A Clockwork Brown

The Diel Activity of *Halyomorpha halys* in Peaches

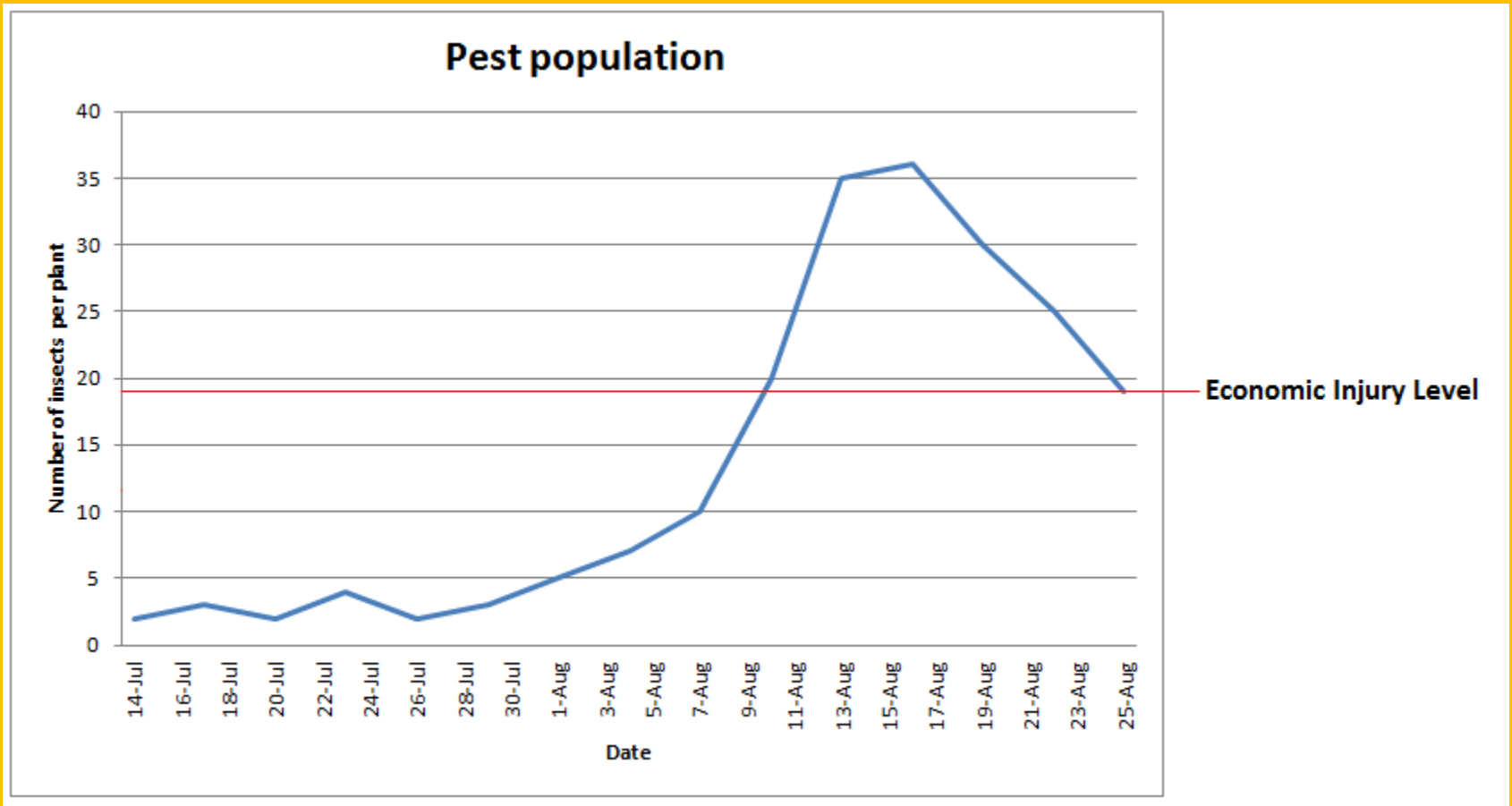
John Cambridge

Background

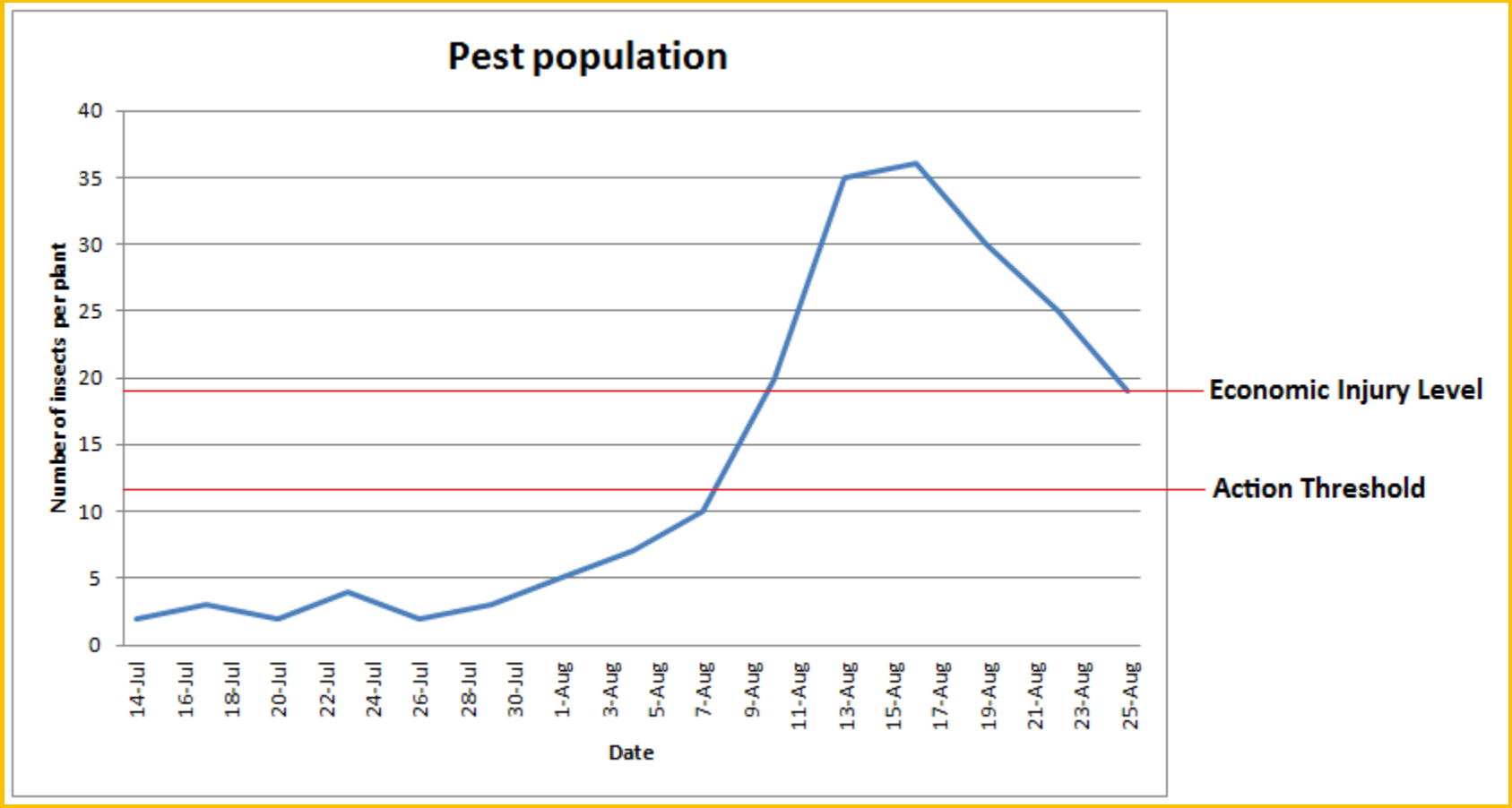
Integrated Pest Management

- IPM scouts use population monitoring to determine if treatment is necessary at that time in a particular field/orchard

