Delivery of weather and pest information via eNEWA

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NEWA - Network for Environment and Weather Applications

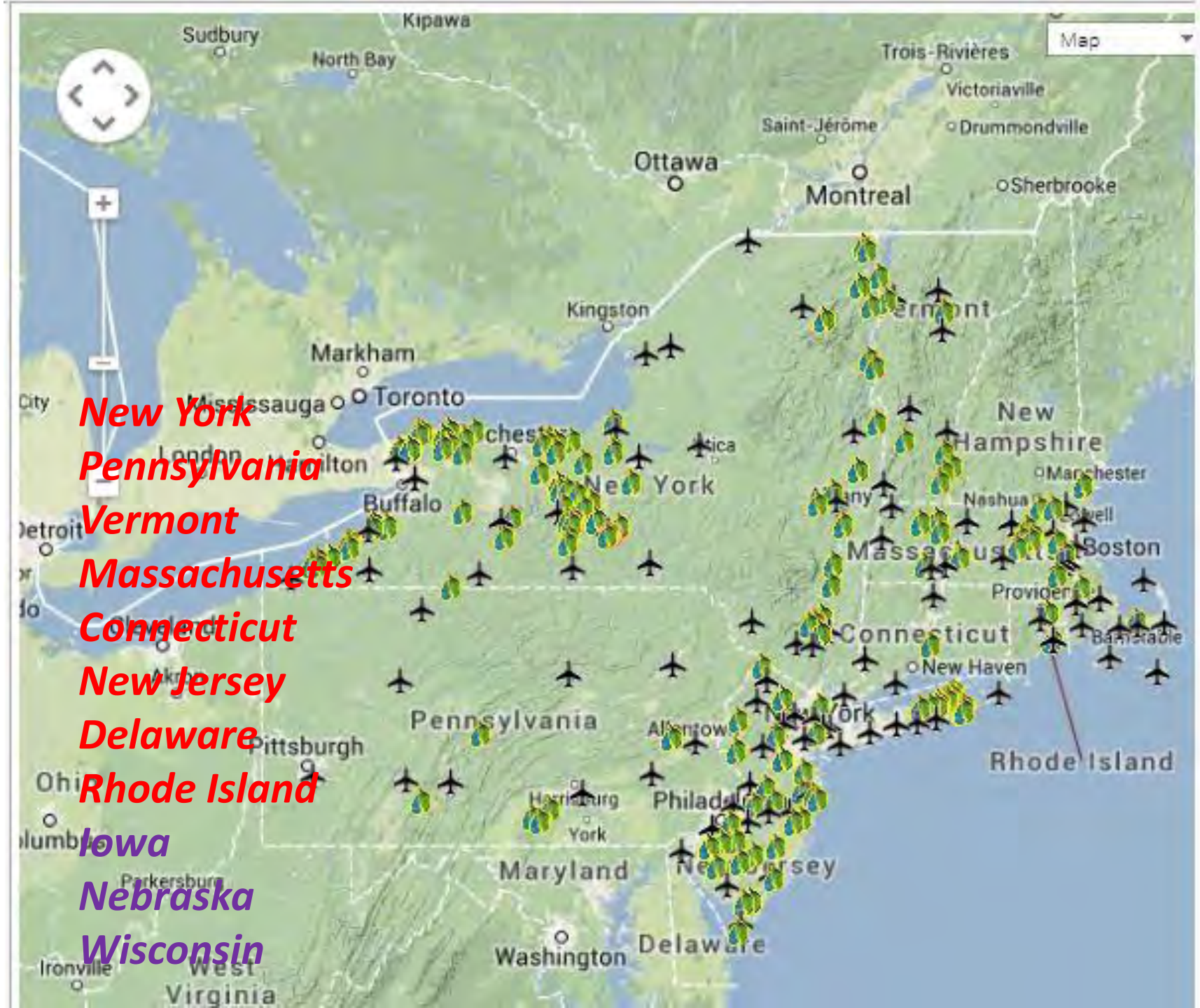
- Web-based, provides weather and pest model data from weather stations across New York State & seven surrounding states
- Now using Rainwise MKIII SP1 Weather Stations

http://newa.cornell.edu

RainWise weather stations

Solar-powered & gauge:

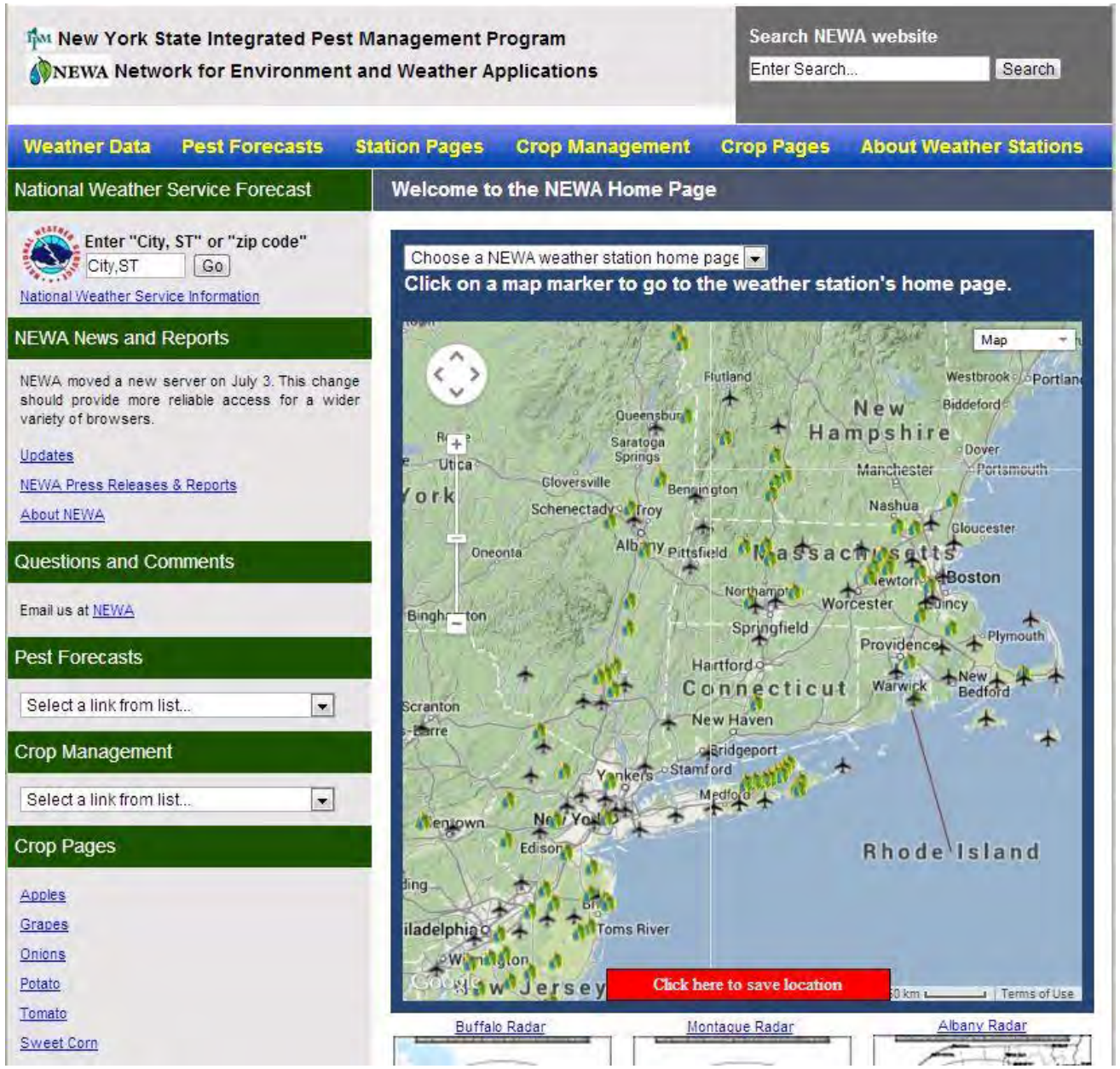
- Temperature
- Precipitation
- Relative humidity
- Leaf wetness
- Solar Radiation
- Wind speed & direction
- Barometric pressure


Map
Sudbury
Kipawa
North Bay
Trois-Rivières
Victoriaville
Saint-Jérôme
Drummondville
Ottawa
Montreal
Sherbrooke
Kingston
Markham
Toronto
Mississauga
London
Buffalo
New York
New Hampshire
Manchester
Nashua
Boston
Connecticut
New Haven
Pennsylvania
Pittsburgh
Rhode Island
Harrisburg
York
Maryland
Washington
Delaware
Parkersburg
West Virginia
Ironville
New York
Pennsylvania
Vermont
Massachusetts
Connecticut
New Jersey
Delaware
Rhode Island
Iowa
Nebraska
Wisconsin

What is NEWA doing?

