

When All Else Fails: Let's Talk About the Weather

36th NYSFOLA Annual Conference

May 4, 2019

Conesus Lake: Watershed Education Center

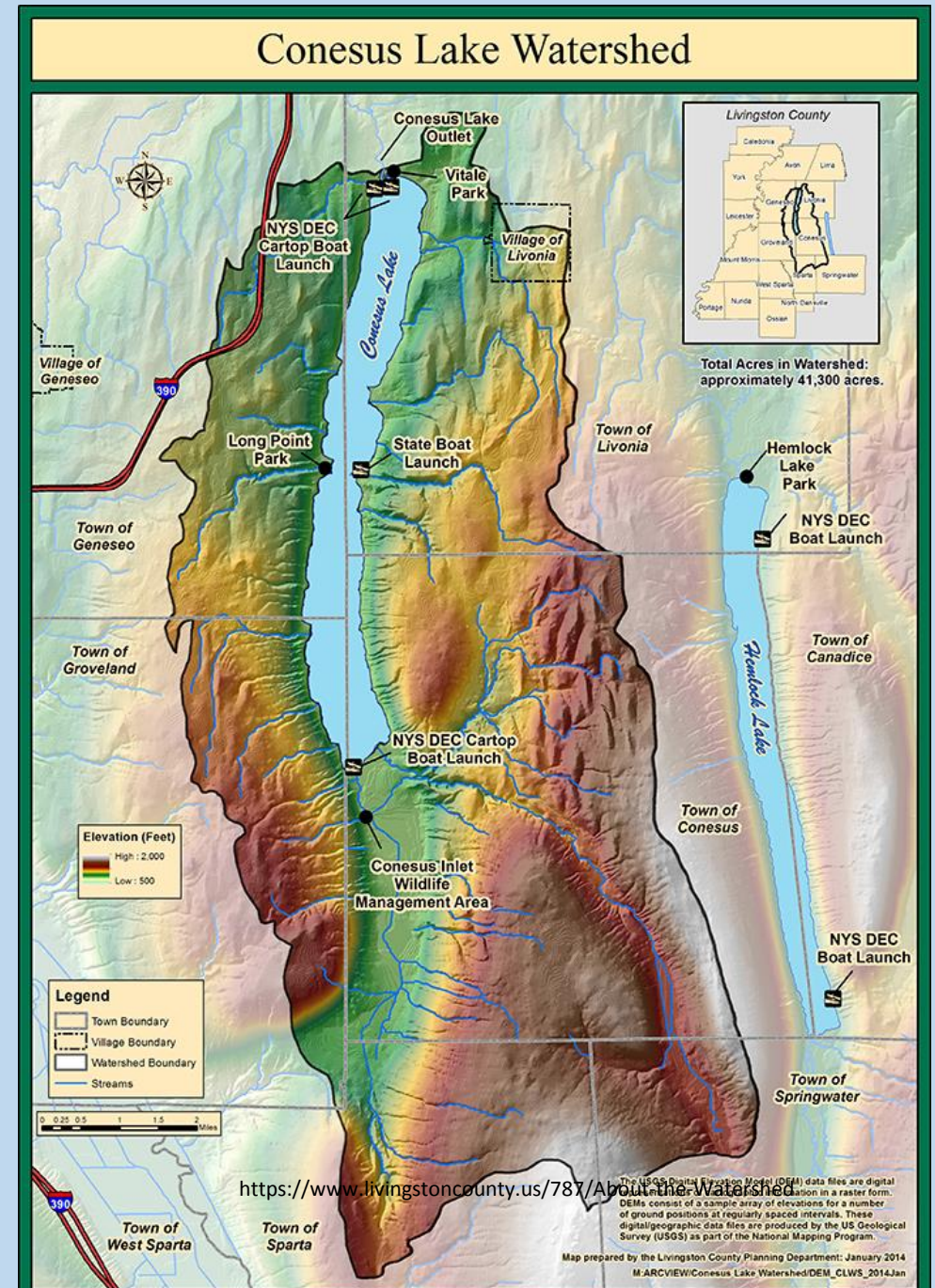
Network for Environmental and Weather Applications

Eric A. Randall

Karl Hanafin

Dan Olmstead

- The situation was:
 - There has been a great deal of good research concerning lake water quality but...
 - There did not seem to be solid baseline data
 - Collected frequently – at least daily
 - Long-term – more than one year
 - For multiple depths



FURTHER LIMNOLOGICAL OBSERVATIONS ON THE
FINGER LAKES OF NEW YORK : : : :

: : : : : By Edward A. Birge and Chancey Juday

From BULLETIN OF THE BUREAU OF FISHERIES, Vol. XXXVII, 1919-20

Document No. 905 : : : : : : : : : : : : : : : : Issued October 8, 1921

TABLE 1.—DATES OF TEMPERATURE SERIES: SURFACE, BOTTOM, AND MEAN TEMPERATURES.

Lake and date.	Surface.	Bottom.	Mean.	Lake and date.	Surface.	Bottom.	Mean.
CANANDAIGUA LAKE.	°C.	°C.	°C.	CAYUGA LAKE—continued.	°C.	°C.	°C.
Aug. 20, 1910.....	21.7	5.4	11.05	Aug. 16, 1917.....	22.6	4.3	9.44
Sept. 4, 1911.....	20.7	4.3	10.02	Aug. 30, 1918.....	22.0	4.2	9.66
Aug. 27, 1914.....	21.6	4.5	10.11	Mean.....	21.2	4.2	9.43
Aug. 31, 1916.....	21.6	5.0	11.57	SENECA LAKE.			
July 27, 1918.....	23.1	5.1	11.91	Aug. 3, 1910.....	20.2	4.2	7.71
Sept. 1, 1918.....	21.5	5.0	11.42	Sept. 1, 1911.....	20.0	4.0	7.34
Mean.....	21.4	4.8	10.95	Sept. 5, 1914.....	21.1	4.0	8.27
CAYUGA LAKE.				Aug. 29, 1918.....	20.8	4.0	8.07
Aug. 11, 1910.....	19.8	4.3	9.34	Mean.....	20.4	4.05	7.84
Sept. 2, 1911.....	20.0	4.1	8.93				
Sept. 4, 1914.....	21.4	4.1	9.65				

- Future Works

- More accurate local weather data to drive the model
- Vary the primary mass source
- Request more satellite thermal imagery
- Climatology



Modeling Stream Plumes in Conesus Lake

Yan Li
Dr. Anthony Vodacek

Digital Imaging and Remote Sensing Laboratory
Chester F. Carlson Center for Imaging Science
Rochester Institute of Technology

