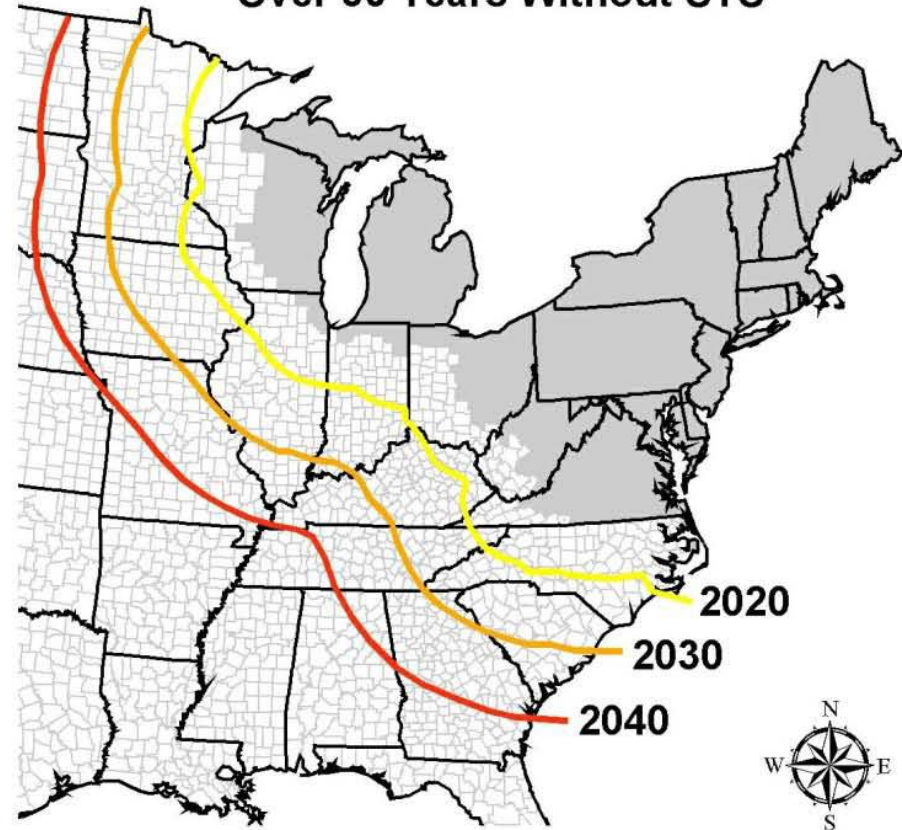
GM populations do not expand as a continuous wave, but instead as distinct colonies. STS identifies and treats these populations before they merge.

