

# Status of Brown Marmorated Stink Bug in the Great Lakes Region

Art Agnello - Cornell University

Larry Gut – Michigan State University

Bill Hutchison – University of Minnesota

Celeste Welty – Ohio State University



*Funding*

 United States Department of Agriculture National Institute of Food and Agriculture  
Specialty Crop Research Initiative

*Collaborating Institutions*

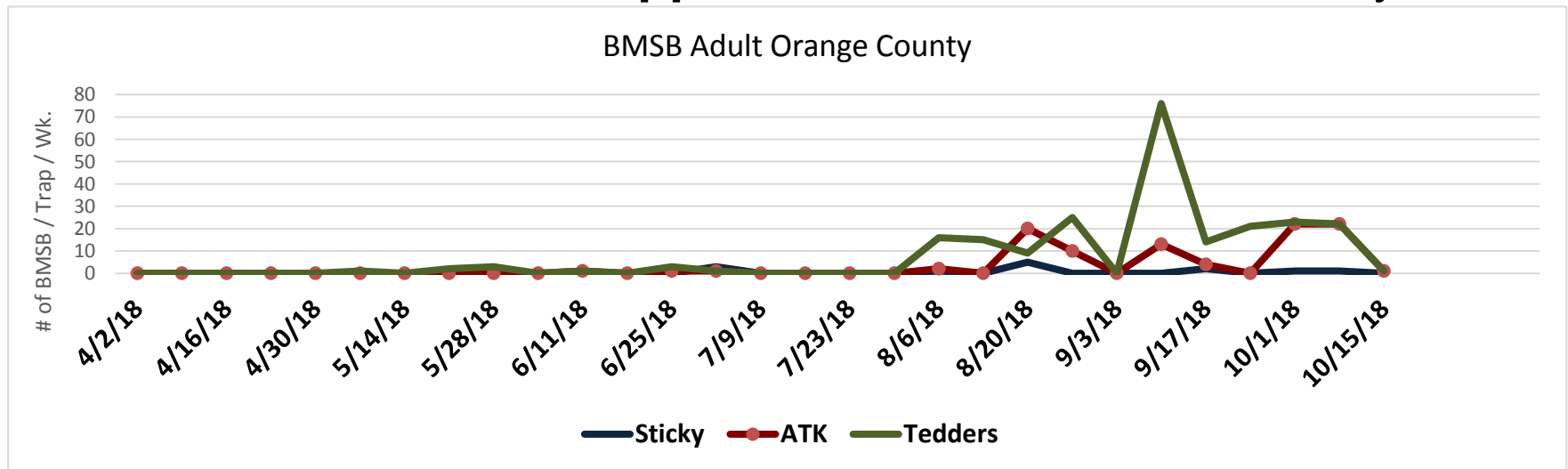
  

This material is based upon work that is supported by the National Institute of Food and Agriculture, U.S. Department of Agriculture, Specialty Crop Research Initiative under award number 2016-51181-25409.

# Brown Marmorated Stink Bug, *Halyomorpha halys* Stål (Hemiptera: Pentatomidae) in NYS - 2018



- **Monitoring:** BMSB were monitored in Wayne, Monroe, Orleans counties in WNY and Orange, Ulster, Dutchess counties of ENY.
- **Trap threshold** only observed in ENY beginning 6<sup>th</sup> August – 8<sup>th</sup> in Tedders Traps.
- Whole orchard **applications** initiated, followed by border



Dana Acimovic  
CALs – HVRL

Art Agnello  
CALs - NYSAES

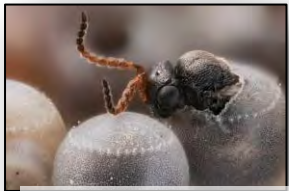
Tessa Grasswitz  
CCE-LOFT

Lydia Brown  
CALs – HVRL

Peter Jentsch  
CALs - HVRL



# Brown Marmorated Stink Bug, *Halyomorpha halys* Stål (Hemiptera: Pentatomidae) in NYS



Photograph: Christopher Hedstrom  
USDA-APHIS Quarantine Facility,  
Corvallis, Oregon

