

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

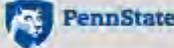
Celeste Welty – Ohio State University



Funding

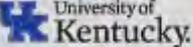
 United States Department of Agriculture National Institute of Food and Agriculture
Specialty Crop Research Initiative

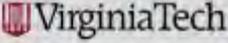
Collaborating Institutions

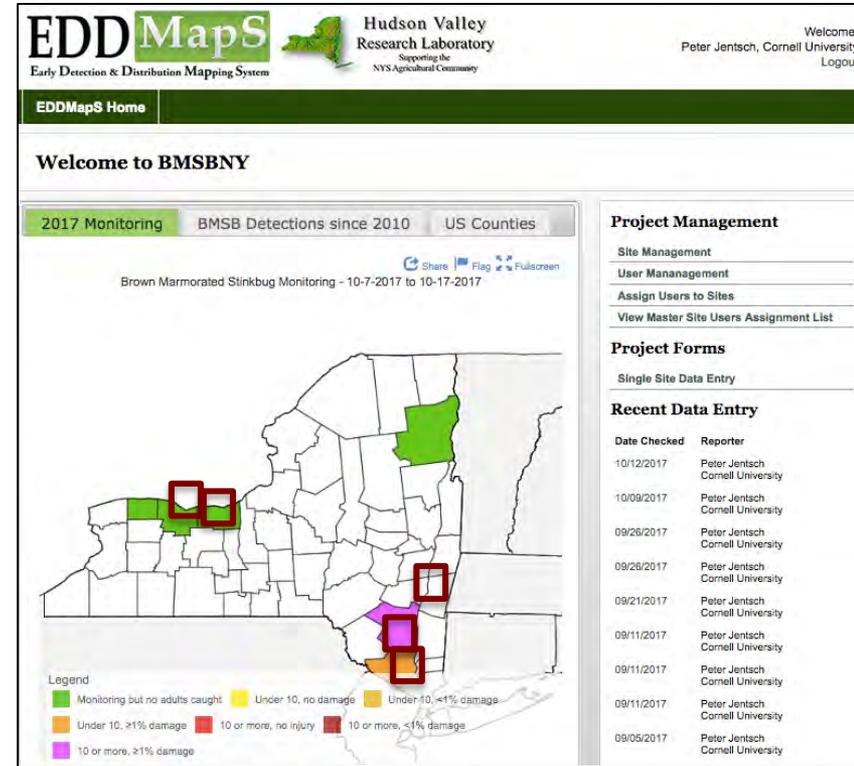
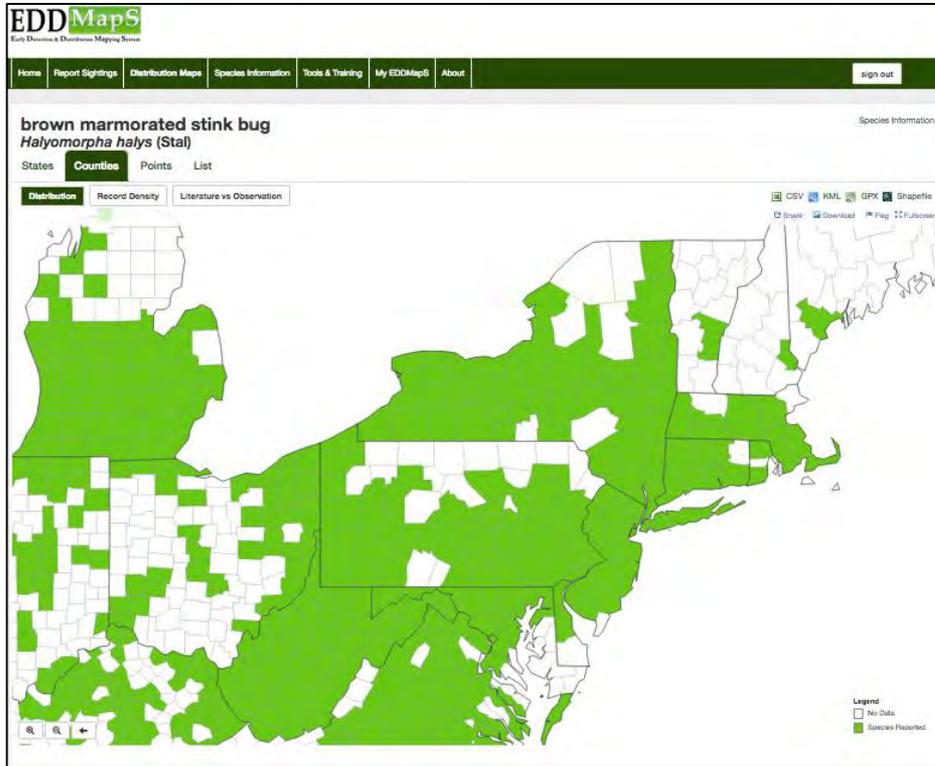
  