# Slow the Spread Program

**Projected Gypsy Moth Spread  
Over 30 Years With STS**



**Projected Gypsy Moth Spread  
Over 30 Years Without STS**





# 2016 GM Results

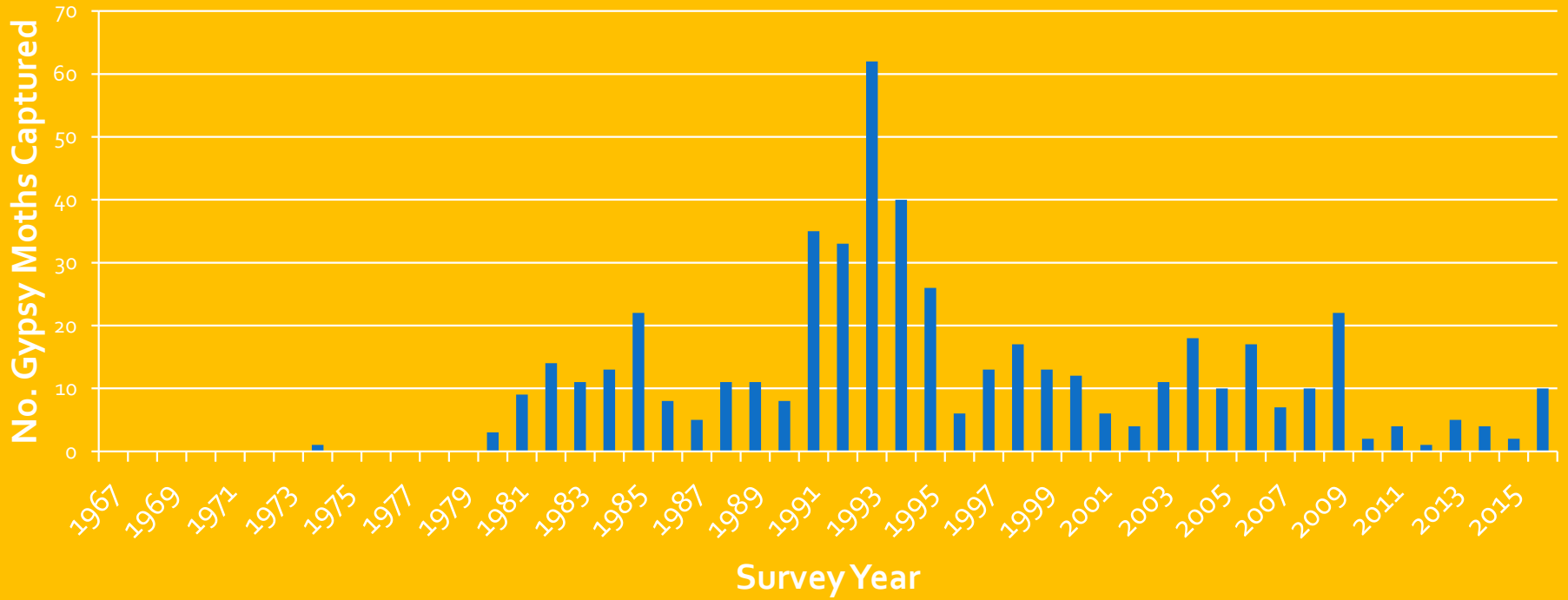
**Stand by for  
increased GM catches  
in Missouri in 2016!!**



# **Stand by for increased GM catches in Missouri in 2016!**

YES INDEED! Last time more than 5 moths collected in MO: 2009 (22 moths). ~6-7 year cycles of peak populations.

