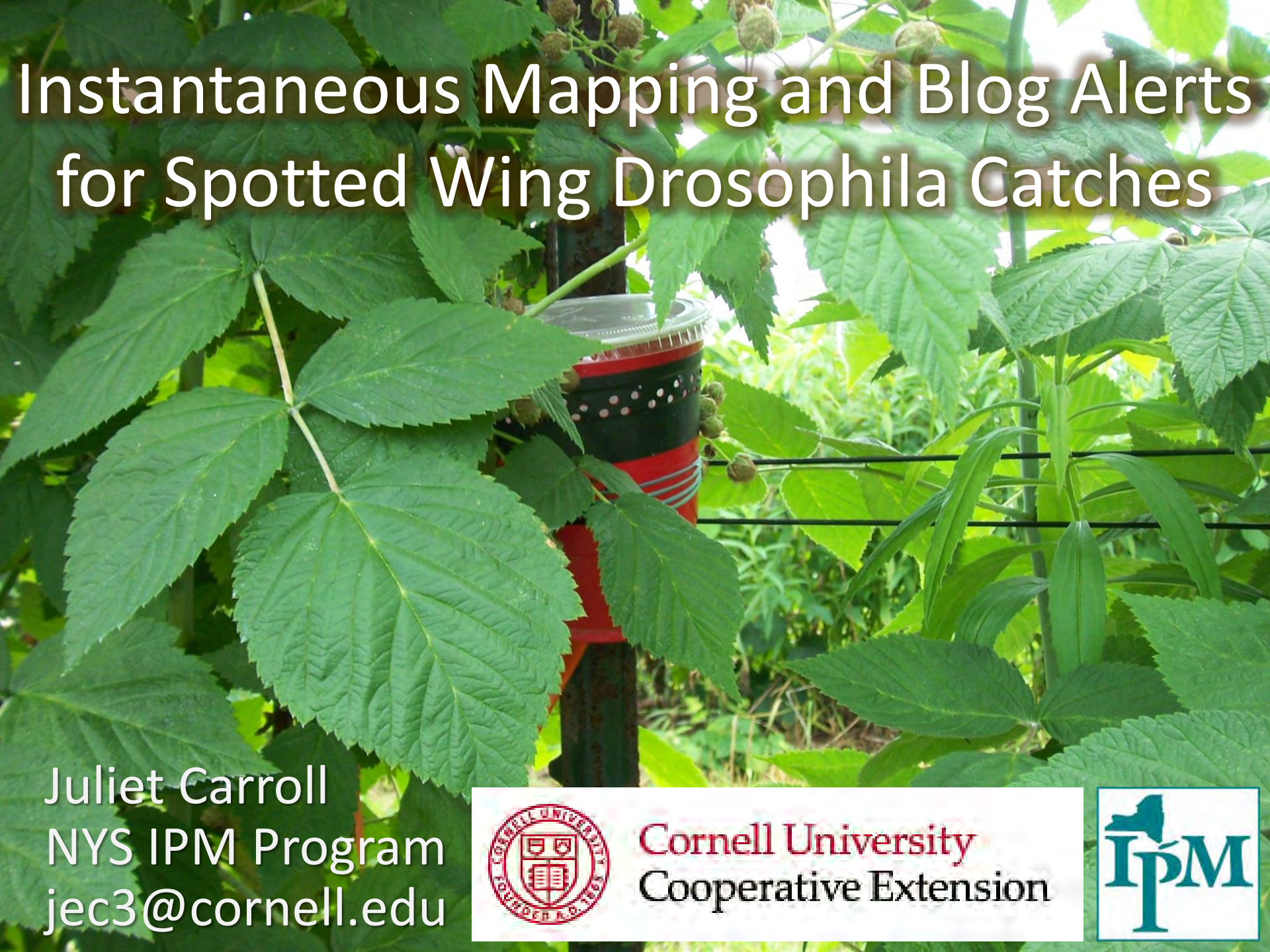
Instantaneous Mapping and Blog Alerts for Spotted Wing Drosophila Catches