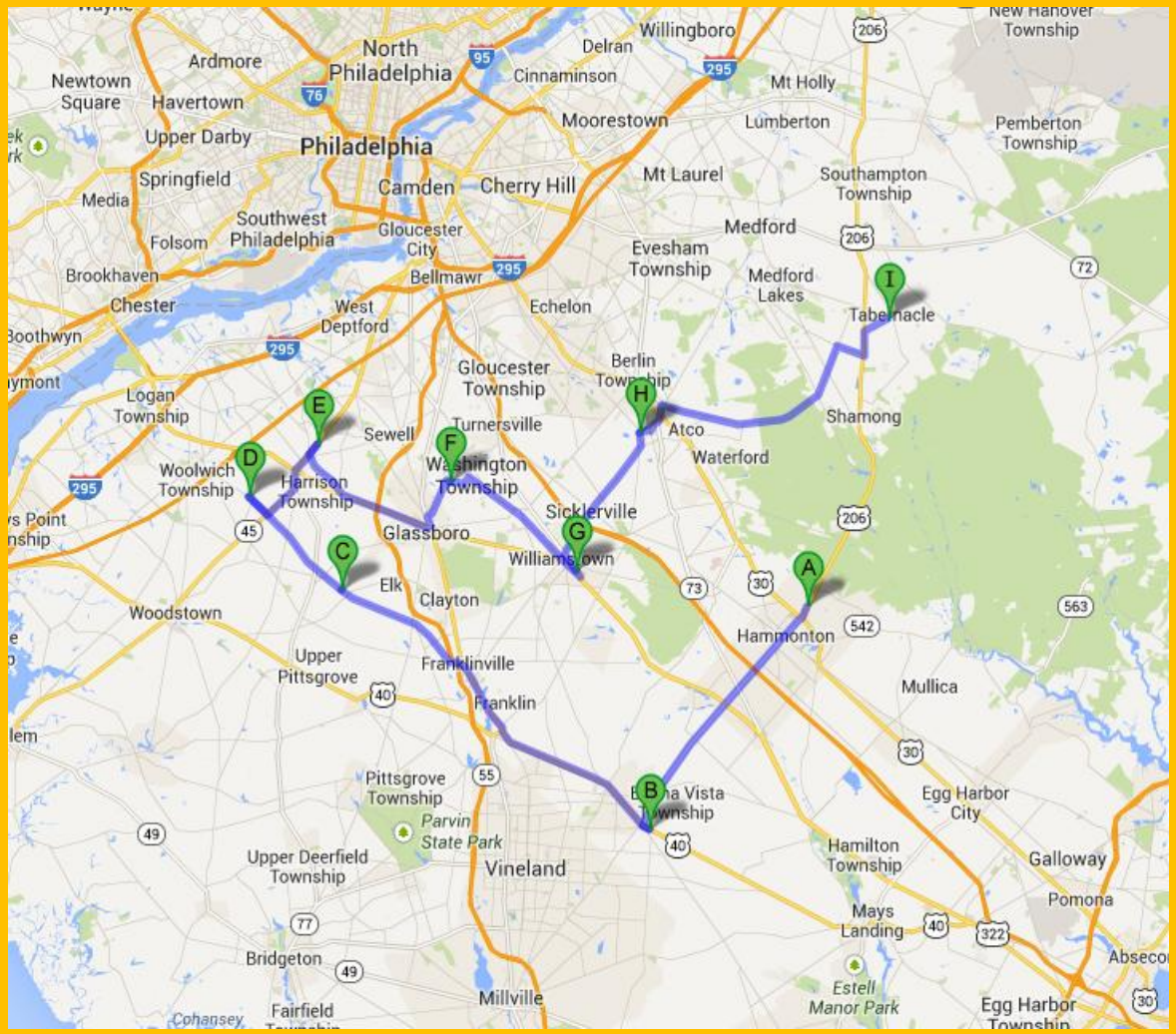
Economic Injury Level (EIL)



Action Threshold



IPM Scouts Route



Purpose

- This study was designed to test weather or not significant differences in observed population levels could be a result of the time of data collection.
- Populations of Brown Marmorated Stink Bug in New Jersey Peaches were chosen as the model system for this study.

Why BMSB?

- Very destructive pest in a wide variety of crops
- Currently, many of the chemical control options are broad-spectrum.
- EIL and action thresholds are still be created.

