

Visual Surveys of BMSB in Agroecosystems in Southwest VA

Tom Kuhar, Kathy Kamminga, D. Ames Herbert
Department of Entomology
Virginia Tech



Typical sampling site in Virginia

Garrett Farms, Glenvar, VA



- **Tree line**
 - Native
 - Invasive
- **Agricultural commodities**
 - Corn
 - Squash
 - Tomatoes
 - Peppers
 - Pumpkins

Survey methods

- Weekly visual survey in 2011 and 2012 (Apr to Oct)
 - 3-min. sample unit
 - Trees (native and introduced)
 - Agricultural commodities



April to mid-May

- April & May - Occasional adult activity around human dwellings and on trees & shrubs
- May 2, 2012 - observed a mating pair on Chinese privet



Also observed in the spring

**BMSB adult aggregations with harlequin bugs on
mustard and horseradish**



1st BMSB eggs -3rd week of May

- May 21, 2012 – 2nd instars were found on a paulownia tree in Suffolk, VA
- May 25, 2012 – 1st egg mass in Winchester, VA on catalpa (Angel Acebes)
- May 26, 2012 - Egg mass detected in Kearneysville, WV on peach by Leskey's group
- May 28 on Tree of Heaven (*Ailanthus*) in Salem, VA by us
- June 6 in vineyards (Basnet & Pfeiffer)



Biofix for BMSB development in the mid-Atlantic

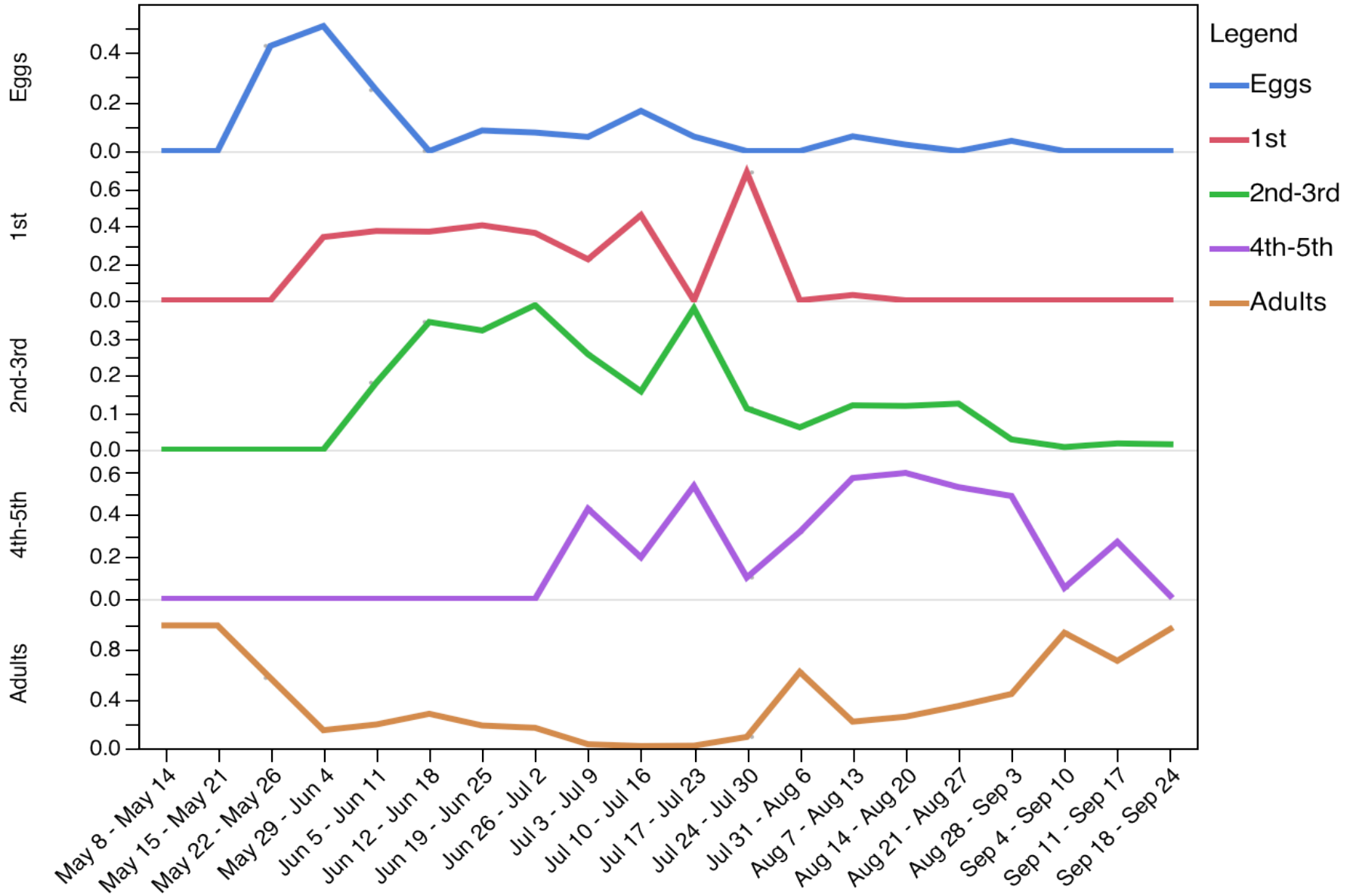
- 14:10 hr (light:dark) phase triggers reproductive development in adult females
- In Kearneysville, WV it occurs on 4 May
- Blacksburg, VA it occurs on 9 May
- Explains why eggs were not found until late May despite unusually warm spring 2012

