

**Invasive kudzu bug (*Megacopta cribraria*)
in Maryland: the spread and status of a
recent invader**

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Background

Persistence in Maryland

Cold Tolerance

Further Work/ Significance

Background

- Hemiptera
Plataspidae
- Eggs laid on leaves
and stems
- Nymphs develop
through five instars
- Stink similar to
brown marmorated
stink bugs



Background

Legumes

Kudzu

Soybean

Lima Bean

Pole/String/Green
Bean

Lablab Bean

Pigeon Pea

American Wisteria

Chinese Wisteria

Japanese Wisteria

American Yellowwood

Lespedeza

Peanut

Crimson Clover

Clover

Alfalfa

Sicklepod

Black Locust

Non-Legumes

Alligatorweed

Black Willow

Banana

Cocklebur

Cotton

Fig

Loquat

Muscadine Grape

Pecan

Pine Trees

Potato

Satsuma Mandarin

Tangerine

Wax Myrtle

Wheat

Wild Blackberry

Background

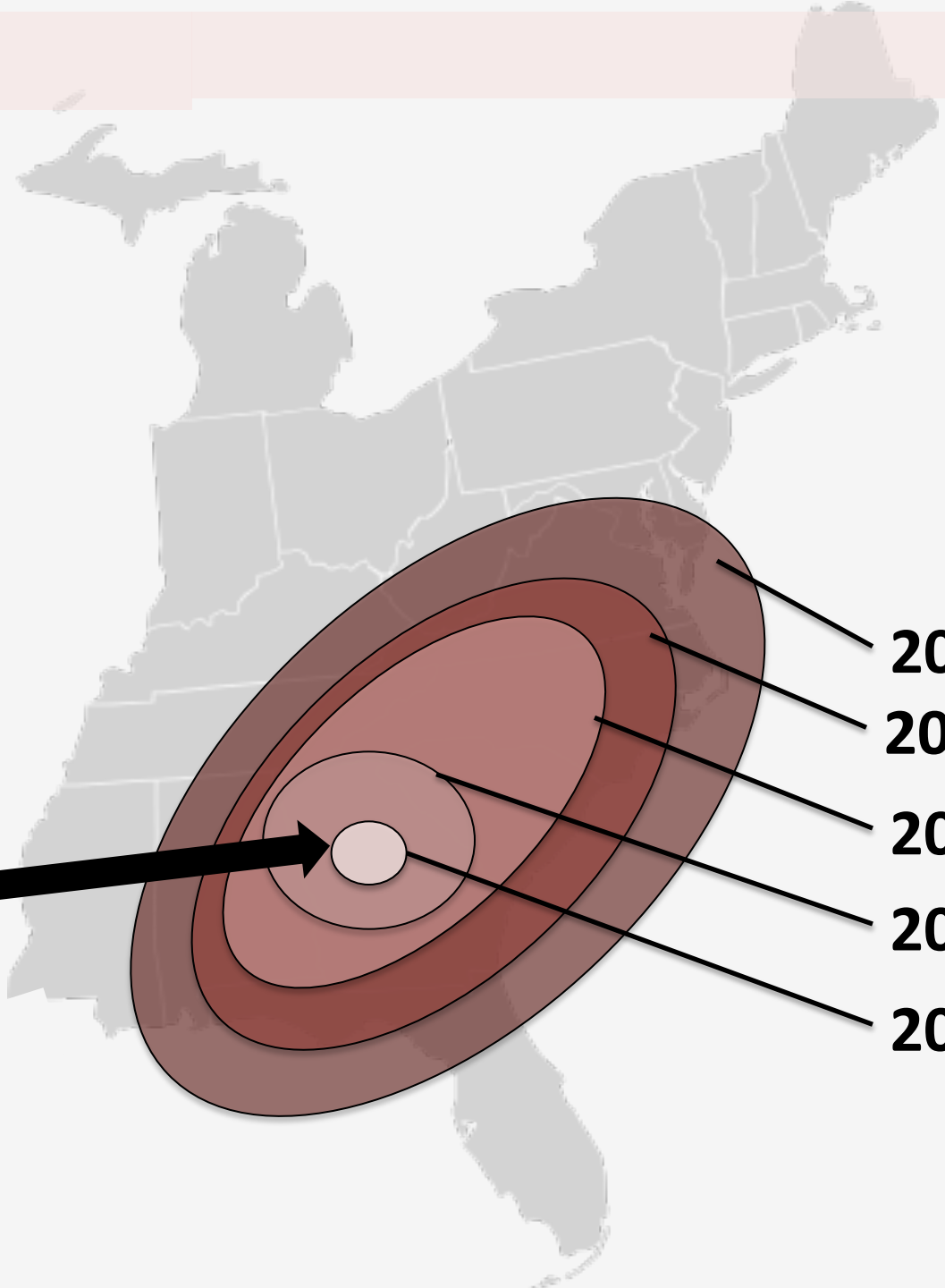
Impact on Soybeans

- Reaches high densities in summer in the Southeast
- Feeds on stems and leaves, impacting photosynthesis
- Reduced number of seeds/pod and seed weight
- Yield losses in untreated fields of up to 47% with an average loss of 18%
- Can invade directly into soybeans from overwintering



Background

Japan: Kyushu



- 2013
- 2012
- 2011
- 2010
- 2009

Objective:

Track the persistence of kudzu bugs in Maryland

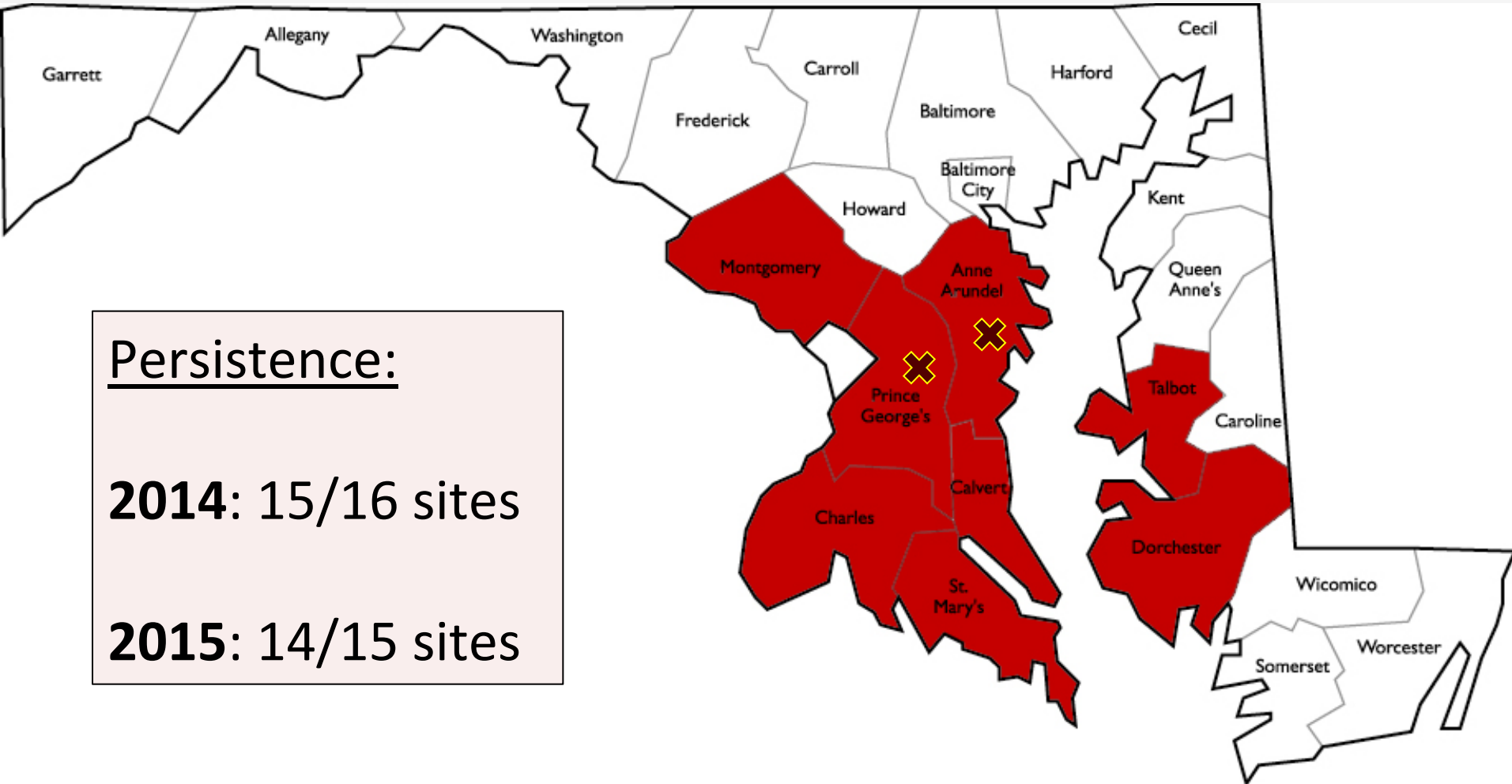
Method:

2014-2015

- Visit all positive kudzu bug sites in the fall
- Sweep net each location



Maryland Distribution: 2013-2015



Persistence:

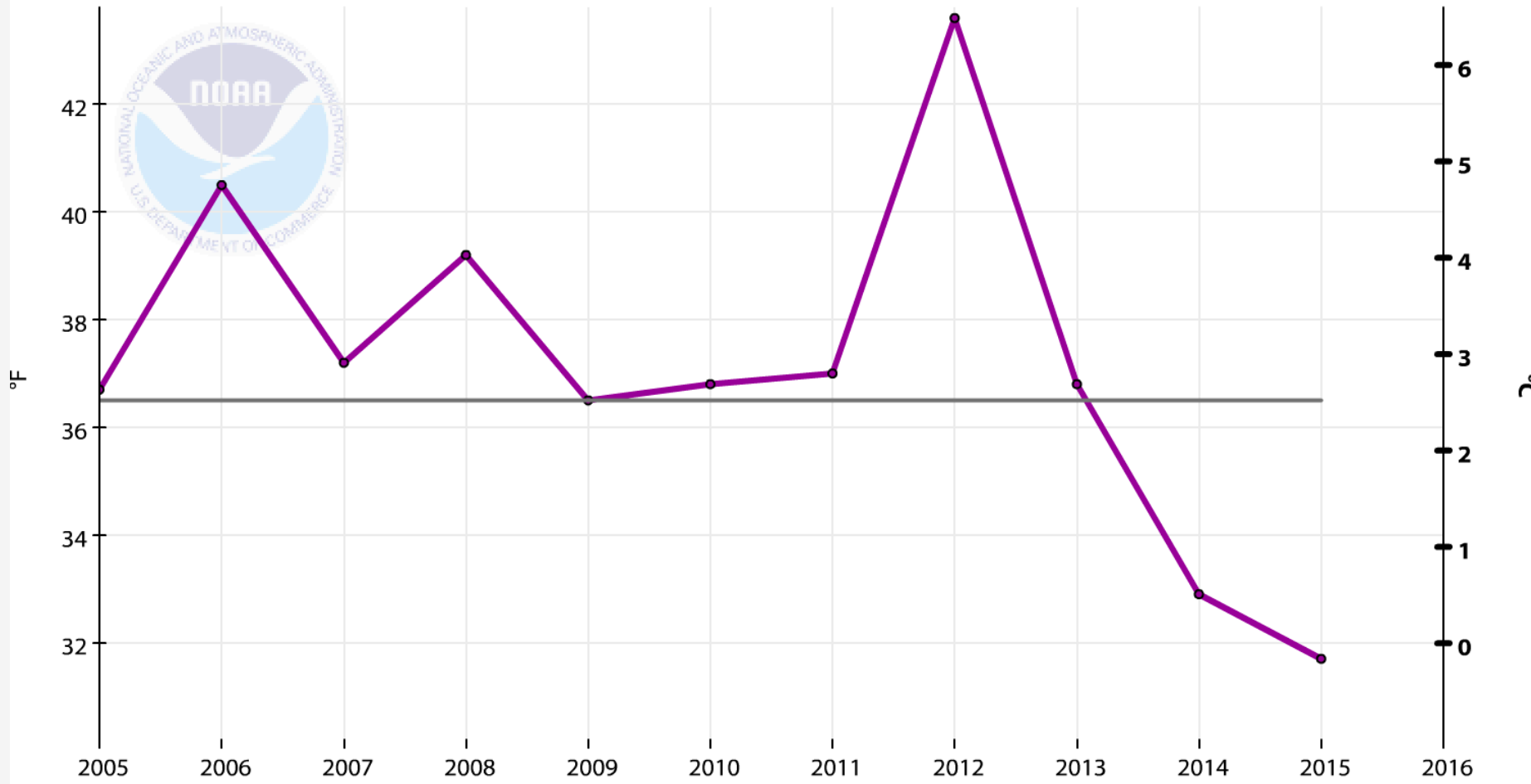
2014: 15/16 sites

