Middle Bolton Lake Aquatic Plant Survey 2020

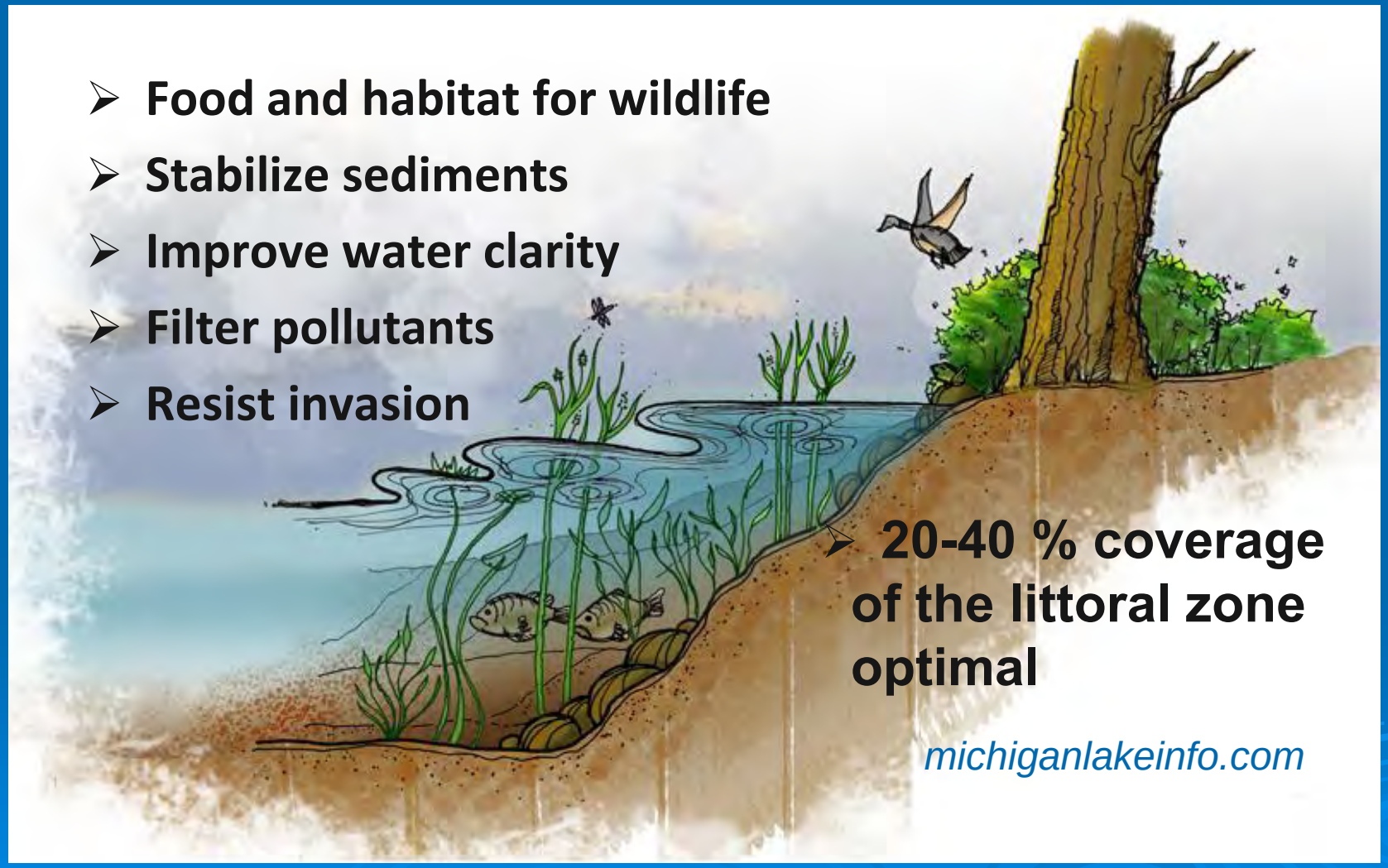
Gregory J. Bugbee and Summer E. Stebbins