June - Peak BMSB oviposition period

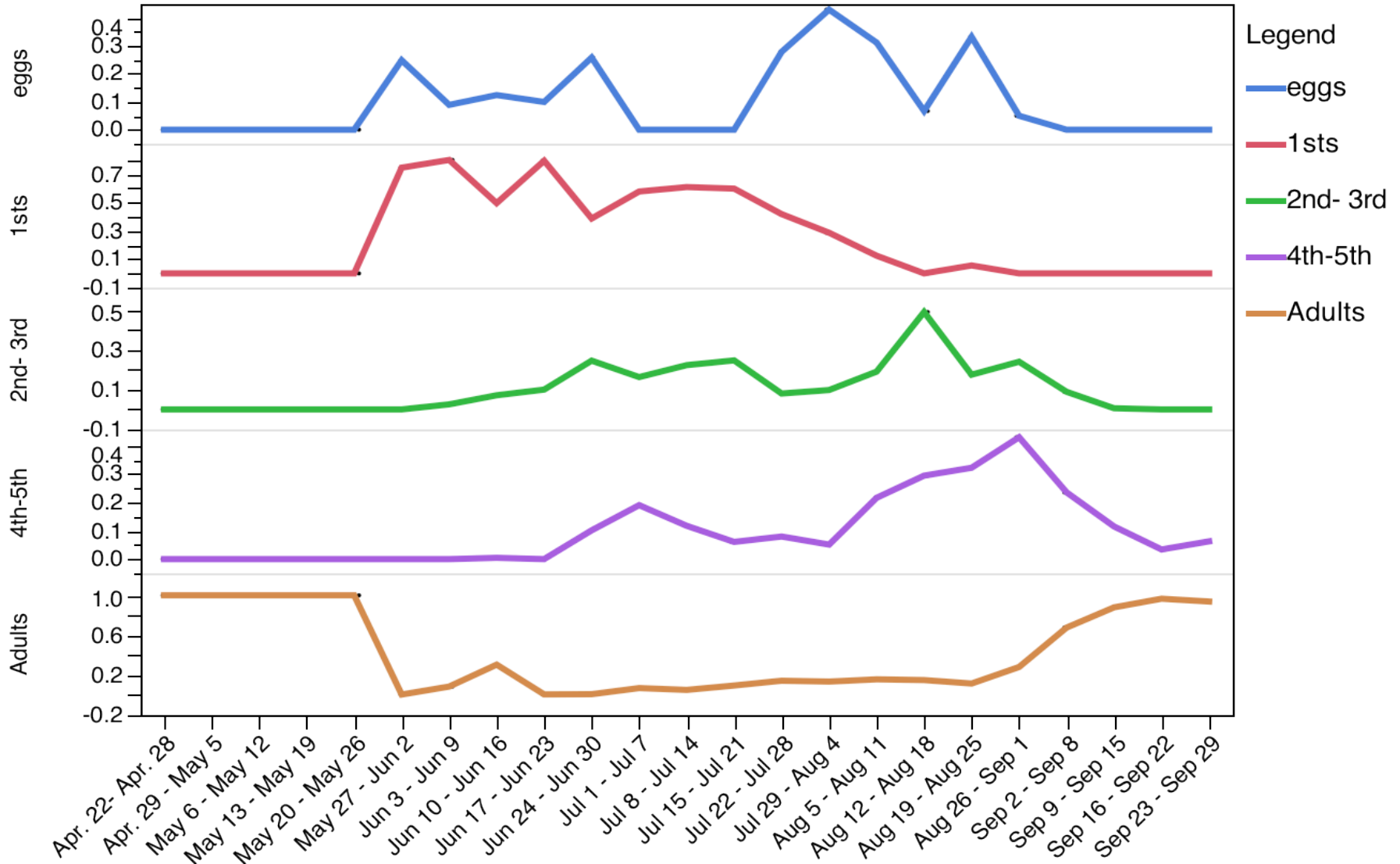
- *Catalpa* (*Catalpa bignonioides* and *C. speciosa*)
– major host plant for BMSB oviposition