May 28, 2004

Environmental Monitoring





**Local,
real-time weather data
makes all the difference.**

Land Use

No Data Available

Agricultural

Single-Family Residential

Multi-Family Residential

Seasonal Residential

Vacant

Commercial

Recreation/Entertainment

Community Services

Industrial

Public Services

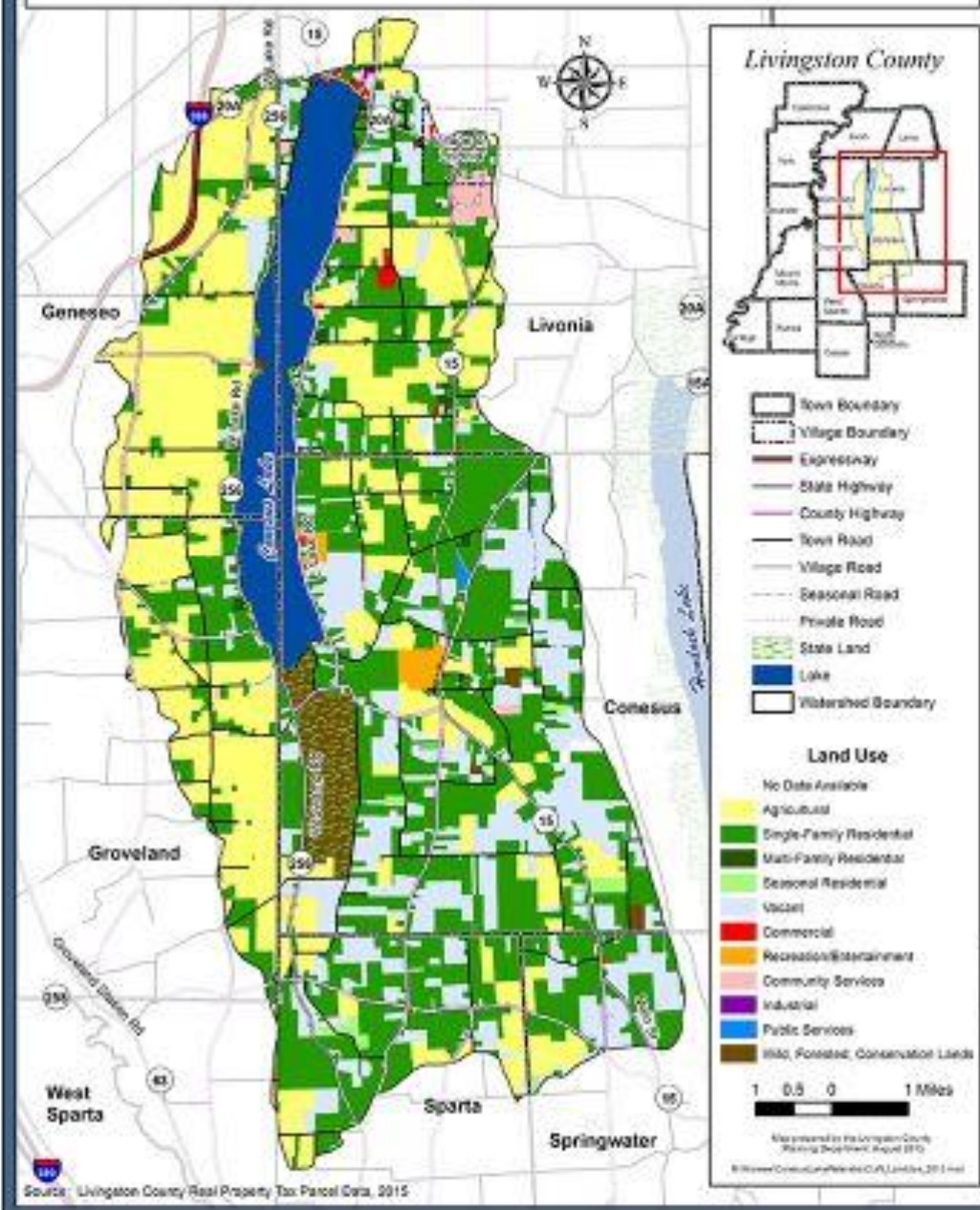
Wild, Forested, Conservation Lands

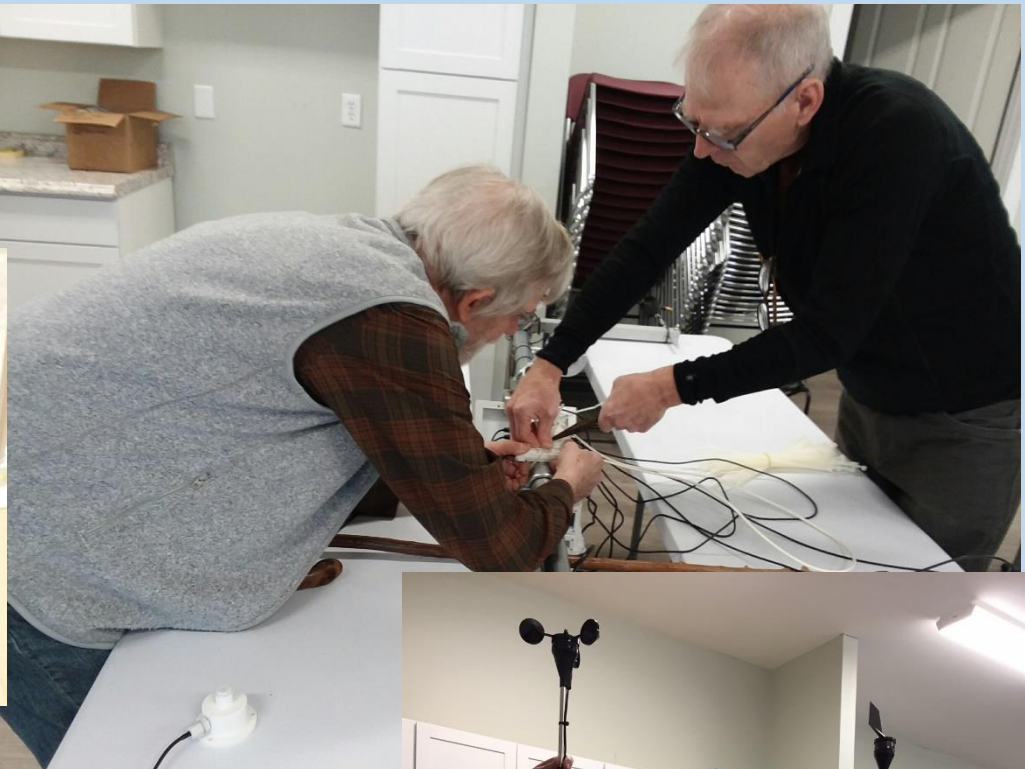
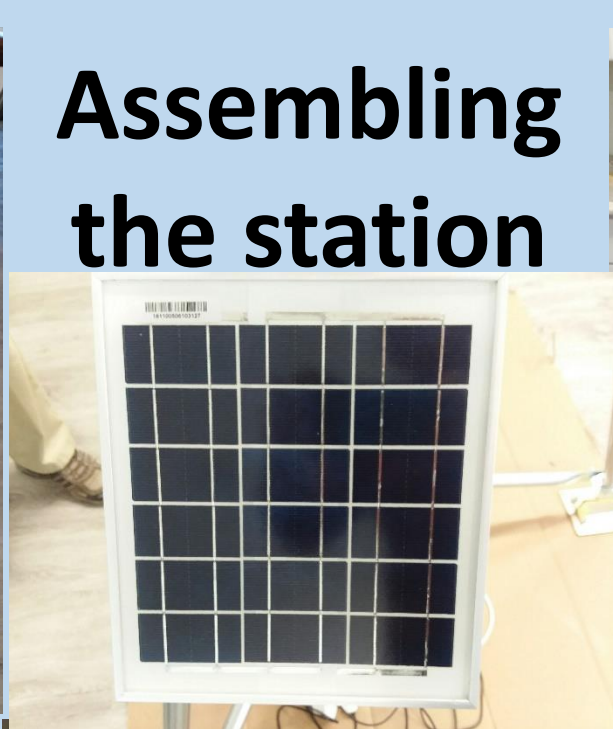
1 0.5 0 1 Miles