Connecticut Agricultural Experiment Station

Department of Environmental Sciences

Invasive Aquatic Plant Program

Aquatic Plants are Important

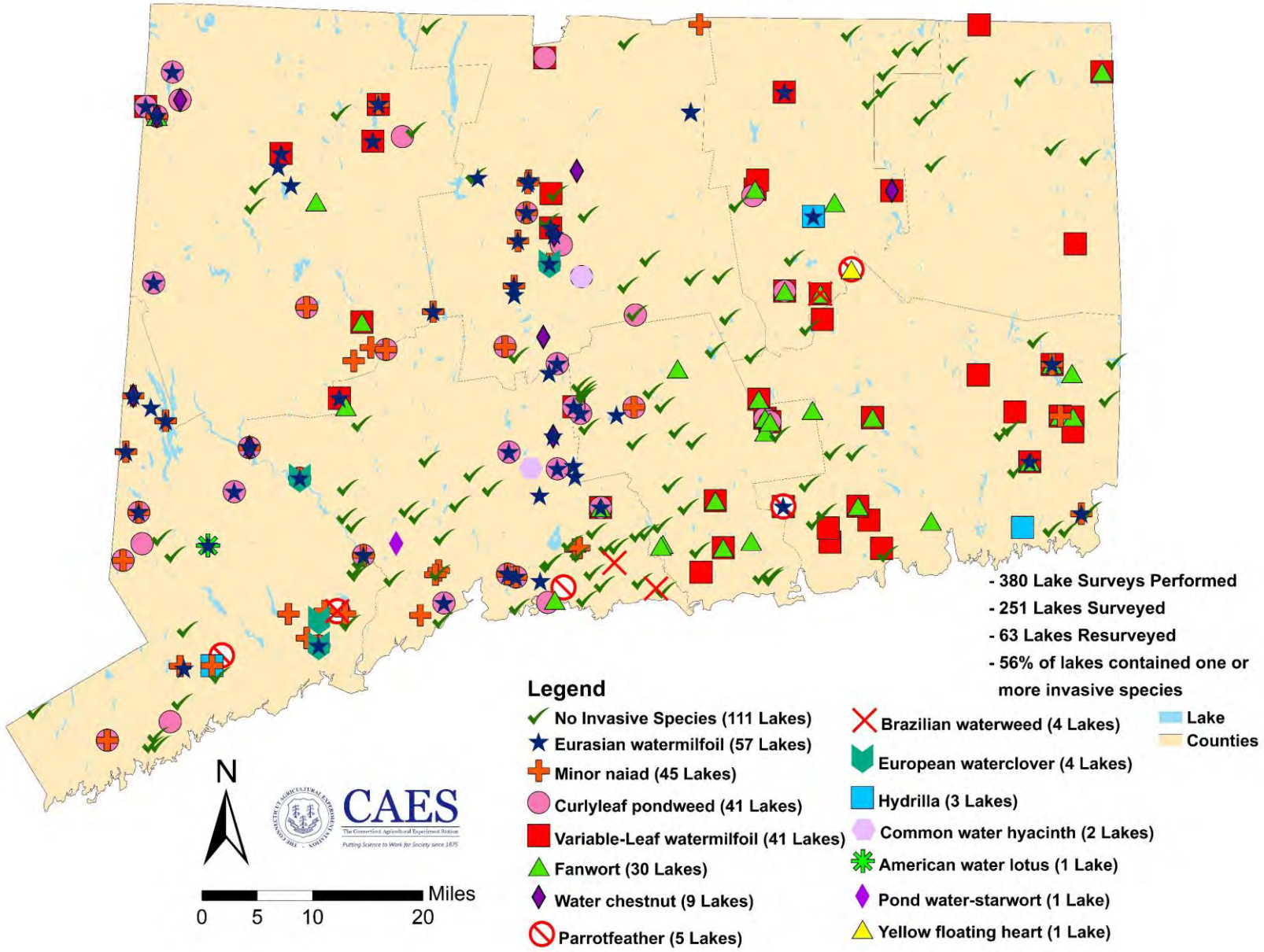


- Food and habitat for wildlife
- Stabilize sediments
- Improve water clarity
- Filter pollutants
- Resist invasion

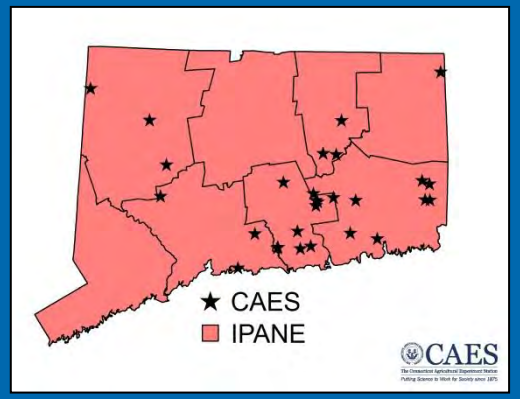
- 20-40 % coverage of the littoral zone optimal

