

# Does host origin influence patterns of utilization by BMSB?



Erik Bergmann<sup>T</sup>

Katherine Kamminga\*, Holly  
Martinson<sup>T</sup>, Thomas Kuhar\*, Paula  
Shrewsbury<sup>T</sup>, and Michael Raupp<sup>T</sup>

<sup>T</sup>Department of Entomology  
University of Maryland, College Park  
ebergman@umd.edu

\*Department of Entomology  
Virginia Polytechnic Institute and State  
University



# *Halyomorpha halys*

Polyphagous herbivore

Uses ornamentals as food  
source

Does ornamental  
landscape influence  
nuisance numbers?

Could BMSB be designed  
out of landscapes?

# Research Objectives:

To Create BMSB Resistant Landscapes

We Need to Know Patterns of Host Utilization:

- Which trees are used for feeding and oviposition?
- How do taxonomy and host origin influence host use?





# Study Site



**Raemelton Farm**  
Adamstown, MD  
Wholesale Commercial Nursery  
~300 Acres



# Survey Methods



## 2011 Nursery Surveys

1 min visual counts for  
each plant part:

Leaves ▪ Fruit ▪ Bark (2m)

BMSB stages:

Egg Masses, Early nymphs,

Late nymphs, Adults

# Scope of Survey

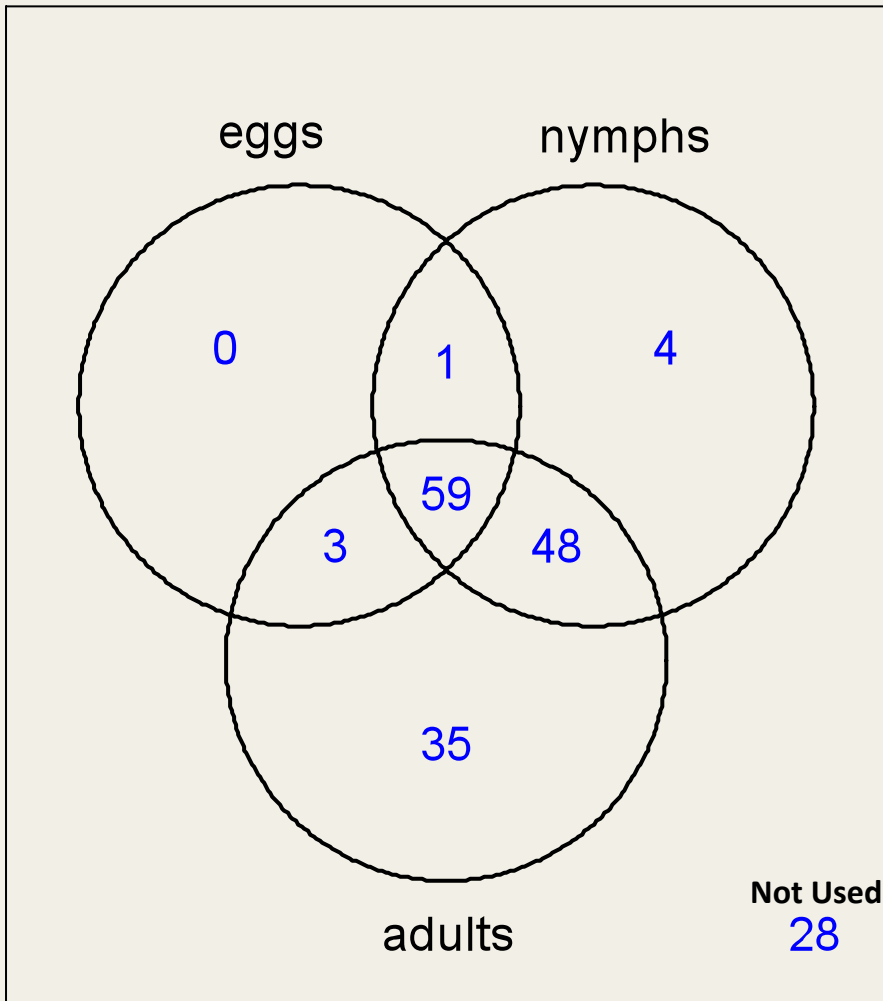


178 cultivars

2006 individual plants

7578 tree visits

13,406 stink bugs and egg masses



Total cultivars  
sampled: 178

Total used by any  
stage: 150

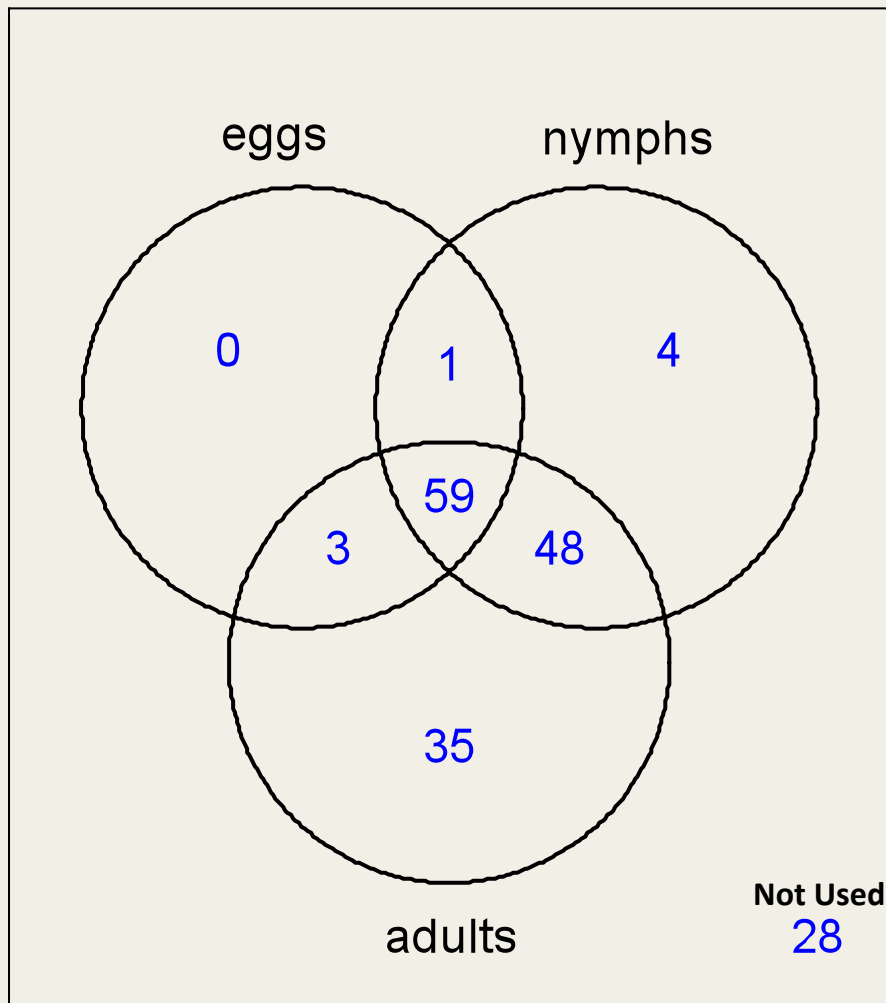
Cultivars used by stage

Eggs: 63

Nymphs: 112

Adults: 145





## Top 10 Hosts for Active BMSB

- Syringa pekinensis 'Morton'
- Syringa pekinensis 'Zhang Zhiming'
- Acer x freemanii 'Jeffersred'
- Acer rubrum 'October Glory'
  - Acer rubrum 'Bowhall'
- Cercis canadensis 'Alba'
- Cladrastis kentukea 'Perkins Pink'
  - Platanus x acerifolia 'Bloodgood'
- Nyssa sylvatica 'Wildfire'
- Evodia danielii



