

# Reproductive Phenology of First Generation

## BMSB in North Carolina

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# Introduction

1. After adults emerge from overwintering sites in western NC:

- What is the longevity of adult BMSB post-emergence?
- Timing of BMSB oviposition?
- Number of egg masses produced by BMSB pairs?

2. Adults collected in late July- mid Sept.:

- What is the longevity?
- When do BMSB oviposit egg masses?
- How many egg masses do BMSB pairs produce?



# Purpose of the study



- Goal is to build an empirical model of BMSB phenology that can be used for making management decisions and studies related to understanding the biotic and abiotic factors affecting population regulation
- One of the first pieces of information needed is the phenology and reproductive potential of the overwintering adult generation

# Methods

- Collected BMSB moving into overwintering sites
- Allowed BMSB to overwinter in boxes



↑ *Upside-down view of wooden BMSB box with cardboard floor in place*

↓ *Upside-down view of wooden BMSB box with cardboard floor removed for deployment*



# Overwintering stink bug boxes

**Photo Credit:  
Chris Bergh**

**Coroplast dome**

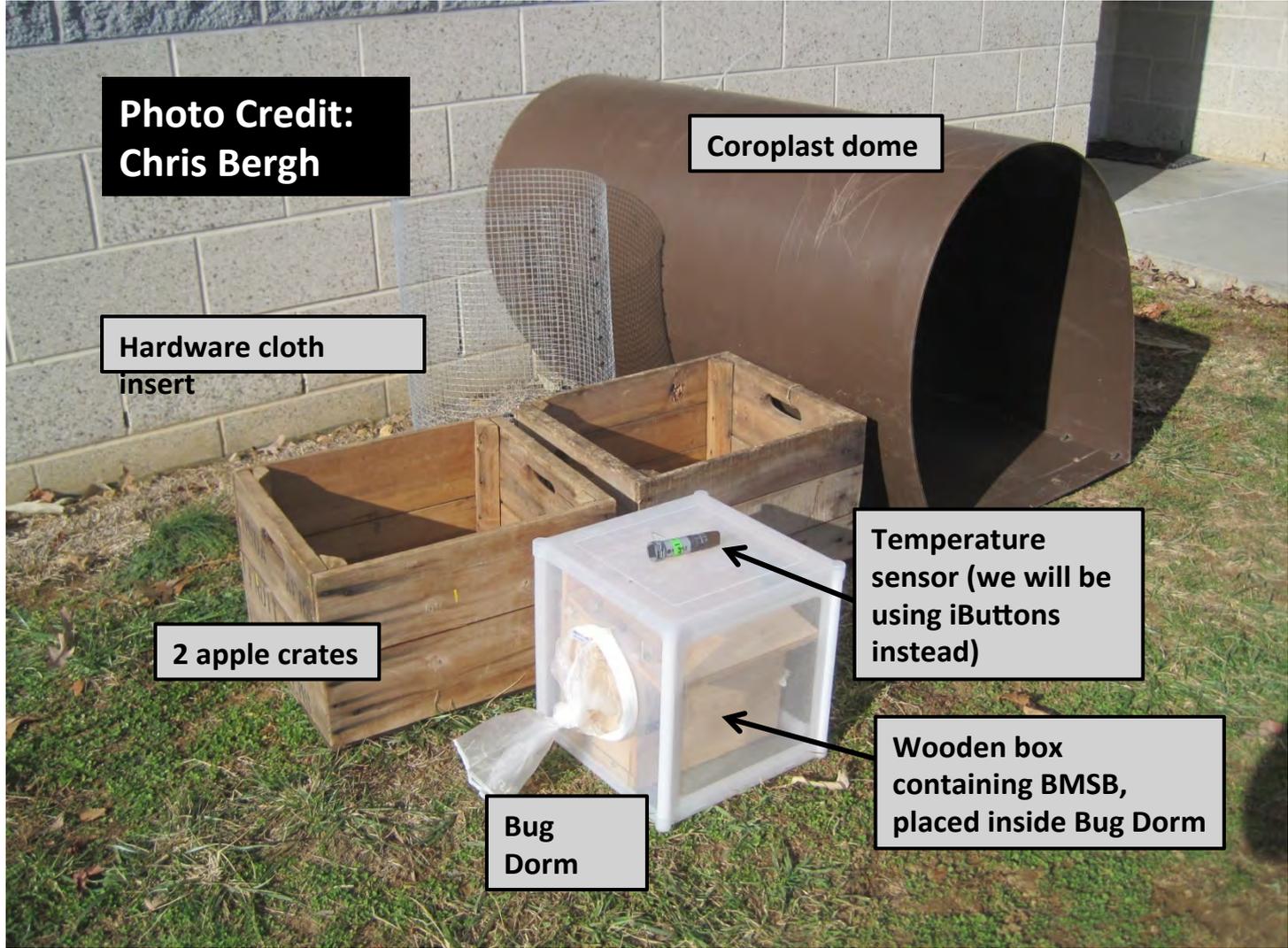
**Hardware cloth  
insert**

**2 apple crates**

**Temperature  
sensor (we will be  
using iButtons  
instead)**

**Wooden box  
containing BMSB,  
placed inside Bug Dorm**

**Bug  
Dorm**



# Overwintering stink bugs







# Results

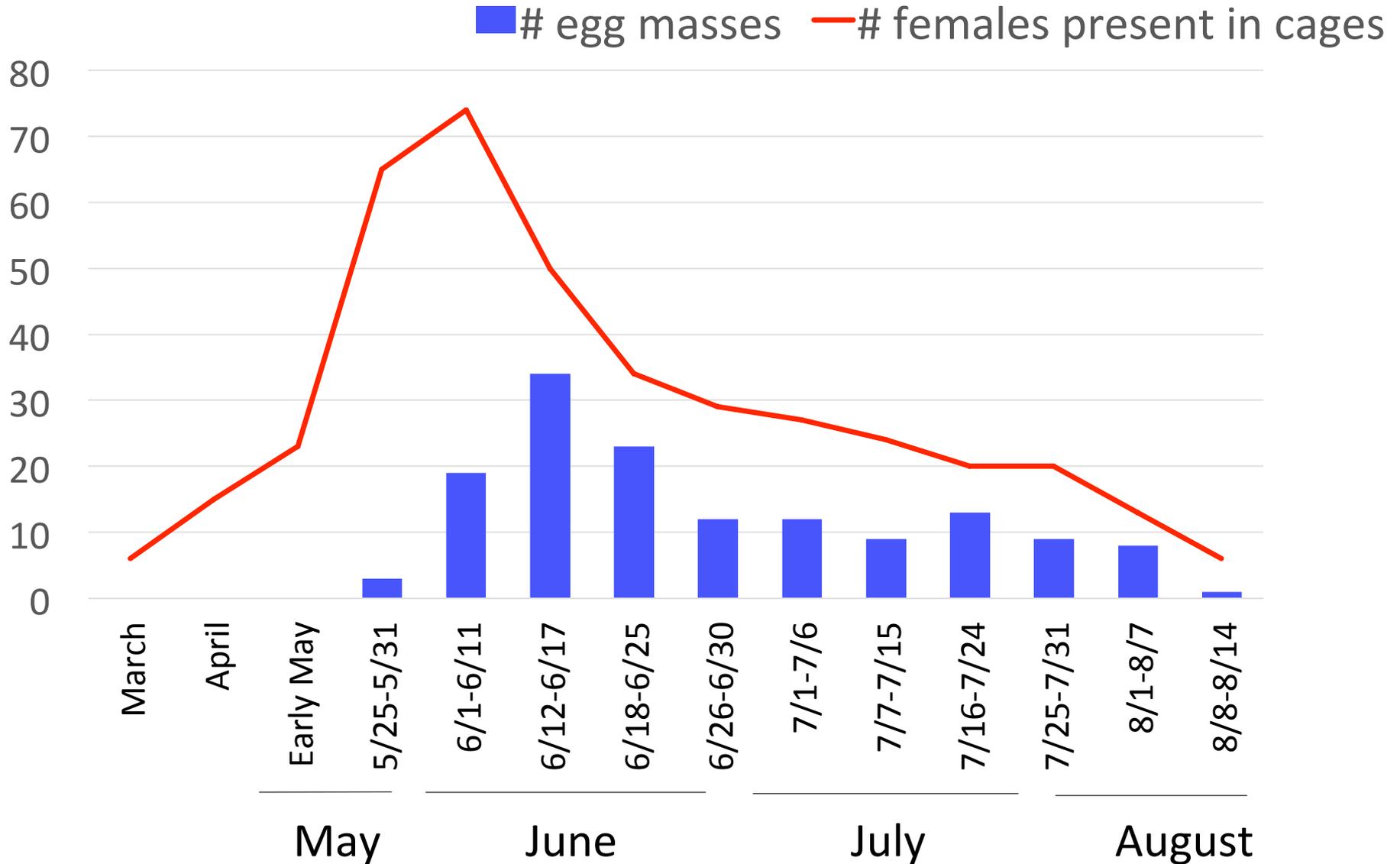
## 2016

- 143 total egg masses, 112 cages
- The most egg masses were oviposited during the week of June 12<sup>th</sup>, 2016
- The first egg mass was laid on May 27 and the last was on Aug 8, 2016

