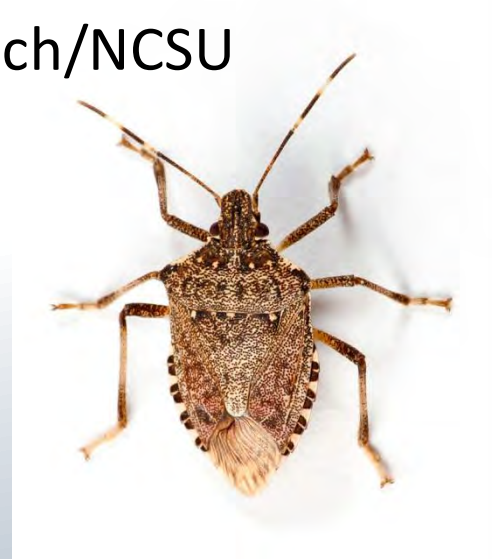
Southeast Region

Michael Toews, Angel Acebes-Doria, Ash Sial, Brett Blaauw, Shimat Joseph/UGA

Glynn Tillman/USDA-ARS-CPMR

Ric Bessin/UK

Jim Walgenbach/NCSU



Funding

USDA United States Department of Agriculture National Institute of Food and Agriculture

Specialty Crop Research Initiative

Collaborating Institutions

ars · NC State University · PennState · OSU Oregon State · University of Maryland · University of Georgia · Washington State University · Northeastern IPM Center · Cornell University · Utah State University · Rutgers University · The Ohio State University · University of Kentucky · UC Davis · University of Minnesota · Virginia Tech · Berkeley · Michigan State University · UC Riverside

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Summer 2019-UK

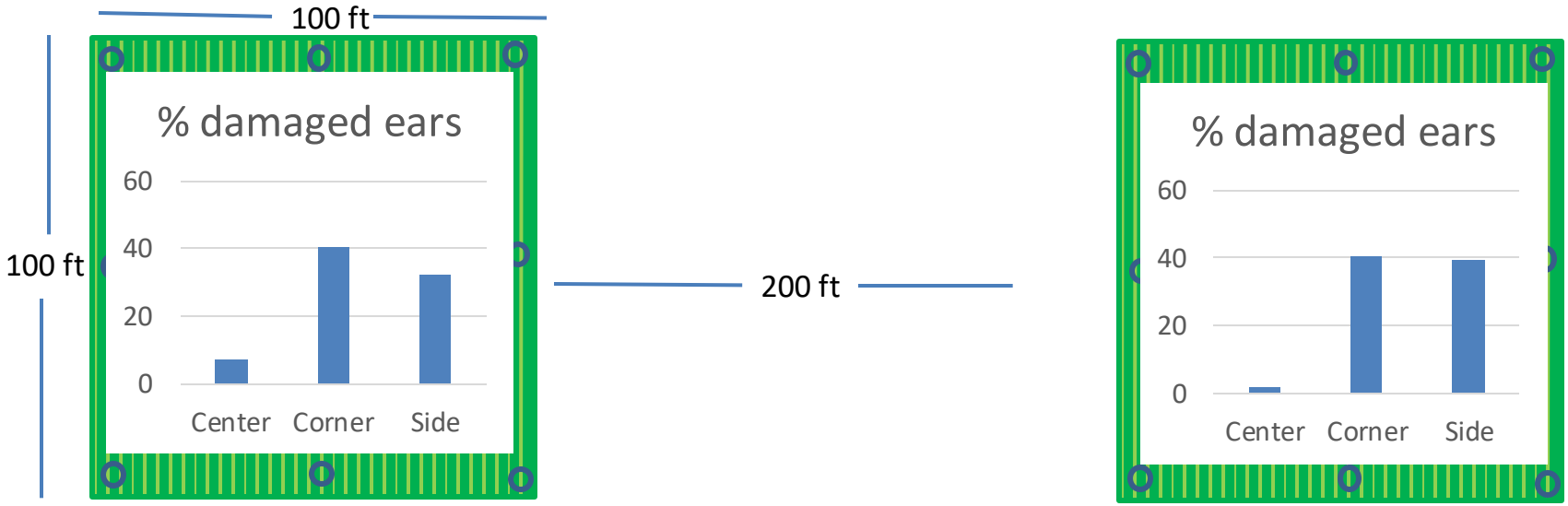
- Trapping for BMSB across the state
  - The western part of Kentucky is beginning to see high BMSB establishing populations
- Using yellow sticky cards to detect *Trissolcus japonicus*
  - Still being counted
- Trap cropping for BMSB in peppers
  - trap crop reduced damage to pepper plants
- Using pheromone baited ghost traps in sweet corn
  - Traps increased damage to the ears of corn adjacent to the ghost traps