# Missouri Gypsy Moth Trapping History 1967-2016



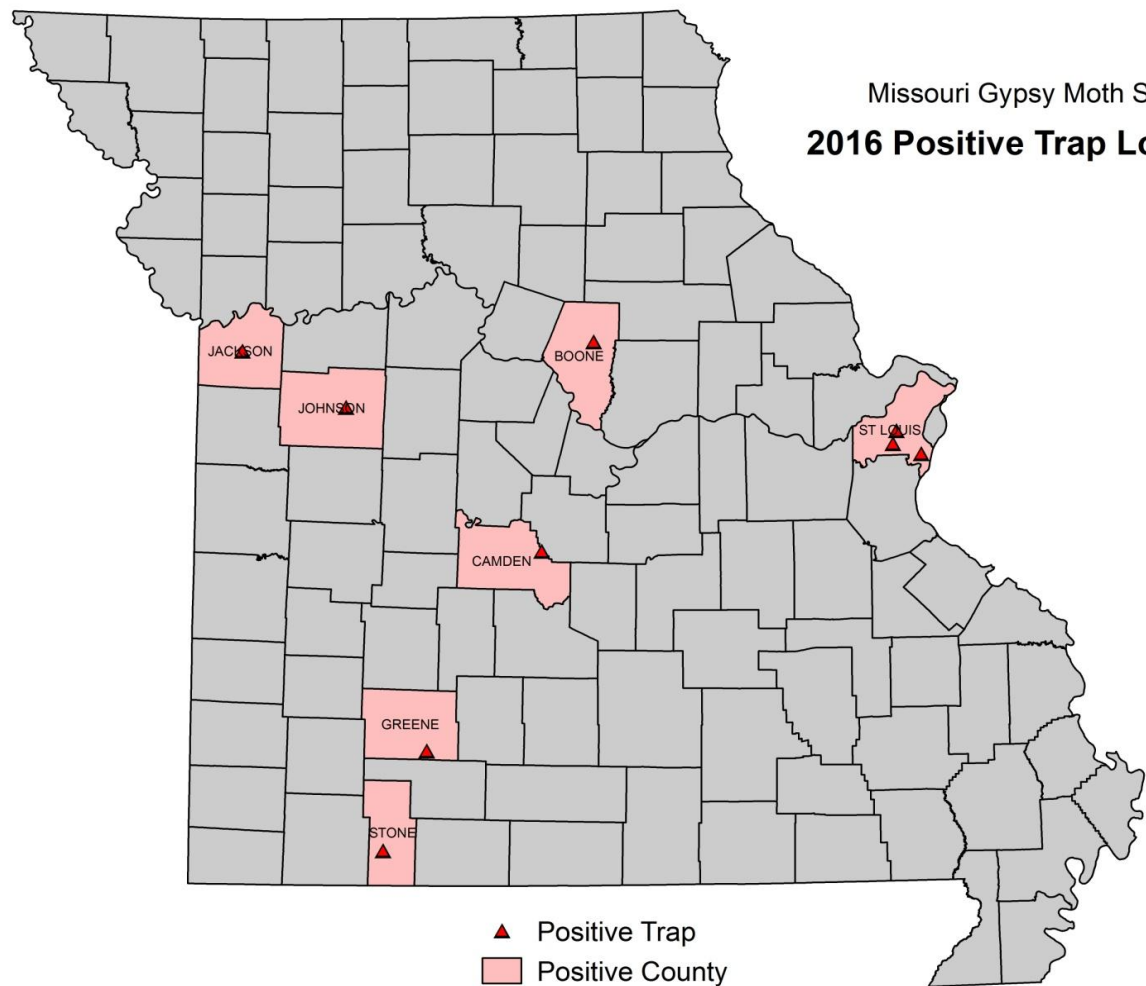


# 2016 GM Results:

- 10 moths total
- 9 positive traps

## • Counties:

- Boone(1)
- Camden(1)
- Greene(1)
- Jackson(1)
- Johnson(1)
- St. Louis(4)
- Stone(1)



Sept. 2016



**Moth in trap from Camden Co.**

## Positive trap locations: 10 moths total



- Camden County (Lake of the Ozarks State Park)
- Boone County (North Columbia)
- Stone County (Resort)
- Johnson County (Neighborhood south part of Warrensburg)
- Greene County (RV Park)
- Jackson County (Campground)
- St. Louis County (Valley Park Middle and High school)
- St. Louis County (South County Mall)
- St. Louis County (Neighborhood in Town and Country)