This material is based upon work that is supported by the National Institute of Food and Agriculture, U.S. Department of Agriculture, Specialty Crop Research Initiative under award number 2016-51181-25409.

Brown Marmorated Stink Bug Update for New York – 2017



- Detected in all but 6 of 62 counties
- Hot spots occur in mid-southern HV and WNY Lake Ontario

Golden Delicious Apple With BMSB Feeding Injury, Campbell Hall, NY October - 2012



5 bins: Range from 38 – 57% damage



2017 Parasitoid Wasp Survey

Trissolcus japonicus, (Hymenoptera: Scelionidae) in NYS.

Sentinel Egg Emergence

Native

Trissolcus euschisti (6/23)
(N=1 Marlboro, Ulster Co.)

Telenomus podisi (6/30)
(N=3 Marlboro, Ulster Co.)

Asian Invasive

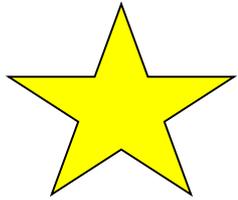
Trissolcus japonicus (7/7)
Marlboro, Ulster Co. (N=96)



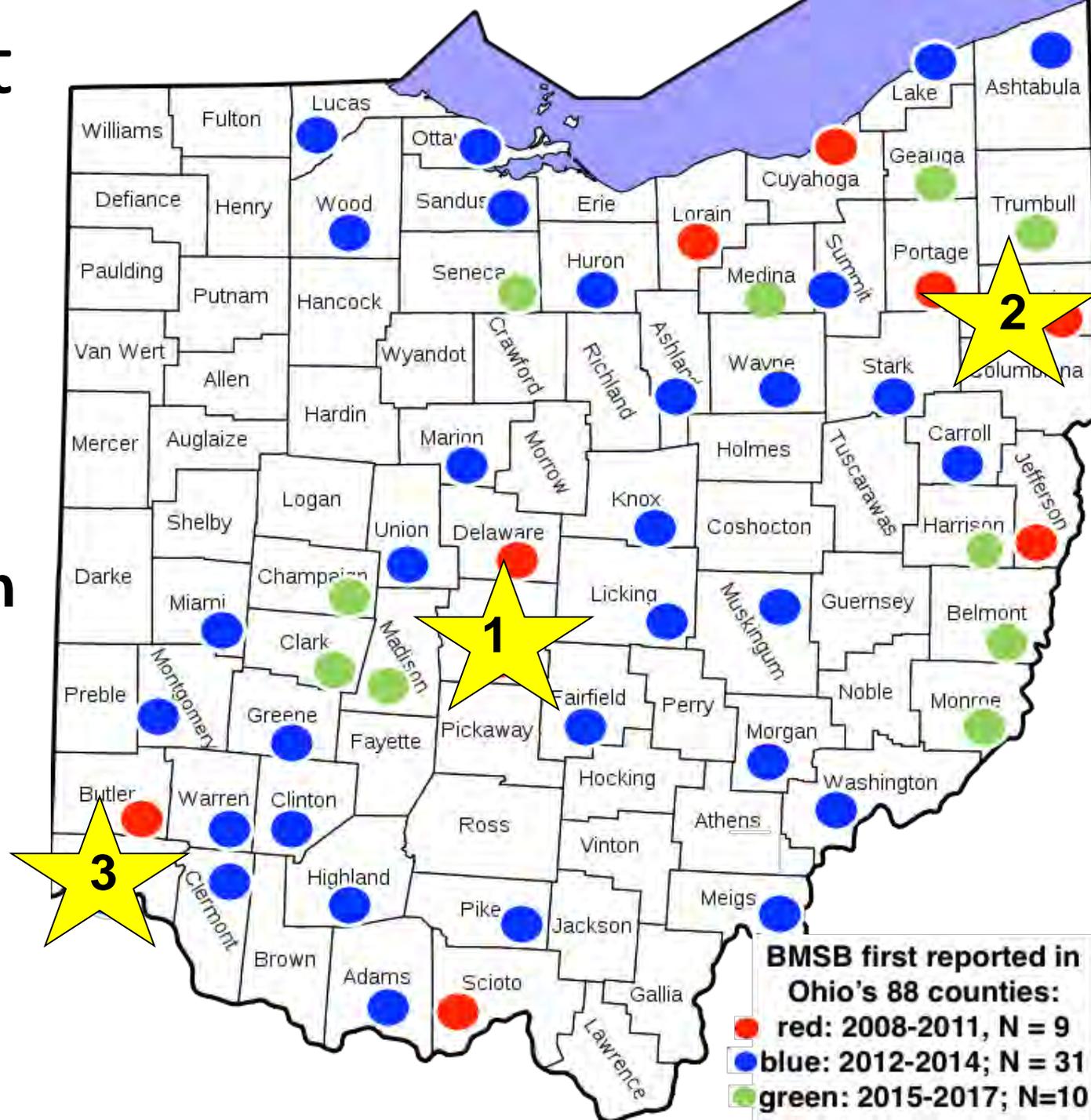
Photograph: Christopher Hedstrom
USDA-APHIS Quarantine Facility,
Corvallis, Oregon