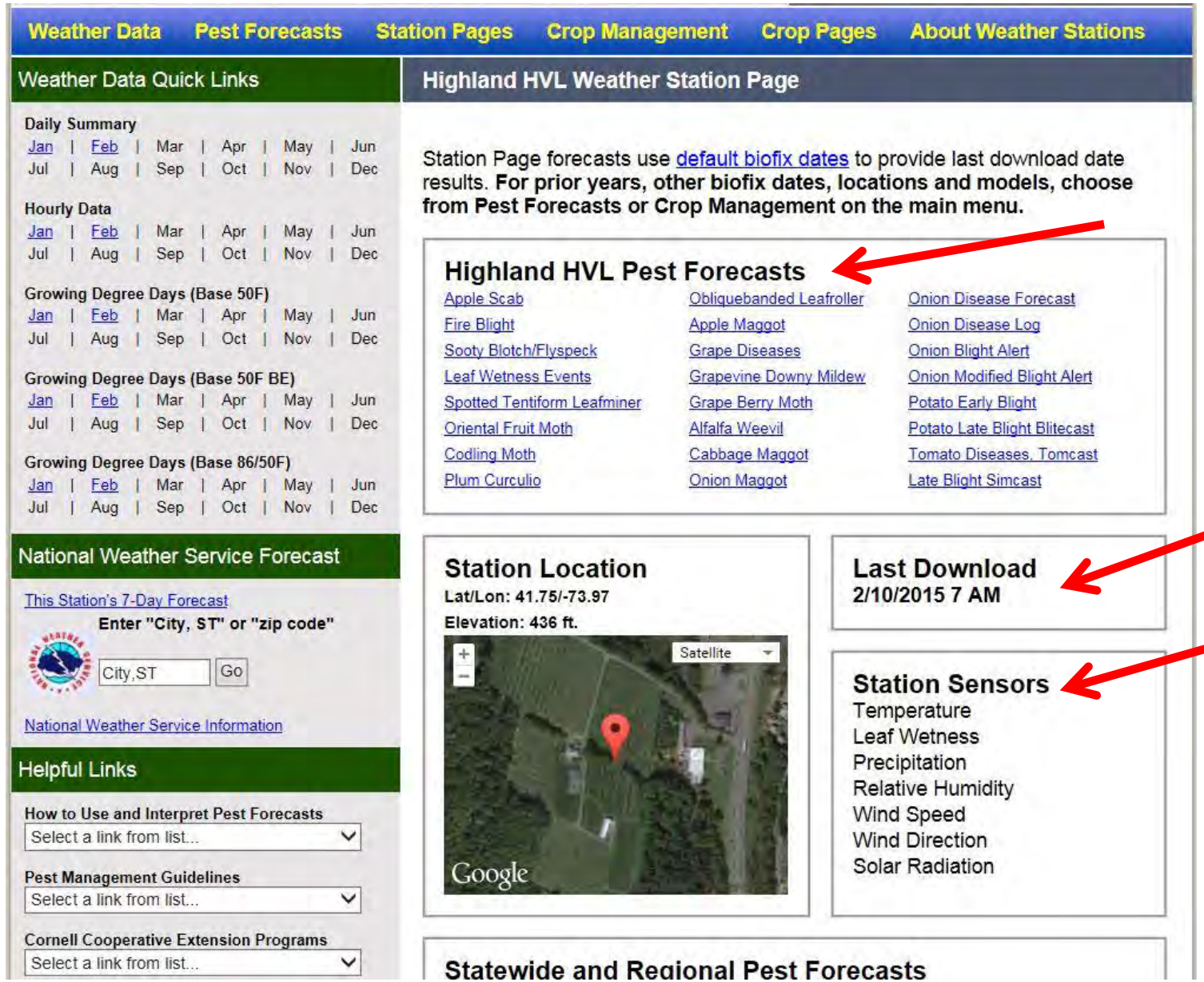
NEWA…

- summarizes and displays weather data
- displays pest forecast model results
- links to pertinent information
- displays and links to National Weather Service weather radar images and weather forecasts



NEWA Home Page

Accessing Info via Station Pages



The Problem

- LERGREP, Inc. identified increasing the use of NEWA resources as a priority for their research and extension funding.