Map prepared by the Livingston County
Planning Department, August 2015

\\L:\Announcements\Conservation\Watershed\Watershed Land Use 2015.mxd

Conesus Lake Watershed: Land Use

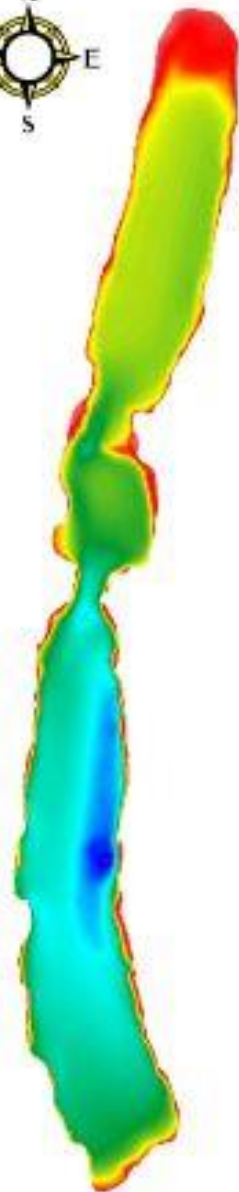




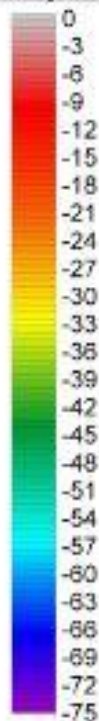




Bathymetric Survey of Conesus Lake, 2009



Depths



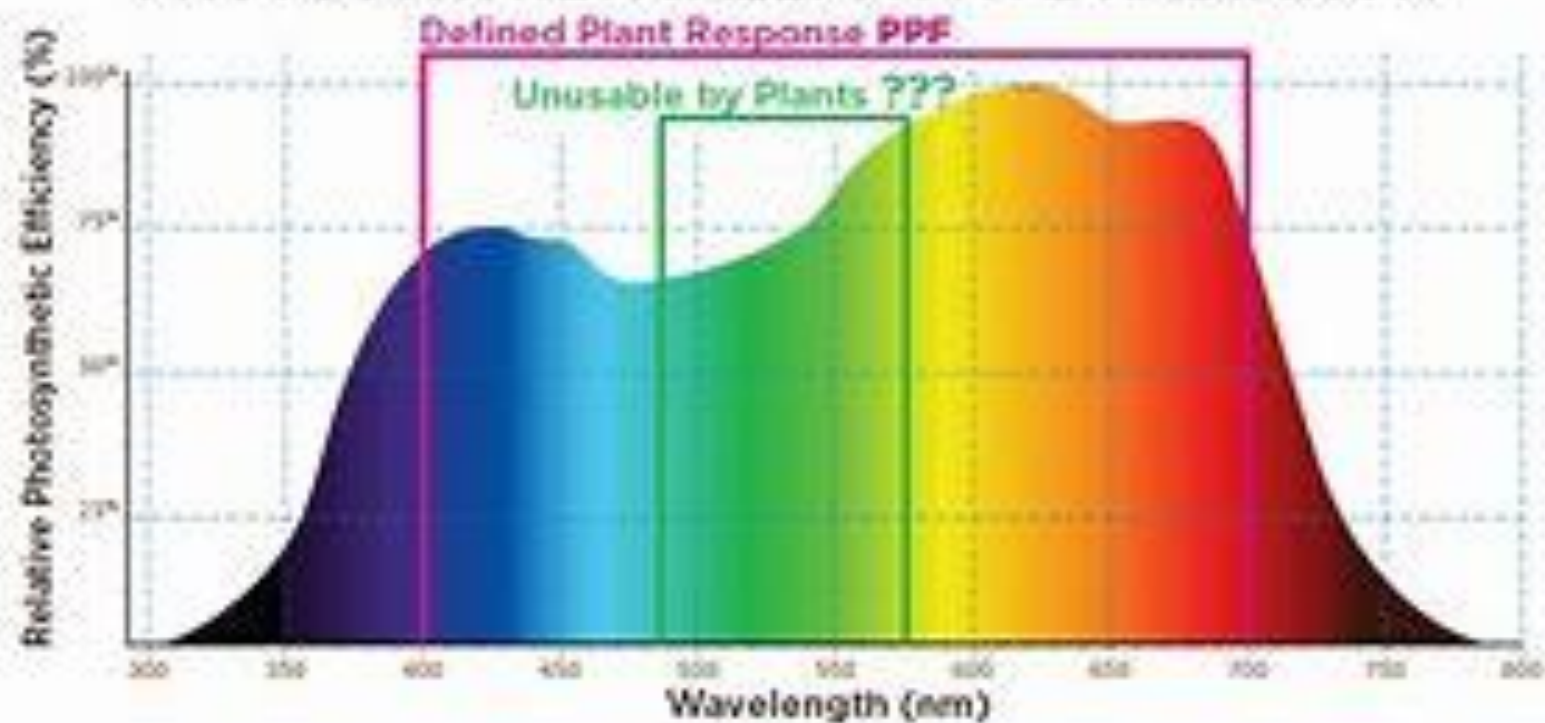
Units = feet

- Bathymetric survey – a high resolution survey of the lake bottom.

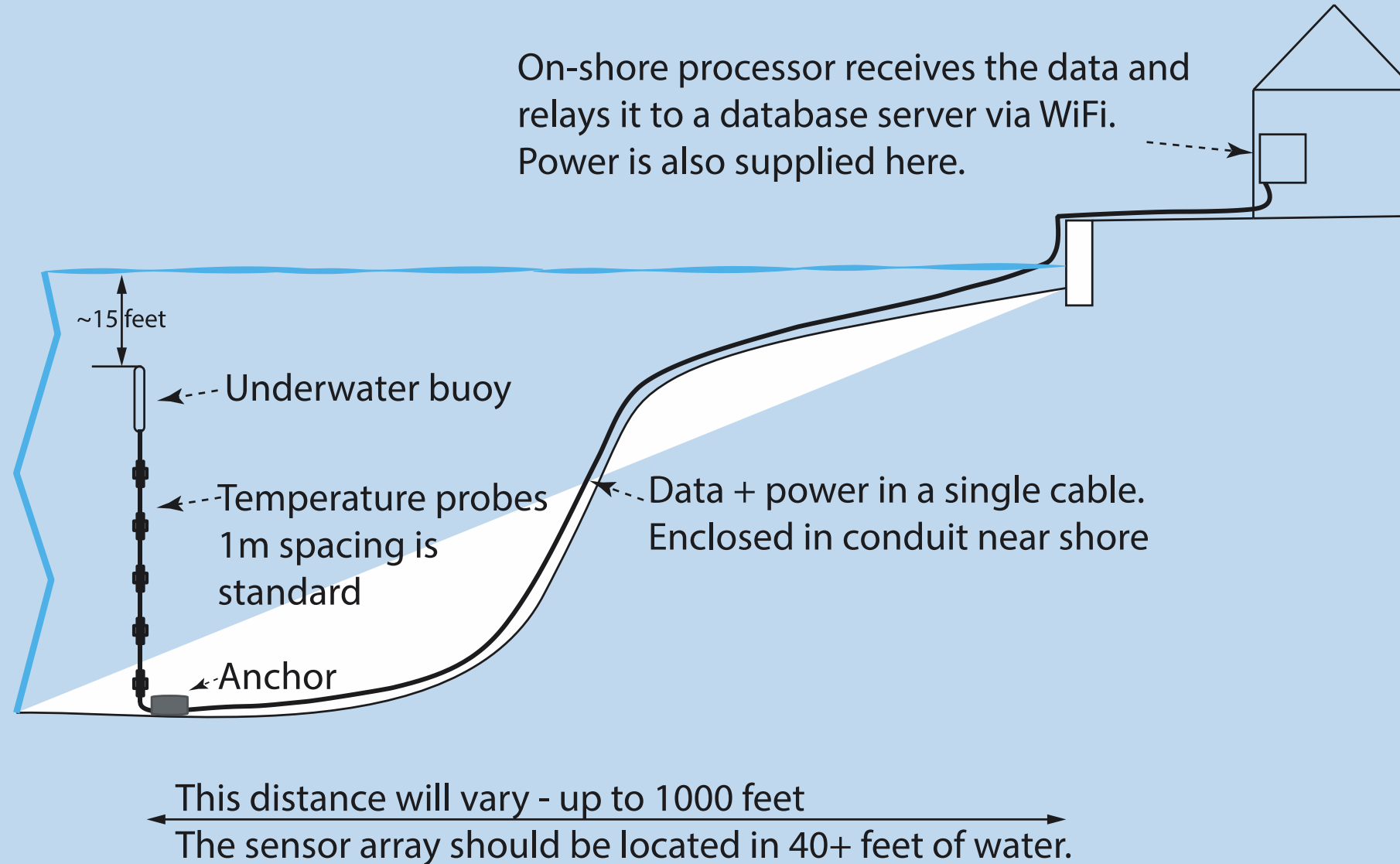
Conesus Lake:

- Relatively shallow in the northern basin
- Large extent of littoral habitat (where plants grow)
- Max. depth is 66 feet
- Average depth is 38 feet
- 9 miles long; 1 mile at its widest point
- Drains north to Lake Ontario
- Water supply to approx. 15,000 residents