BMSB hot spots



- 1 Columbus
- 2 Youngstown
- 3 Cincinnati



Ohio crops most affected

- peaches
- apples
- sweet corn
- soybeans
- peppers
- raspberries

Commercial damage in Ohio: apples

Year	% of apple fruit with stink bug injury at harvest in untreated plots
2010 & earlier	0%
2011	16%
2012	0.2%
2013	48%
2014	1%
2015	19%
2016	8%
2017	0.2%

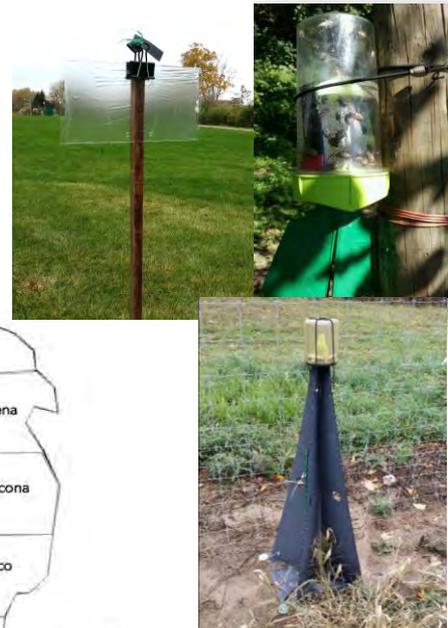
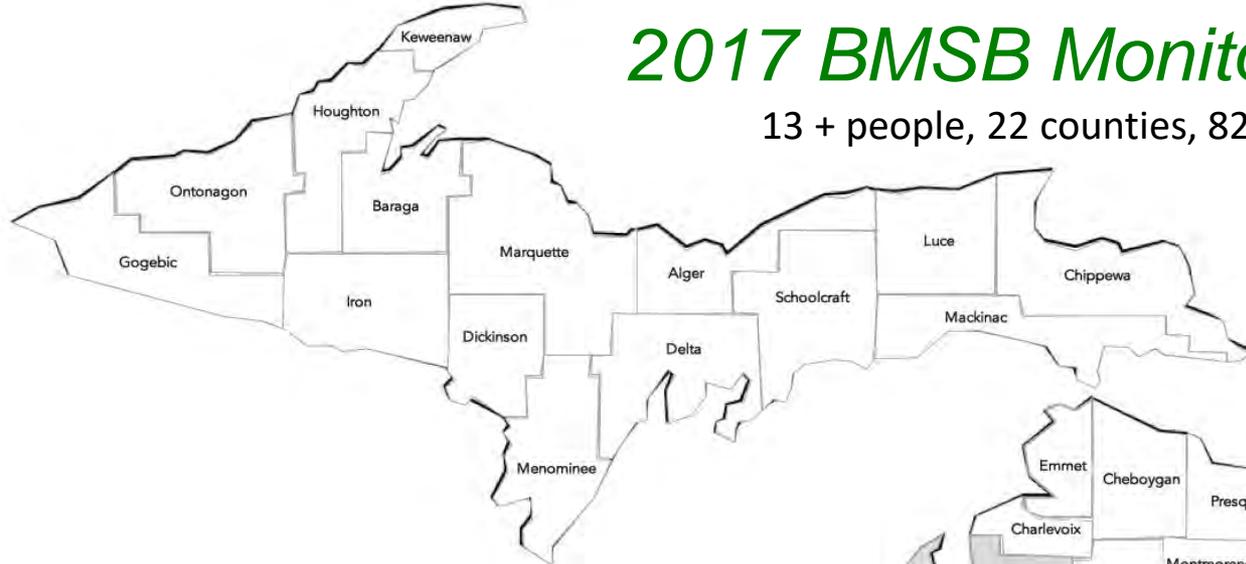
Potential natural enemies