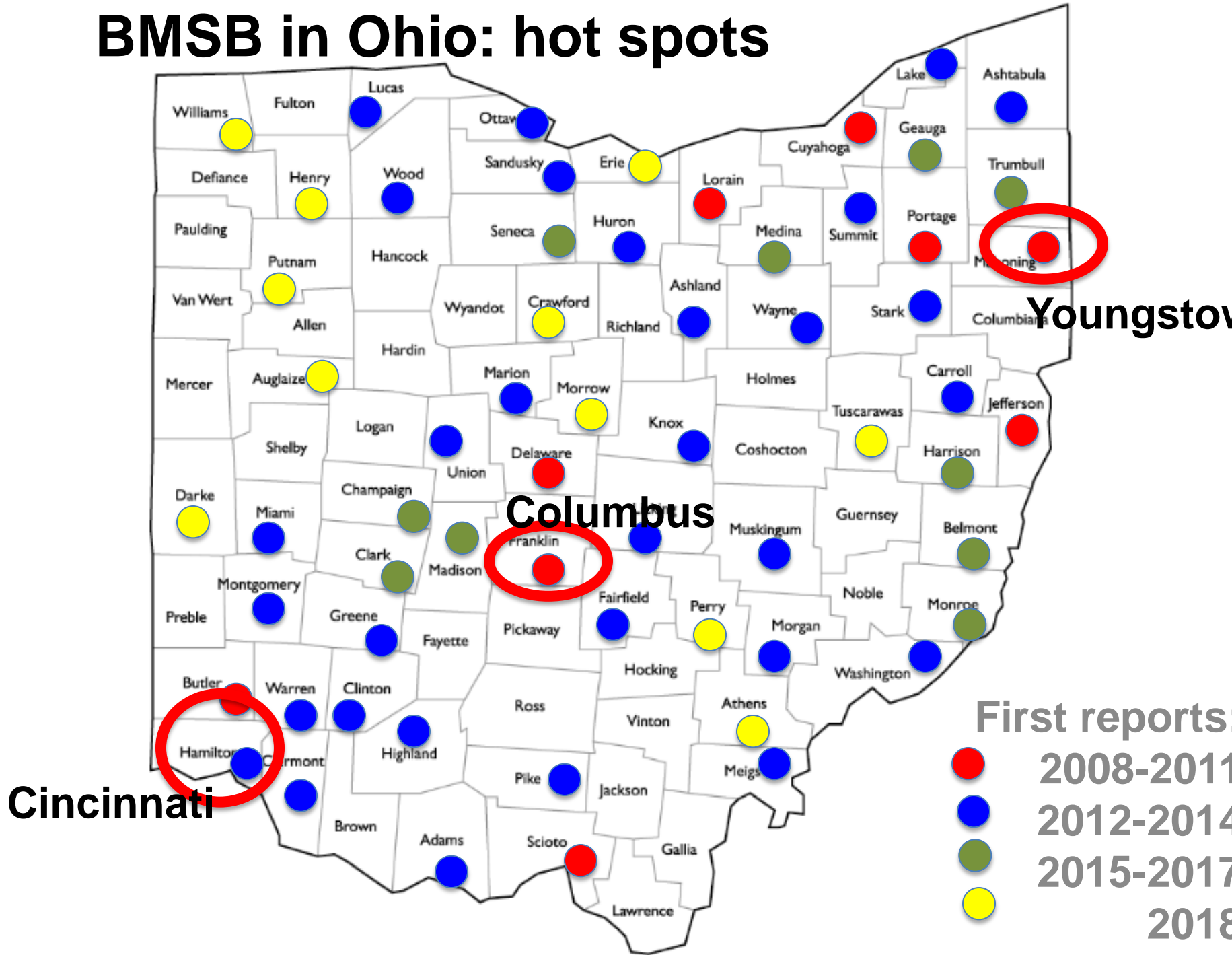


- **Sentinel egg surveys** in 2016-2017 discovered *Trissolcus japonicus* in the mid-Hudson Valley (Marlboro, NY) with *T.j.* colony developed in 2017.
- **2017 redistribution of *T. japonicus*** was made, upon DEC approval, using parasitized eggs stapled to BMSB host foliage on 32 sites on 25 farms (Hudson Valley, western NY) from Sept. 15<sup>th</sup> – Oct. 6<sup>th</sup> using 72 eggs/site and Citizen Science- based urban sites with recovery of *T.j.* in 2 WNY sites.
- **Sentinel egg surveys of 9 redistribution sites** made from 23<sup>rd</sup> Jun to 15<sup>th</sup> Sep. using 2 egg masses/site/week