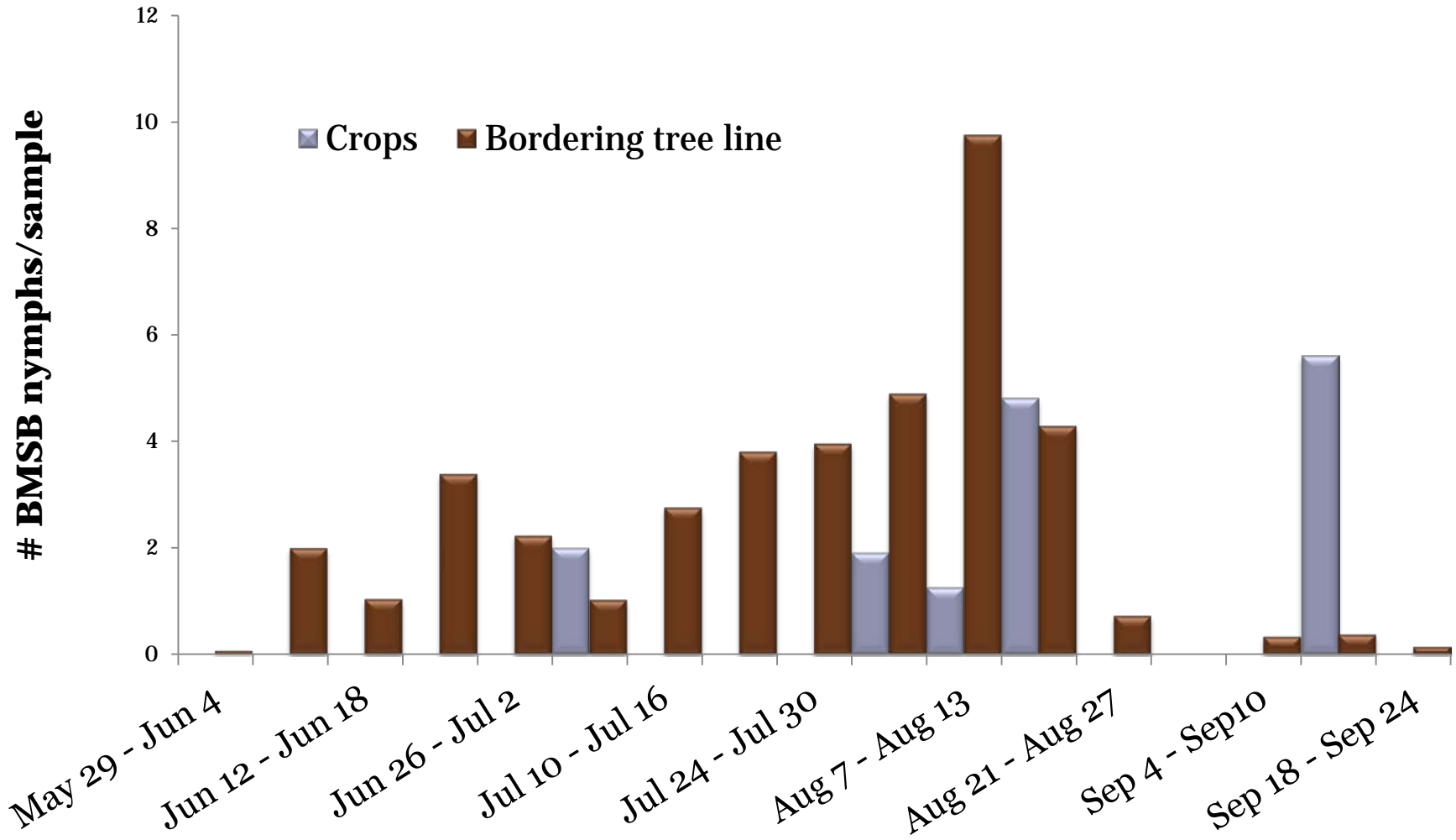
Proportion of BMSB Life Stage by Week, 2011