The Response

- Determine why growers did not use NEWA
  - Not computer savvy
  - Don’t have the time
  - Don’t have a weather station near me

The Response: Part 2

- Develop an easier way to access information
  - eNEWA –grapes was developed based on eNEWA alerts for apples
  - A daily email containing weather and pest model information pertinent to grape growers was developed

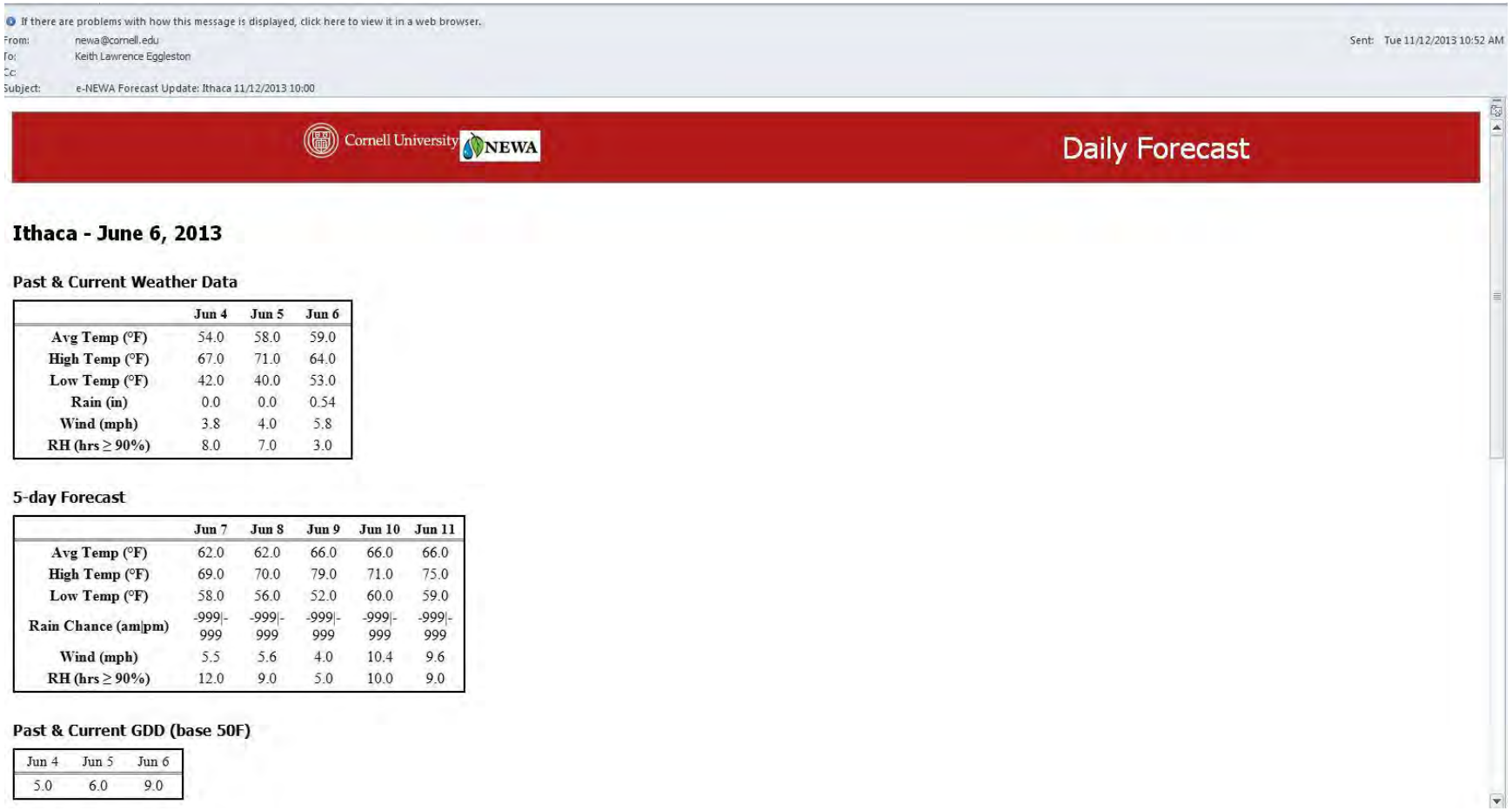
eNEWA - grapes

- Daily email during the growing season
  - Weather info
  - Pest model info (diseases and grape berry moth)
- Cue to visit website if more info is needed