in 2018. No *Tj* recovered. Yet weekly placement of Alpha Scents YS cards captured (1) *T. japonicus* recovered in Dutchess Co., (3) in Ulster Co. and (1) *T.j.* in Orleans Co. (WNY).





# BMSB in Ohio: hot spots





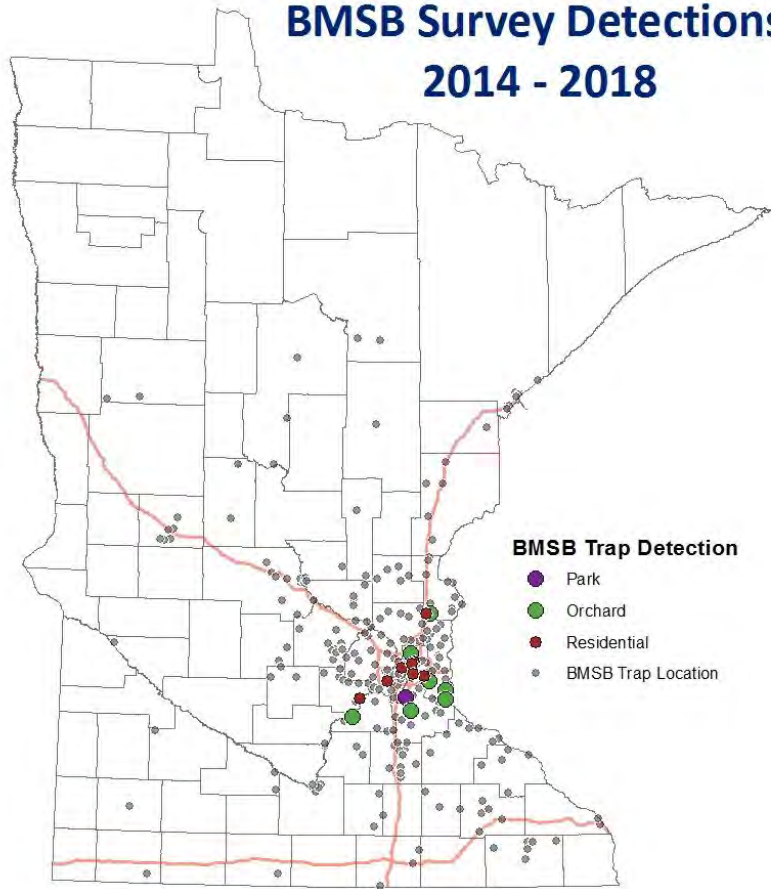
# ***BMSB in Ohio***

- **First detect in 2007**
- **Confirmed in 61 of 88 counties**
- **3 urban hot spots**
- **Still low density in most rural areas**
- **Damage in apple research trials:**
  - **6% in untreated plots, 2019, Columbus**
- **Commercial farms:**
  - **Some reports of damage: peach, apple**
  - **Often misdiagnosed? under-reported?**
  - **Also concern in soybeans**