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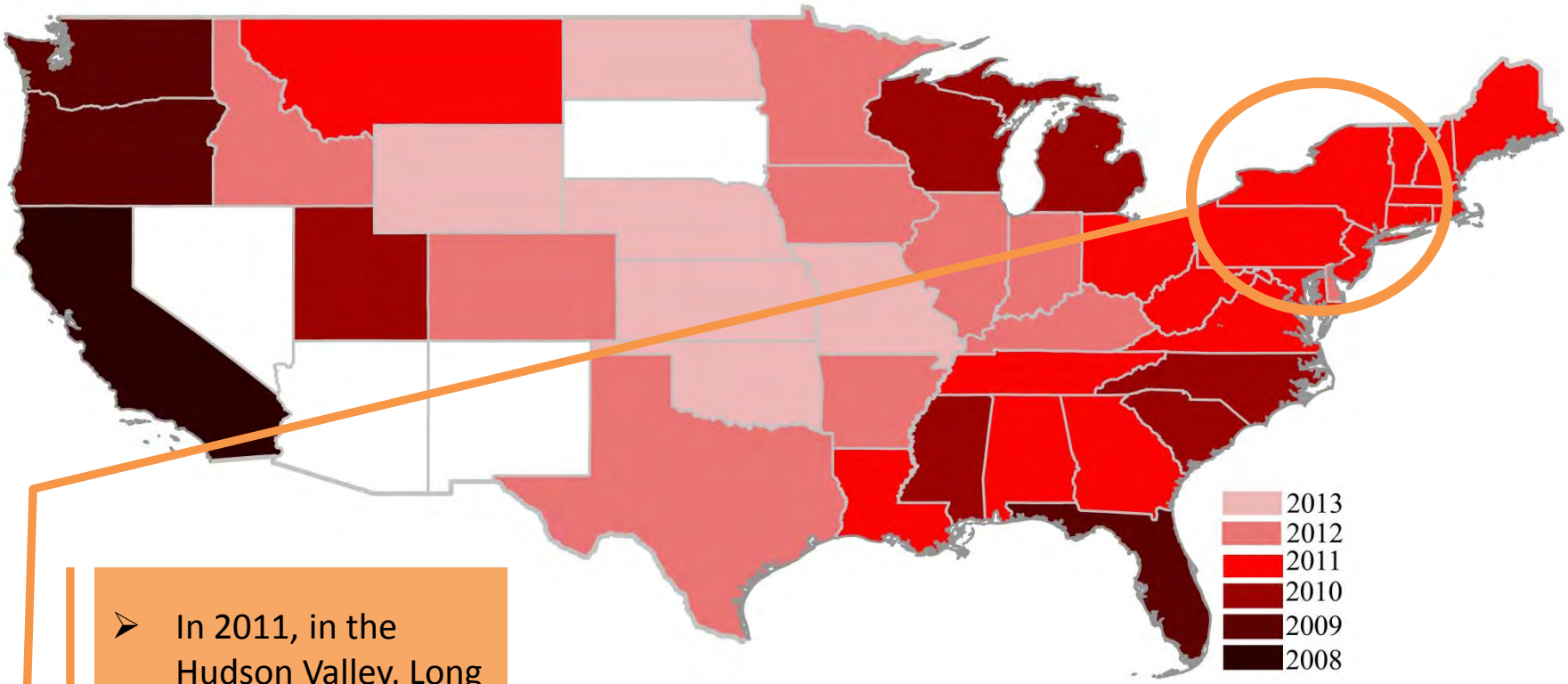