Sentinel egg mass studies in Ohio:

- 2013: 358 masses; 15 with parasitoids
- 2014: 176 masses; 8 with parasitoids
- *Telenomus podisi* most common; *Trissolcus euschisti* & *Trissolcus brochymenae* also found
- (thus no different than other States)
- 2017: 544 masses; 264 wasp specimens awaiting i.d.

2017 BMSB Monitoring Network

13 + people, 22 counties, 82 sites, 9+ crops



Brown Marmorated Stink Bug 2017 Trapping Network

- On average >100 BMSB caught per site
- On average 20-50 BMSB caught per site
- On average <20 BMSB caught per site
- Trapping conducted, but no BMSB caught
- No trapping conducted

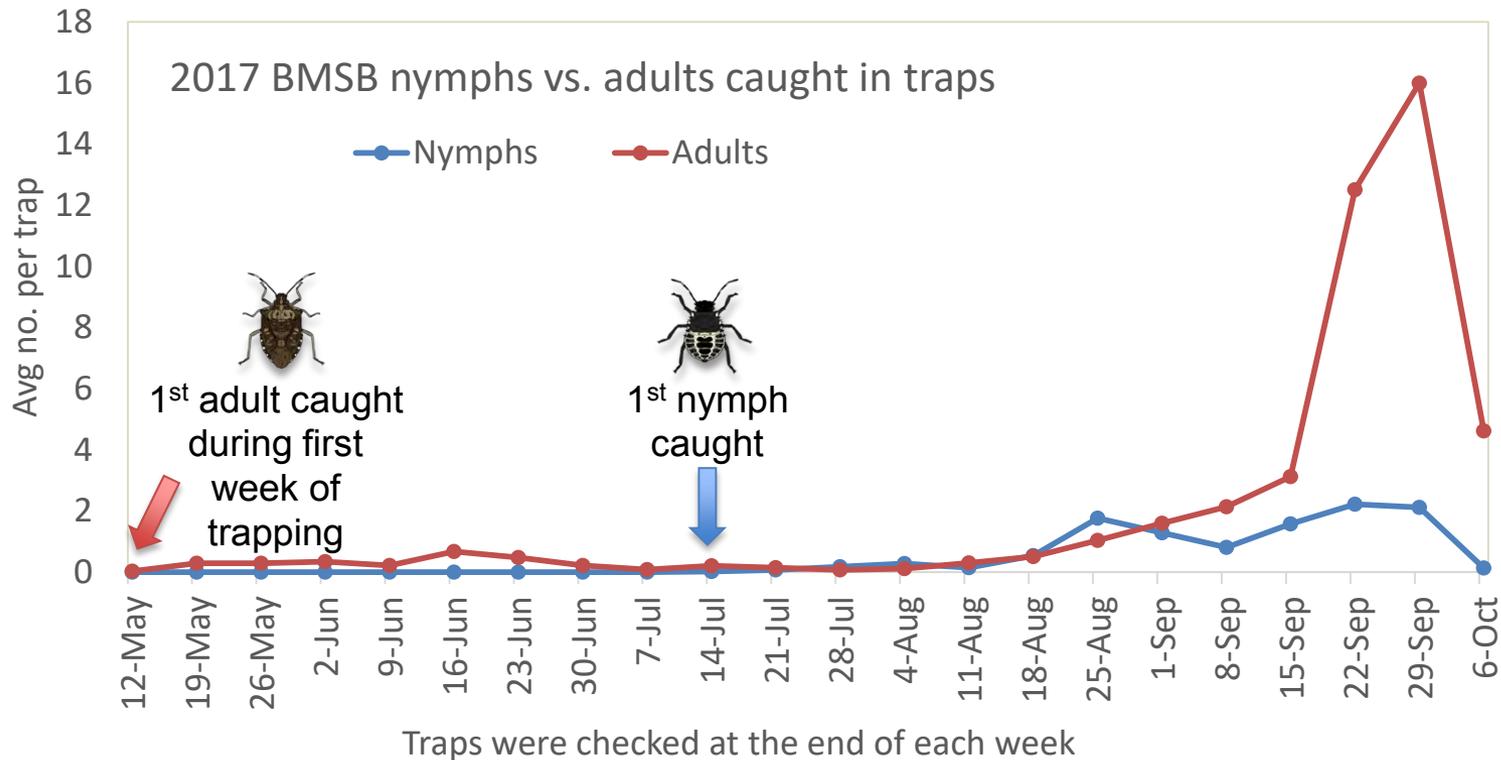


Pyramid,
Rescue, or
Panel trap
Trécé lure



Seasonal BMSB captures - 2017

- Increasing catch of adults in May and June
- First nymphs appeared in July
- Significant uptick in August – 1st OW adults
- Total catch of >2,000 BMSB
- Only a few BMSB captured in west central and NW MI





BMSB damage was detected in a number of apple orchards in Southern MI and the Ridge

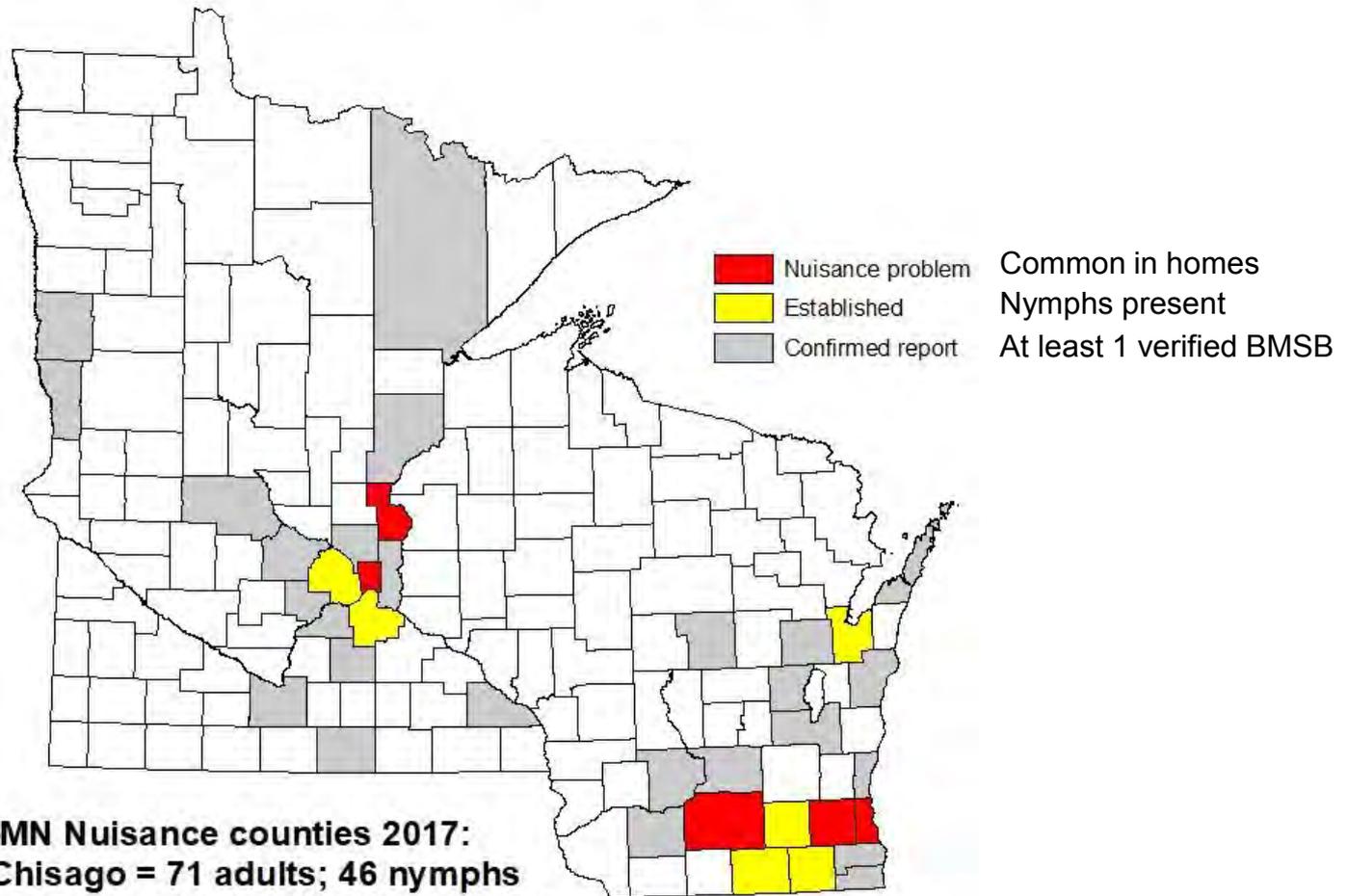
- Early season “exploratory feeding”
- Late-season injury