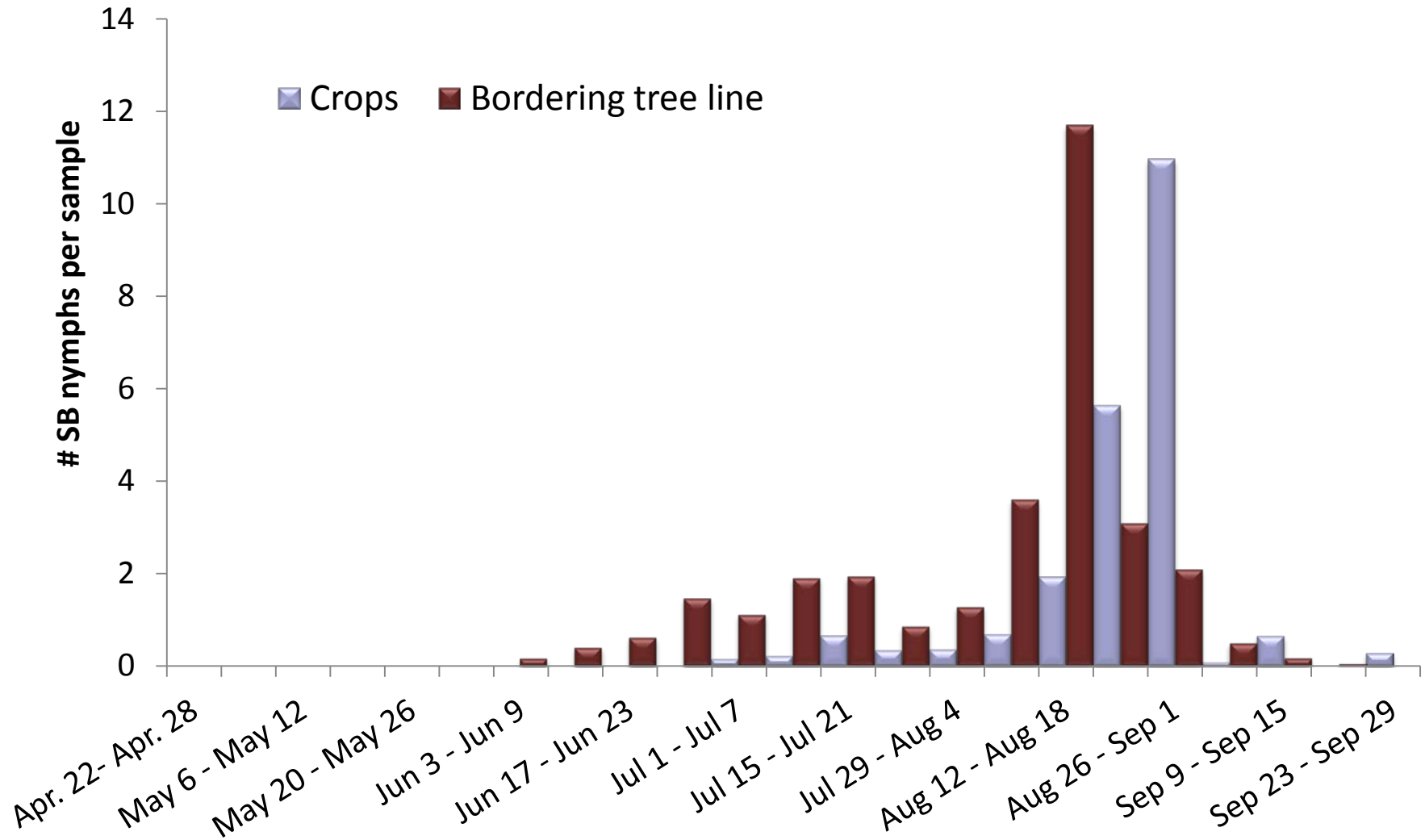
Proportion of BMSB Life Stage by Week, 2012



