



Site specific applications via integration of existing weather networks and proven predictive models

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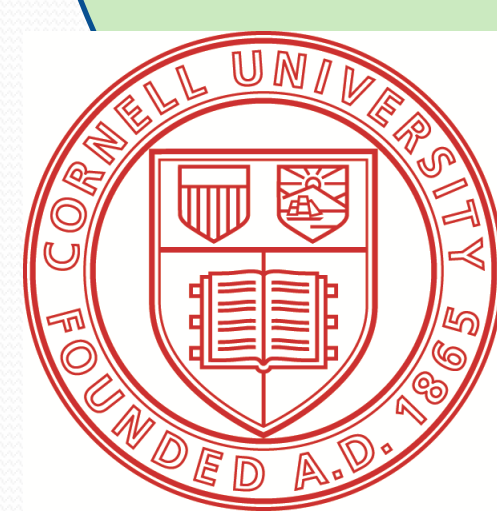
Network for Environment & Weather App's

NEWA delivers weather data from weather stations primarily located on farms via newa.cornell.edu. NEWA generates weather data summaries and IPM forecast model results.

Degree days for 10 base temperatures and results for 22 IPM forecast models are calculated and displayed. NEWA provides a portal to weather and IPM forecast products from other groups (NOAA, NRCC, MSU, NWS, ipmPIPE, PA PIPE, and the North American Plant Disease Forecast Center).

NY NEWA

NY NEWA weather stations are owned primarily by farmers, and also by the NYS IPM Program, Cornell University faculty, and agricultural industries.



The UNIVERSITY of VERMONT

The VT NEWA weather stations, complete with all sensors for disease and insect modeling, are in our primary apple growing regions and represent the variability of our farm sites, the Champlain Valley, the Champlain Islands, the Connecticut River Valley and upland interior sites.

Vermont fruit growers overwhelmingly support VT NEWA....

60% are accessing VT NEWA,
67% are reducing sprays and improving efficacy,
33% are saving spray costs,
17% are improving farm labor efficiency.
...when using VT NEWA.

Most stations were funded by the Vermont Tree Fruit Growers Association through the Specialty Crops Block Program, with technical support from the University of Vermont Fruit Team.



Increased coverage of the network could increase usage.

VT NEWA

Integration of existing weather networks with established predictive models provides a significant value-added product for farmers and field professionals.

RUTGERS

New Jersey Agricultural Experiment Station

Our goal is to develop site specific applications for pests and diseases of New Jersey fruit and vegetable crops such as apples, cranberries, blueberries, grapes, tomatoes and potatoes (combined value of \$200 million annually, USDA NASS 2011).