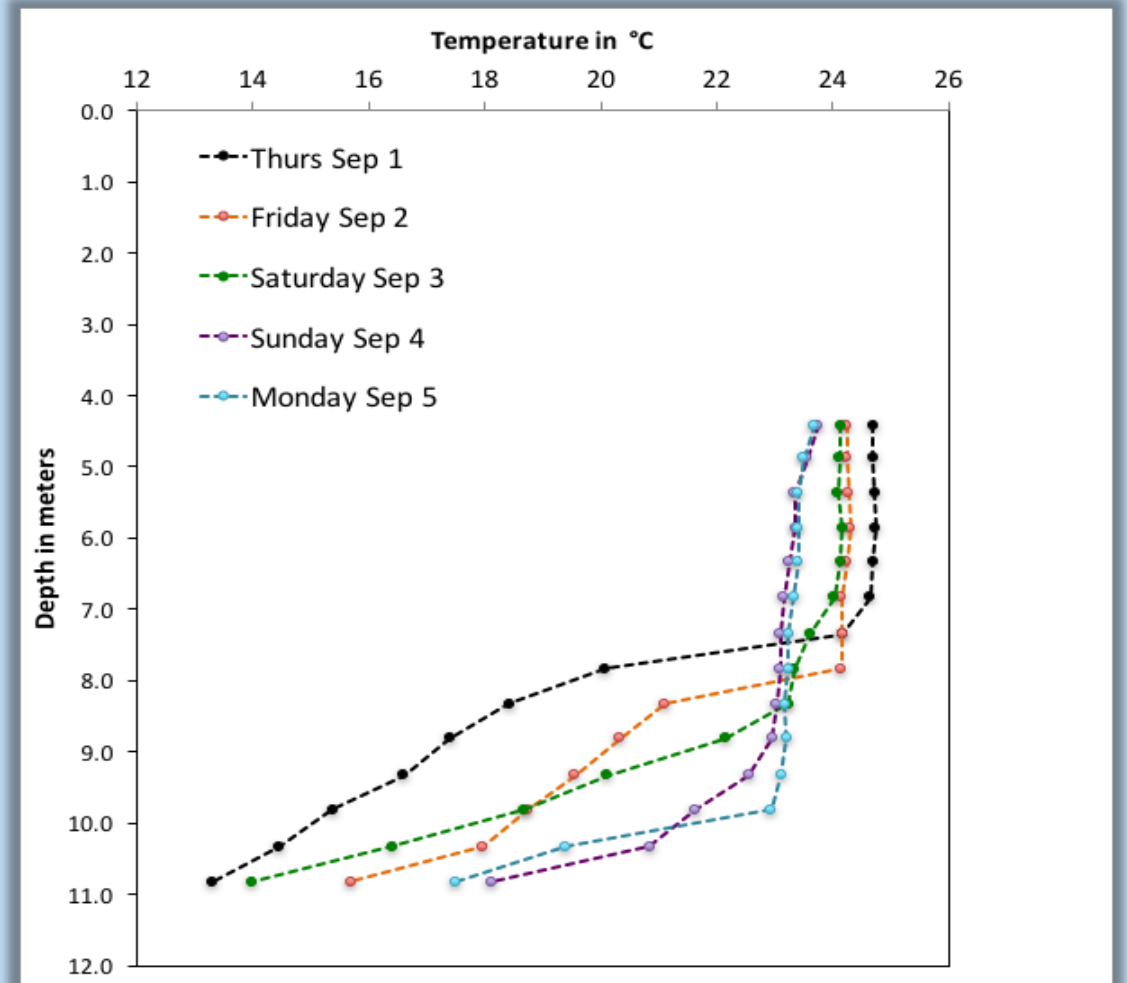
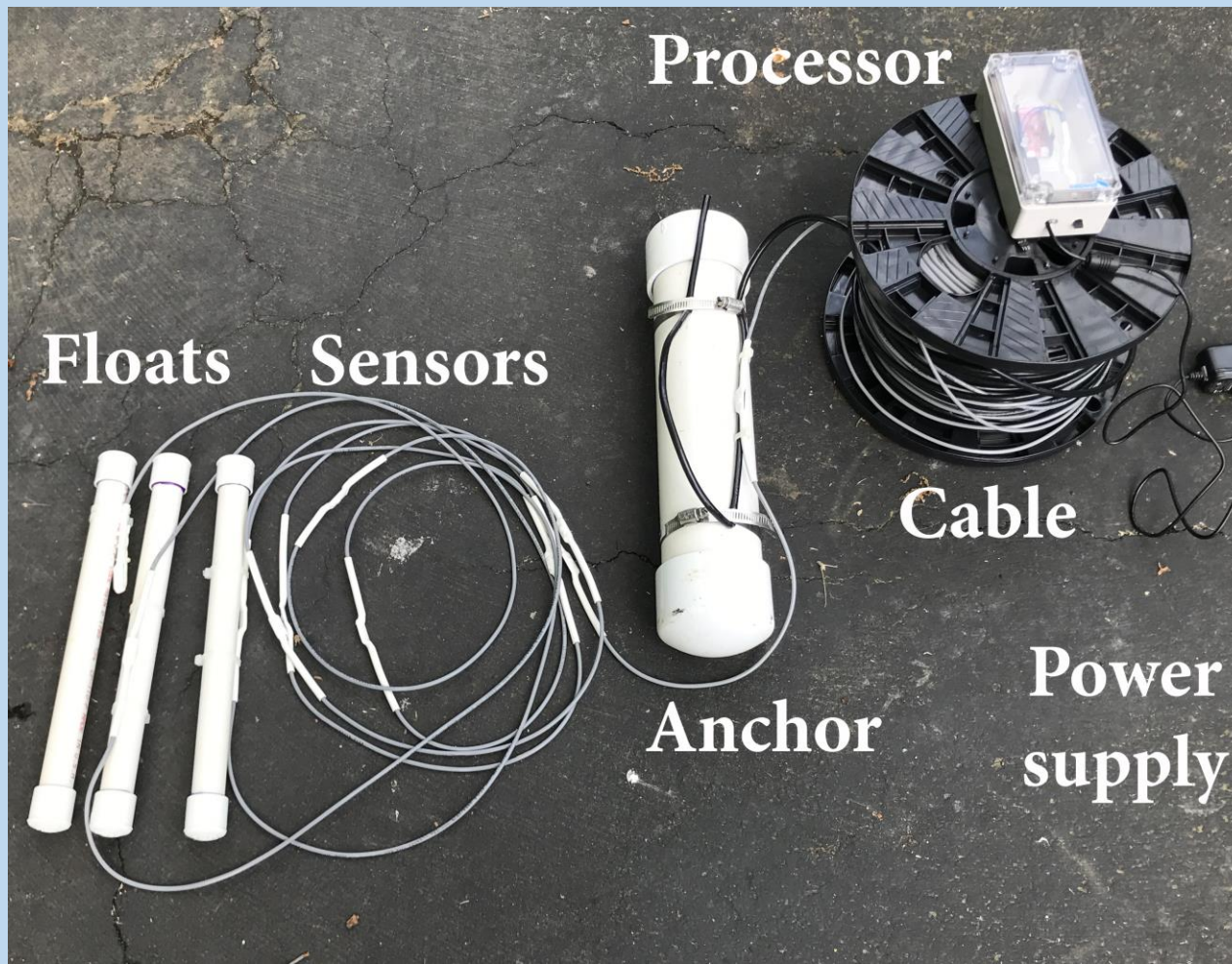
PHOTOSYNTHETICALLY ACTIVE RADIATION