# No Known Established Populations

Recent  
Captures

2007: 7

2008: 10

2009: 22

2010: 2

2011: 4

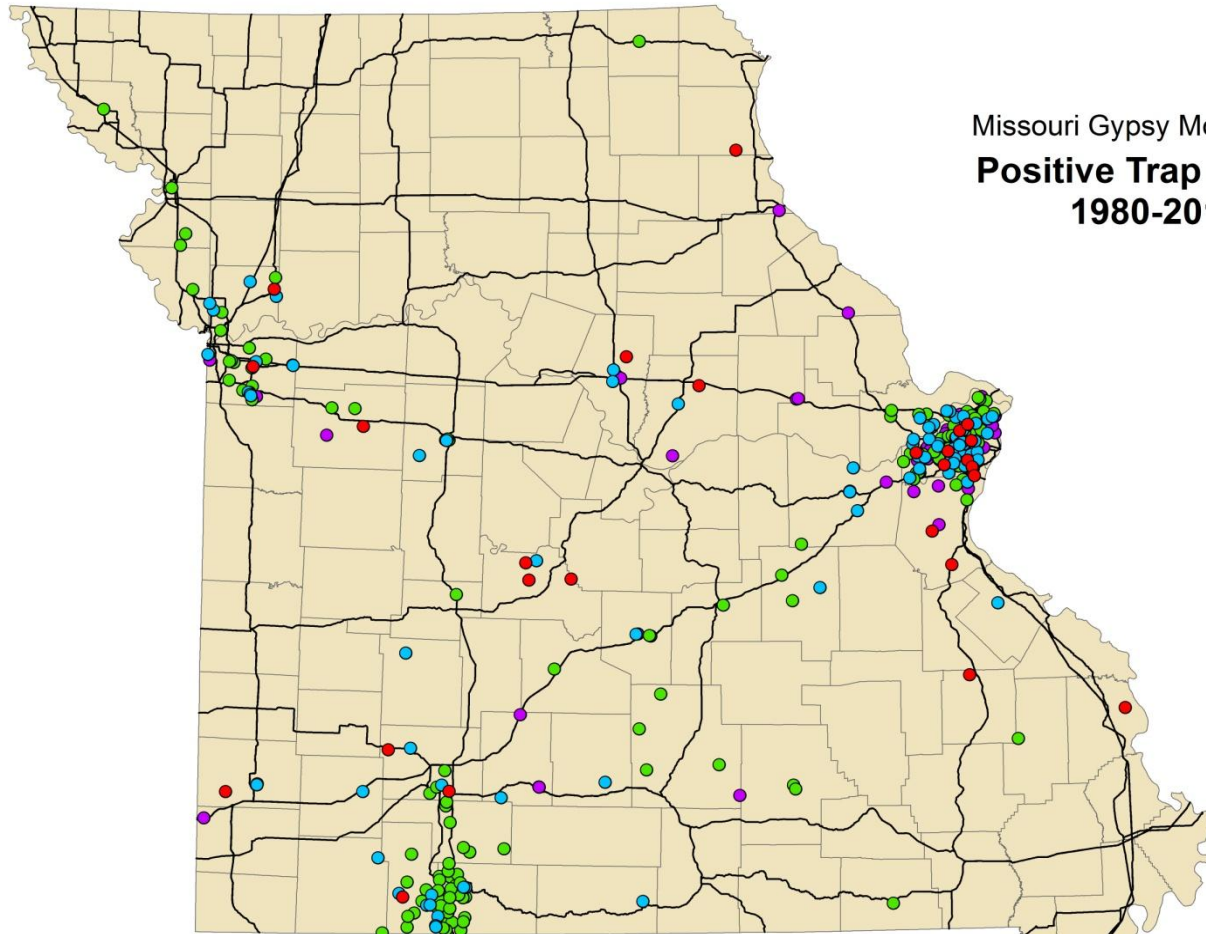
2012: 1

2013: 5

2014: 4

2015: 2

2016: 10



Missouri Gypsy Moth Survey  
**Positive Trap History**  
**1980-2016**

- |             |             |
|-------------|-------------|
| ● 2010-2016 | ● 1990-1999 |
| ● 2000-2009 | ● 1980-1989 |





# Asian Gypsy Moth Testing

- All moths submitted for AGM testing.
- All specimens negative.

# Pennsylvania Visit









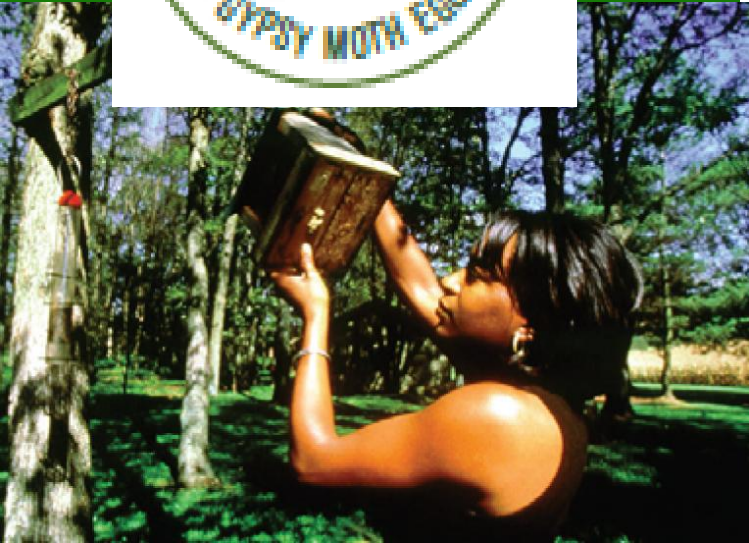
How do we protect our forest resource?



# 1. Prevent introductions!







If you are moving/visiting an infested area between April 1 and August 31, when female moths lay eggs and the caterpillars spread, you should inspect your articles on moving day if at all possible. After August 31 still need to inspect for egg masses.