132 trees were selected at two sites

RAREC

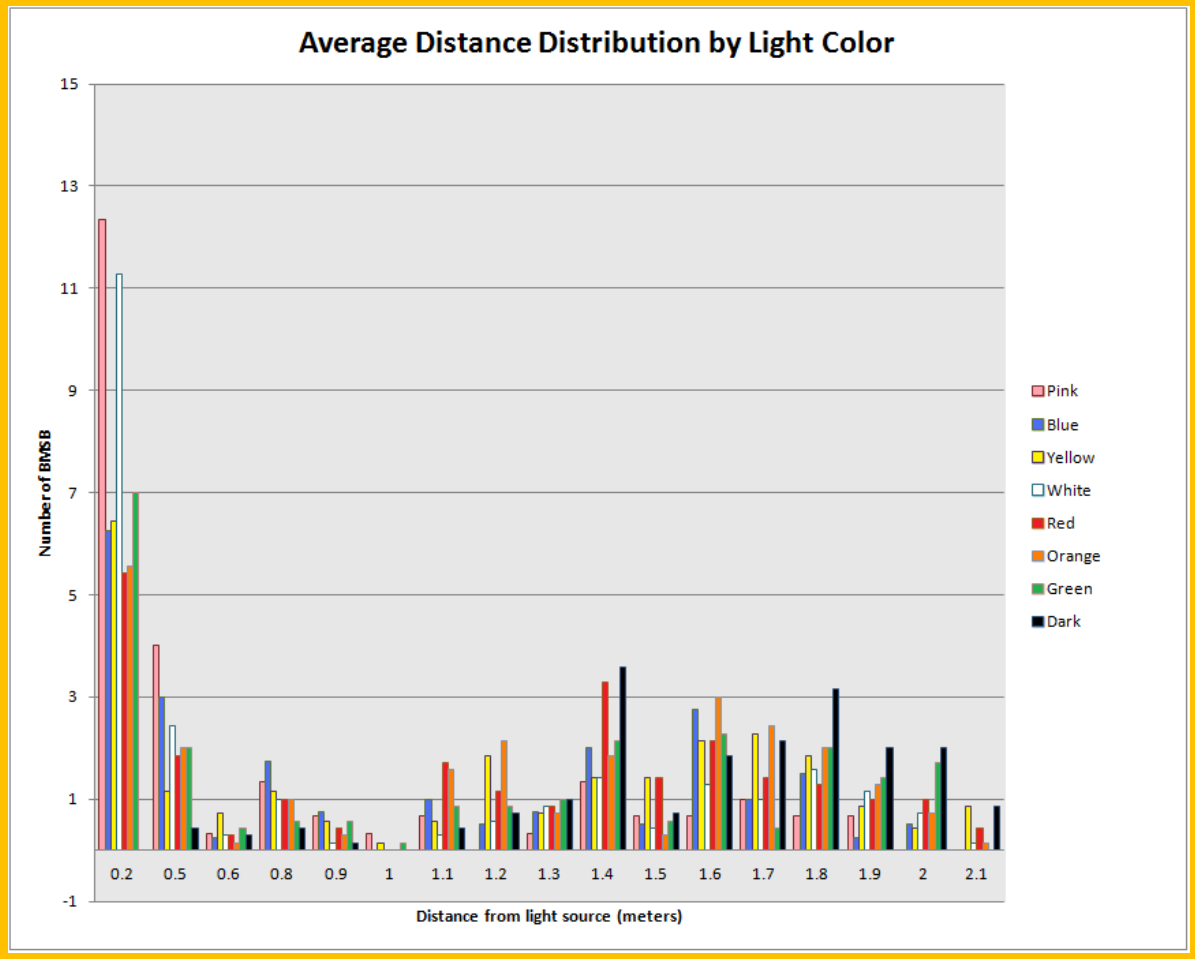
Cream Ridge

The sampling method was 2 minute visual observations on each tree

Color study

Color stats

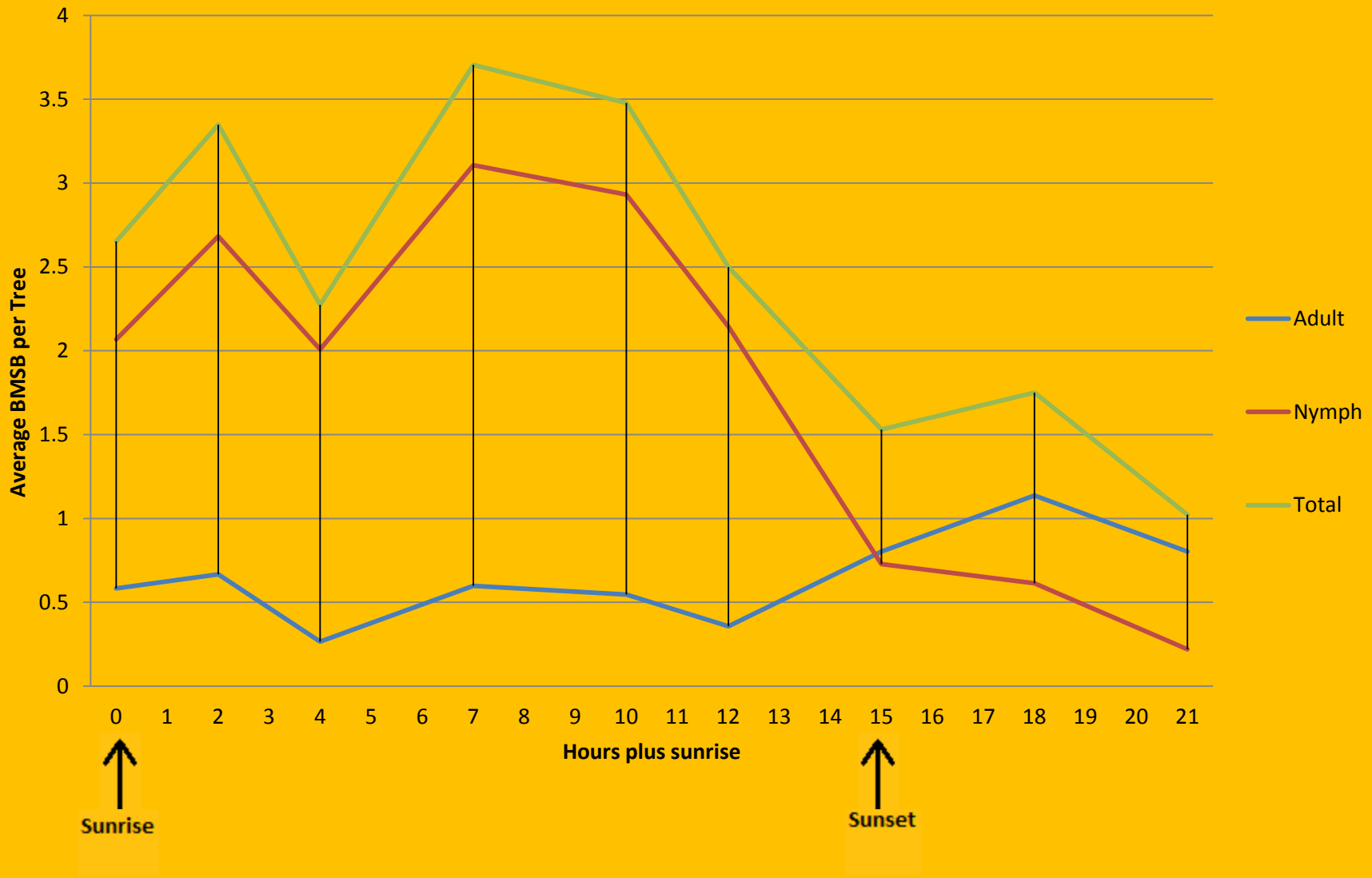