Lake Temperature Profiler - Overview



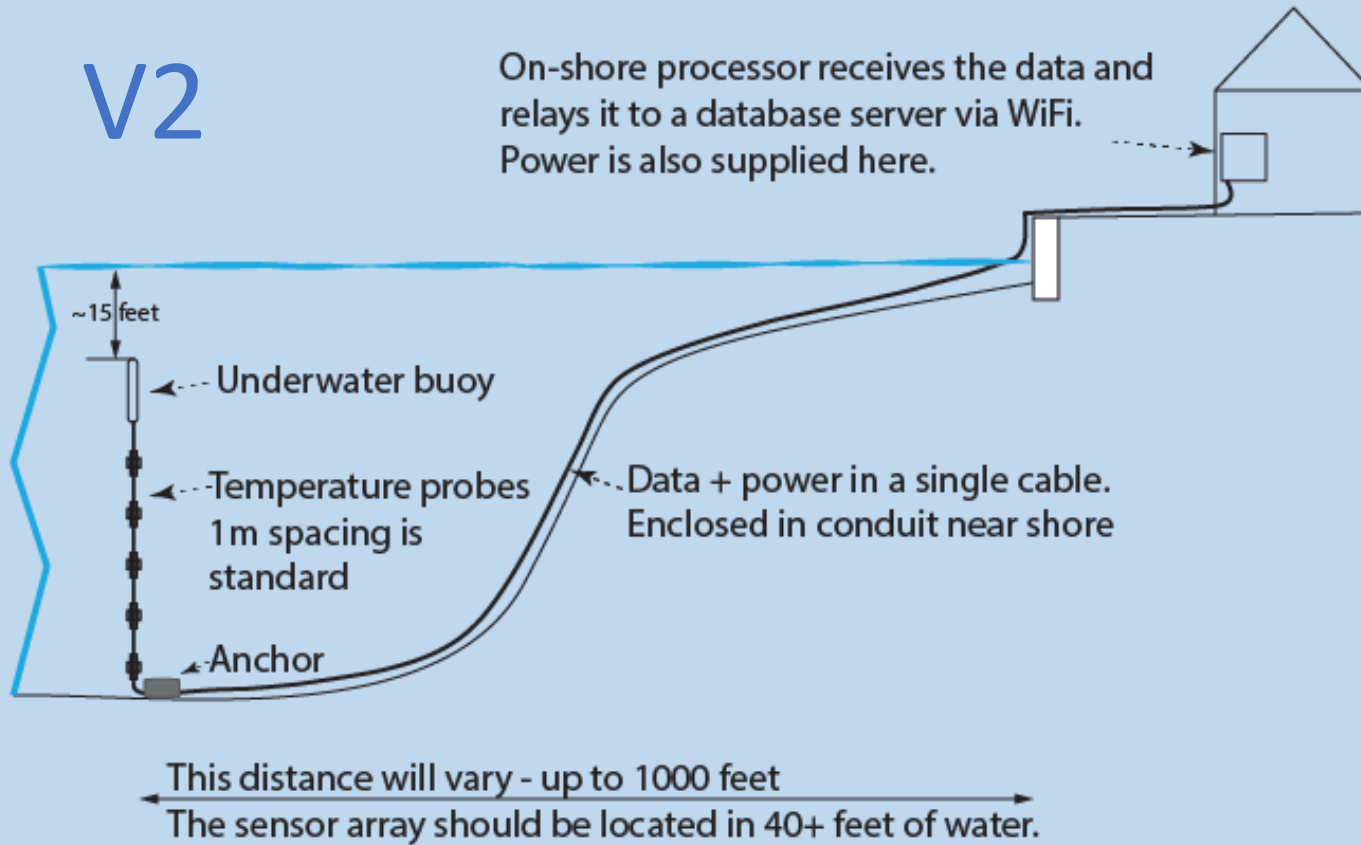
Lake Temperature Profiler



Lake Temperature Profiler

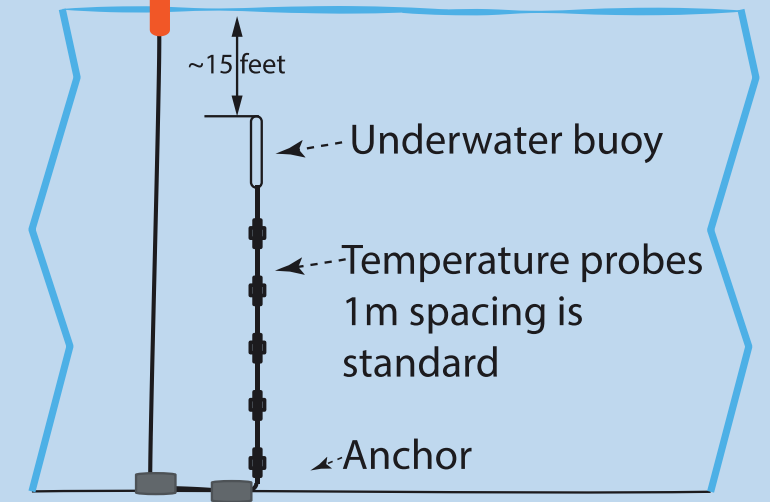
V2

On-shore processor receives the data and relays it to a database server via WiFi. Power is also supplied here.

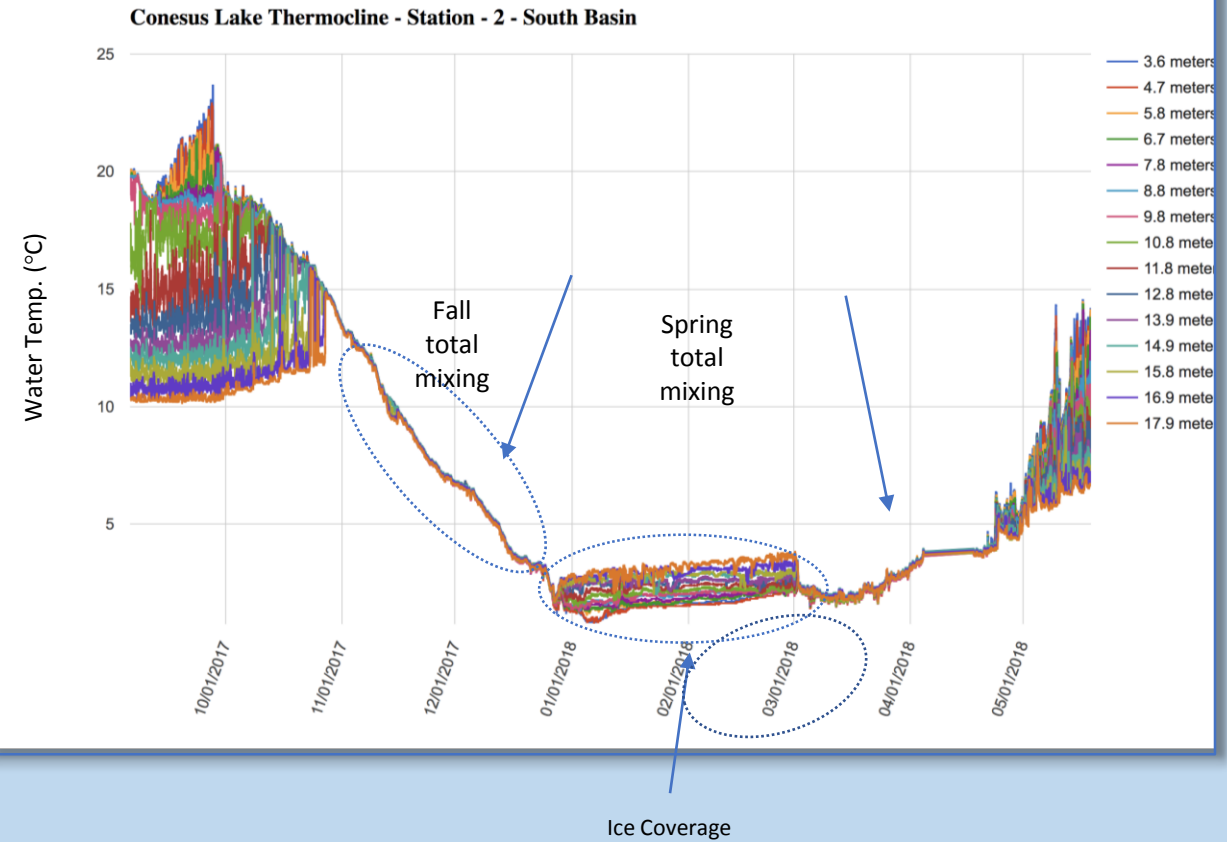
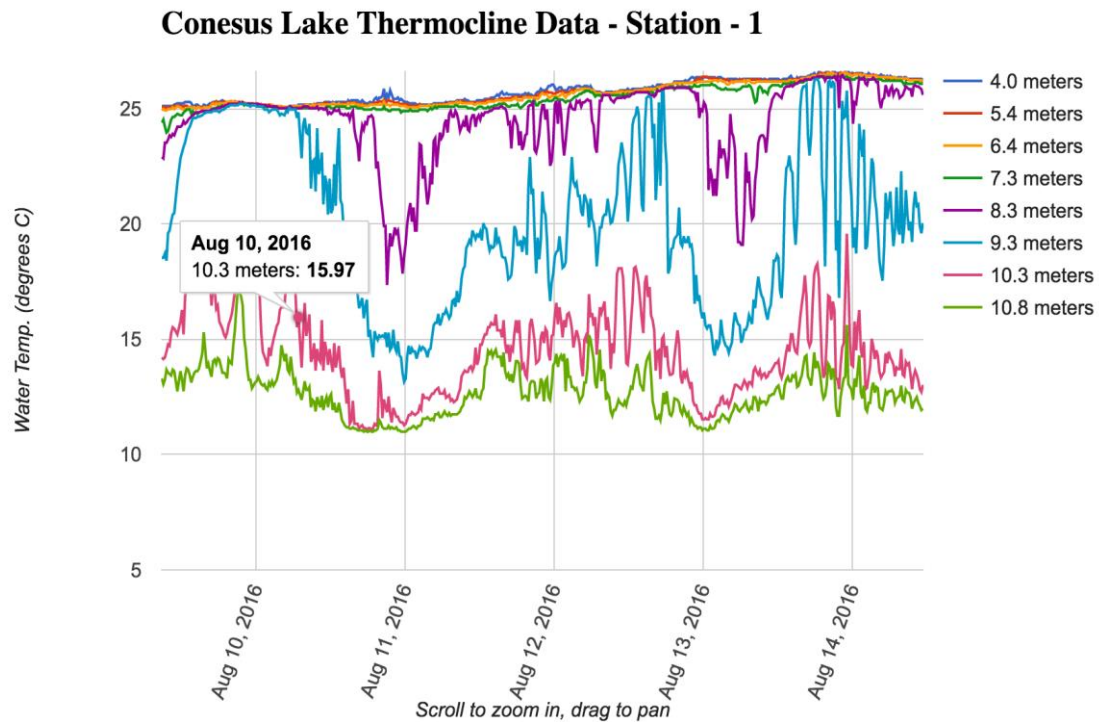


V3

Solar powered processor receives the data and relays it to a database server via cellular.



