

# Hydrilla in the Cayuga Inlet

## August 2011-2020



### Prepared by:

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Photo credit: Robert L. Johnson

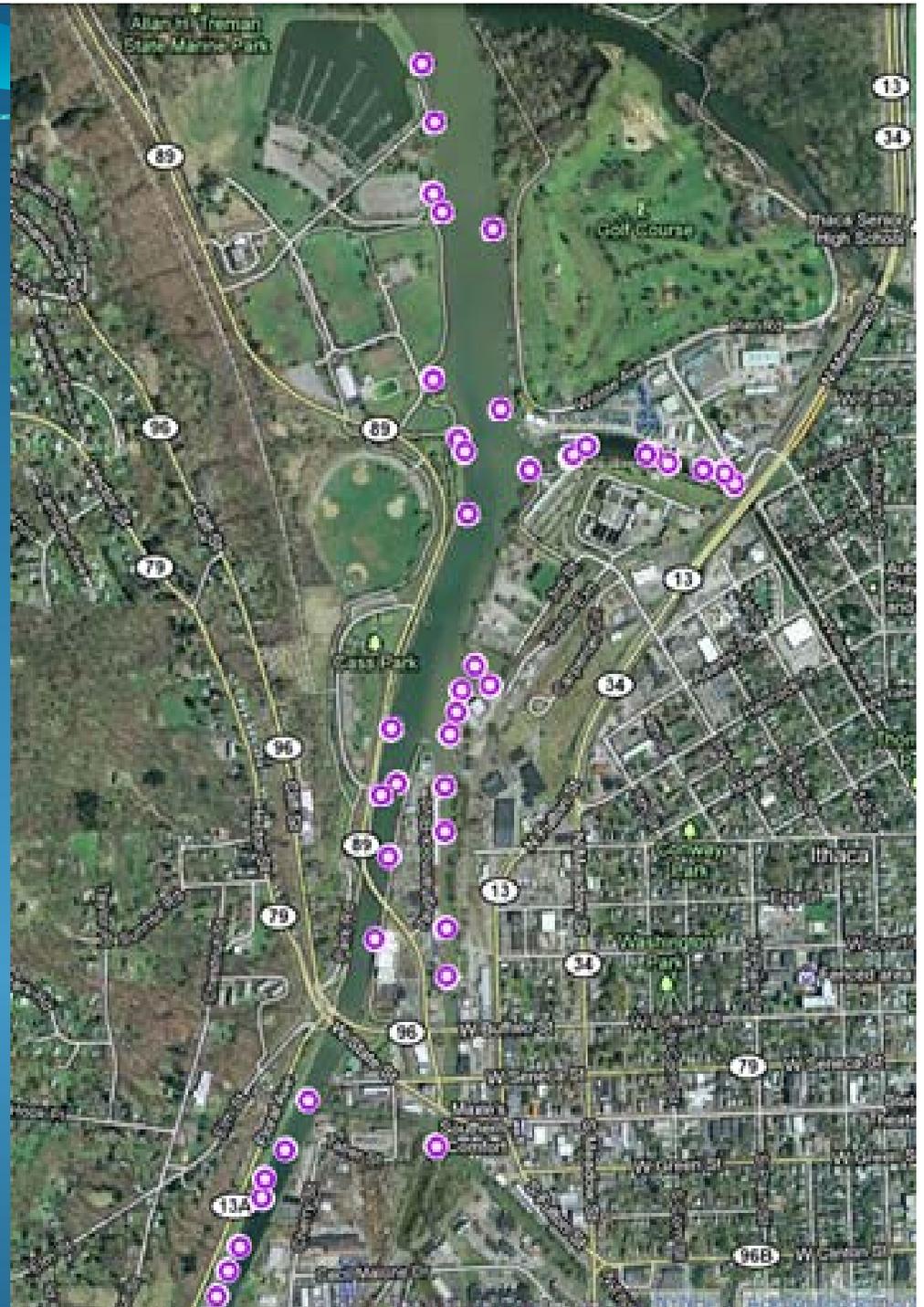
# Fall 2011 Surveys

## Dense populations:

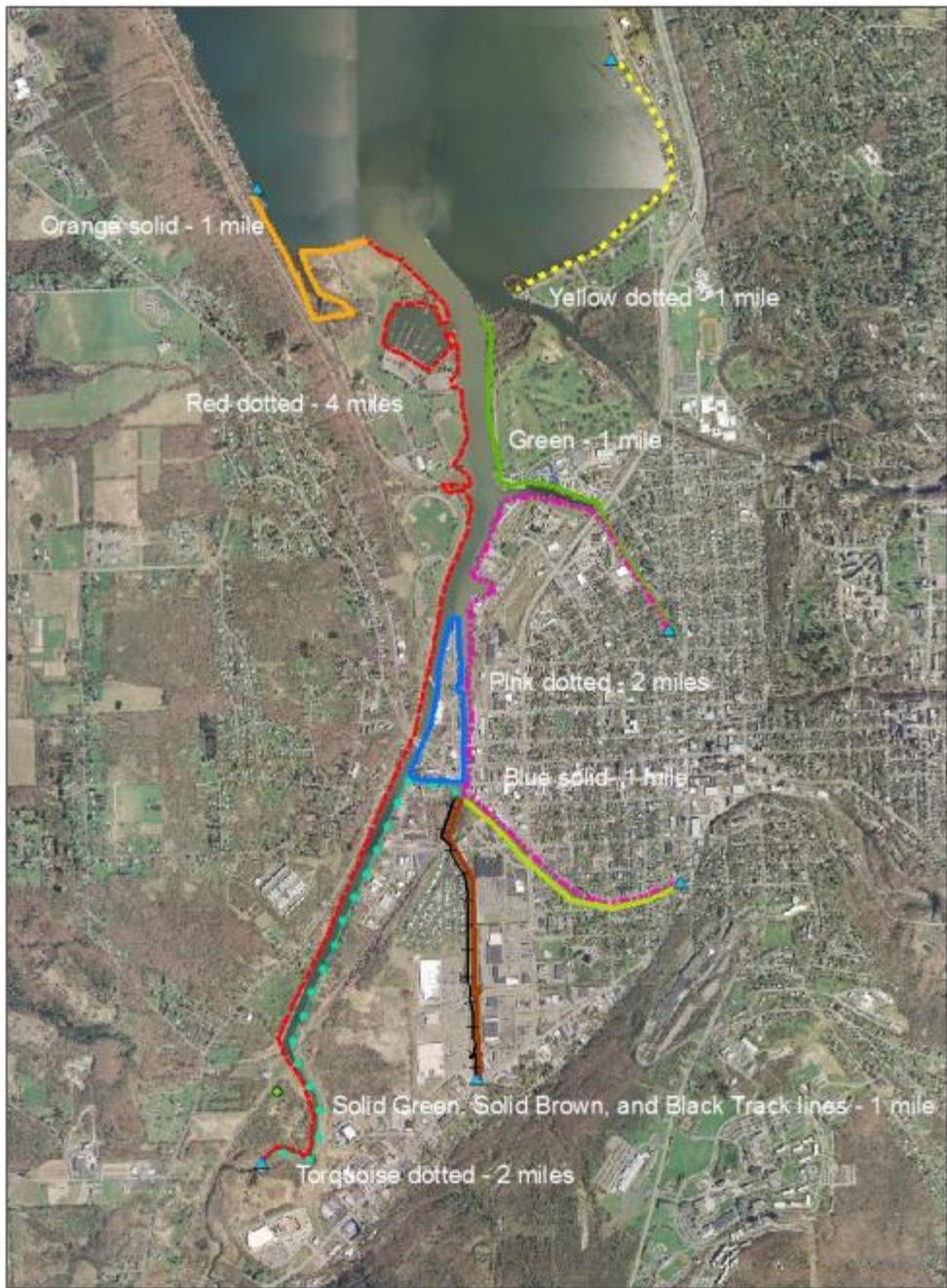
- Farmer's Market docks
- Cascadilla Creek
- Dragon Boat launch/Cass Park
- Cornell University Boathouse

Rooted fragments throughout inlet channel

Small fragments un-rooted to bottom but found on bottom at entrance to lake.



# Sign Distances 2012



# How Did Hydrilla Get Here?

Boat



Trailer



Power, Sail or Paddle



# Public Outreach: Sept. – Oct. 2011



Flyers & Website Created  
[cctompkins.org/hydrilla](http://cctompkins.org/hydrilla)



Marina Postings &  
Training Workshop

Tables & People at Farmers' Market  
& Elsewhere



Evaluation:  
*Moderately Effective....*

# Why should we be worried?

## Ecological Impacts

- Shades out native plants
- Oxygen deficits kill fish
- Reduces habitat quality
- Potential blue-green algae outbreaks



*1st year noted*

# Economic Impacts

Impedes boating, fishing & swimming  
Cripples tourism & property values  
Costs millions to manage