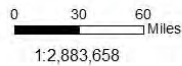
# *BMSB in Minnesota*

## BMSB Survey Detections 2014 - 2018

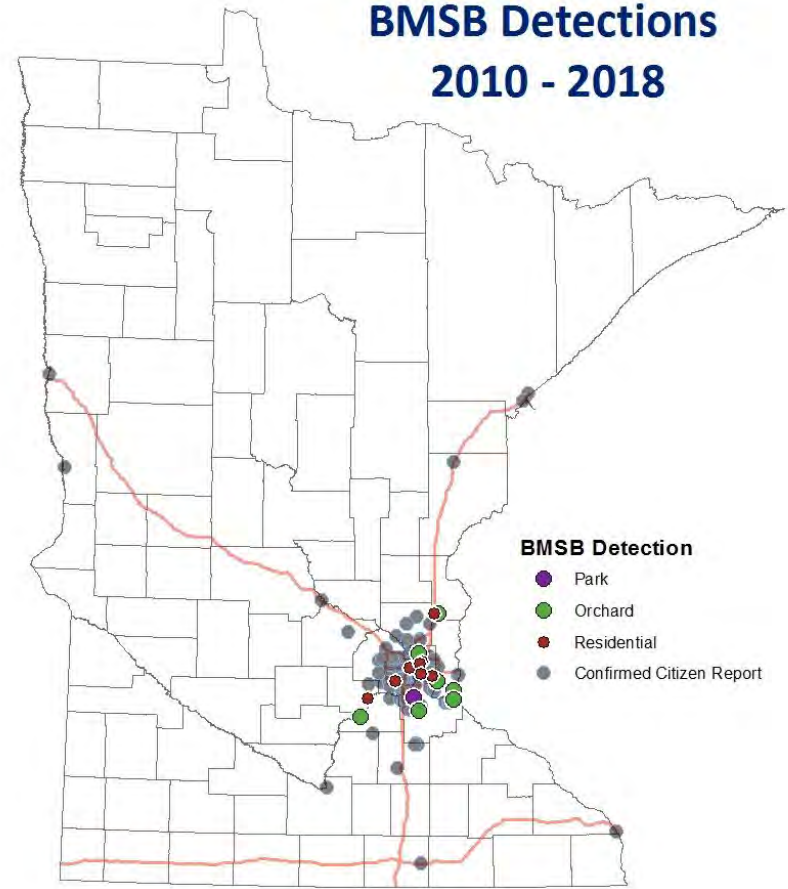


### BMSB Trap Detection

- Park
- Orchard
- Residential
- BMSB Trap Location

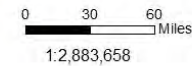


## BMSB Detections 2010 - 2018



### BMSB Detection

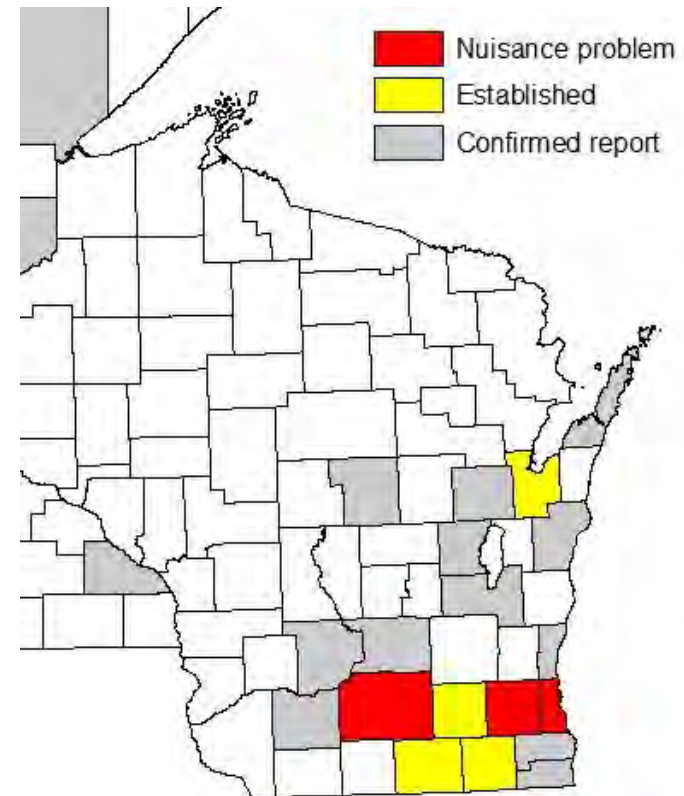
- Park
- Orchard
- Residential
- Confirmed Citizen Report