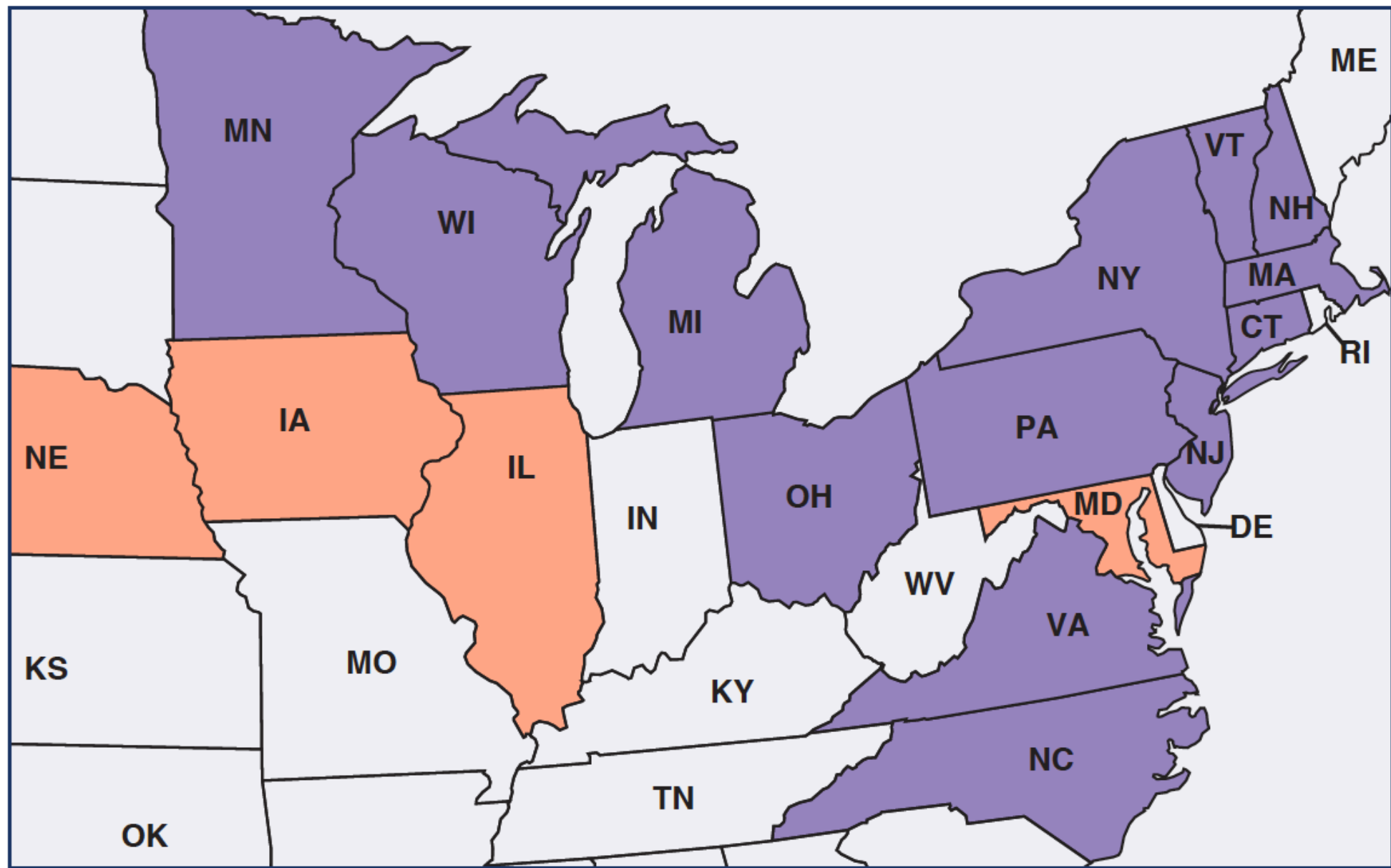
Sample Data



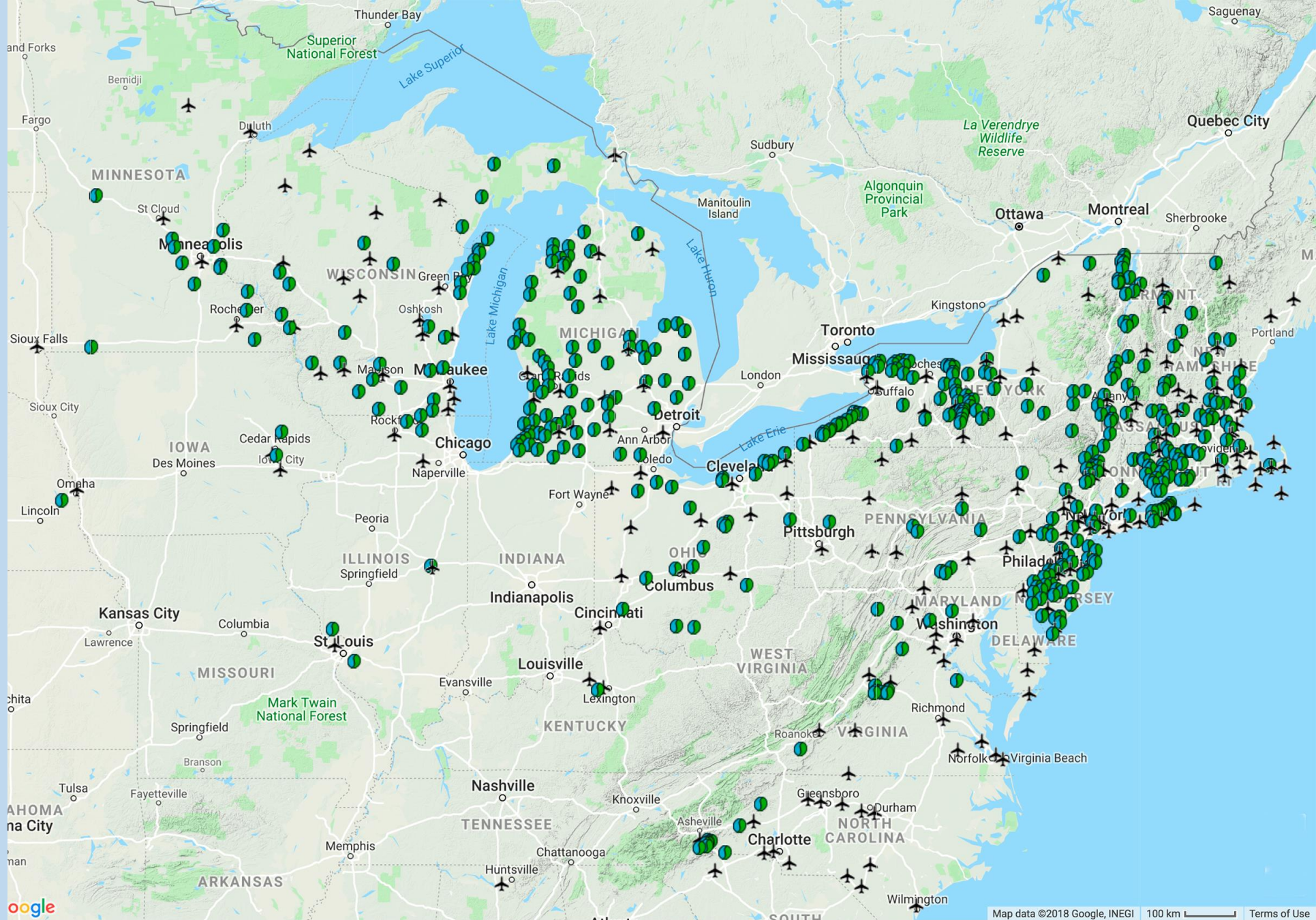
NEWA: Weather Network

sharing resources to make possible:


- weather data collection,
- Weather analysis, distribution
- Archiving data
- Weather stations,(originally primarily located on farms) deliver data to the NEWA website, which automatically calculates and displays weather data summaries,...