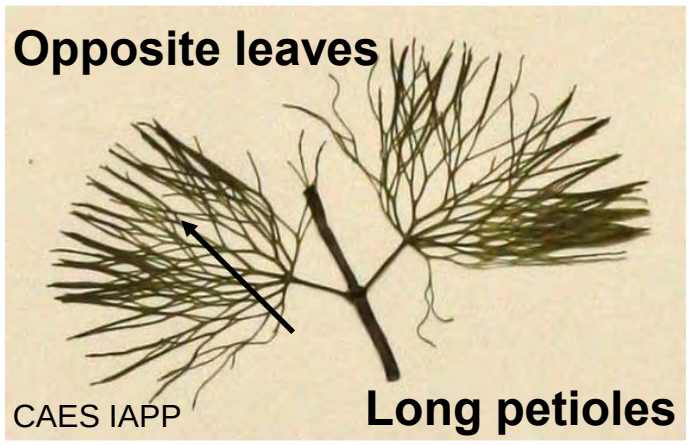
michiganlakeinfo.com

Locations of Invasive Plants Found by CAES IAPP 2004-2020

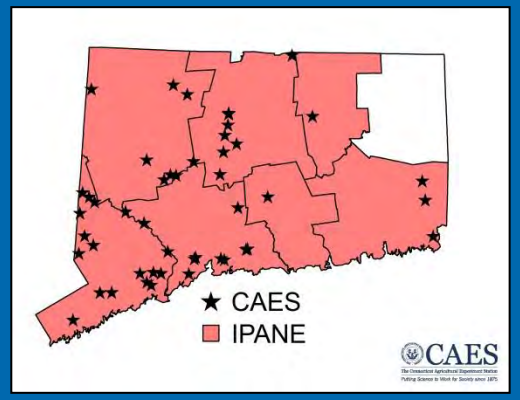


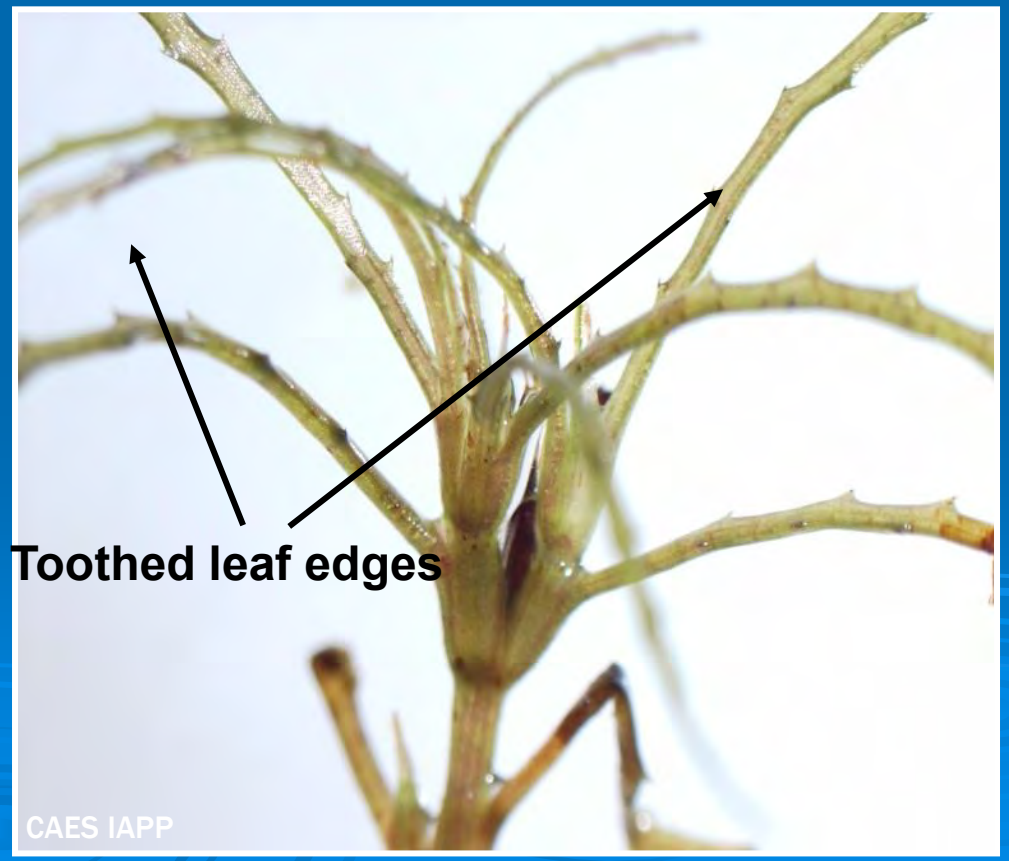
Fanwort
Cabomba caroliniana