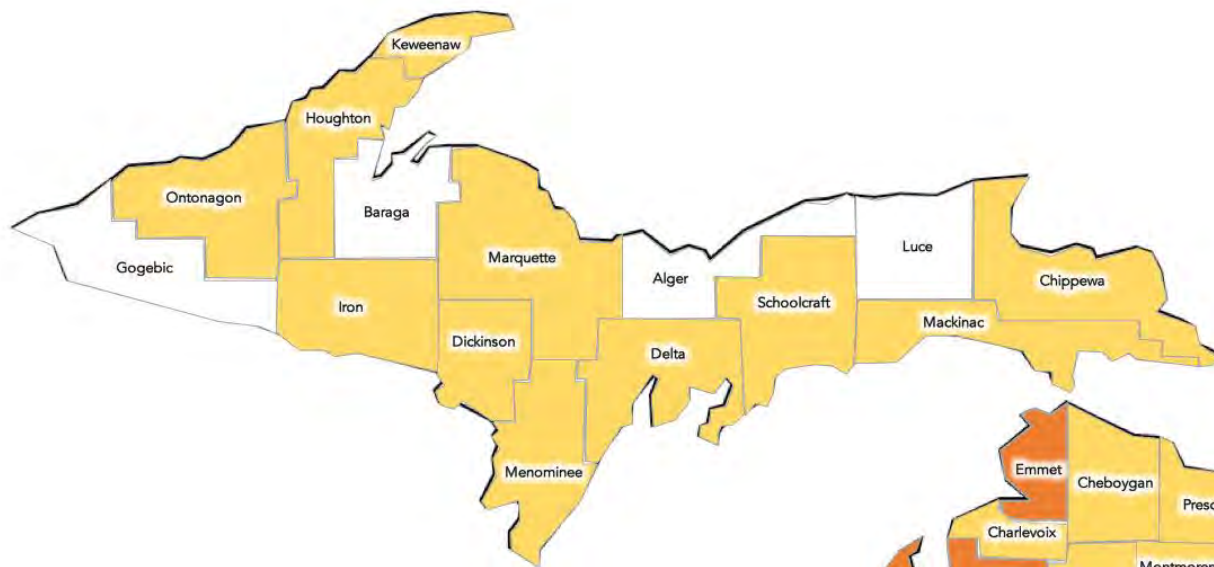




# *BMSB in Wisconsin*

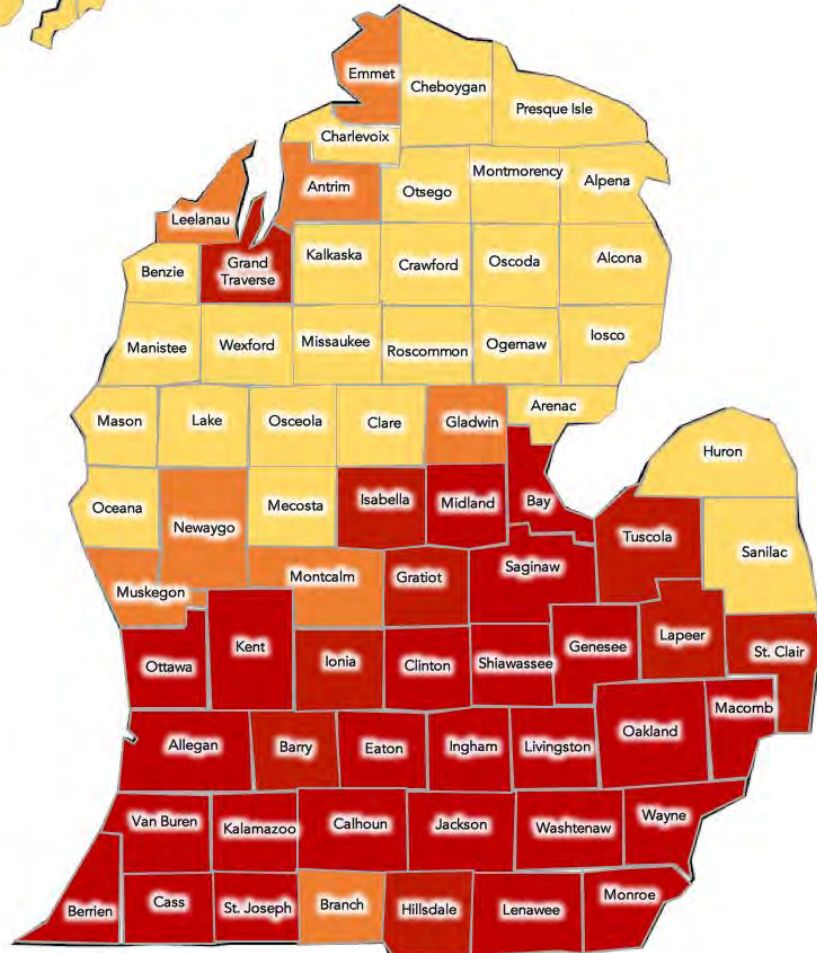
- Specimens have been confirmed from 20 counties since 2010
- Established populations in at least five Wisconsin counties.
- Dane and Rock have been generally infested for 2-5 years
- Brown, Jefferson and Waukesha counties were added to the list in 2017.
- Citizen reports indicate the actual distribution is much wider.
- Most reports concentrated near Madison, Waukesha and Green Bay.
- Densities in the Madison area of Dane County are high enough that BMSB can be considered an urban nuisance.