- Pink p=0.002
- Blue p=0.045
- Yellow p=0.168
- White p=0.003
- Red p=0.176
- Orange p=0.001
- Green p=0.067



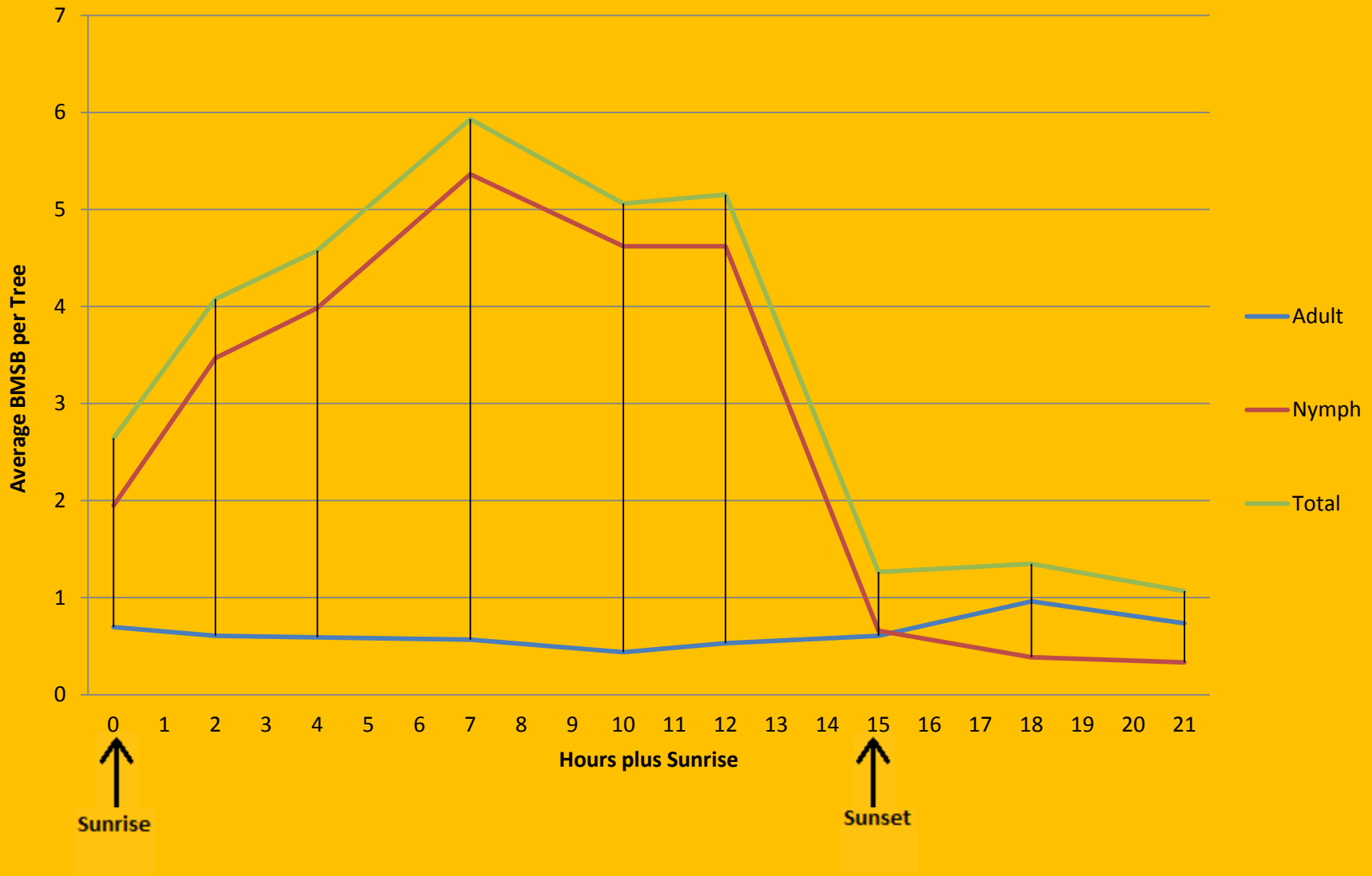
Red light is an inadequate source of illumination at night