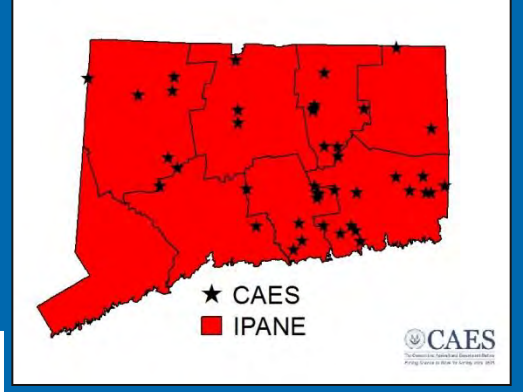


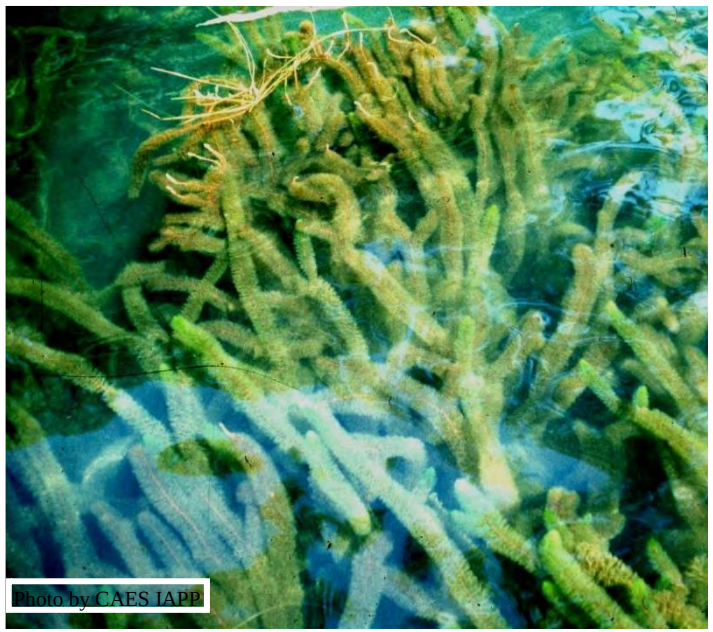
Brittle Waternymph
Najas minor



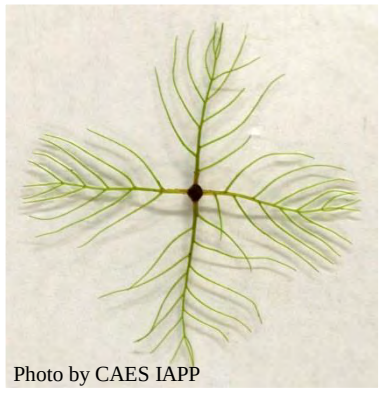


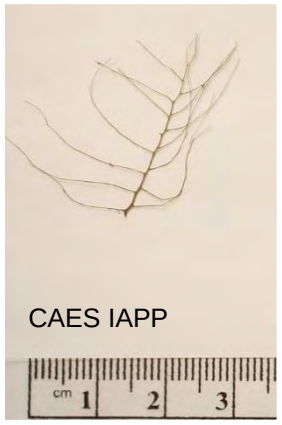
Myriophyllum heterophyllum (Variable Watermilfoil)