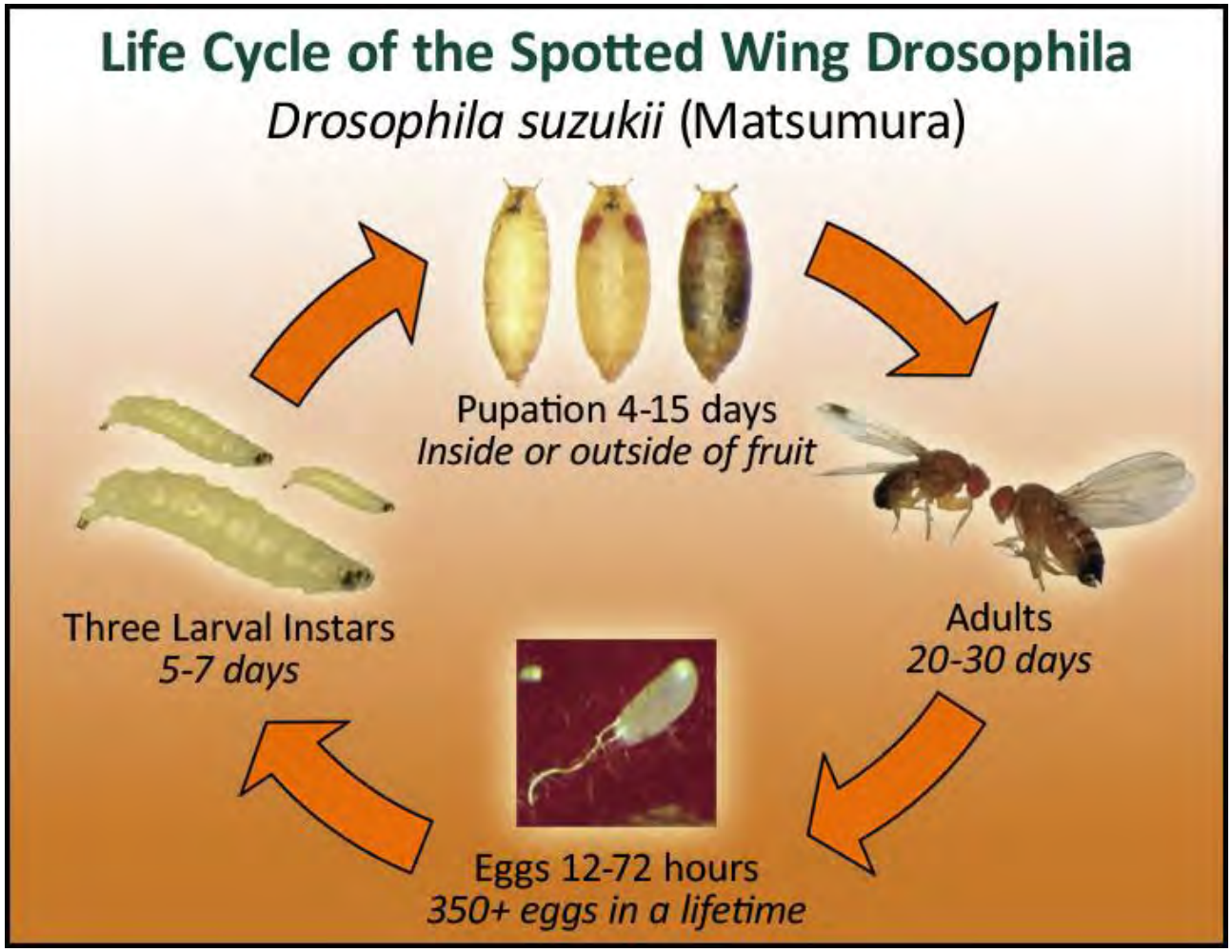
Invasion of the continental US