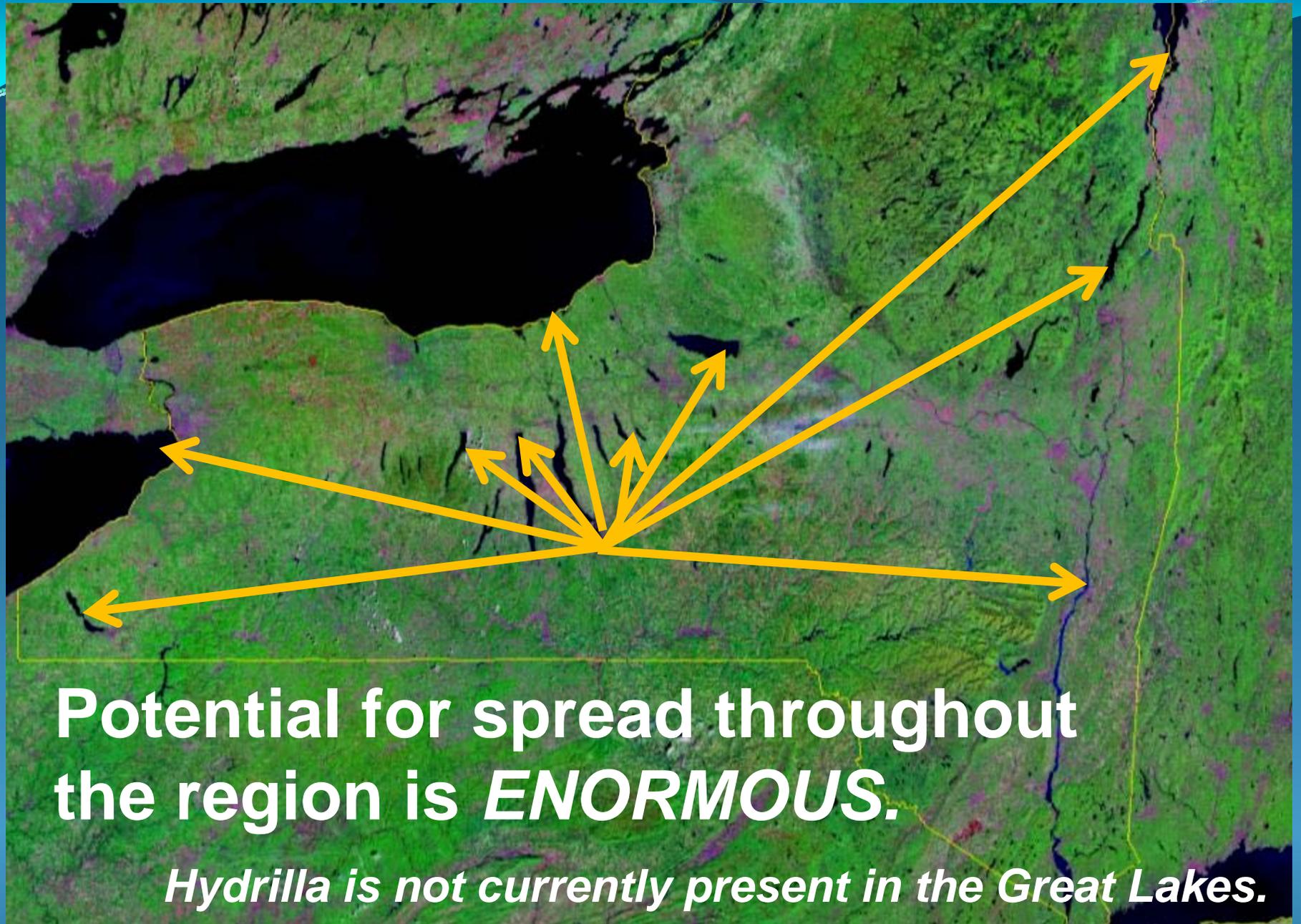


Hydrilla infestation  
Withlacoochee River, Florida  
Photo by Brian Nelson  
Copyright 1997 Southwest Florida Water Management District

*3-5 years?*

# What Can We Do?

- Write elected officials
- Spread the word, not the plant
  - Neighbors
  - Marinas
- Learn more
  - Get Trained; May workshops
  - [ccetompkins.org/hydrilla](http://ccetompkins.org/hydrilla)



Potential for spread throughout the region is ***ENORMOUS***.

*Hydrilla is not currently present in the Great Lakes.*

# Hydrilla verticillata

- One of World's most invasive plants
- Spread by humans
- Cayuga Inlet 8/2011



# What can boaters do?

- Avoid
- Remove
- Discard
- Clean and dry



**STOP AQUATIC  
HITCHHIKERS!™**

Prevent the transport of nuisance species.  
Clean all recreational equipment.  
[www.ProtectYourWaters.net](http://www.ProtectYourWaters.net)

*Plant fragments can survive*

# Boaters & Property Owners

## Around docks & launch sites:

- *Carefully* remove
- Dry
- Compost and yard waste



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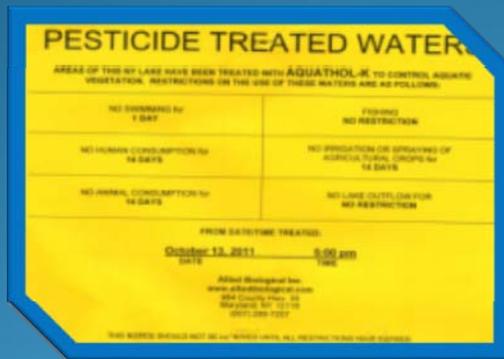
[www.ProtectYourWaters.net](http://www.ProtectYourWaters.net)

# Response Measures: Sept. – Oct. 2011



Lake Survey Completed – Sept. 5  
(no confirmed lake presence!)

Sept. 19: *City recommends boaters stay off of inlet.... Community complies!*



Permit Application & Public Notice by SWCD – Sept. 14



Inlet Closed for Endothall (Herbicide) Applications - Oct. 12, 13

# Goal = Eradication

## Long-term battle :

- Repeated herbicide applications
- Research on the plant in Cayuga
- Sustained community support
- Long-term monitoring



# Results



**95% Effectiveness of  
Endothall**



**Plant re-growth &  
intact roots**



# Options Limited



# 2012

- **3 herbicide treatments**
- **Coordinated efforts N/S**
- **Boat Stewards**
- **No Inlet closure?**