# Taxonomy and Host Origin

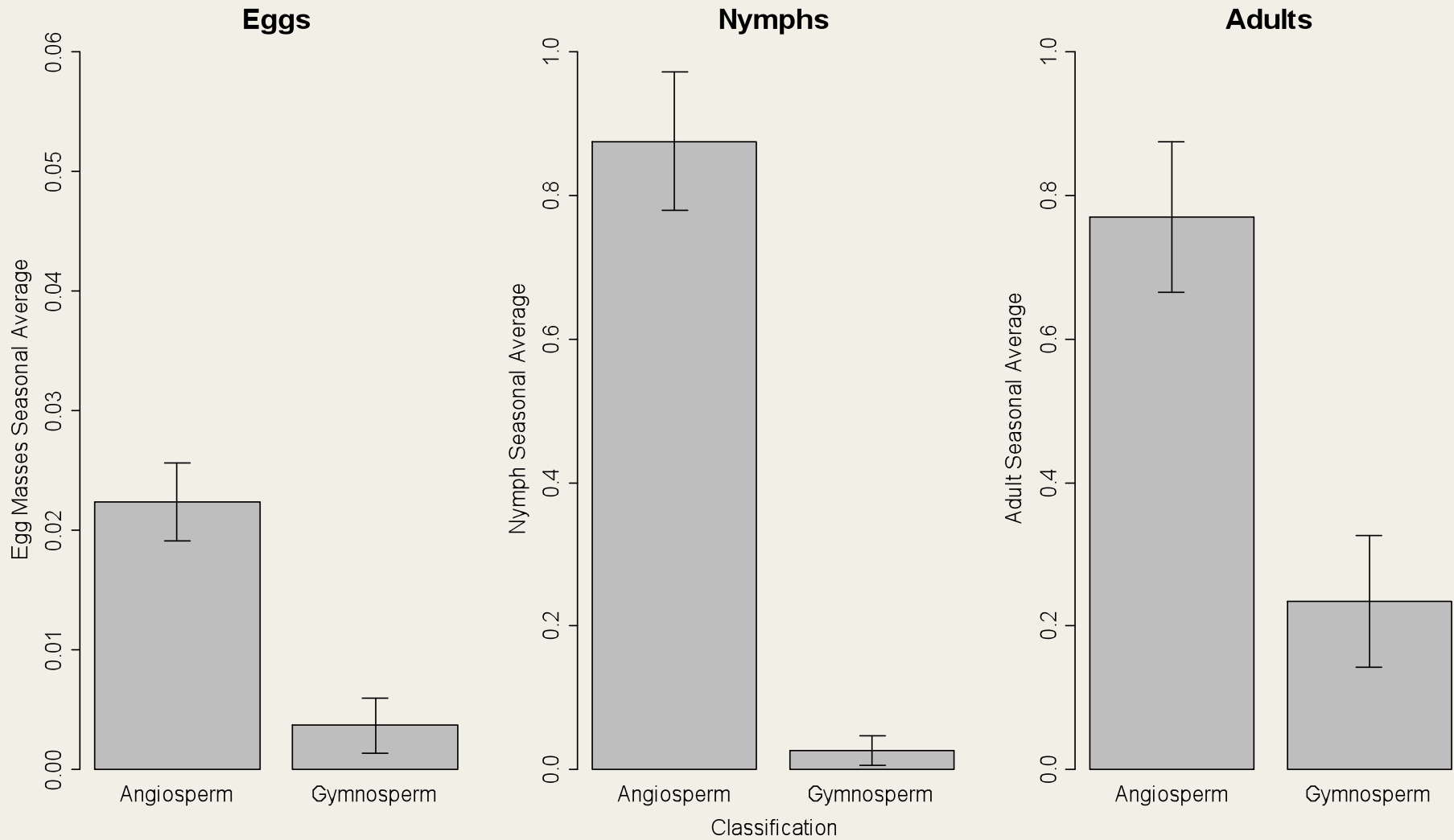
## Taxonomy

**Do Angiosperms and Gymnosperms differ in their use by BMSB?**

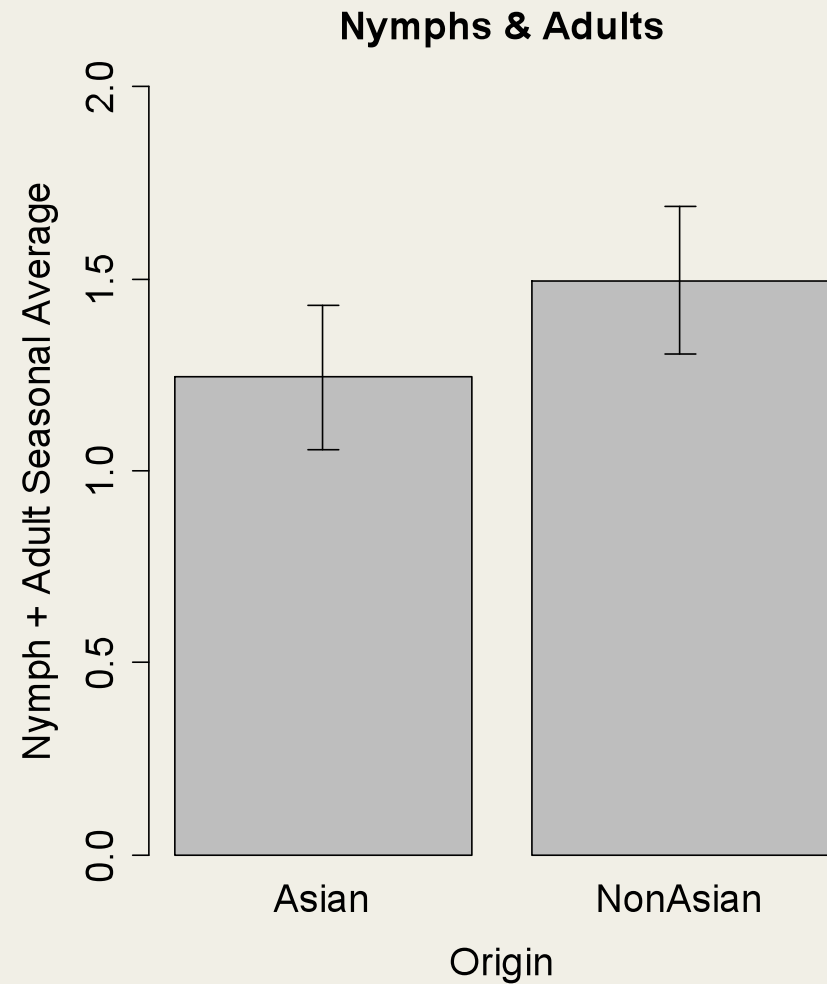
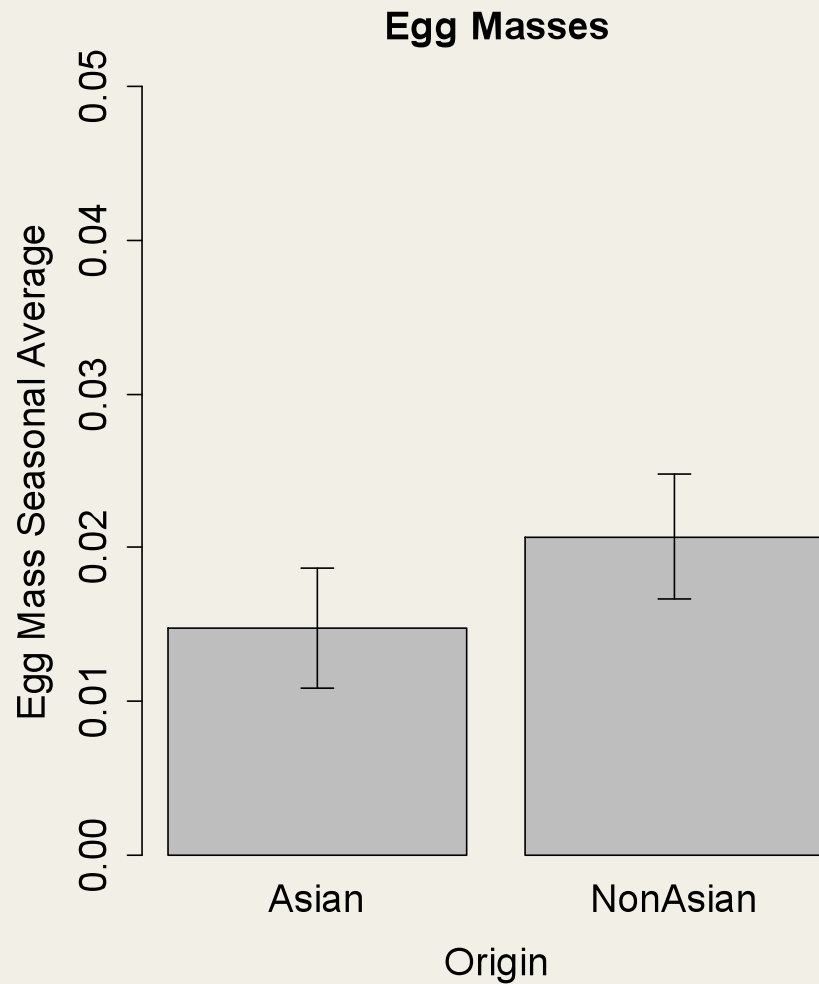
## Origin