2015: 14/15 sites

Cold Tolerance

Maryland, Average Temperature, January-March

1915-2015 Avg: 36.5°F Avg Temperature

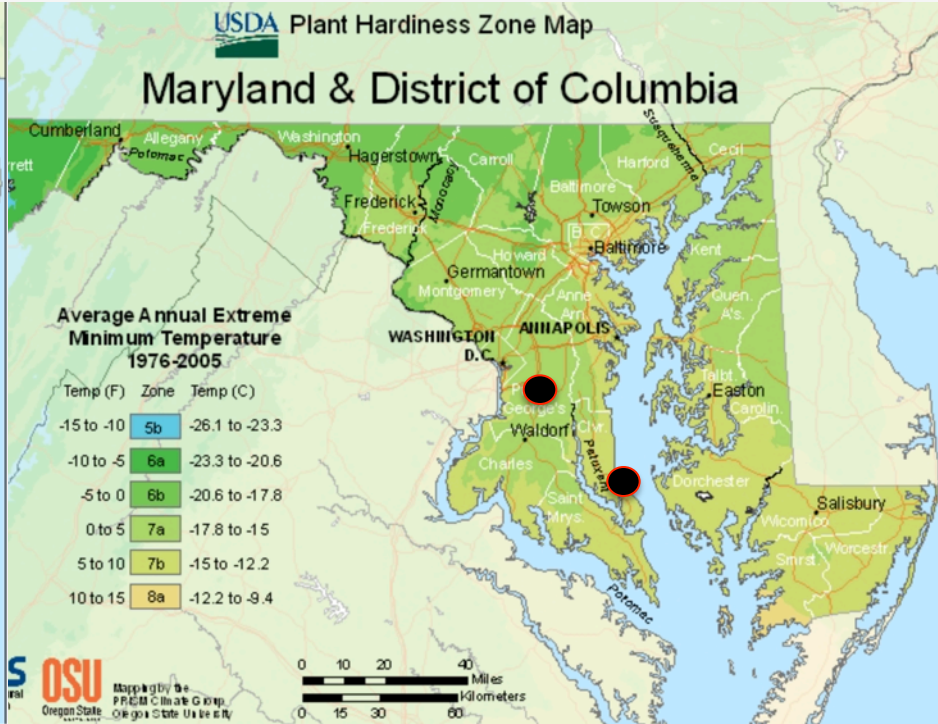
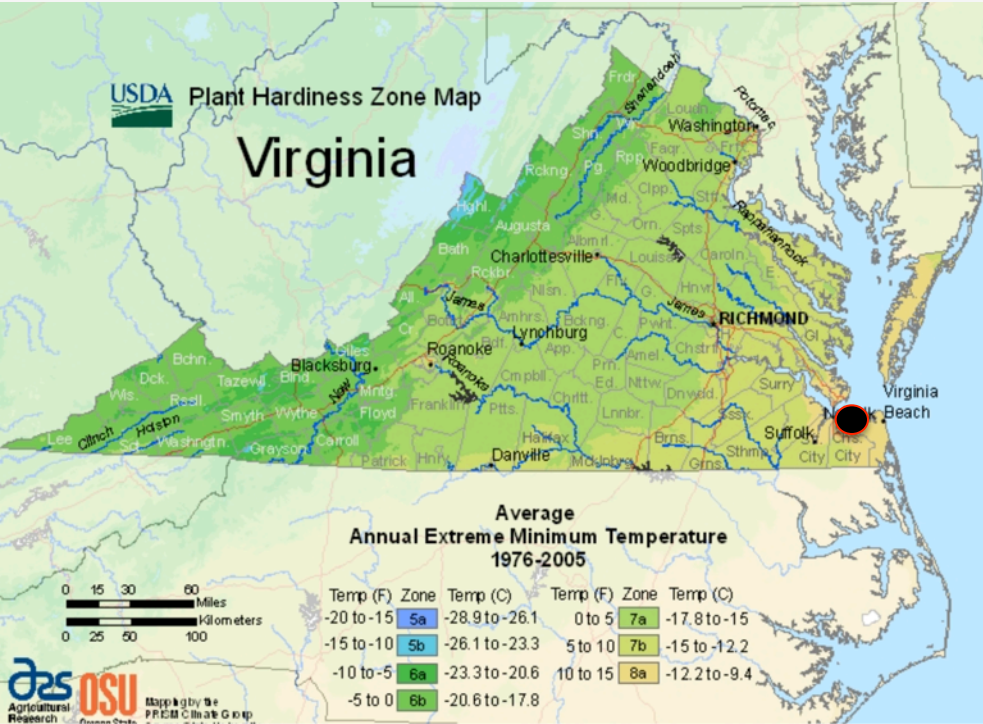