## Current extent of Brown Marmorated Stink Bug establishment in Michigan

- BMSB is well established, no more reports needed
- BMSB is becoming established, new reports welcome
- Low number of reports so far, new reports welcome
- No BMSB reported

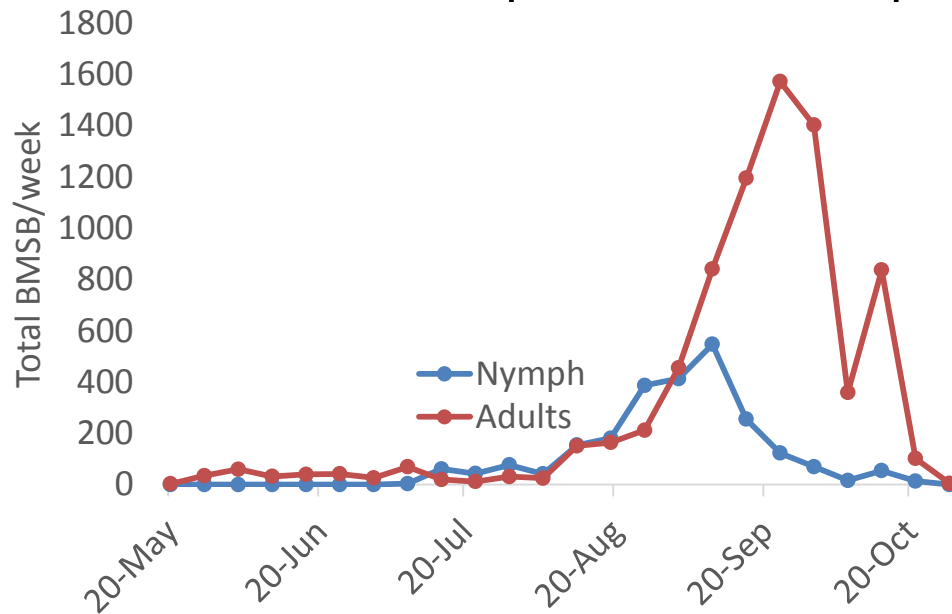






## *BMSB activity - 2018*

- Total catch of >10,000 BMSB
- Significant uptick in early Aug
- Peak Nymph captures in early Sept
- Peak adult captures in late Sept



- Higher catches using LLIN trap
- Dispatched 38,000 BMSB on three farms
- Up to 60% damaged apples



## *Detected T. japonicus*

- Deployed 240 sentinel egg masses across 10 sites
- *T. japonicus* found in a single egg mass on the MSU student organic farm