**Does host use differ between plants of Asian and non-Asian origin?**

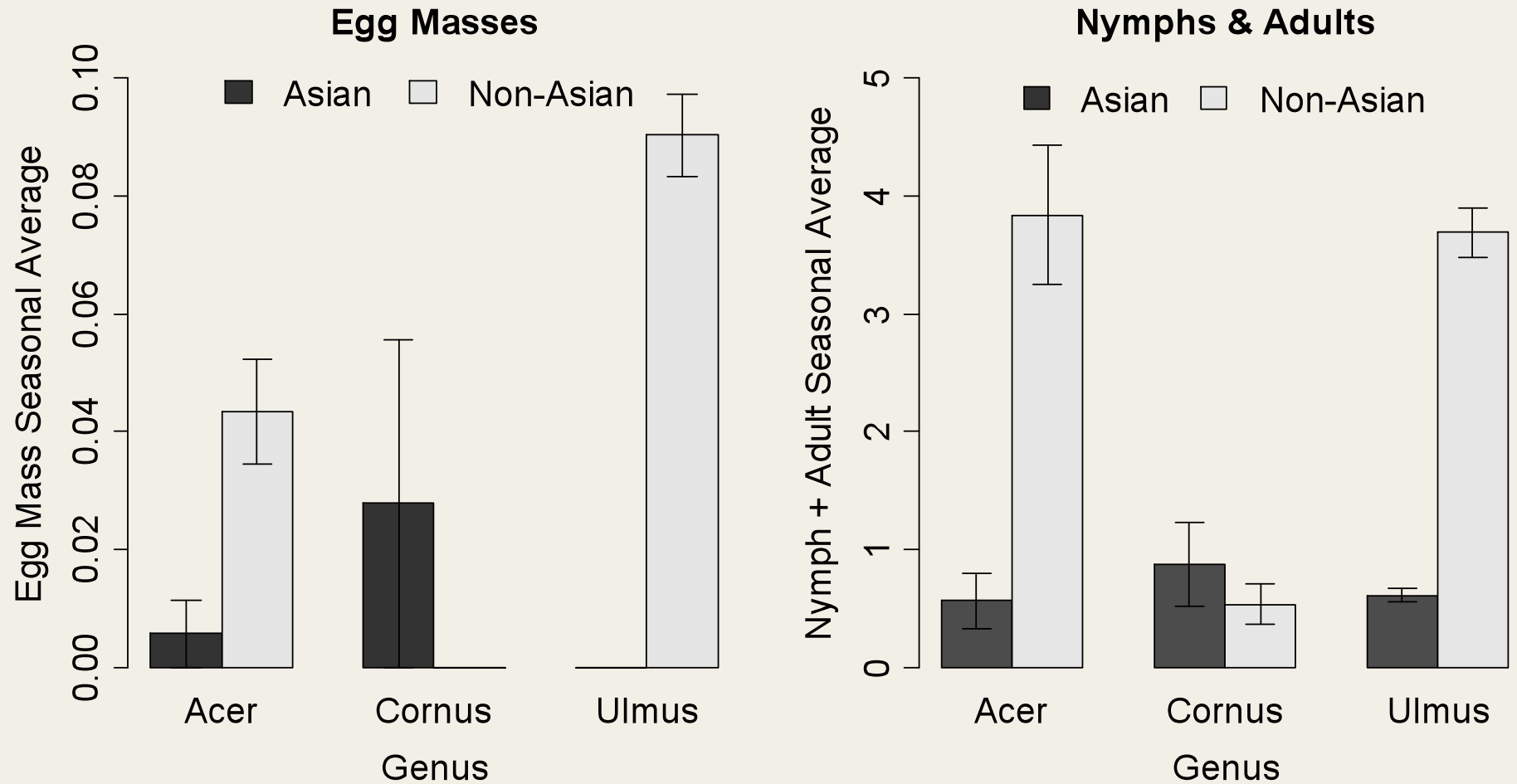
# Taxonomy



# Host Origin



# Host Origin by Genus





# Summary of Findings

BMSB used 150 of 178 cultivars surveyed

Later life stages use a wider range of hosts

Angiosperms strongly favored

Prefer hosts they “know” evolutionarily  
(*Cornus*), but some naïve hosts (*Acer*, *Ulmus*)  
may be favored

Begin to design BMSB out of landscapes

# Acknowledgements

## Field Crew (UMD)

Ashley Jones

Chris Riley

Ryan Wallace

Sean Harris

Dylan Reisinger

Caroline Brodo

## Nursery Access

Steve Black,

Raemelton Farm

## Funding

USDA-NIFA-SCRI

#2011-51181-30937

UMD MAES