## Checklist and Record of Your Self-Inspection

Date: \_\_\_\_\_

Originating property address: \_\_\_\_\_

### Recreational or Camping Items

- |  |  |  |
|--|--|--|
| <input type="checkbox"/> Backpacks             | <input type="checkbox"/> Ice chests            | <input type="checkbox"/> Tarps           |
| <input type="checkbox"/> Basketball backboards | <input type="checkbox"/> Motorcycles           | <input type="checkbox"/> Tents           |
| <input type="checkbox"/> Bicycles              | <input type="checkbox"/> Motor homes           | <input type="checkbox"/> Waders or boots |
| <input type="checkbox"/> Boats                 | <input type="checkbox"/> Recreational vehicles | <input type="checkbox"/> Other: _____    |
| <input type="checkbox"/> Boat trailers         | <input type="checkbox"/> Snowmobiles           |  |
| <input type="checkbox"/> Campers               | <input type="checkbox"/> Sports equipment      |  |

### Household Items

- |   |   |  |
|---|---|--|
| <input type="checkbox"/> Air conditioners                               | <input type="checkbox"/> Ladders                        | <input type="checkbox"/> Tanks for propane and oil |
| <input type="checkbox"/> Barrels  | <input type="checkbox"/> Outdoor doormats               | <input type="checkbox"/> Television antennas       |
| <input type="checkbox"/> Cardboard and wooden boxes                     | <input type="checkbox"/> Outdoor thermometers           | <input type="checkbox"/> Trash cans                |
| <input type="checkbox"/> Clothesline poles                              | <input type="checkbox"/> Refrigerators                  | <input type="checkbox"/> Washing machines          |
| <input type="checkbox"/> Clothespin bags                                | <input type="checkbox"/> Sheets of plastic              | <input type="checkbox"/> Water hoses               |
| <input type="checkbox"/> Empty plant containers                         | <input type="checkbox"/> Shutters                       | <input type="checkbox"/> Weather vanes             |
| <input type="checkbox"/> Firewood*                                      | <input type="checkbox"/> Storage sheds                  | <input type="checkbox"/> Window awnings            |
| <input type="checkbox"/> House plants (taken outside during the summer) | <input type="checkbox"/> Storm/screen doors and windows | <input type="checkbox"/> Other: _____              |



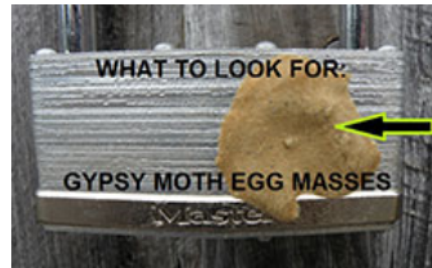
## Gypsy Moth

Home » plants » pests » Gypsy Moth

### Moving to Missouri?

Gypsy moth "hitchhikes" into new areas by traveling on outdoor household articles (vehicles, grills, toys, and lawn furniture, etc.) Gypsy moth can spread up to 13 miles per year unassisted but hundreds of miles in a single day with human assistance.

If you are moving to Missouri from a gypsy moth infested state (CT, DE, DC, \*IL, \*IN, ME, MD, MA, MI, \*MN, NH, NJ, NY, \*NC, \*OH, PA, RI, VT, \*VA, \*WV, \*WI) you are required by federal law to conduct an inspection of your outdoor household articles (patio furniture, lawn equipment, toys, grills, trailers, vehicles, etc.) for gypsy moth egg masses and other life stages before you move. Check the gypsy moth quarantine map to find out if you are moving from a gypsy moth infested area.



*Gypsy moth females lay their eggs on many man-made objects. Egg masses contain 500 to 1,000 eggs and are covered with buff or yellowish "hairs". The velvety egg masses average at about an inch and a half long and three-quarters of an inch wide (a little bigger than a quarter). Photo courtesy of USDA/APHIS, Susan Lane*

- [Gypsy Moth Quarantine Map](#)
- [\\*States where only part of the state is quarantined.](#)
- Instructions for conducting the inspection and filling out a self-inspection checklist are included in this USDA brochure: ["IT'S THE LAW: BEFORE MOVING, CHECK FOR GYPSY MOTH"](#)





*GYPSEY MOTH CATERPILLARS COLLECTED  
DURING AN OUTBREAK. (JODIE ELLIS,  
PURDUE UNIVERSITY)*





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