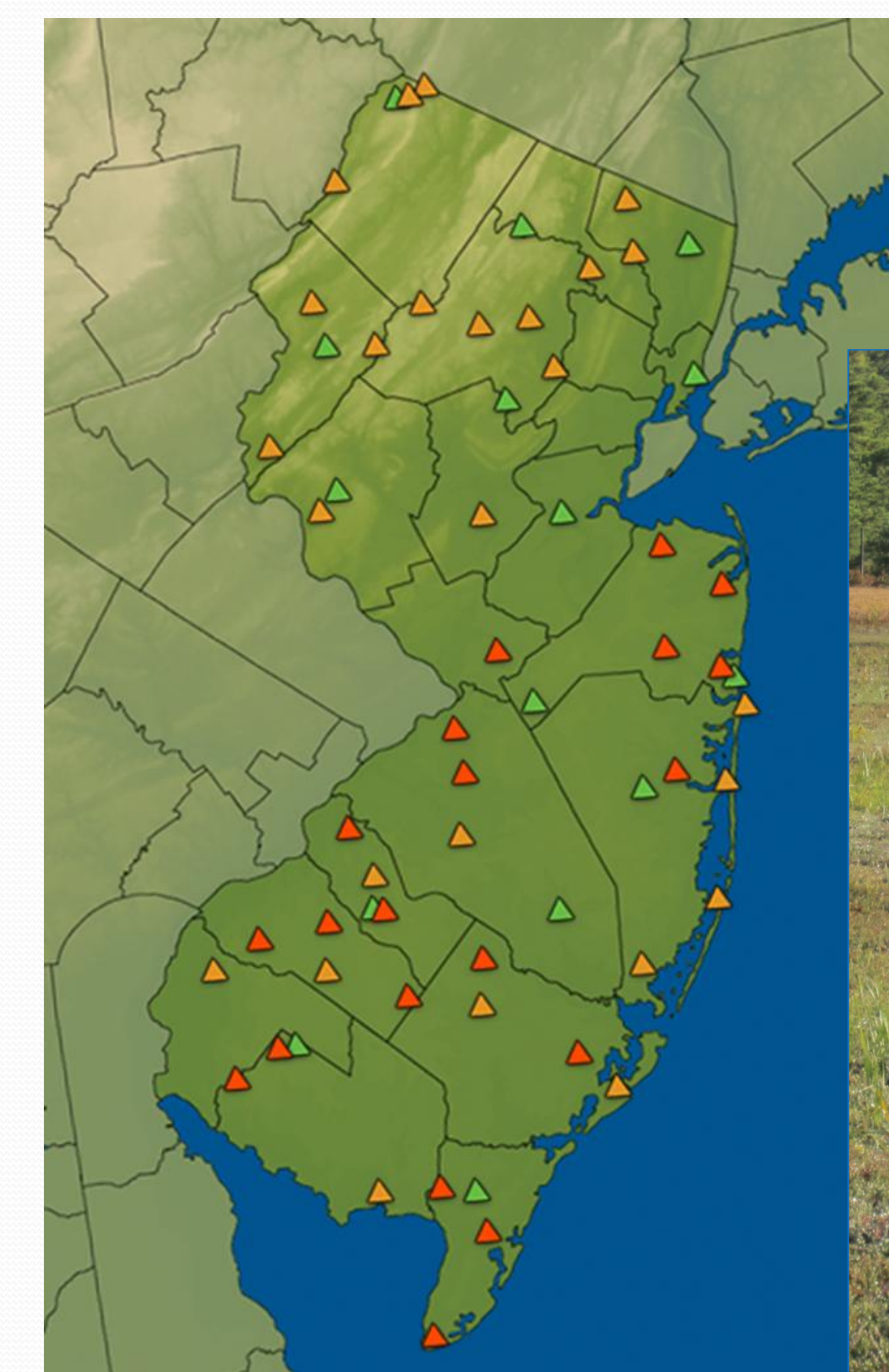


Black rot

Grape Models

Powdery mildew
Phomopsis
Black rot
Downy mildew
Grape berry moth

For grapes, four specialized weather stations designed specifically to collect data needed to drive the disease models will be placed in commercial vineyards. These stations are designed to send data back to the office of the state meteorologist and subsequently upload data to the NEWA site. Funding for this aspect of the project was provided by a Wine Industry Grant.



NJ NEWA

In New Jersey, the office of the State Climatologist maintains three weather networks (MesoNet, SafteyNet and RISE) which includes over 60 stations distributed across the state. In 2011 we added these NJ weather networks to the NEWA system to provide site specific disease and insect prediction models.



University of Massachusetts Amherst

As of March 2012, MA NEWA includes 17 on-farm weather stations (13 Rainwise, 4 Onset) and 23 airport/other locations in Massachusetts, reporting data to NEWA.

From March-September, 2011, about one-in-five visits to NEWA were from Massachusetts.

Most MA NEWA weather stations are on diversified, direct market fruit and vegetable farms.

Fire blight



Weather stations have been funded through a combination of grower self-purchase, UMass Center for Agriculture, the Northeast Regional IPM Center and USDA/NIFA Extension Integrated Pest Management Coordination and Support Program (EIPM-CS).

Grower response has been overwhelmingly positive, especially from apple growers who use the apple scab, fire blight, and plum curculio models to enhance decision-making and timing of control sprays.