Stink Bugs feeding on Sweet Corn

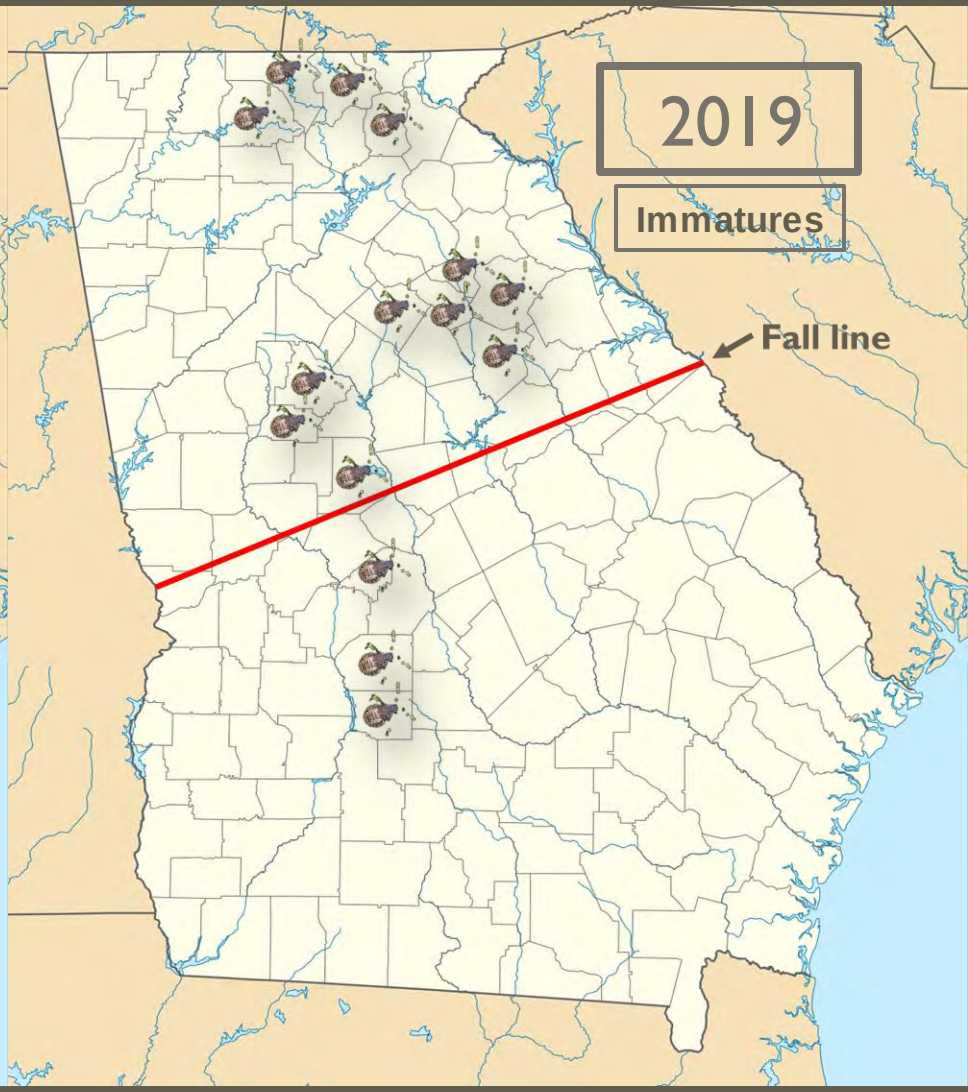
Stink Bugs Damage to Sweet Corn

BMSB and Ghost Traps

Used Attribute II (Cry 1Ab + Vip 3A) sweet corn to eliminate damage from other pests