Minnesota and Wisconsin BMSB Distribution

BMSB Distribution 2010-2017

University of Minnesota
Minnesota Department of Agriculture
Wisconsin Department of Agriculture, Trade & Consumer Protection

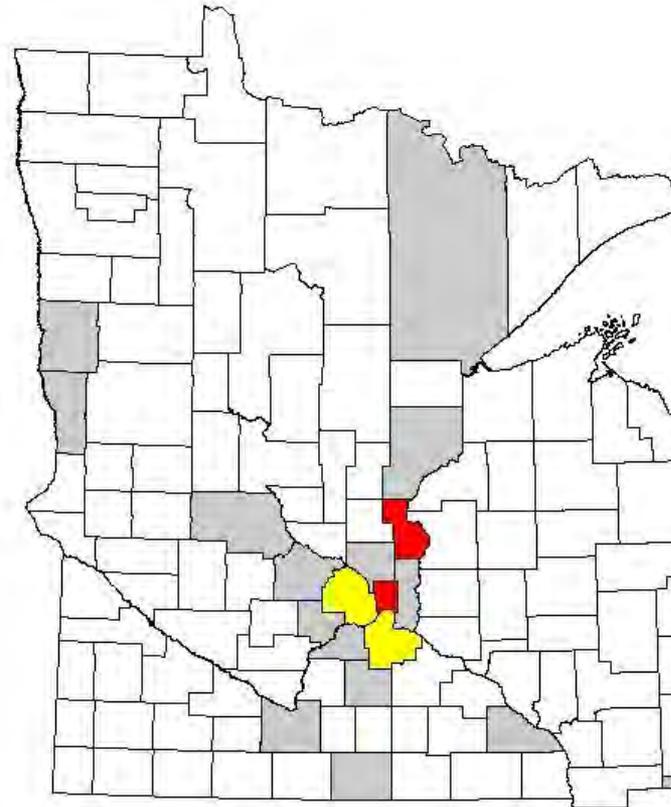


-MN Nuisance counties 2017:
Chisago = 71 adults; 46 nymphs
Ramsey = 124 adults; 253 nymphs

-WI Nuisance counties 2017:
Dane = 50-100+ BMSB common in homes

BMSB in Minnesota

- First detection of BMSB in home in Chisago Co in 2017
- Chisago Co. totals are for 2 traps
- Ramsey Co. total are for 10 traps
- Dakota Co. only had 1 trap with 1 adult
- Hennepin Co. no trap catch in 2017 – but 32 reports on EddMaps since 2012





BMSB in Wisconsin

- Specimens have been confirmed by the 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.