Cold Tolerance: Super Cooling Point

Methods (1)

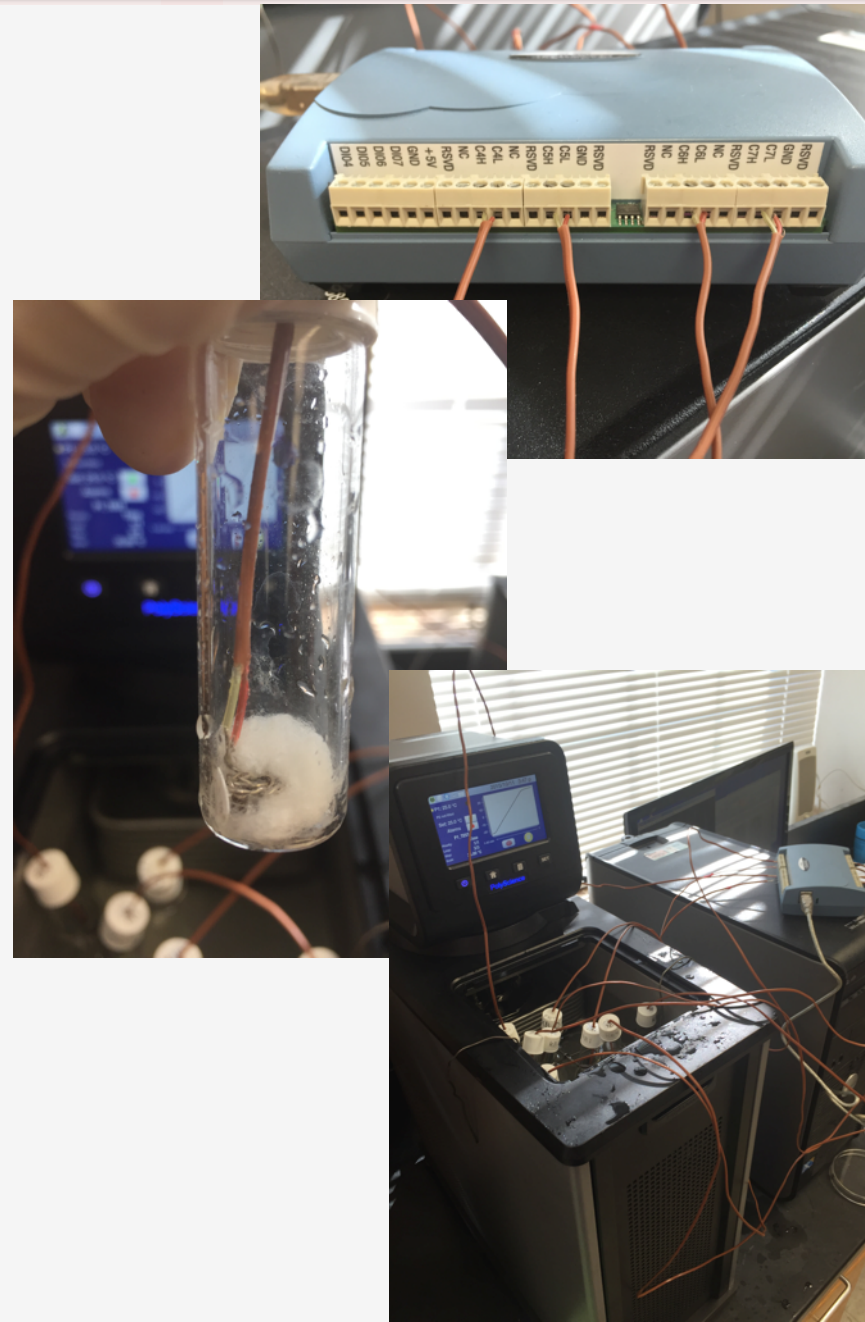
Objective:

Determine the point at which the insect freezes and any differences between climatic zones and fall months.