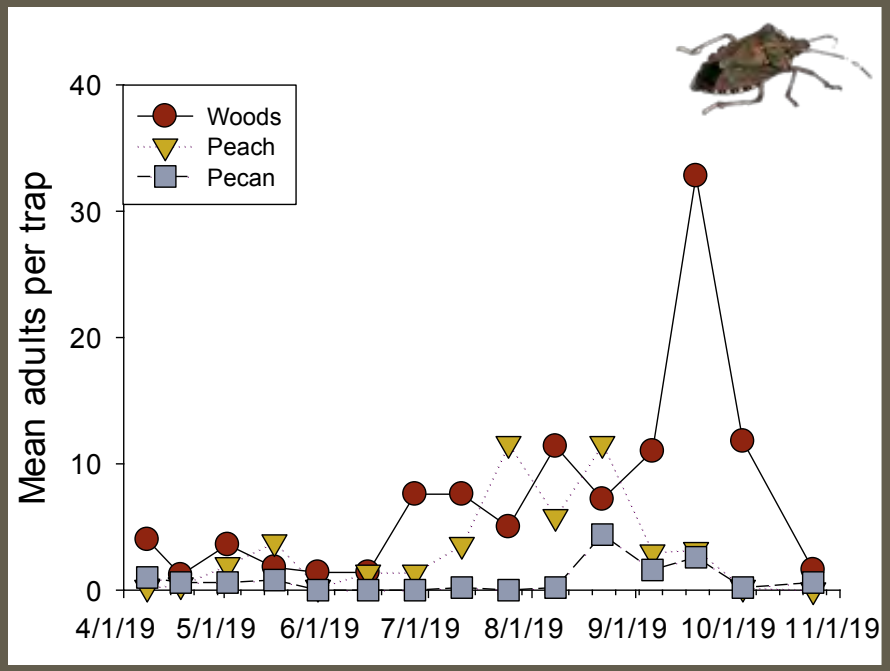
First year results: Slightly increased damage to sweet corn
This year to place traps further away from field



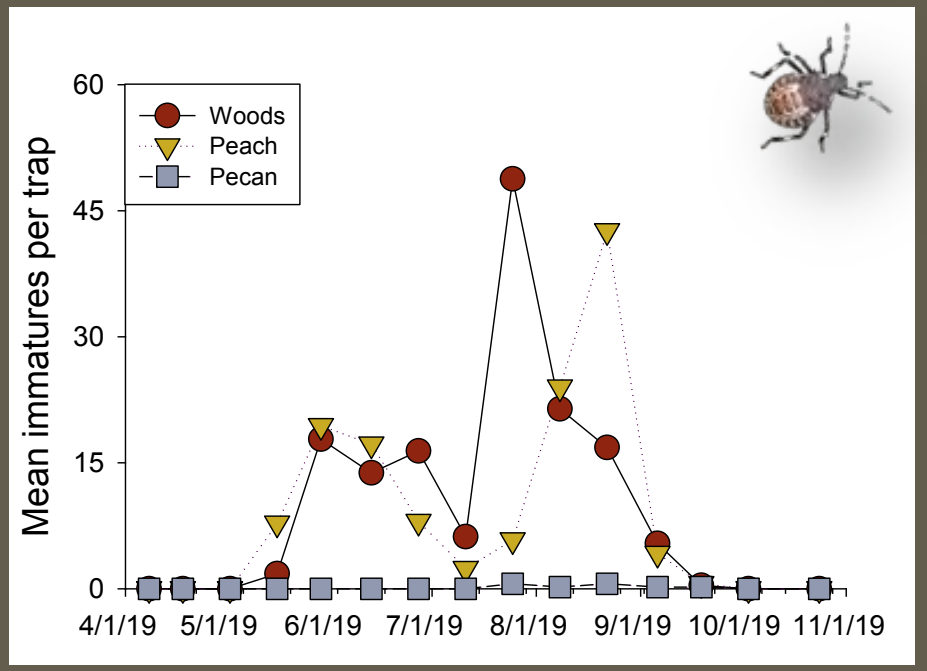
- Full season trapping data at 17 sites
- 8 host crops
- 3 ecoregions