eNEWA grape provides

- 5-day Forecast for GDD (base 50F)
- Previous two days and current infection events for powdery mildew, black rot, Phomopsis
- Pest status and pest management information for grape berry moth
- Does not provide downy mildew model info

eNEWA - grapes



If there are problems with how this message is displayed, click here to view it in a web browser.

From: newa@cornell.edu
To: Keith Lawrence Eggleston
Cc:
Subject: e-NEWA Forecast Update: Ithaca 11/12/2013 10:00
Sent: Tue 11/12/2013 10:52 AM

Cornell University NEWA

Daily Forecast

Ithaca - June 6, 2013

Past & Current Weather Data

	Jun 4	Jun 5	Jun 6
Avg Temp (°F)	54.0	58.0	59.0
High Temp (°F)	67.0	71.0	64.0
Low Temp (°F)	42.0	40.0	53.0
Rain (in)	0.0	0.0	0.54
Wind (mph)	3.8	4.0	5.8
RH (hrs ≥ 90%)	8.0	7.0	3.0

5-day Forecast

	Jun 7	Jun 8	Jun 9	Jun 10	Jun 11
Avg Temp (°F)	62.0	62.0	66.0	66.0	66.0
High Temp (°F)	69.0	70.0	79.0	71.0	75.0
Low Temp (°F)	58.0	56.0	52.0	60.0	59.0
Rain Chance (am|pm)	-999|-999	-999|-999	-999|-999	-999|-999	-999|-999
Wind (mph)	5.5	5.6	4.0	10.4	9.6
RH (hrs ≥ 90%)	12.0	9.0	5.0	10.0	9.0

Past & Current GDD (base 50F)

Jun 4	Jun 5	Jun 6
5.0	6.0	9.0

Powdery mildew model on eNEWA

Powdery Mildew NEWA Grape Models

Estimated phenological stage: 10 inch shoot

Disease Management: A lot of powdery mildew the previous year = More primary inoculum to cause infections this spring. The model logs potential primary infection events. **CAUTION:** Prolonged cloud cover (lack of sunshine), high RH (>60%) and warm (63-86F) weather significantly increases the risk of powdery mildew infections.
Do not delay sprays beyond the 10 inch shoot growth stage for highly susceptible *V. vinifera* and hybrid varieties.
Do not delay sprays beyond the immediate prebloom stage on Concord and other moderately to slightly susceptible varieties.
Fruit is extremely susceptible to powdery mildew from immediate prebloom through fruit set. This is the most critical period to protect from fruit infections. Management programs should be at their peak, emphasizi! ng the use of effective fungicides, full rates, appropriate spray intervals, and superior spray coverage.