White light works great

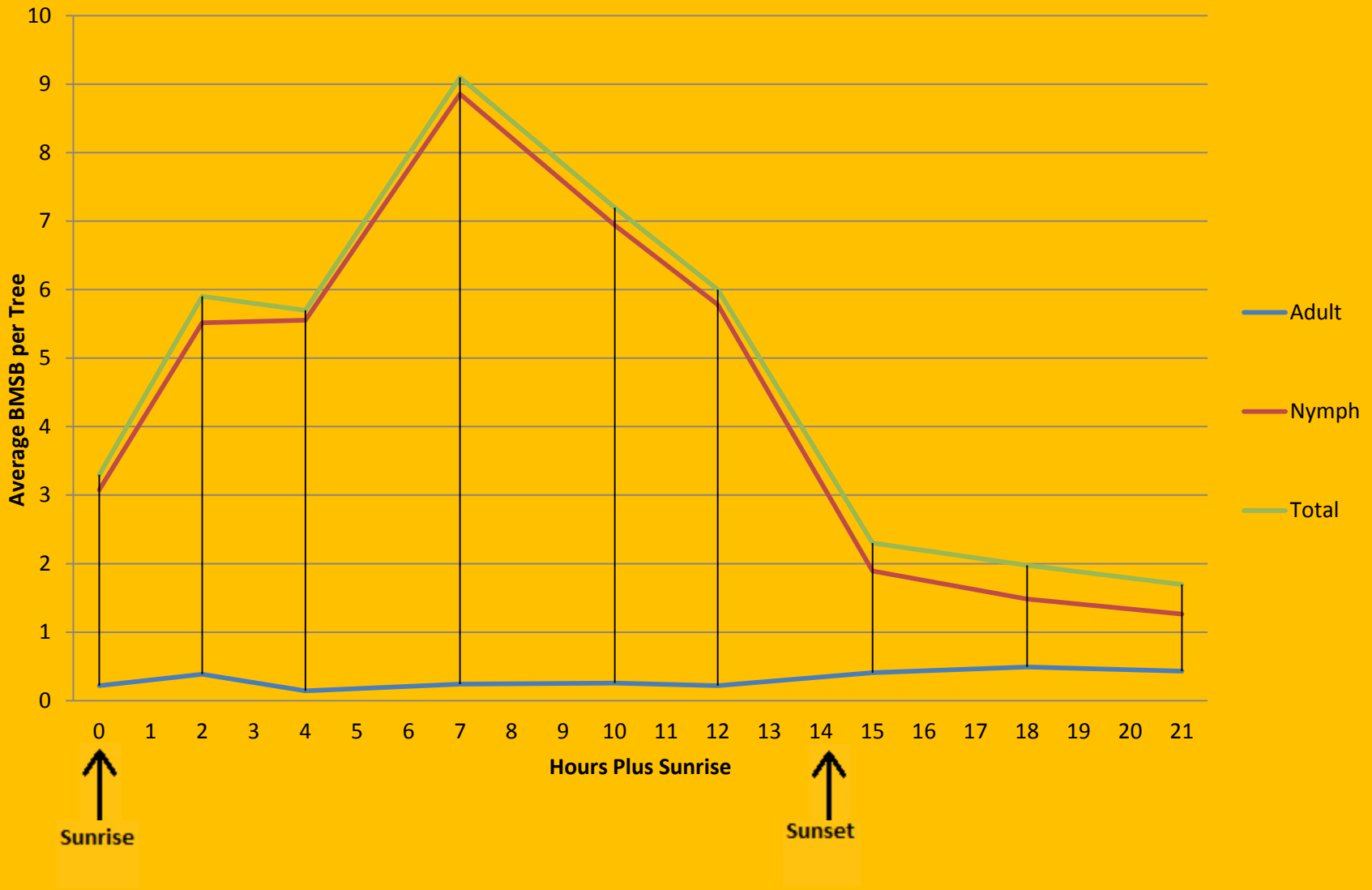
July 11st-July 12nd 2013 RAREC



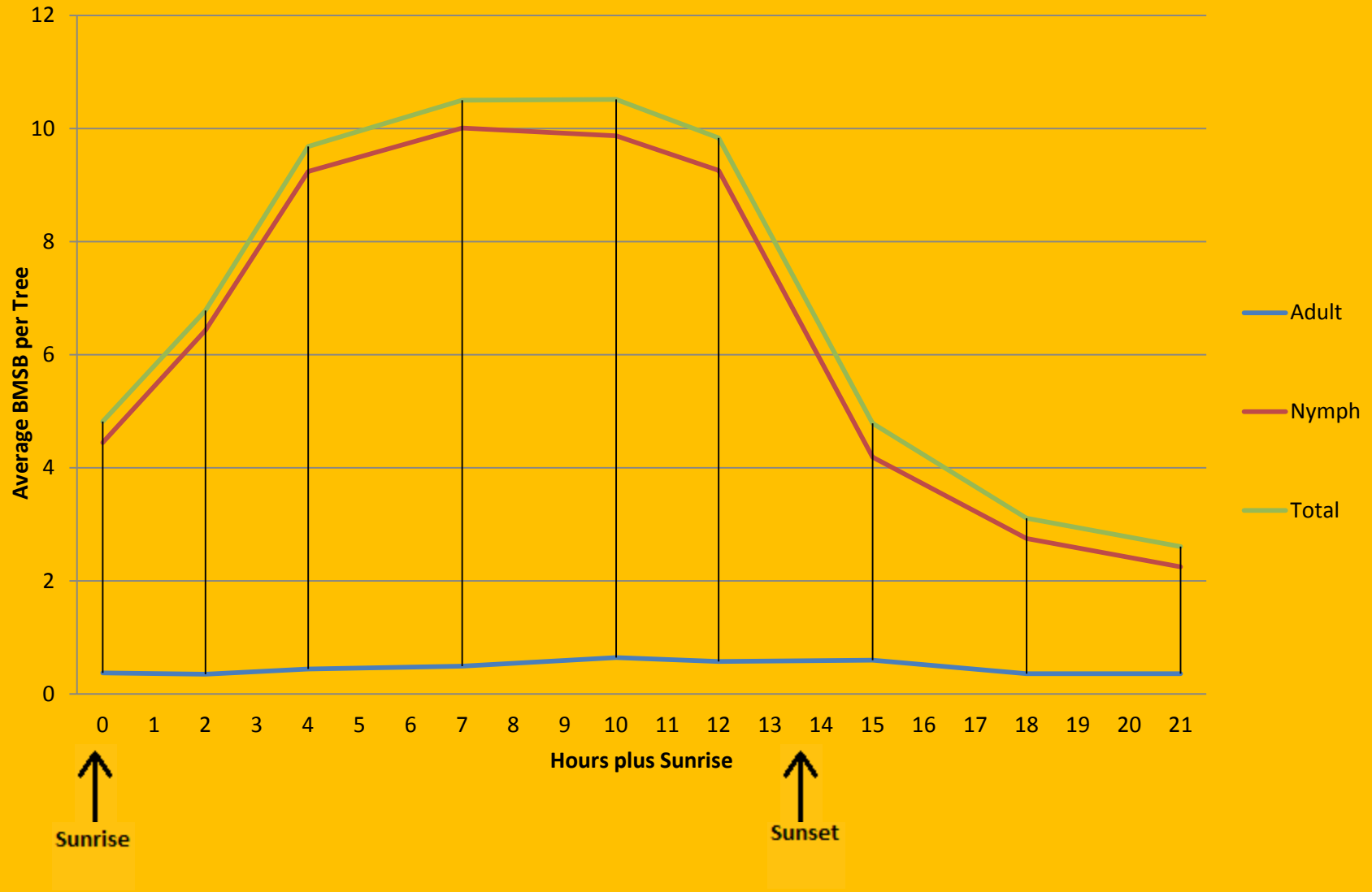
July 21st-July 22nd 2013 RAREC



August 5th-August 6th 2013 RAREC



August 19th-August 20th 2013 RAREC



Stats: Day versus Night

August 11th–12th 2013 RAREC

- Total p= <0.001
- Nymphs p= <0.001
- Adults p= <0.001

July 21st-22nd 2013 RAREC

- Total p= <0.001
- Nymphs p= <0.001
- Adults p= 0.018

August 5th–9th 2013 RAREC