BMSB POPULATIONS

RESULTS



Repeated measures ANOVA $F = 41.43$; $df = 2, 12$; $P < 0.01$
Woods > Peach > Pecan



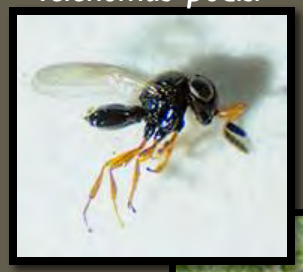
Repeated measures ANOVA $F = 32.79$; $df = 2, 12$; $P < 0.01$
Woods = Peach > Pecan

Adults captured from April 8 through Oct. 29
Immatures captured from May 16 through Oct. 1

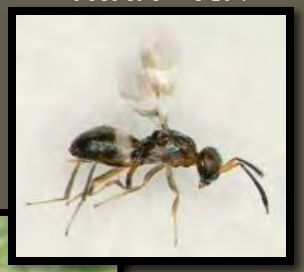
NATURAL ENEMIES

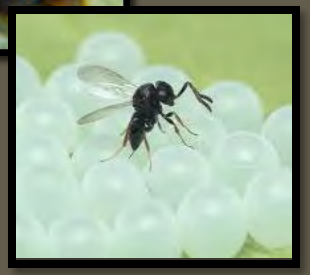
RESULTS

Telenomus podisi

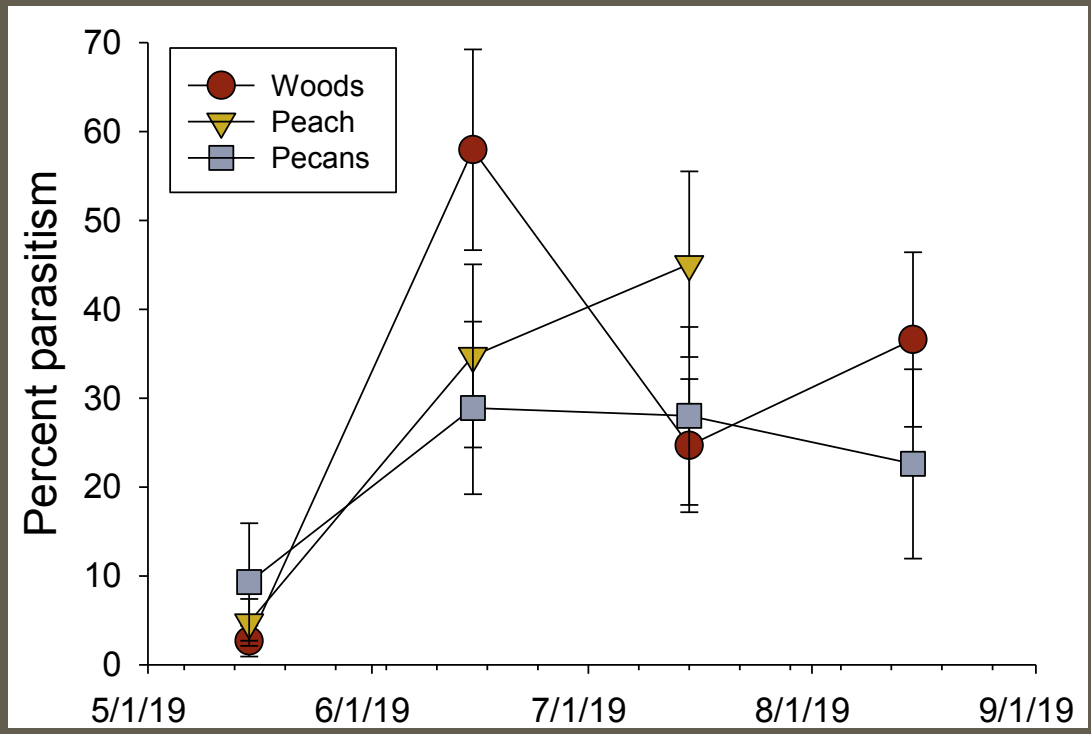


Anastatus reduvii



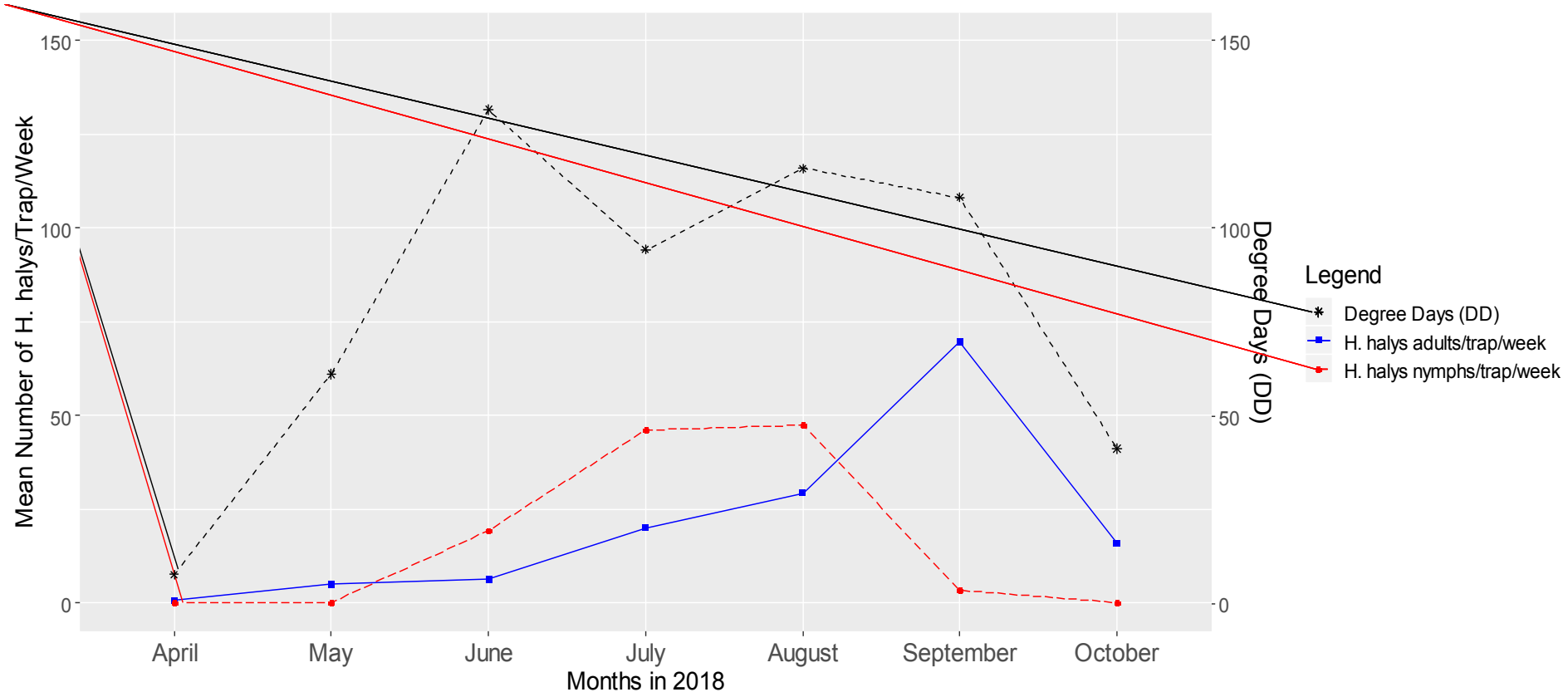


Family: Scelionidae



Month by host interaction: F = 2.24; df = 4, 154; P = 0.067
Interaction sliced by host for June: F = 2.76; df = 2, 154; P = 0.066