Apple Models

Apple scab
Fire blight
Sooty blotch & flyspeck
Apple maggot
Codling moth
Plum curculio
Obliquebanded leafroller
Spotted tentiform leafminer
Oriental fruit moth

Center for Agriculture
University of Massachusetts Amherst

Our future focus will be on improving the sooty blotch & flyspeck model.



Models Used

Apple models
Grape models
Potato late blight
TomCast
Stewart's wilt
Curcubit downy mildew

MA NEWA

NOAA NWS data from airports in NY, MA, VT, NJ, and adjacent states, have been incorporated into the network.



Plum curculio

The Vermont NEWA network supports over 80 apple farms with gross farmgate receipts of \$15 million annually.

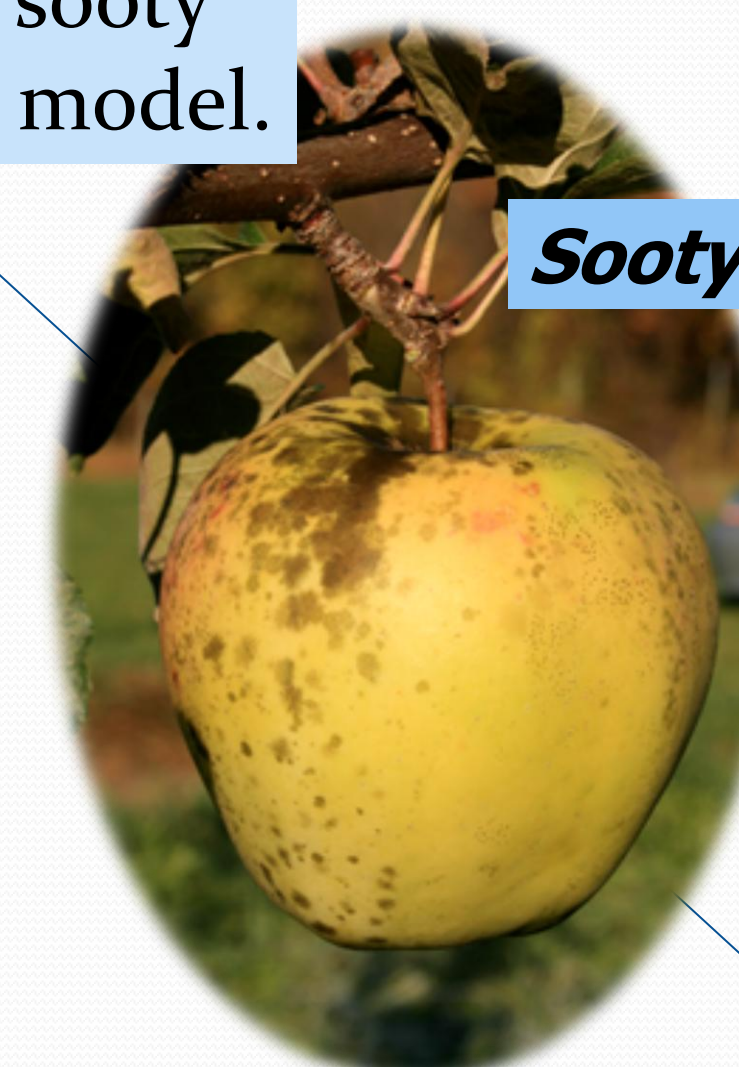
Growers use information from the NEWA network to provide real-time, biologically-based modeling that assists in the efficient management of diseases and insects.

The University of Massachusetts coordinates a network as part of a project with Eco Apple growers and advanced apple IPM research, including three stations at apple orchards in southern VT and NH and one in CT. Some Eco Apple growers use the NY and VT networks.

Apple scab



Sooty blotch & flyspeck



Growers were introduced to MA NEWA via meetings, newsletter articles, and one-on-one training.