Partner states (purple) and states with individual grower partners (orange) in the NEWA network.



National Weather Service Forecast

 Enter "City, ST" or "zip code"

About NEWA

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[Vision Statement](#)
[Your NEWA Blog](#)

Other Weather Data Sources

[6-10 Day Outlook \(NWS\)](#)
[National Doppler Radar Sites](#)
[National Weather Service](#)
[NWS Graphical Forecasts](#)
[NWS State Data](#)
[Weather Activity Planner](#)
[Weekly Weather & Crop Bulletin \(USDA\)](#)
[About Other Weather Data Sources](#)

Other Pest Forecast Tools

[Cucurbit Downy Mildew Forecasting](#)
[Fusarium Head Blight Prediction Center](#)
[Soybean Rust ipmPIPE](#)
[About Other Pest Forecast Tools](#)

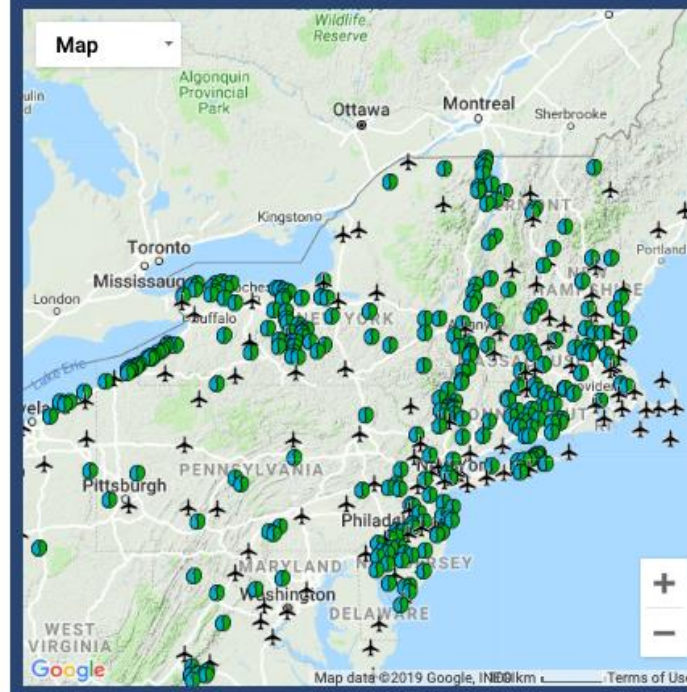
Other Crop Management Tools

[Apple Freeze Risk Tool](#)
[Blueberry Phenology Tool](#)
[Critical Temperatures for Tree Fruit](#)
[Drought Monitoring](#)
[US Drought Monitor Map](#)
[US Monthly Drought Outlook](#)
[Weather Activity Planner](#)
[About Other Crop Management Tools](#)

NEWA Partners

Welcome to the NEWA Home Page

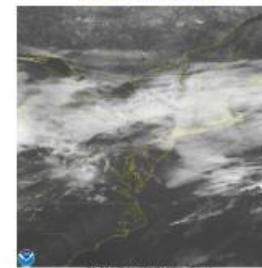
Click on a map marker to go to the weather station's home page.



[Northeast Radar Loop](#)



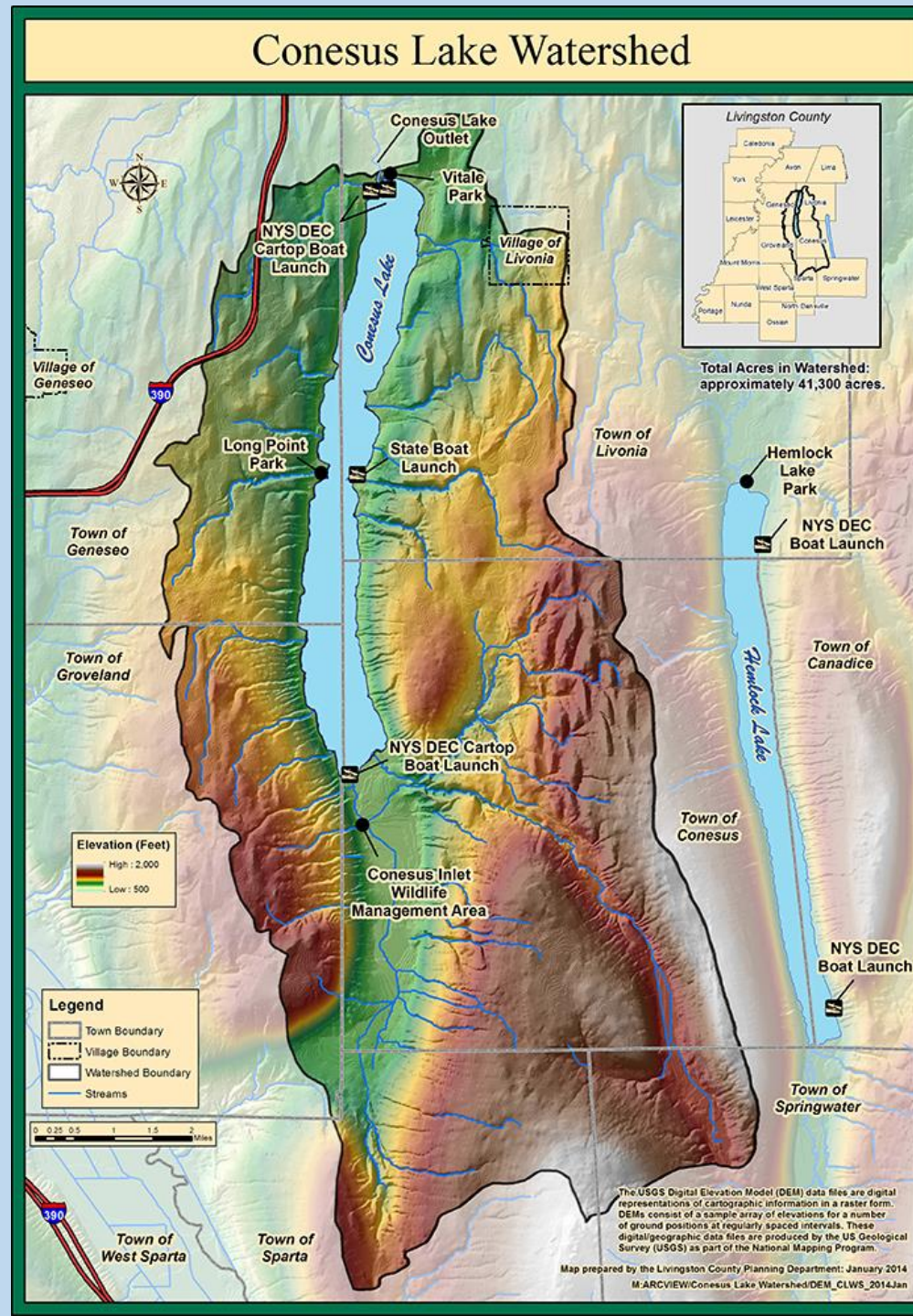
[Visible Satellite Loop](#)



NEWA: Something New

- What happened yesterday.
- What is happening now.
- What might happen 1-5 days from now.
- Biological context.
- Insect pests.
- Plant diseases.
- Watershed Management
 - New Focus
- ~~Long term forecasts.~~