# Linderman Creek

August 6,  
2011



August 28, 2011



# Rate of Growth in Linderman Creek

August 6, 2011



August 28, 2011



# Turions



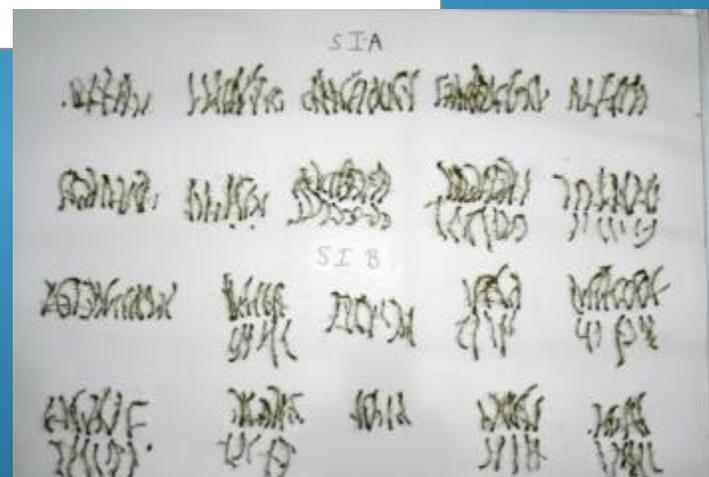
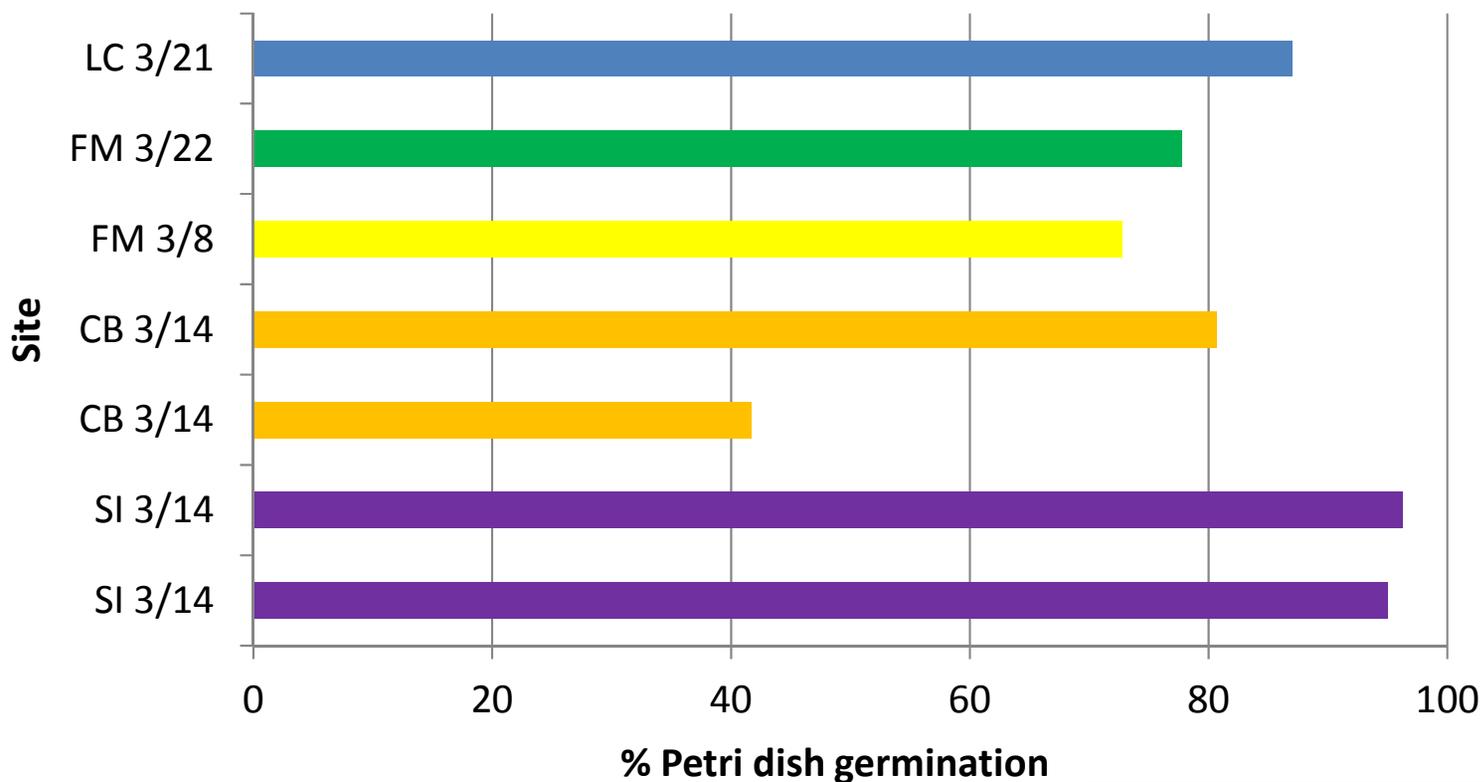
# Specific Cayuga Inlet Hydrilla ongoing and planned Monitoring



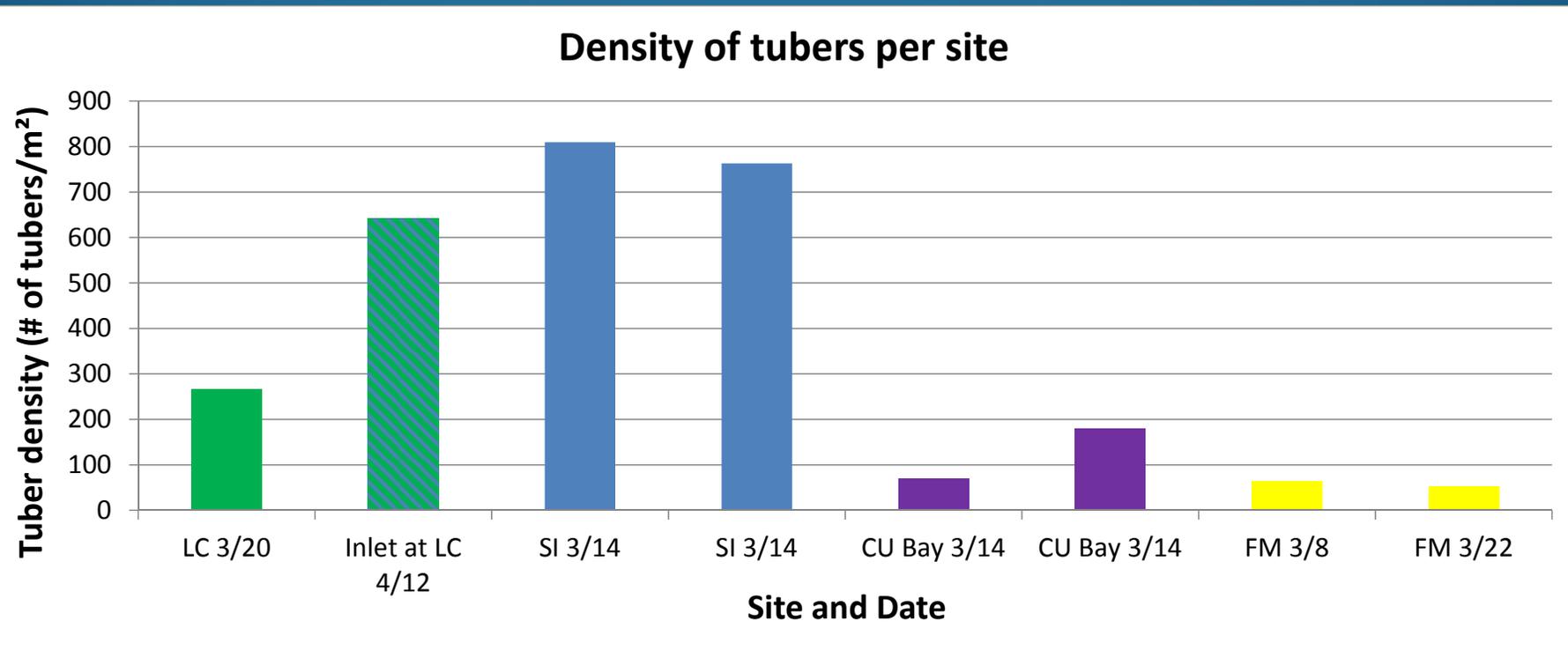
# Tubers in South Inlet at High Density



## % Petri dish germination of tubers per site



# Spring tuber density at locations



# Turions



5/10/2012

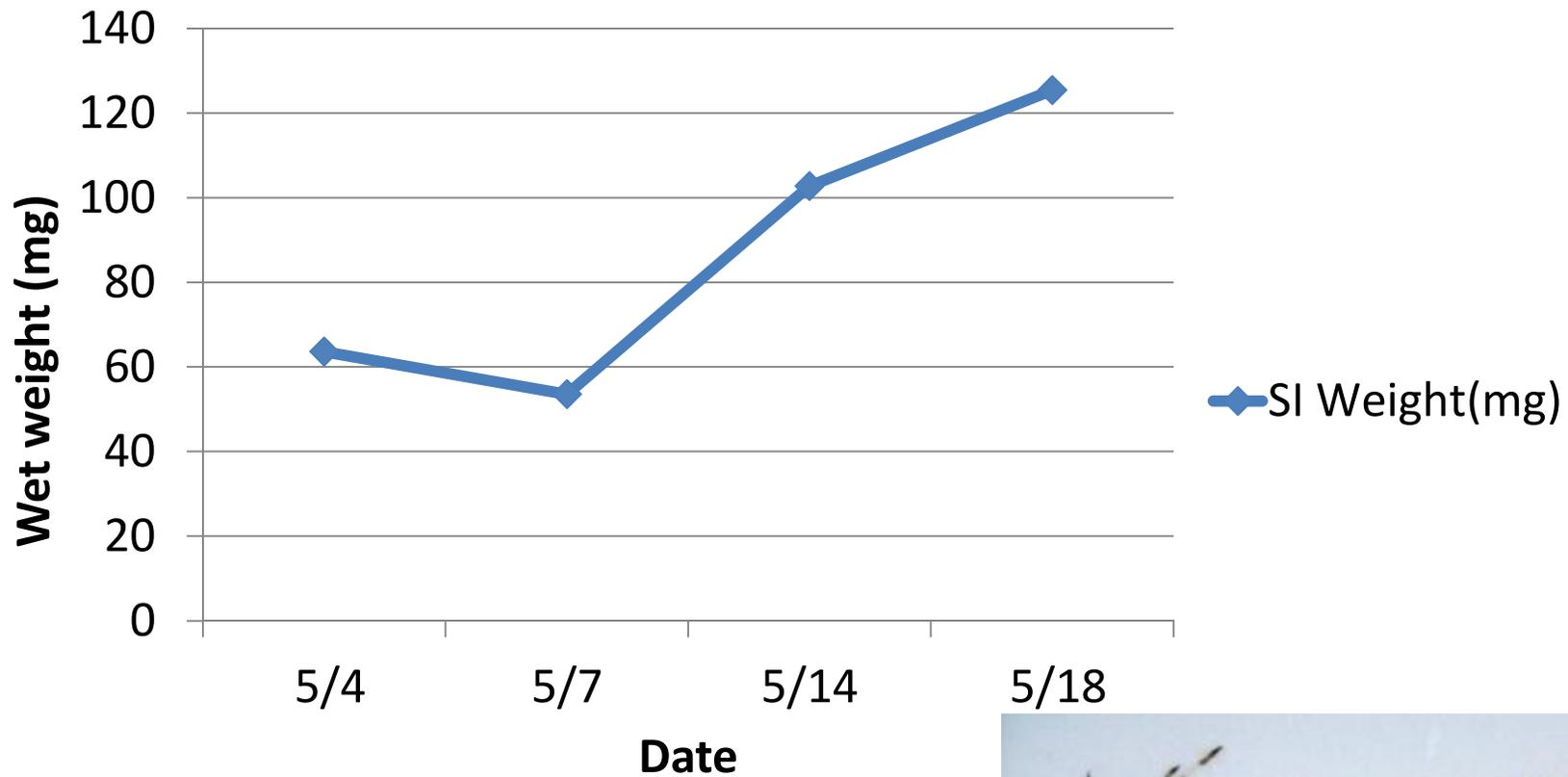


collected October 2011

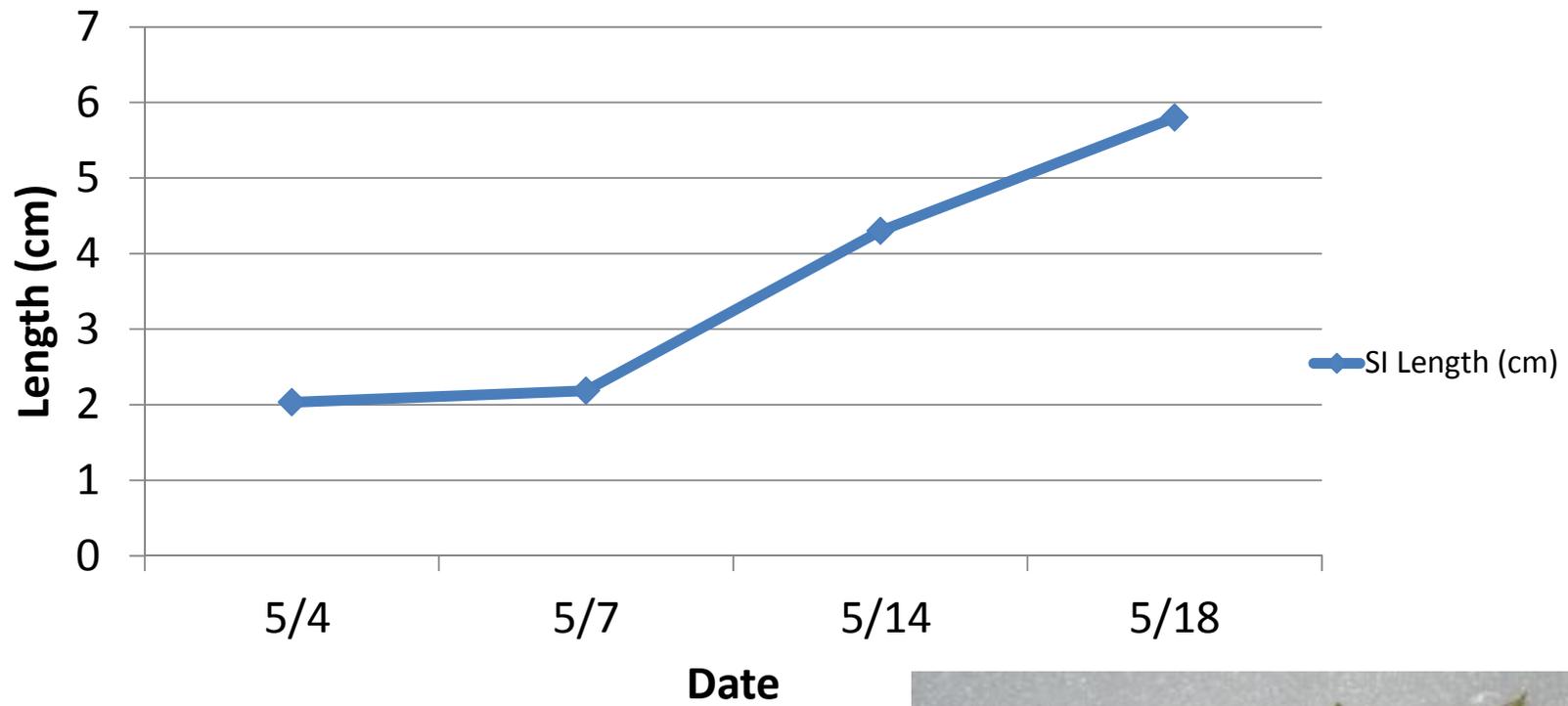