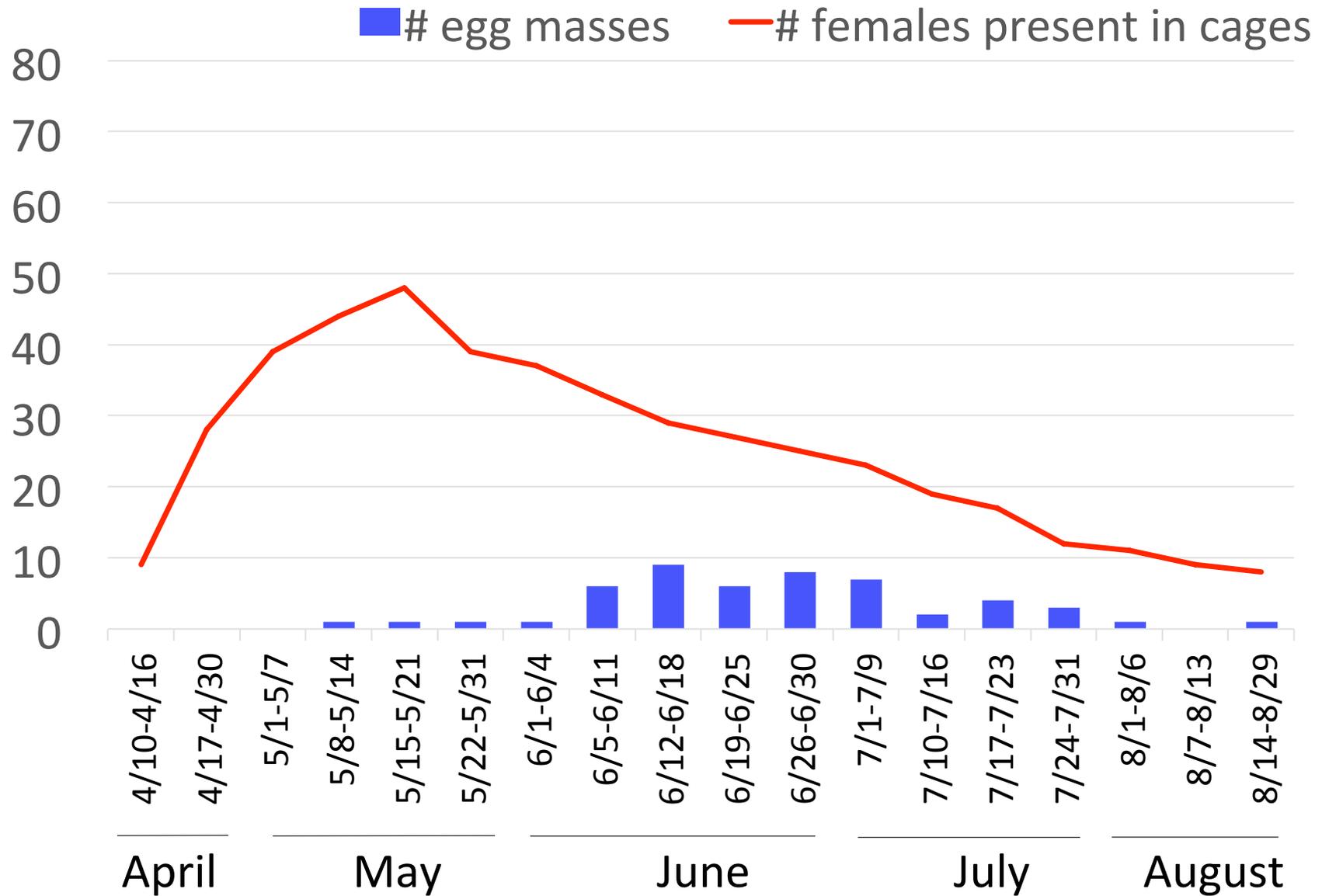
## 2017

- 37 total egg masses, 66 cages
- The most egg masses were oviposited during the week of June 12<sup>th</sup>, 2017
- The first egg masses were found on May 19 and the last was found on Aug 15, 2017