H. Burrack, NC State



- In 2011, in the Hudson Valley, Long Island & the Finger Lakes.
- In 2012, statewide.



- Optimum 65° to 70° F
  - Maximum 88° to 91° F
  - Minimum 28° to 33° F
- 9- to 25-days from egg to adult.
- Adults live ~1 month.
- Females lay >300 eggs, …into intact fruit.
- Limited by high heat in summer and by winter cold.

Does SWD overwinter in NY or migrate up from warmer climates?

Impacts of spotted wing drosophila

- Customer complaints
- 30% loss in blueberry
- Raspberry plantings abandoned
- Sanitation labor-intensive
- Insecticide sprays
  - Calendar spray schedules
  - Only affect the adults
- Economic impact in NY estimated at $5 million

S. Gwise, CCE Jefferson County

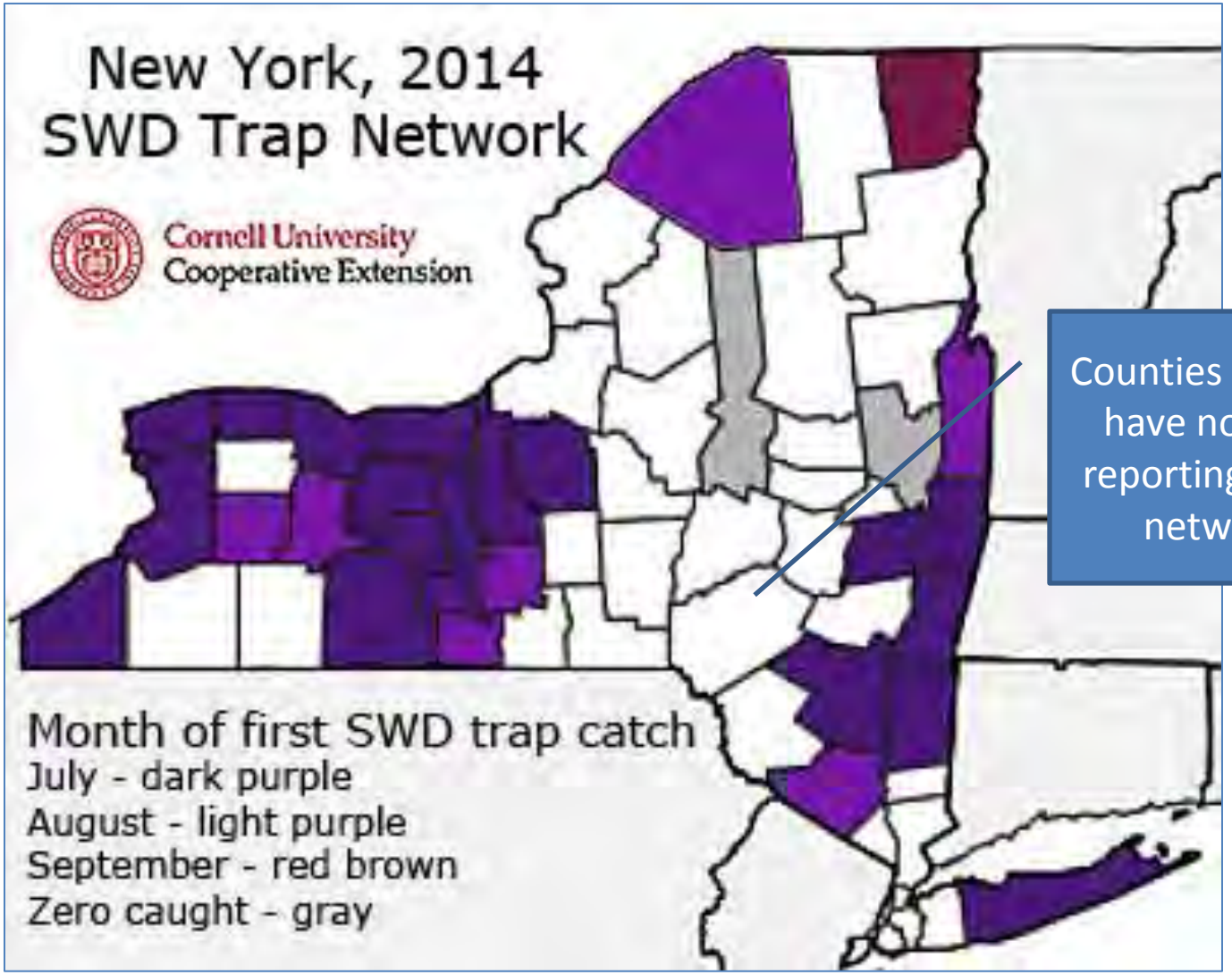
NY SWD Monitoring Network

- A coordinated approach to collect and deliver SWD information to fruit growers.
- Broader reach to more growers and extension educators to take action to protect their crops.
- SWD trap catch reported to a NY map at www.eddmaps.org/swd/ (SE IPM Center).
- SWD first reports posted on the SWD blog at blogs.cornell.edu/swd1/.

SWD Trap Network Specifics

- 107 sites with two or four traps per site
- One trap within the crop and one on the edge
- 28 Counties
- Crops – raspberry, blueberry, blackberry, grape, cherry
- Participants – extension faculty, educators, regional specialists, Master Gardeners
- Volunteers and growers – their reports only on the blog

SWD Distribution Map



Counties in white have no traps reporting to the network.

Access the NY distribution map online

- Cornell Fruit Resources, SWD Distribution webpage
  www.fruit.cornell.edu/spottedwing/dist.html
- NYS IPM, SWD invasive species fact sheet
  nysipm.cornell.edu/invasives_exotics/swd/swd.asp
- SWD Volunteer Monitoring Network
  www.eddmaps.org/swd/

  This map covers the Eastern USA.

Monitoring Network Results

- In 2012 & 2013 first SWD captured in mid June.
- In 2014 first SWD captured in mid July.
- Late arrival in 2014 spared summer raspberry and many blueberry plantings.
- Peak capture & ***serious risk to fruit in August***.
- Adult capture typically earliest on Long Island.
- **NY map** ***beneficial for Extension educators***.
- **SWD blog** ***conveys SWD warning to growers***.