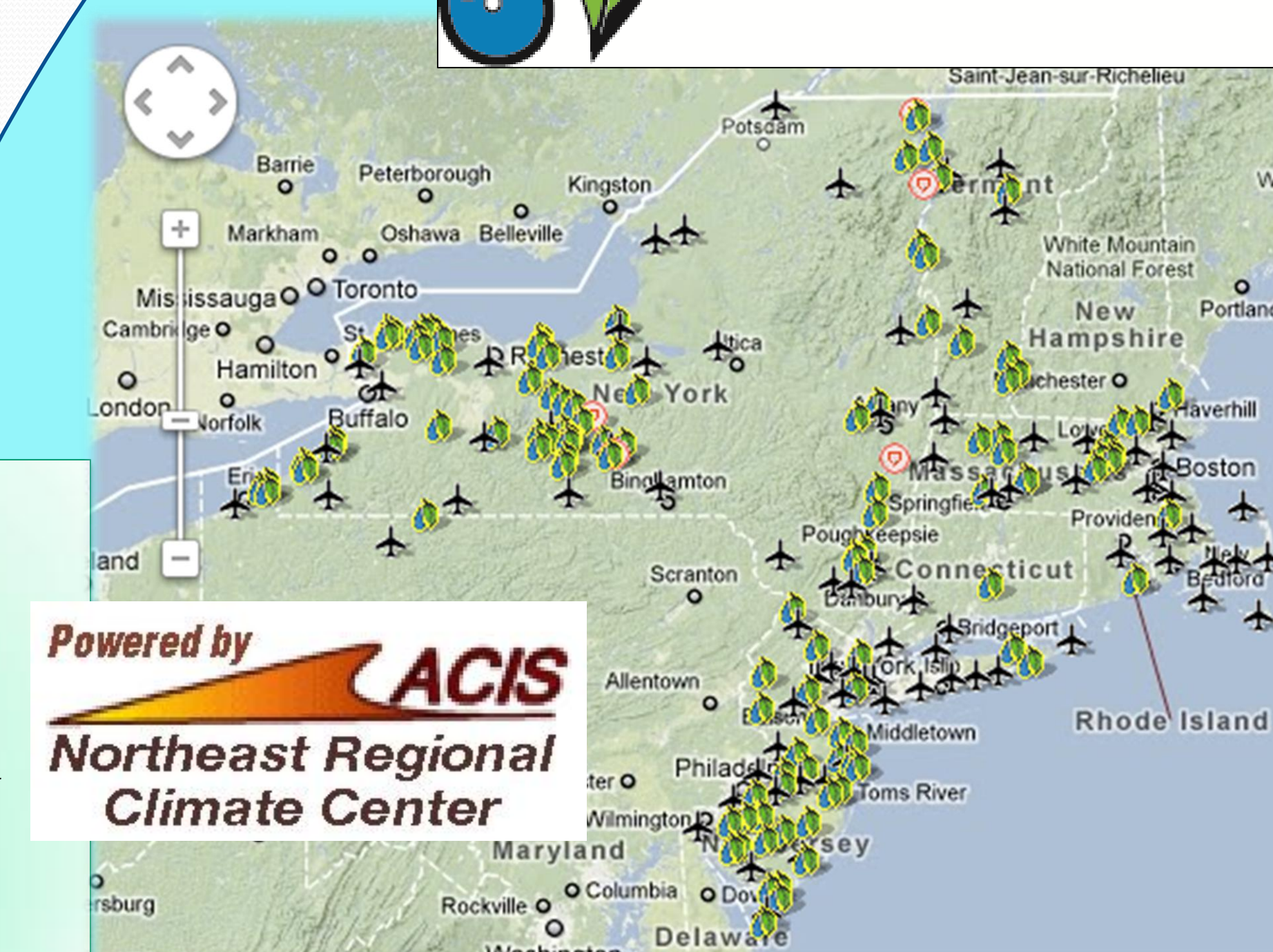
It's a great source of real-time information. Growers are very positive.

Eco-Orchard NEWA

The Eco Orchard network, which is spread out around New England and New York, provides growers with valuable daily information that the project could not provide with on the ground scouting.

Model Wish List

Apple thinning
Residue depletion
Chilling hours
Apple powdery mildew
Cherry leaf spot
Mummy berry



NEWA-connected stations can be found throughout much of the Northeast