11 egg parasitoid species were collected statewide

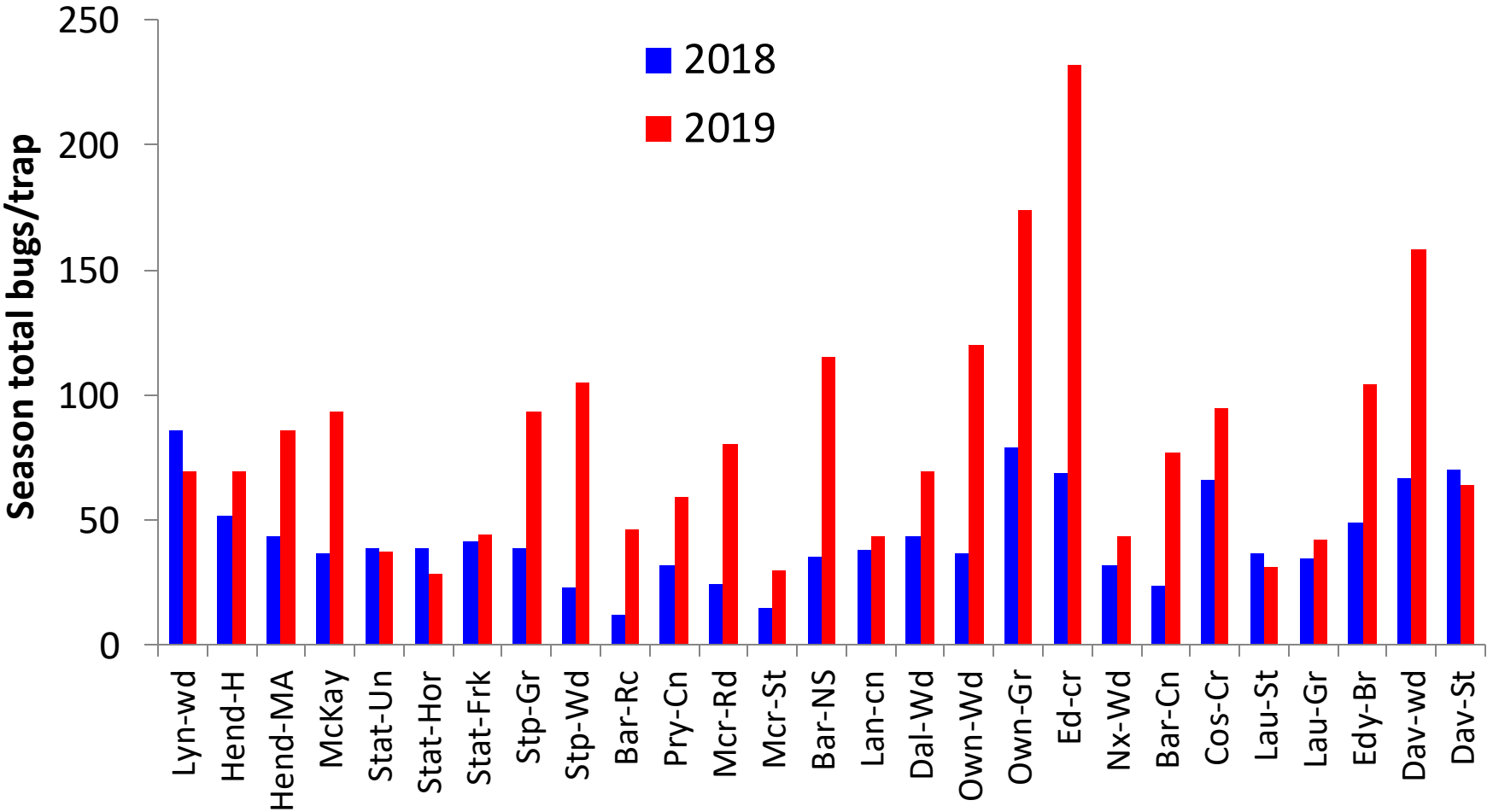


Degree day modeling work in Brett's lab

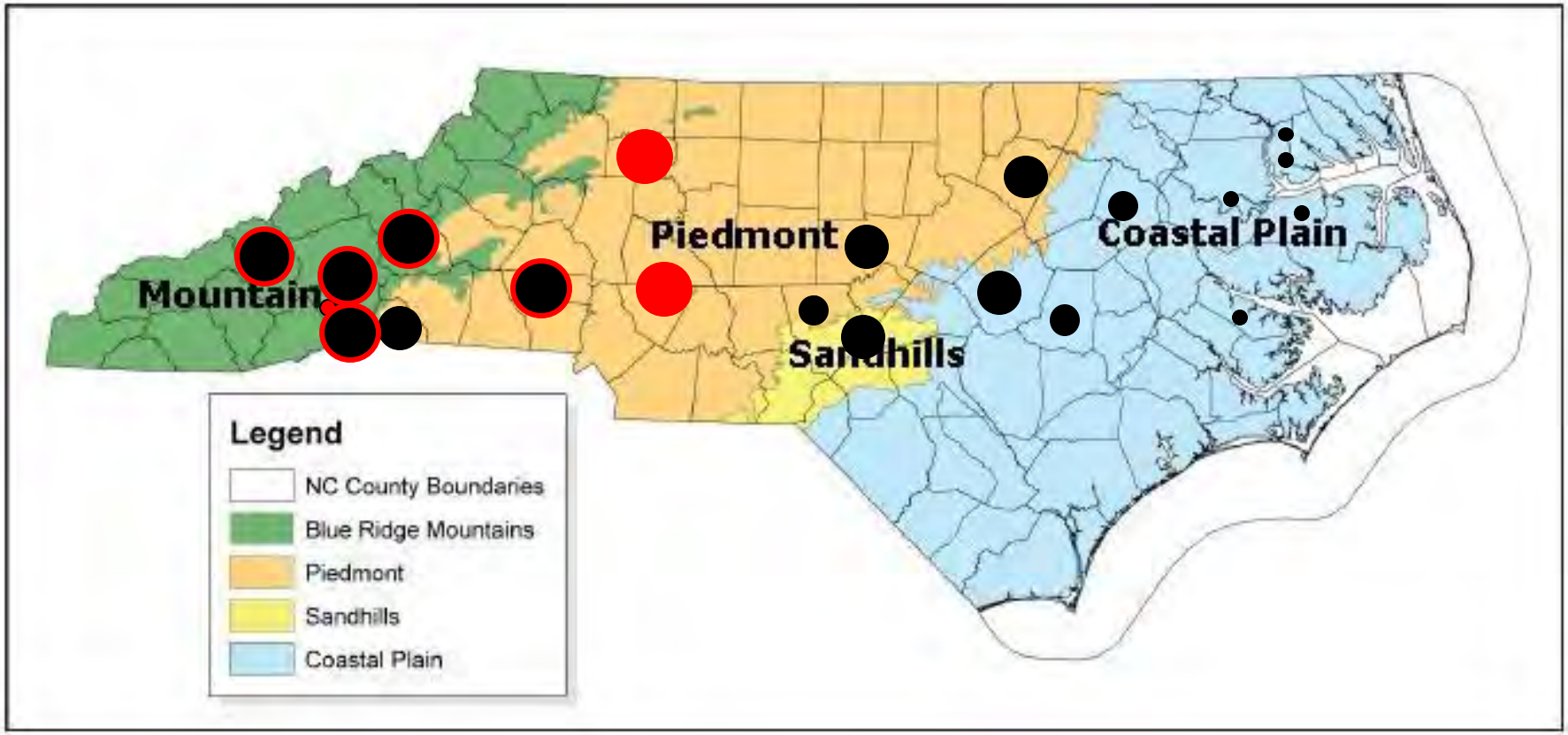
2019 BMSB in North Carolina

- First detected in 2009, serious ag pest in 2014
- Compared to recent years, populations were considerably higher, especially later first generation adults. Remains most important tree fruit pest.
- Populations remain low in the eastern coastal plains
- Research focus
  - Life table studies to help model phenology
  - Biological control in low and high input cropping systems
  - Agroecosystem effects on pheromone trap capture and damage in apples
  - Evaluation of pheromone trap thresholds in apples
  - Relative efficacy of pyrethroid vs neonicotinoid insecticides

BMSB Season Total Pheromone Trap Captures in Henderson County Apple Orchards



Consistently Low Populations in Eastern NC - 2019



Season Total Captures

0-5 • 100-200 ● >400 ●

40-100 ● 250-350 ●

Blue Ridge Parkway trapping sites - 2019

Craggy Mtns 2
5500 ft
Craggy Mtns 1
5000 ft
Potato Field Gap
4000 ft
Craven Gap
3000 ft
2000 ft
Swannanoa River
Asheville
2000 ft
French Broad River
3000 ft
Sleepy Gap
Fork Mtn
4000 ft
5000 ft
Pisgah
10 miles

Imagery Date: 4/26/2019 lat 35.591896° lon -

BMSB in Pheromone Traps at Different Elevations Along South-North Transect