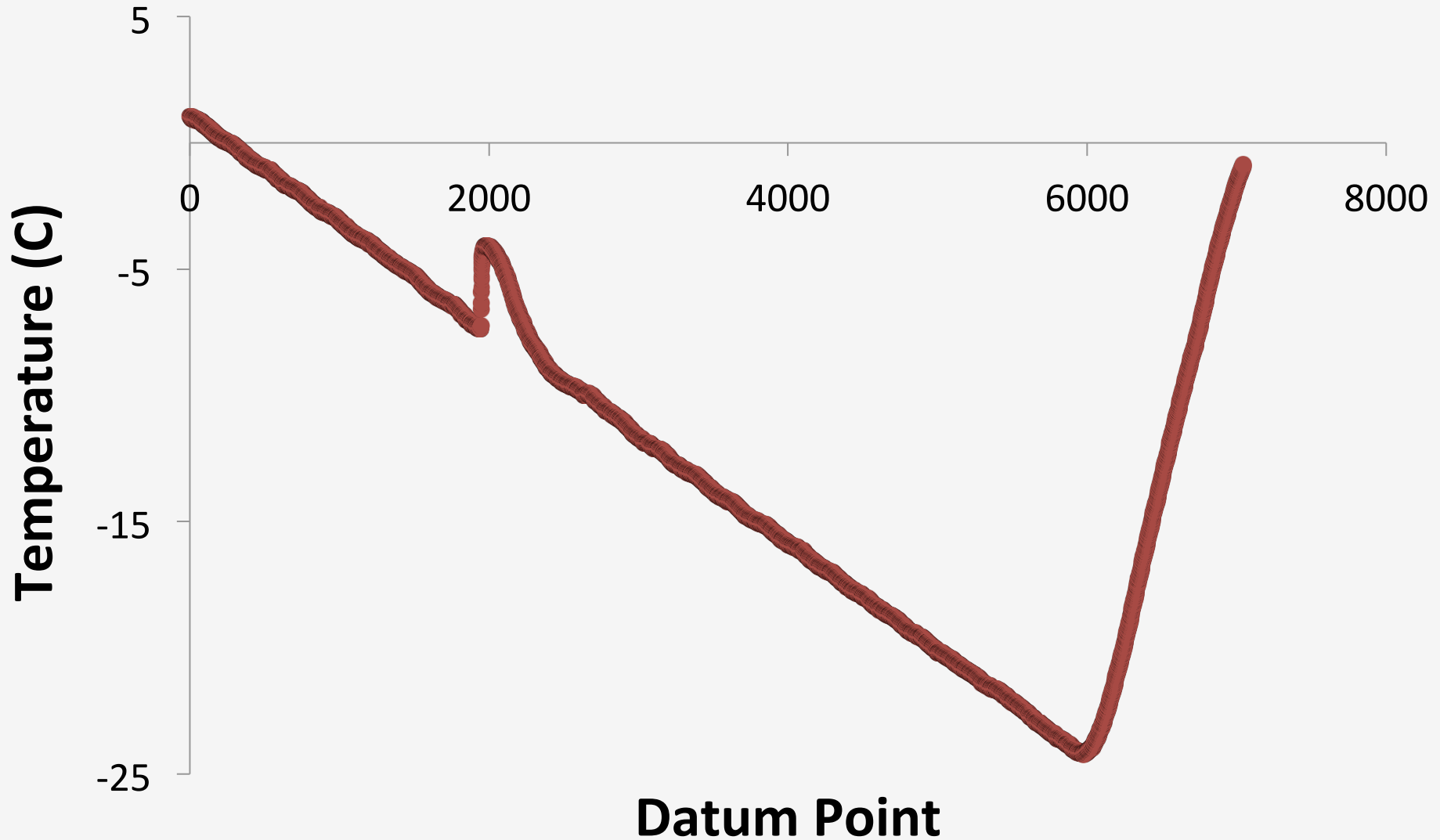


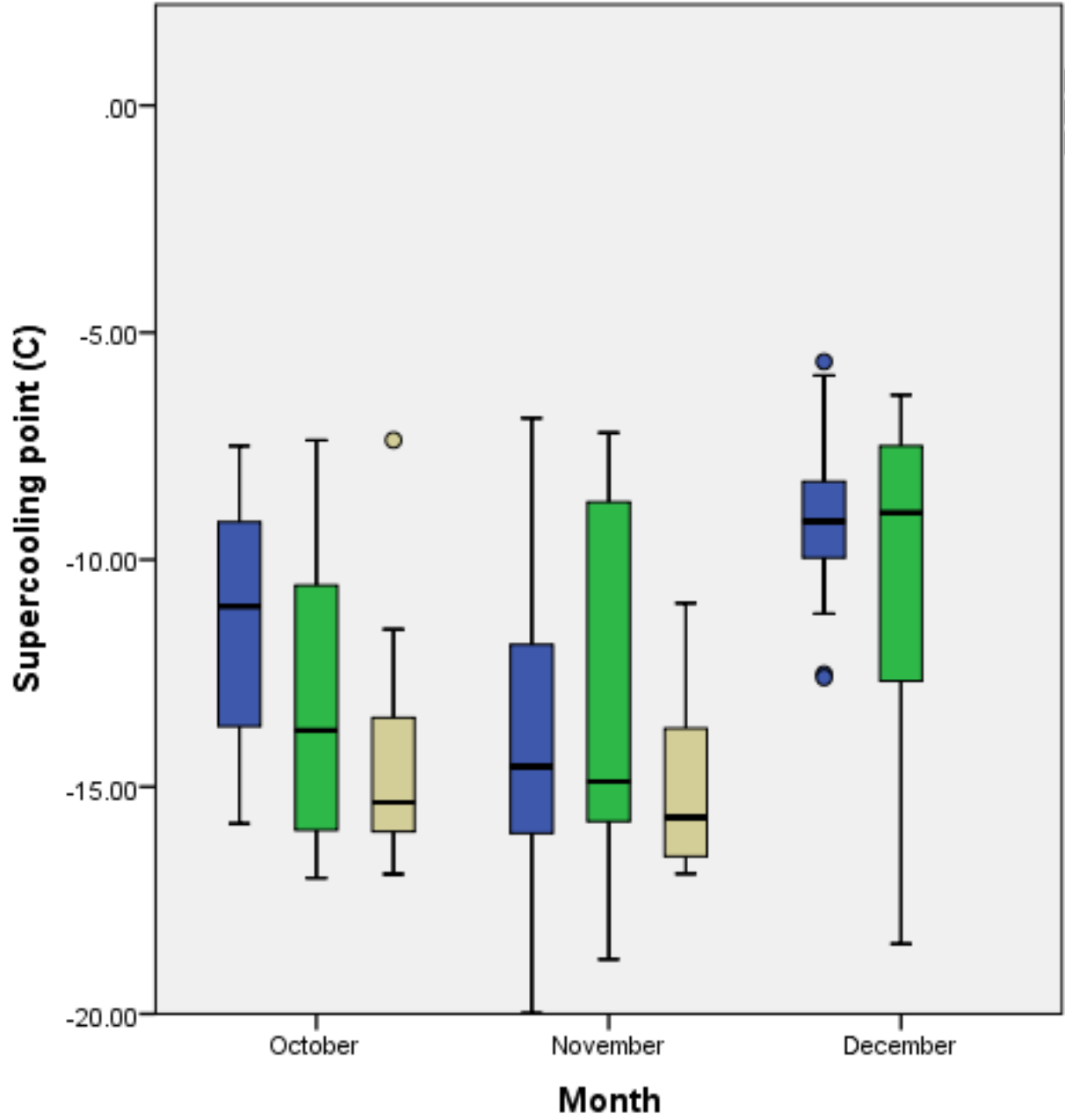
Methods:

- Collect 20 (10M, 10F) bugs per location per month
- Attach bugs to a thermocouple
- Place in cooling water bath
- Cool at a rate of $0.27^{\circ}\text{C}/\text{min}$
- Starting 25°C , ending -25°C