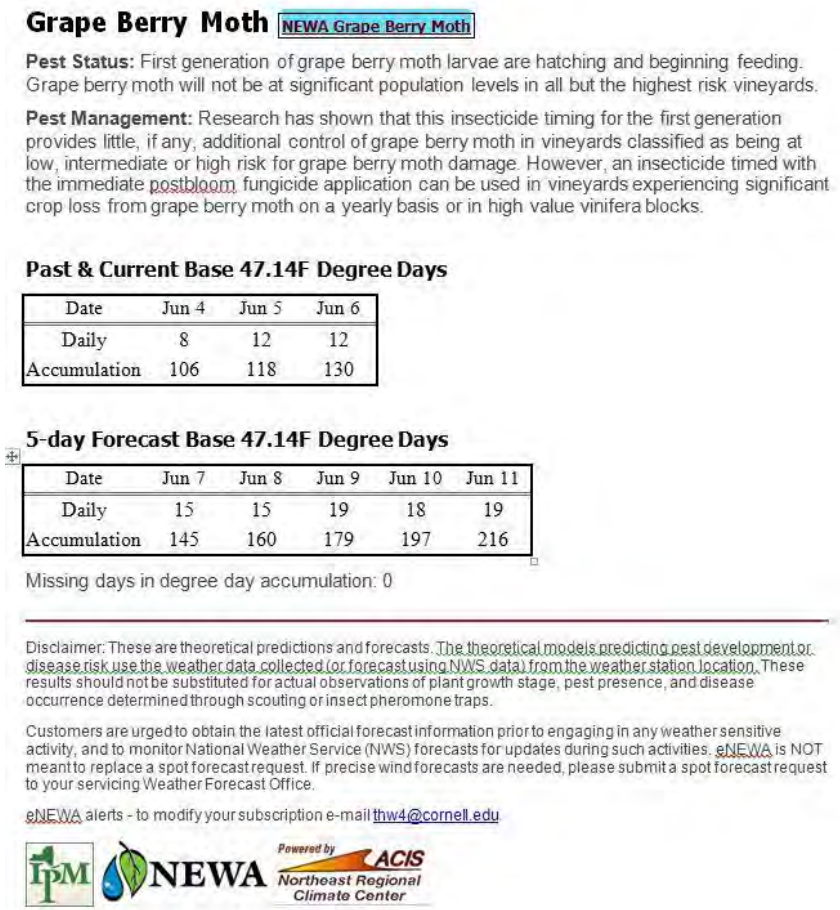
Past & Current Infection Events

Jun 4	Jun 5	Jun 6
No infection	No infection	Infection

5-day Forecast Infection Events

Jun 7	Jun 8	Jun 9	Jun 10	Jun 11
Infection	No infection	No infection	Infection	-----

Grape Berry Moth model on eNEWA



Grape Berry Moth NEWA Grape Berry Moth

Pest Status: First generation of grape berry moth larvae are hatching and beginning feeding. Grape berry moth will not be at significant population levels in all but the highest risk vineyards.

Pest Management: Research has shown that this insecticide timing for the first generation provides little, if any, additional control of grape berry moth in vineyards classified as being at low, intermediate or high risk for grape berry moth damage. However, an insecticide timed with the immediate postbloom fungicide application can be used in vineyards experiencing significant crop loss from grape berry moth on a yearly basis or in high value vinifera blocks.

Past & Current Base 47.14F Degree Days

Date	Jun 4	Jun 5	Jun 6
Daily	8	12	12
Accumulation	106	118	130

5-day Forecast Base 47.14F Degree Days

Date	Jun 7	Jun 8	Jun 9	Jun 10	Jun 11
Daily	15	15	19	18	19
Accumulation	145	160	179	197	216

Missing days in degree day accumulation: 0

Disclaimer: These are theoretical predictions and forecasts. The theoretical models predicting pest development or disease risk use the weather data collected (or forecast using NWS data) from the weather station location. These results should not be substituted for actual observations of plant growth stage, pest presence, and disease occurrence determined through scouting or insect pheromone traps.

Customers are urged to obtain the latest official forecast information prior to engaging in any weather sensitive activity, and to monitor National Weather Service (NWS) forecasts for updates during such activities. eNEWA is NOT meant to replace a spot forecast request. If precise wind forecasts are needed, please submit a spot forecast request to your servicing Weather Forecast Office.

eNEWA alerts - to modify your subscription e-mail thw4@cornell.edu

IPM NEWA Powered by ACIS Northeast Regional Climate Center

The Evaluation

- EOS survey had 24 of 47 responding (51%)
- 92% of responses indicated that eNEWA –grapes was helpful in implementing their IPM practices (great or above average)

Grower Quotes

- “NEWA is a great source of information, it gives you a great road map to follow and still allows you to make your own decision based on the information
- Overall, I think it was a good program. I found the delivery of information to be timely and the content helped me with my management decisions. I liked that it came to my email and the information was already compiled for me

Take Home Messages

- Need to educate growers on the value (only 36% of growers indicated they would be willing to pay $5/month for eNEWA-grape
- Need to develop a true alert system
- Effective method of relaying info for IPM
- Not a cure all. Growers may still need assistance
- Should be considered a gateway to NEWA website for more specific pest model information

Questions?

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716.792-2800 x203