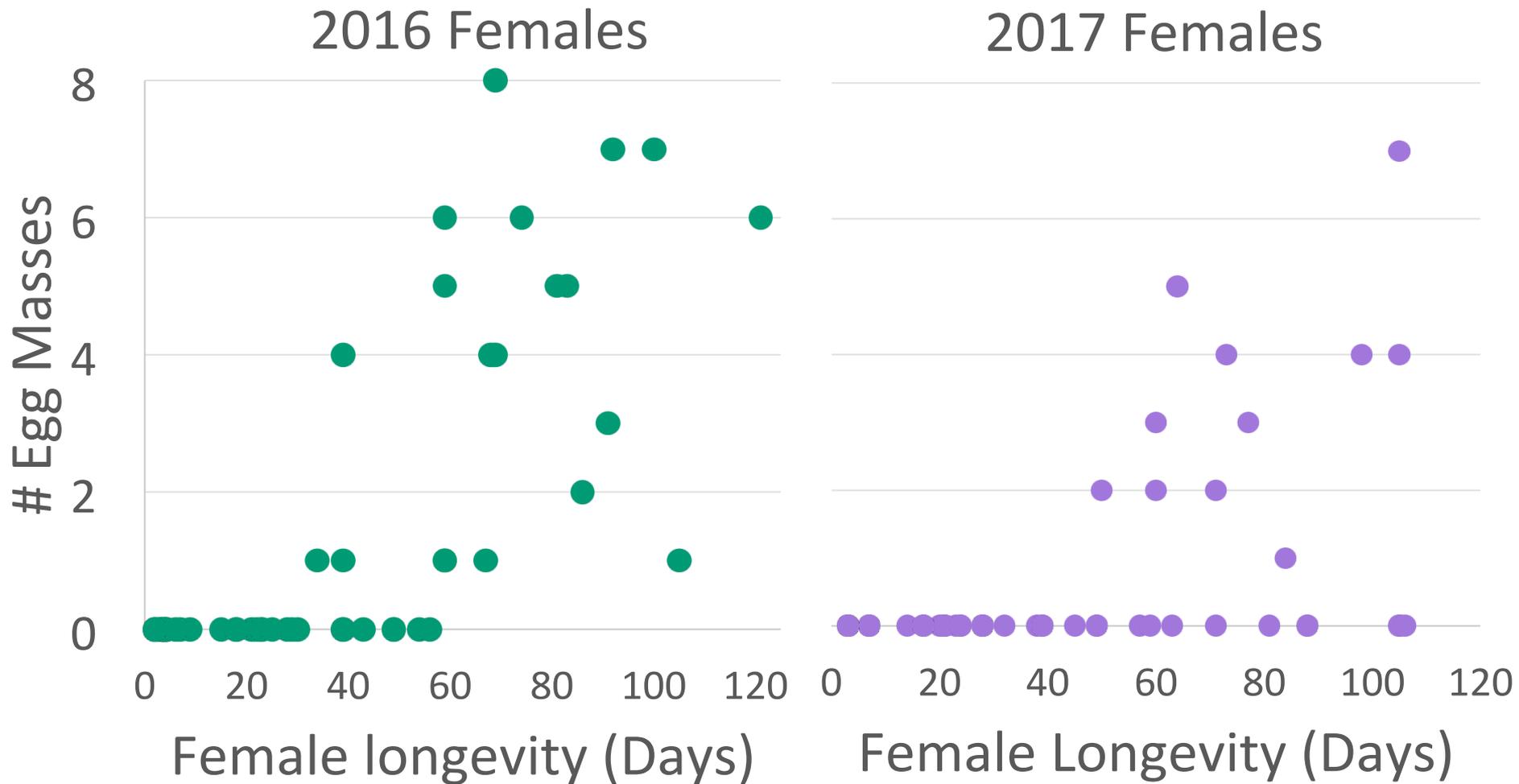
# Oviposition 2016



# 2017



# Longevity of Adults



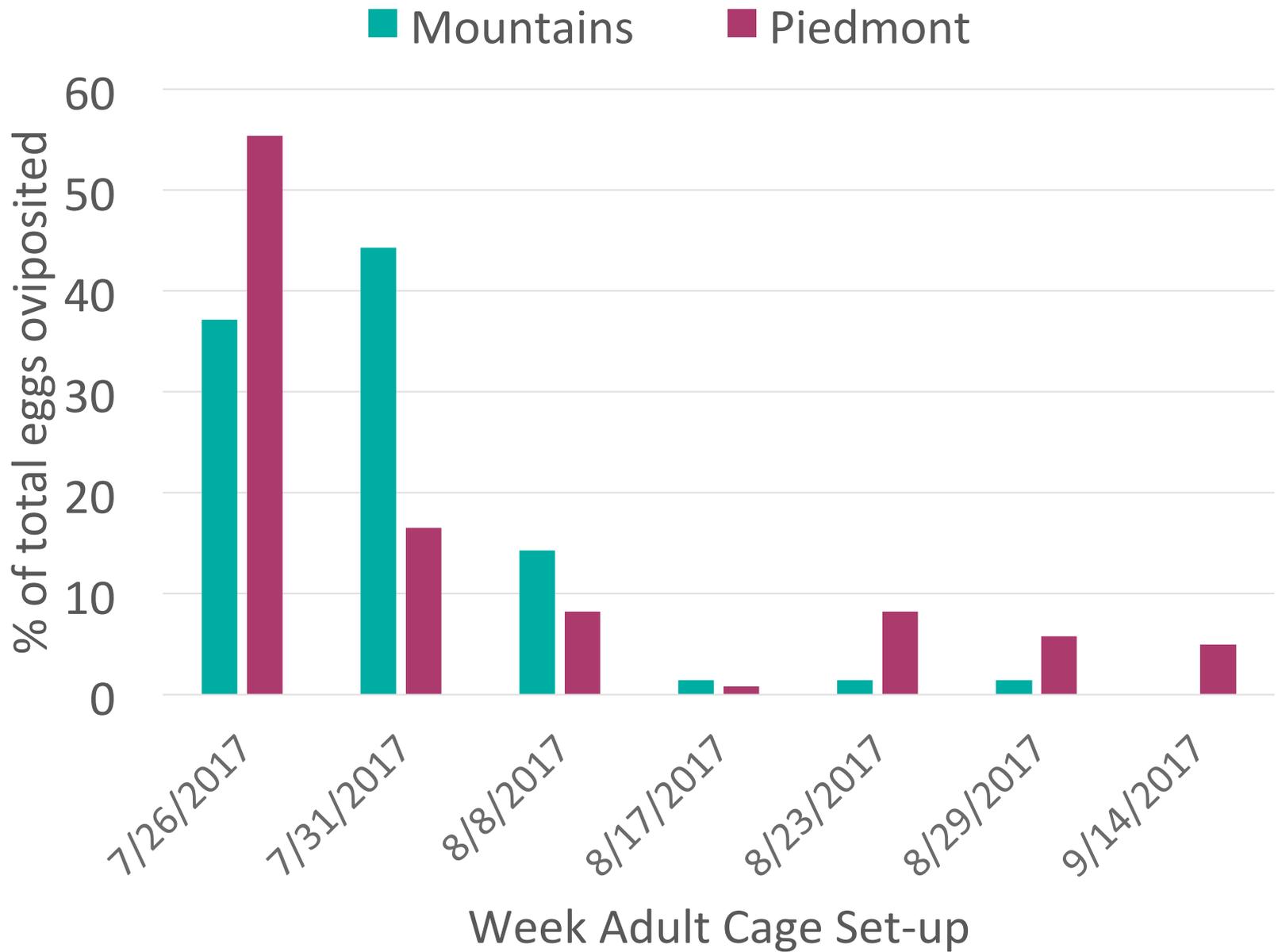
# Conclusion

- BMSB females can live up to several months post-emergence in western NC
  - Maximum 121 days, mean 39.6 days
- BMSB adults can produce egg masses from late May to early August in western NC, with the most oviposited in June
- Preliminary work
  - modeling and life table analysis in the future



# Late Season Collection

- **Mountains** of Western North Carolina vs North Carolina **Piedmont** collected 7/25-9/15/2017
- Mountains: 203 adult cages, 70 egg masses
- Piedmont: 153 adult cages, 121 egg masses



Questions?