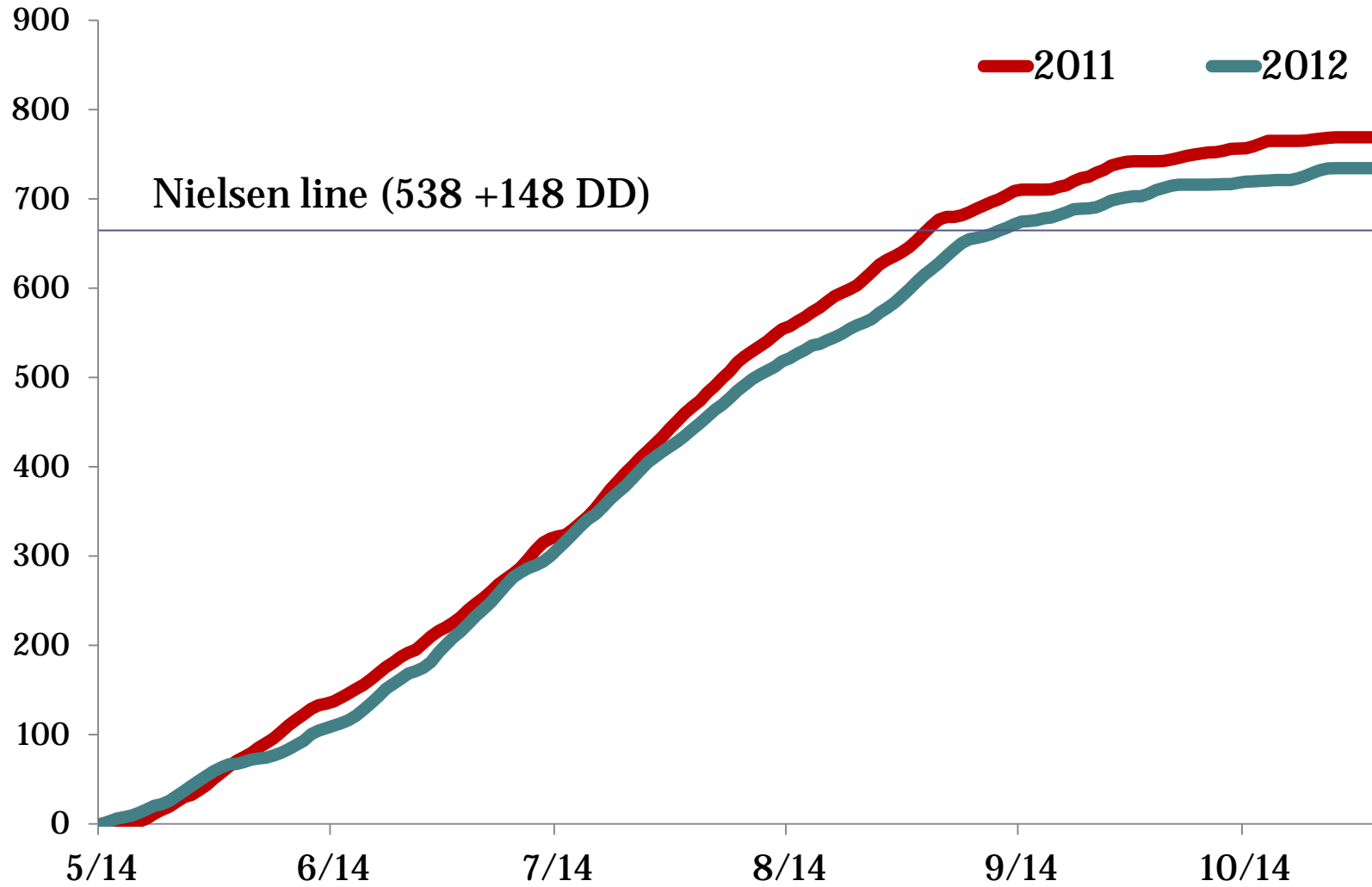
2011 - BMSB nymph densities



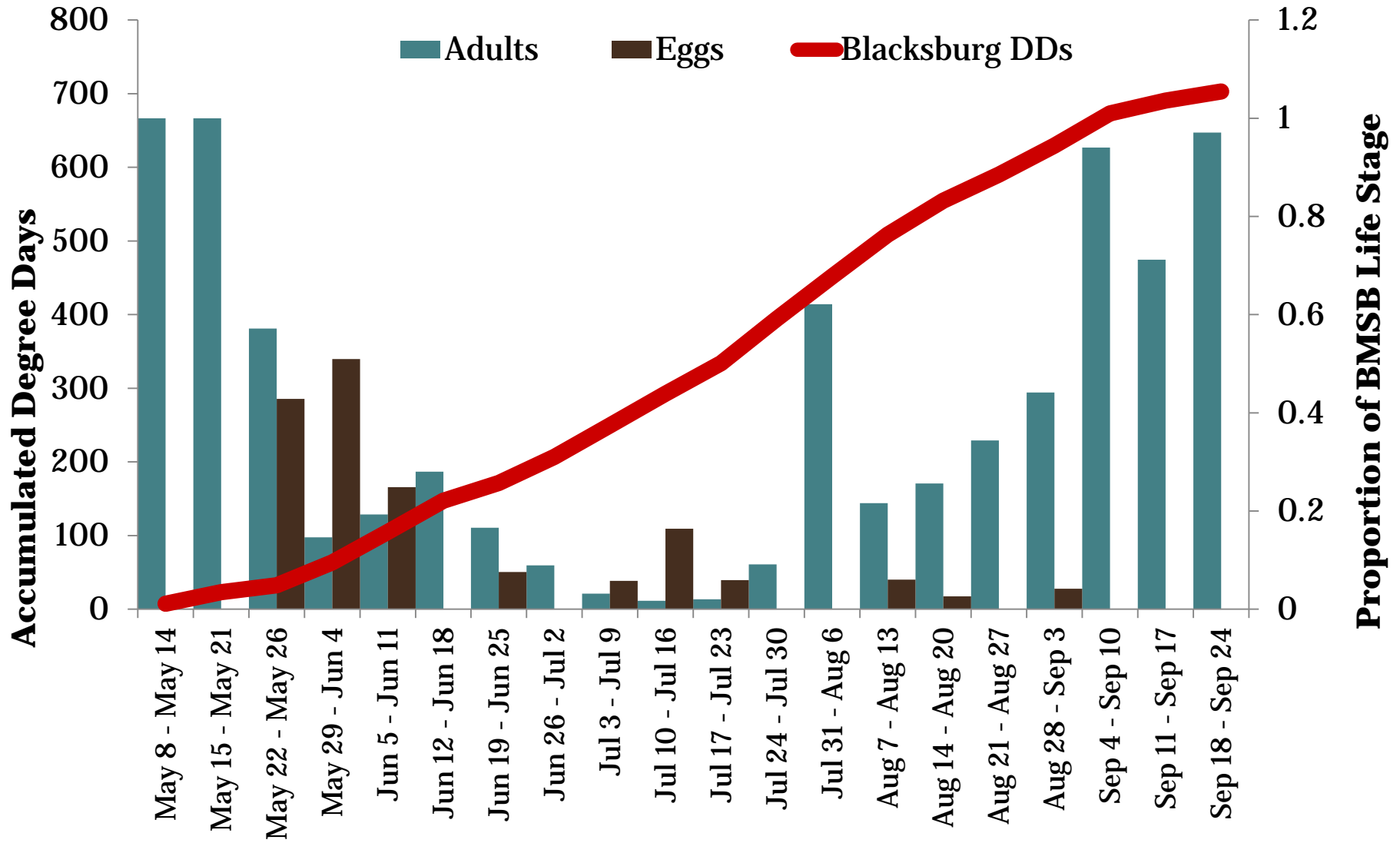
2012 - BMSB nymph densities