Decision Support System



Conditions Today at 22:10 EDT



— Smart Sensors

Wind Direction: SSW 194 °

Pressure: 29.221 inHg

PAR: 1 uE

Rain: 0.00 in


Solar Radiation: 1 W/m²

Wind Speed: 5 mph

Gust Speed: 8 mph

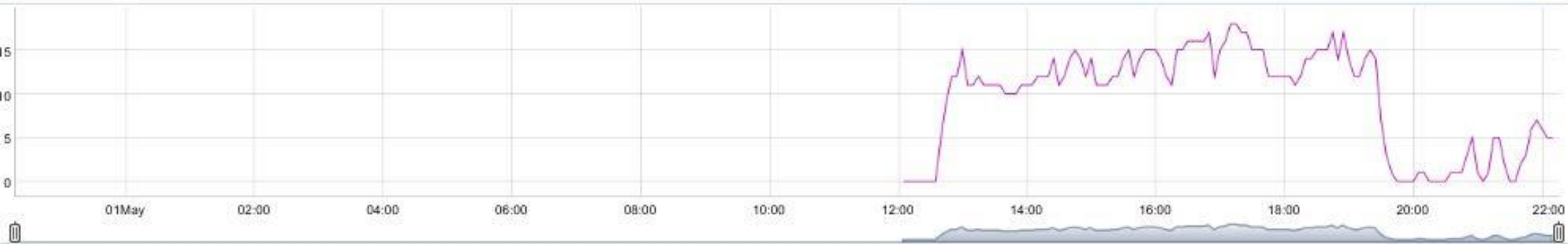
Temperature: 55.82 °F

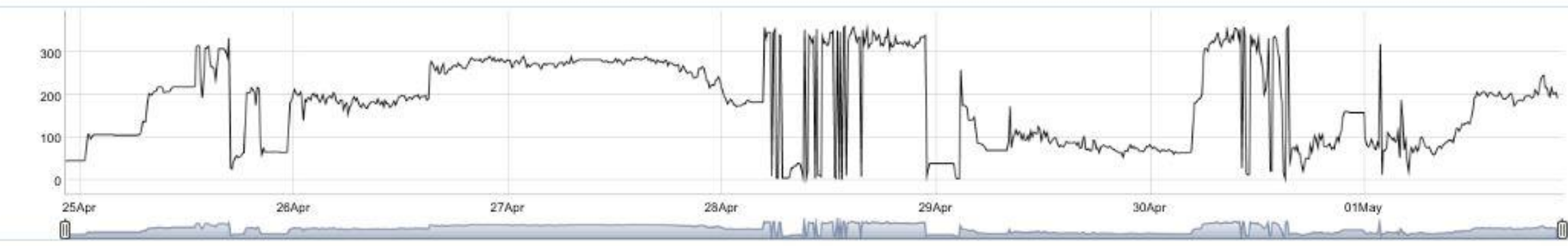
RH: 96.30 %

Dew Point:  57.45 °FBattery:  100%

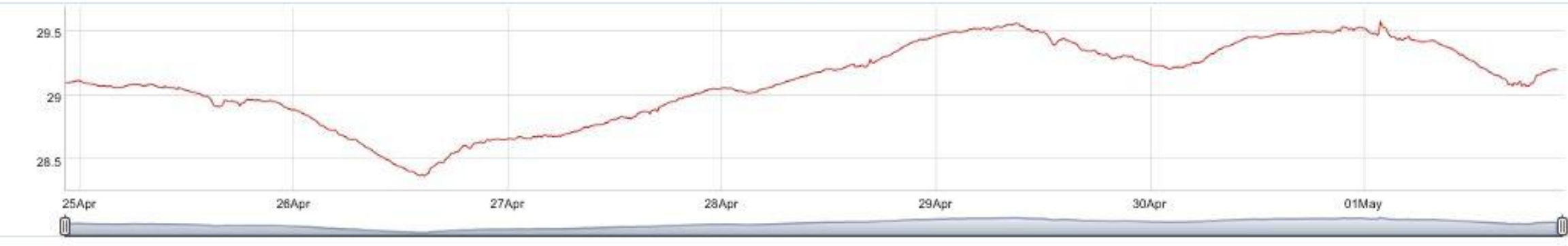
Next Device Connection

Next connection expected 6 minutes from now





Wind Direction: *
20496563-1



Pressure: inHg
20506314-1

NEWA, IPM, & Cornell



Cornell **CALS**
College of Agriculture and Life Sciences

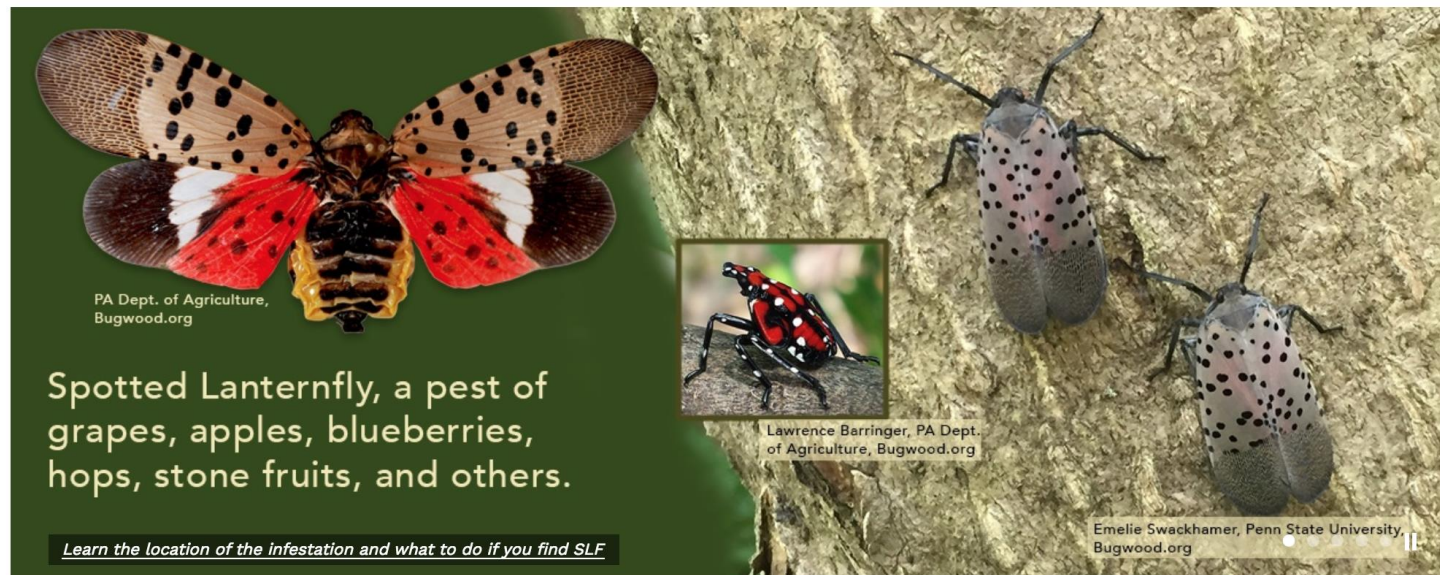
SEARCH:

☐ NYSIPM ☒ Cornell

go

New York State Integrated Pest Management

[About](#) [Agriculture](#) [Community](#) [Environment](#) [Resources](#) [What's Bugging You?](#) [NEWA](#) [EIQ](#)



PA Dept. of Agriculture,
Bugwood.org

Spotted Lanternfly, a pest of
grapes, apples, blueberries,
hops, stone fruits, and others.

[Learn the location of the infestation and what to do if you find SLF](#)

Lawrence Barringer, PA Dept.
of Agriculture, Bugwood.org

Emelie Swackhamer, Penn State University,
Bugwood.org

WELCOME

IPM is as broad as our selection of photos. On farms, vineyards, orchards; in schools, nursing homes, playgrounds; in your own home, lawn, or garden—IPM is foundational to sound, careful, economical ways of dealing with pests.

Our Mission: The New York State Integrated Pest Management Program develops sustainable ways to manage pests and helps people to use methods that minimize environmental, health, and economic

QUICK LINKS

- [Your Local Cornell Cooperative Extension Office](#)
- [Ticks](#)
- [Bed Bugs](#)
- [News](#)
- [Publications](#)
- [Project Reports](#)
- [Pollinators](#)

- Merged data
- Expertise
- Integrated Pest Management (IPM)

Working together

- Conesus Lake – CLA
 - Silver Lake – SLA
 - Hemlock Lake – City of Rochester
 - Canandaigua Lake – CLWA and CLWC
-
- SUNY Geneseo
 - SUNY Brockport
 - Cornell University

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- Web – <http://newa.cornell.edu>