- Total p= <0.001
- Nymphs p= <0.001
- Adults p= <0.001

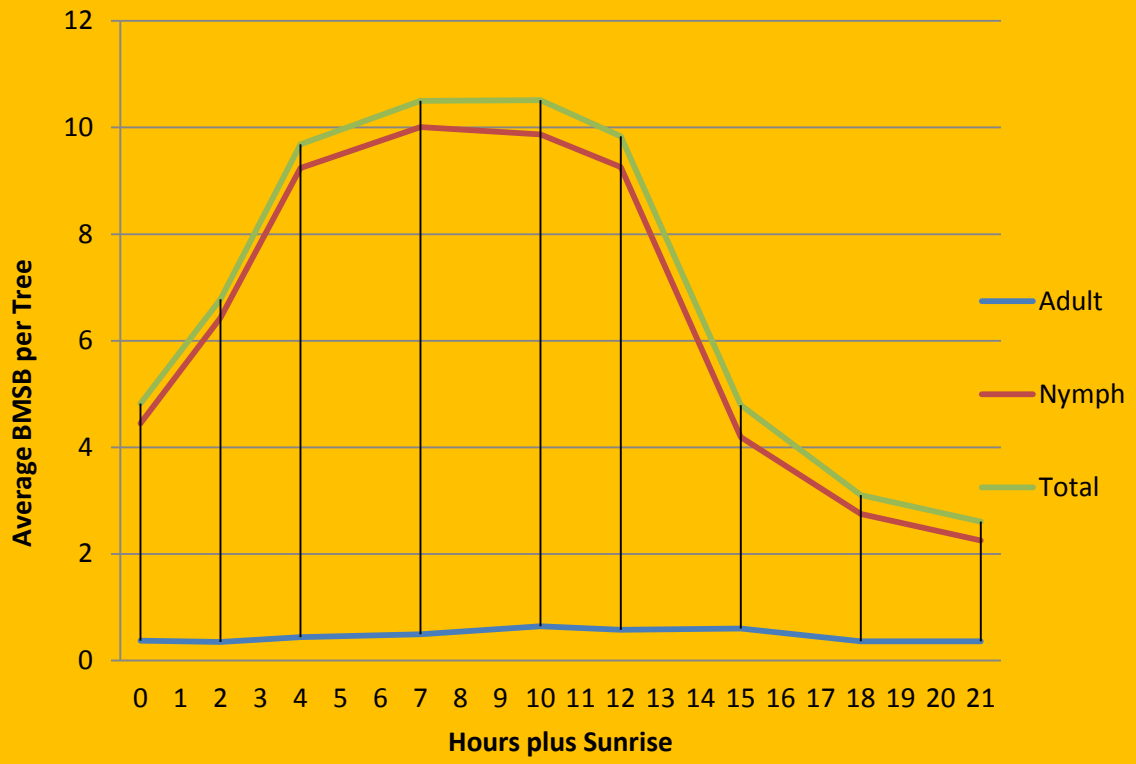
August 19th–20th 2013 RAREC

- Total p= <0.001
- Nymphs p= <0.001
- Adults p= 0.257

Stats: ~8am versus ~1pm

August 19th–20th 2013 RAREC

- Total p= 0.001
- Nymphs p= 0.001
- Adults p= 0.112



Importance

- Standardization of IPM scouting-setting precedence for scouting other insects
- Optimizing pesticide application

The Near Future

Experiments

- Redo light attraction trials with nymphs
- Continue visual sampling variability trials
- Opportunistically predacious?

References

- Nielsen, A.L., and Hamilton, G.C. 2009. Life history of the invasive species Halyomorpha halys (Hemiptera:Pentatomidae) in Northeastern United States. *Ecology and Population Biology* 102(4): 608-616.
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Acknowledgments

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Questions?