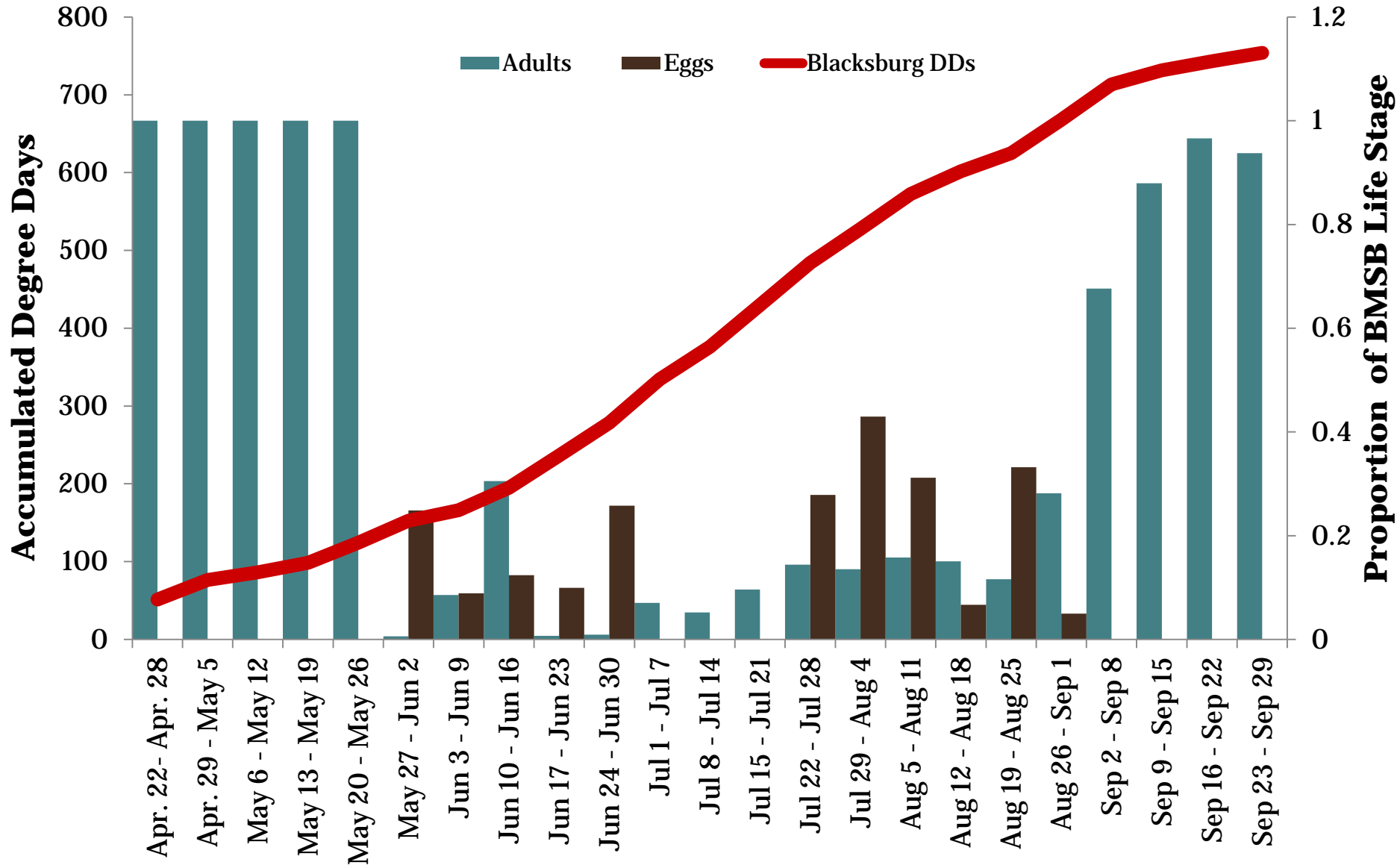
Accumulated DDs (base 17°C) for Blacksburg, VA



2011



2012



Observations in October

- Matt Kassen research (VT and Penn State)
- Tree of heaven (*Ailanthus*) samara clusters
- Numerous BMSB 3rd-5th instars and adults



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