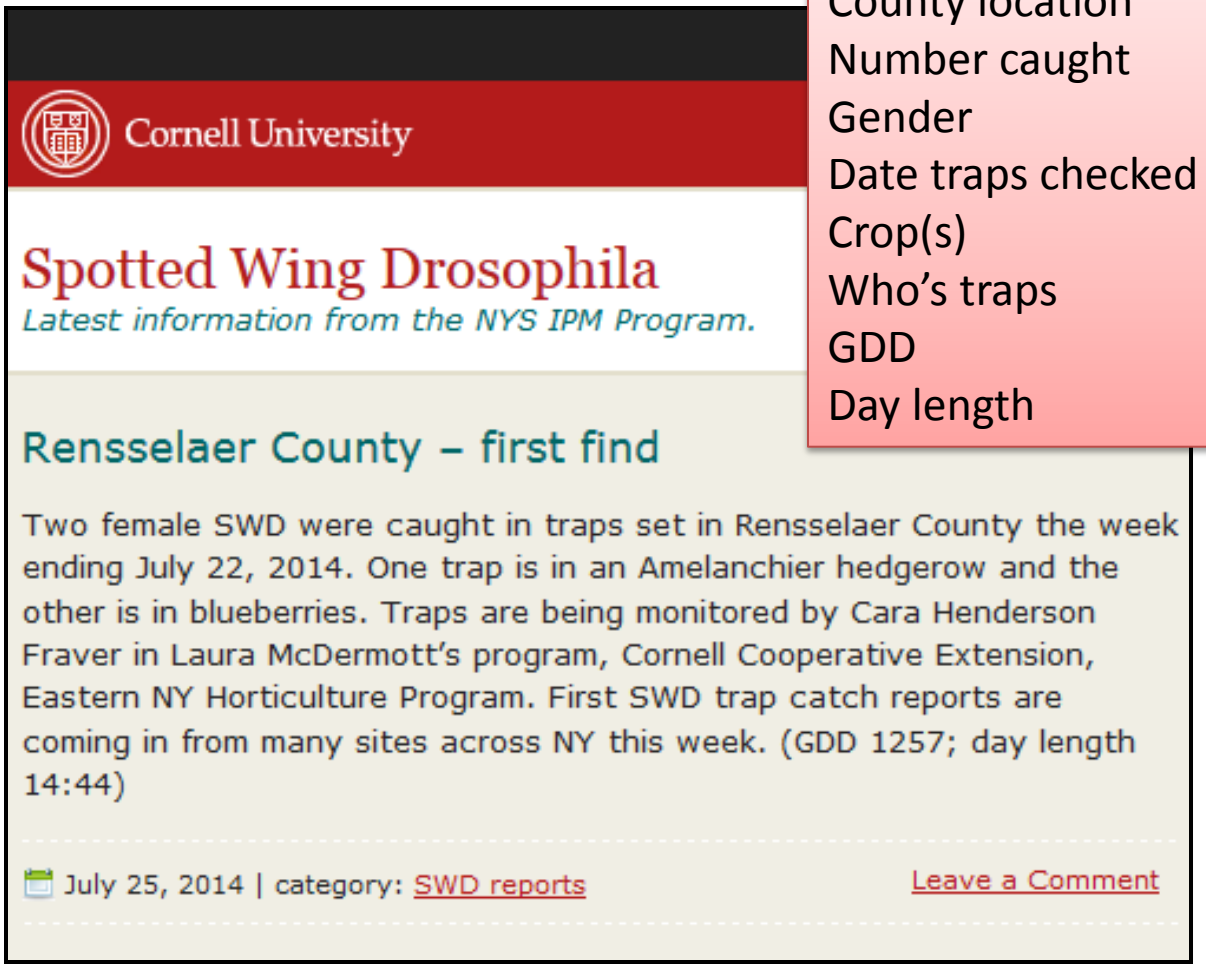
Spotted Wing Drosophila blog

blogs.cornell.edu/swd1/

Subscribers get email alerts with a link to the blog post.

Other SWD info is posted.

235 subscribers.



County location
Number caught
Gender
Date traps checked
Crop(s)
Who's traps
GDD
Day length

How does the SWD map and blog aid in management decisions?

- Growers can decide if their crop is at risk
  - consider SWD numbers, fruit maturity & market.
- Is an insecticide application warranted?
  - when at-risk fruit will be present, yes.
  - if harvest is nearing completion, possibly not.
- Provides warning of potential infestation
  - growers can sample fruit for larvae.
- They can inform customers SWD is in area
  - and make sure they know to refrigerate fruit.

With SWD trap network data…

- Can GDD accumulation, from January 1, be used to predict SWD arrival in NY?
- Is SWD arrival in NY correlated with day length?
- Do females always arrive first or can growers simply monitor males?
- Will farms within a County benefit from reported trap captures in that County?
- Does SWD trap capture within a County accurately reflect SWD presence across all farms within that County?

Getting the word out online

Comprehensive info

- Cornell SWD website, www.fruit.cornell.edu/spottedwing

Crops of concern & wild hosts,
Monitoring,
Identification,
Management,
Distribution map,
Economic & environmental impact,
Biology & life cycle

Alerts & latest updates

- SWD blog, blogs.cornell.edu/swd1/

SWD caught in traps July 23, 2014 in Cayuga County. Female on right, male on left.

SWD monitoring impacts

- SWD distribution map for NY is generated and available.
- The SWD blog emails growers about SWD trap captures to inform IPM decisions.

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