SI on 5.7.2012

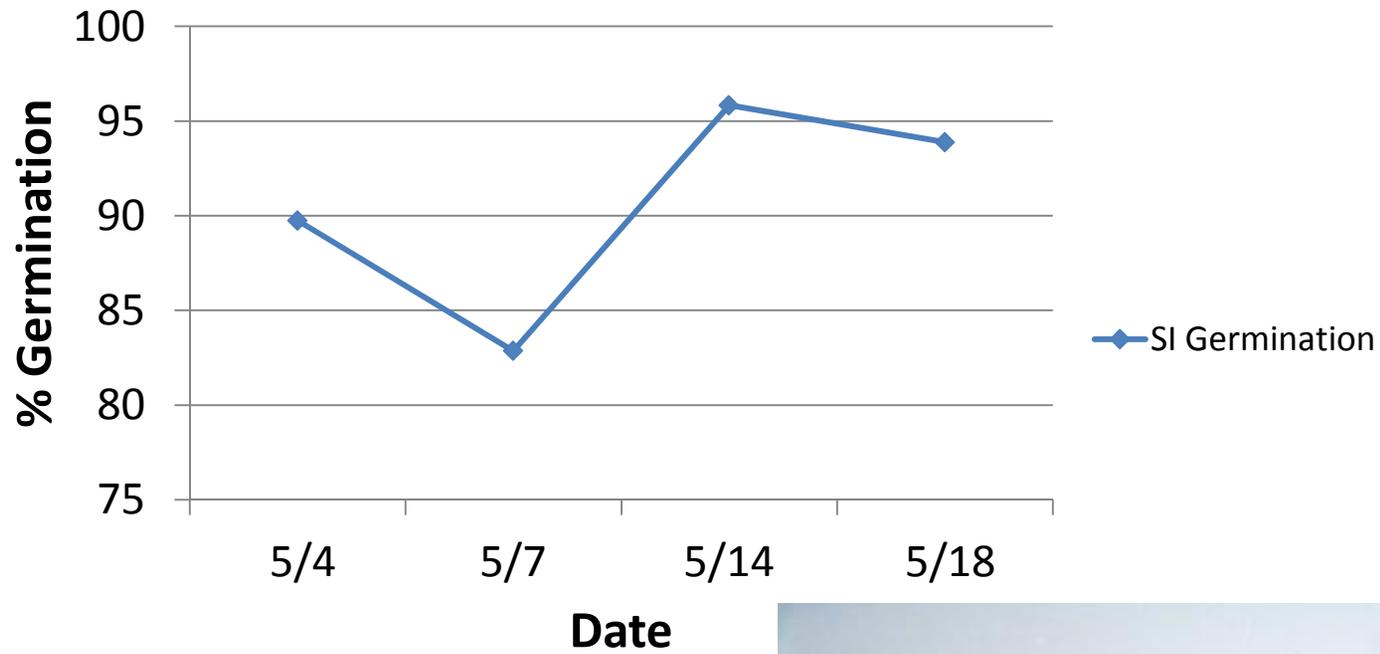
## Average wet weight (mg) of tubers over time



## Average length (cm) of tubers over time



## South Inlet % Germination



# Surprise



Collected April 20 and placed in water bath at 20C. Still waiting !!!!



