

Management of BMSB in US Specialty Crops

USDA-NIFA

Specialty Crops Research Initiative (SCRI)
Coordinated Agricultural Project (CAP)

2-year \$3.75 million

5-year, \$9.1 million

2011-2016 BMSB SCRI Project

- Led by Tracy Leskey, USDA-ARS, Kearneysville, WV
- Focus on tree fruits, vegetables and ornamentals in the Mid-Atlantic (NC – NY)
- Information developed
 - Pheromone ID and trapping systems
 - Biology and ecology of BMSB in mid-Atlantic & Oregon
 - Examined impact of natural enemies in different habitats
 - Developed chemical control strategies
 - Developed website that serves as a clearinghouse for BMSB information (StopBMSB.org)

BMSB SCRI 2 Grant

- Builds upon and expands SCRI 1 both in participation and scope of study.
- Focus is on
 - Landscape ecology
 - Biological control
 - Management strategies based on agroecology and behavior
 - Economics of biological control
 - Outreach/Extension program

BMSB SCRI 2 Participation and Organization Structure

- Participants
 - 43 co-PI's
 - 17 States
 - 18 Institutions (17 Land Grants/USDA-ARS)
- Organizational structure
 - Lead PD
 - 6 co-PDs: 5 geographic regions + USDA-ARS
 - 7 objective leaders

Pacific NW
Betsy Beers

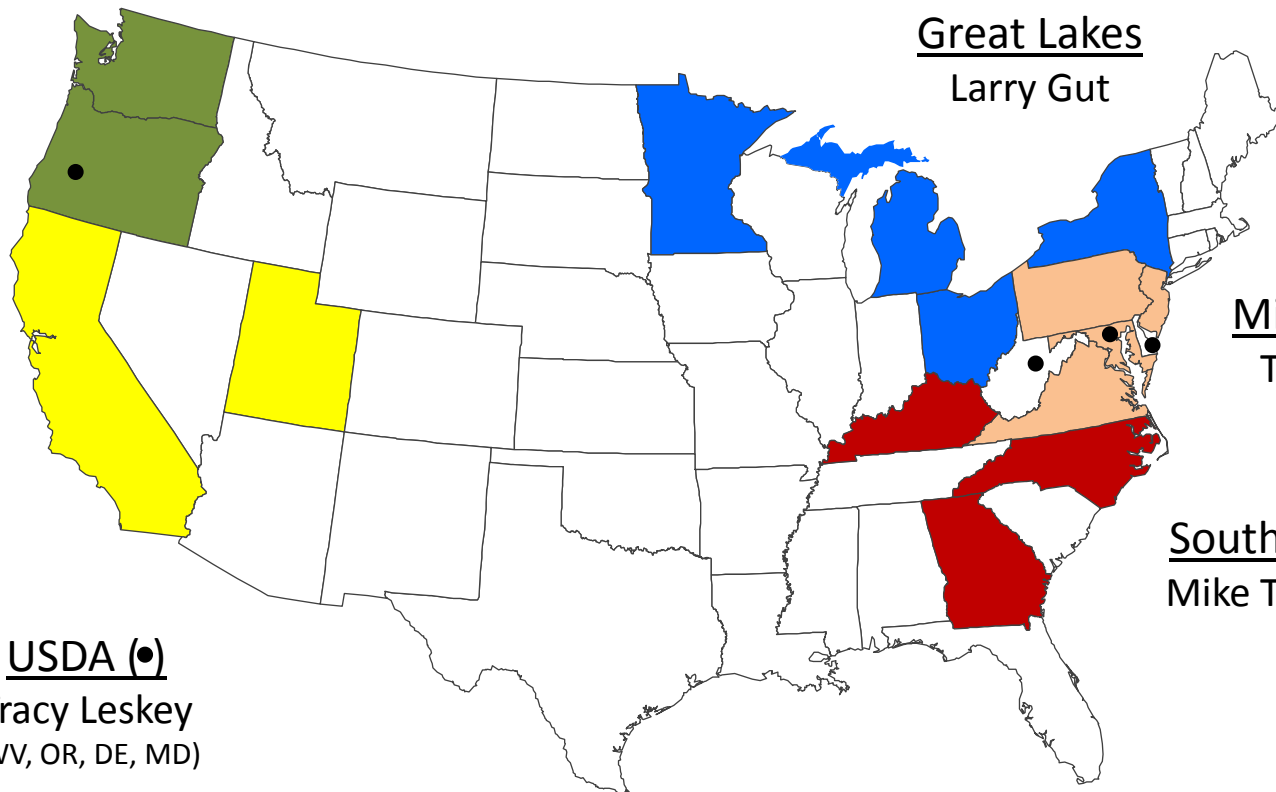
West
Kent Daane

USDA (●)
Tracy Leskey
(WV, OR, DE, MD)

Great Lakes
Larry Gut

Mid-Atlantic
Tom Kuhar

Southeast
Mike Toews



Specialty Crop Advisory System

- Regional Advisory System
 - Regional PIs and stakeholder advisors (3).
 - Annual meetings to update stakeholders and obtain feedback on project direction.
- National Advisory System
 - 21 member advisory panel consisting of 15 regional advisors and 6 national advisors (APHIS, EPA, USDA, national commodity organizations).
 - Annual meetings for feedback and advise on project.

Crops Addressed

- Direct Focus of Management Strategies
 - Tree Fruits
 - Tree Nuts
 - Fruiting Vegetables
- Indirectly to Understand Landscape Ecology
 - Field crops (corn, cotton, soybean, others?)
 - Ornamentals
 - Non-managed wooded habitats

Objective 1

(Dave Crowder, WSU)

- Predict risk from BMSB damage through enhanced understanding of agroecology and landscape ecology
 - Monitor BMSB in different crops and habitats using pheromone traps.
 - Assess suitability of landscapes based on host suitability and climate x BMSB biology interactions
 - Integrate landscape-level habitat maps and data on abiotic factors to predict BMSB distribution and risk.

Objective 2

(Kim Hoelmer USDA-ARS; Ann Hajek Cornell)

- Implement widespread biological control, incorporating Asian parasitoids and native natural enemies.
 - Asian parasitoids (*Trissolcus japonicus*)
 - Native parasitoids
 - Native predators
 - Entomopathogens-microsporidia

Objective 3

(Anne Nielsen, Rutgers)

- Develop decision support tools and strategies compatible with biological control and informed by risk.
 - Decision support tools to assess abundance and mitigate damage (traps, thresholds, etc.)
 - Insecticide uses compatible with biological control
 - Improve agroecosystem sustainability through spatially focused or habitat manipulation strategies
 - Integrate IPM tools across landscapes

Objective 4

(Jay Harper, Penn State)

- Managing the economic consequences of BMSB.
 - Assess economic potential of biological control of BMSB on specialty crops – focus on *T. japonicus*.
 - Develop estimates of costs and benefits of specific management practices for BMSB.

Objective 5

(Steve Young, NEIPM Center)

- Outreach plan: Deliver new information on BMSB to stakeholders.
 - Maintain and develop knowledge repository (StopBMSB.org)
 - Expand relevancy of outreach resources to all US regions.
 - Evaluate social benefits of improved conditions resulting from increased awareness and adoption of sustainable practices.
 - Evaluation – including progress on objectives