October: Prince George's County (Female)





Main Effects

Month $p < 0.001$

Location $p = 0.002$

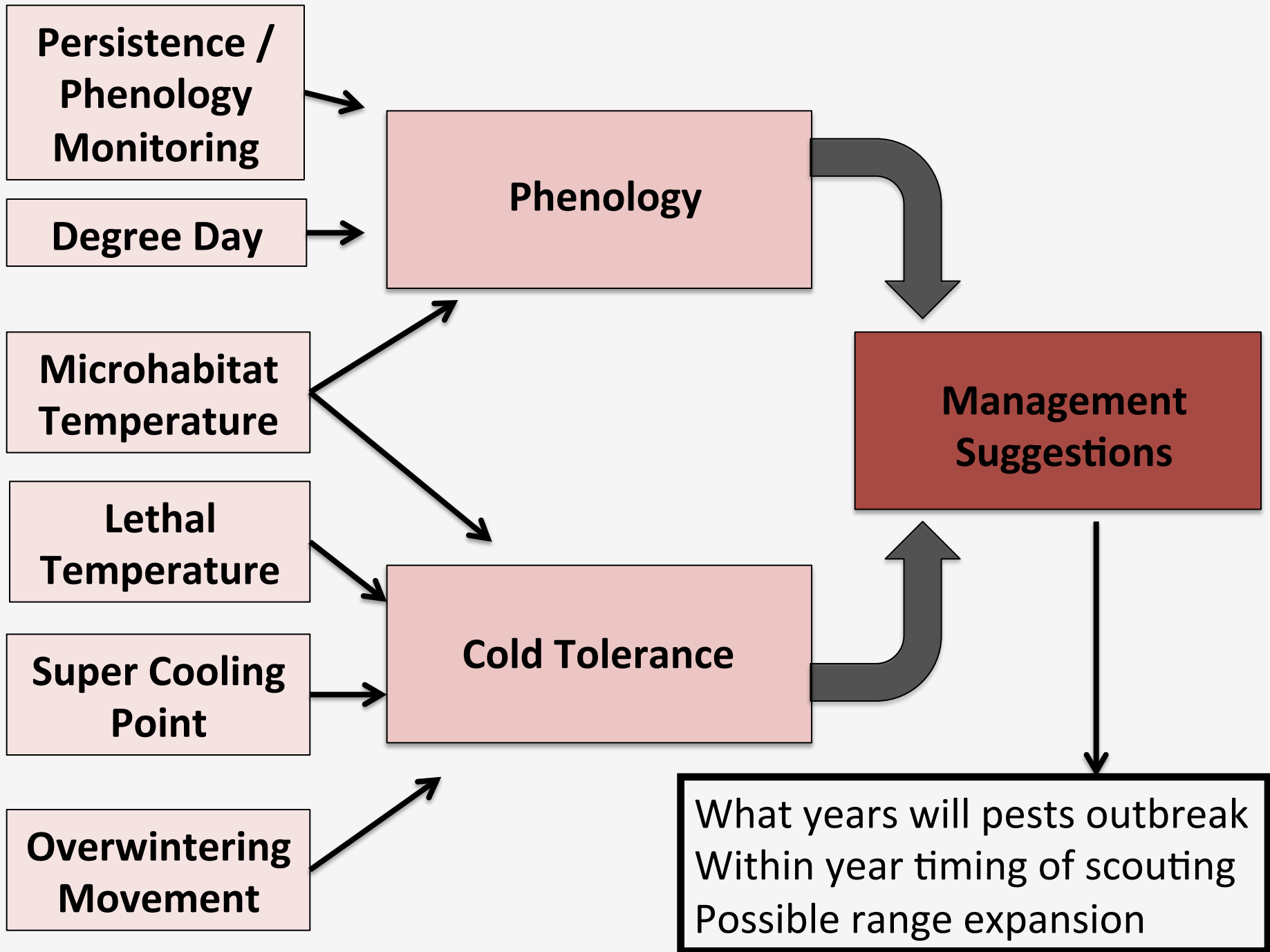
Tukey HSD

December significant

$P < 0.001$

Suffolk significant

$P < 0.001$



Thanks!



For more visit:

www.mdkudzubug.org