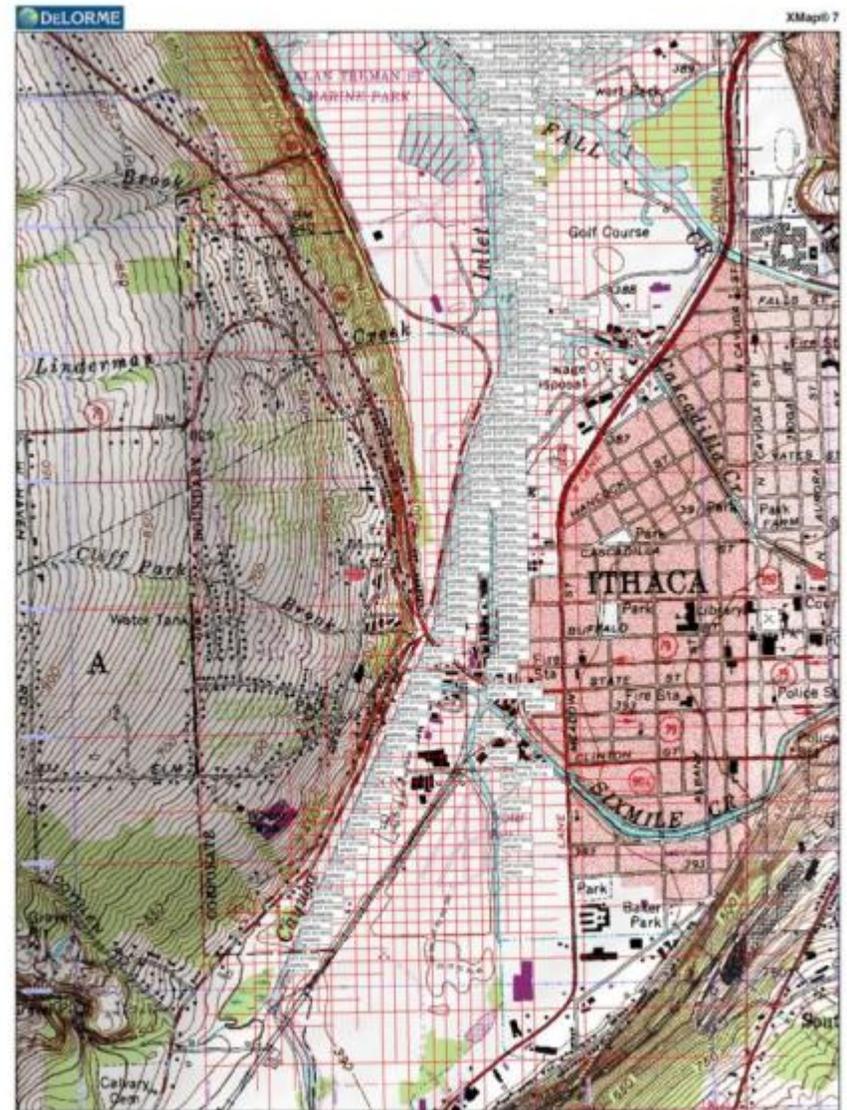
# Treatment and Monitoring Area

Cayuga Inlet Treatment Area 2012



0 625 1,250 2,500 3,750 5,000 Feet

Legend  
● Stations  
■ TreatmentArea\_2012  
■ NYS Wetlands

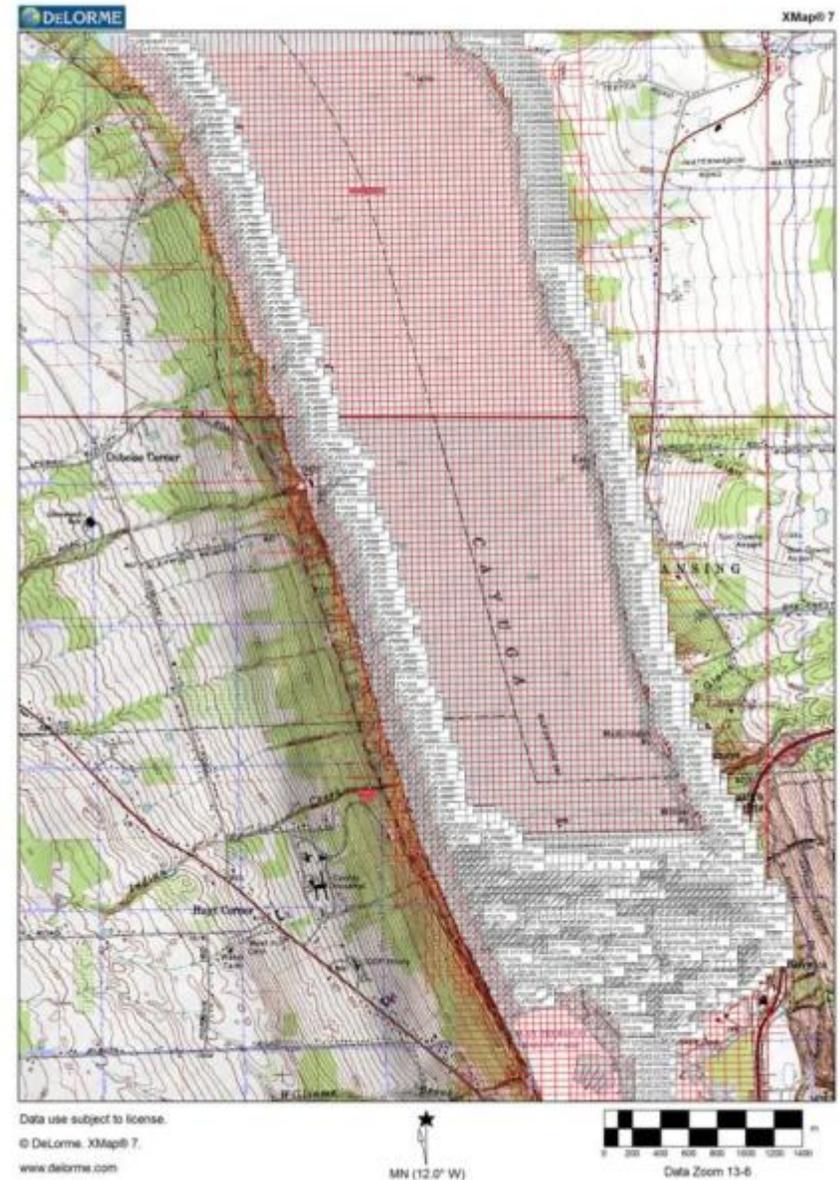
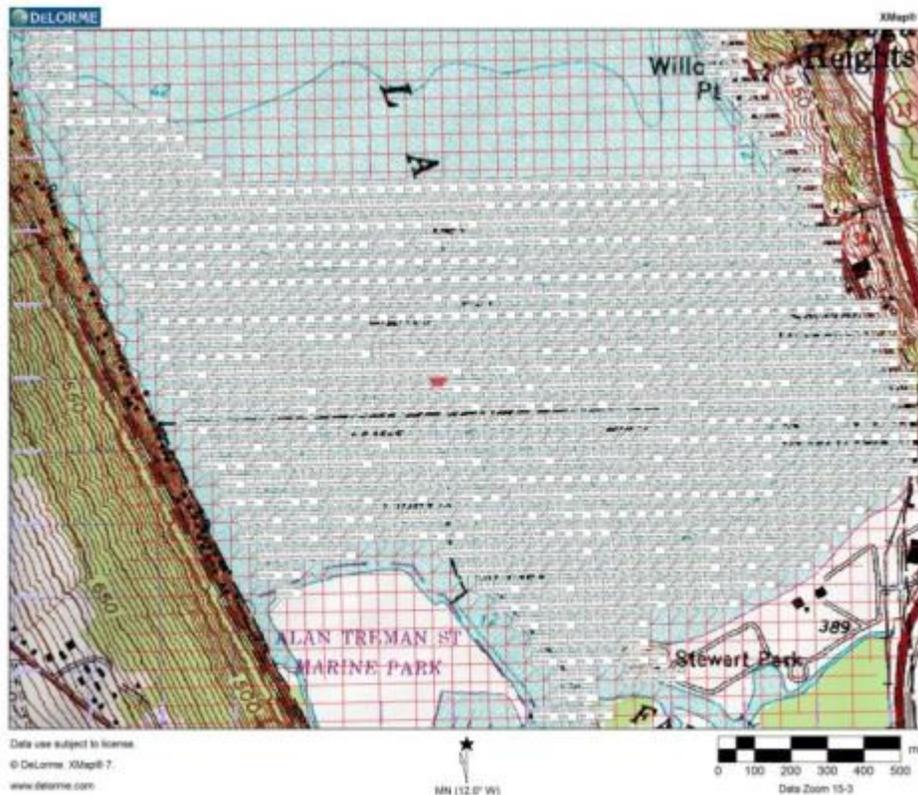


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MN (12.0° W)

0 160 320 480 640 800 m  
Data Zoom 14-5

# Likely Sampling Points for South End of Cayuga Lake by Rake-toss and Divers On UTM 50X50m Grid



# Rake-toss plant survey on up to 1500+ locations on UTM Coordinate Grid



Continuing to plan, monitor and wait for hydrilla growth to initiate herbicide treatment