Leaves collapse out of water



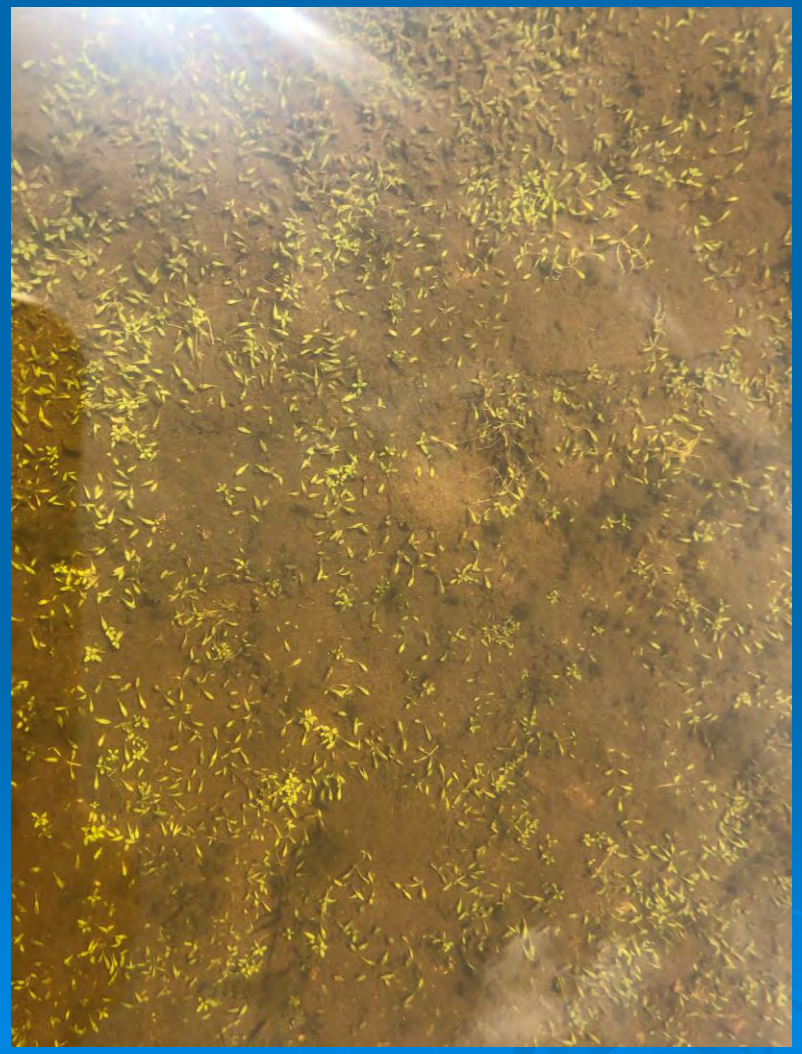


Leaves < 1 inch apart

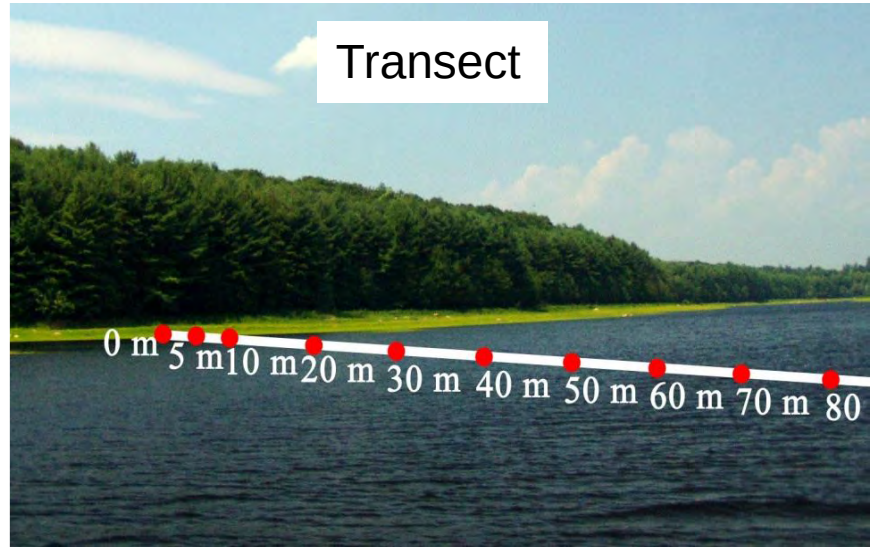
≤ 11 pairs of leaflets

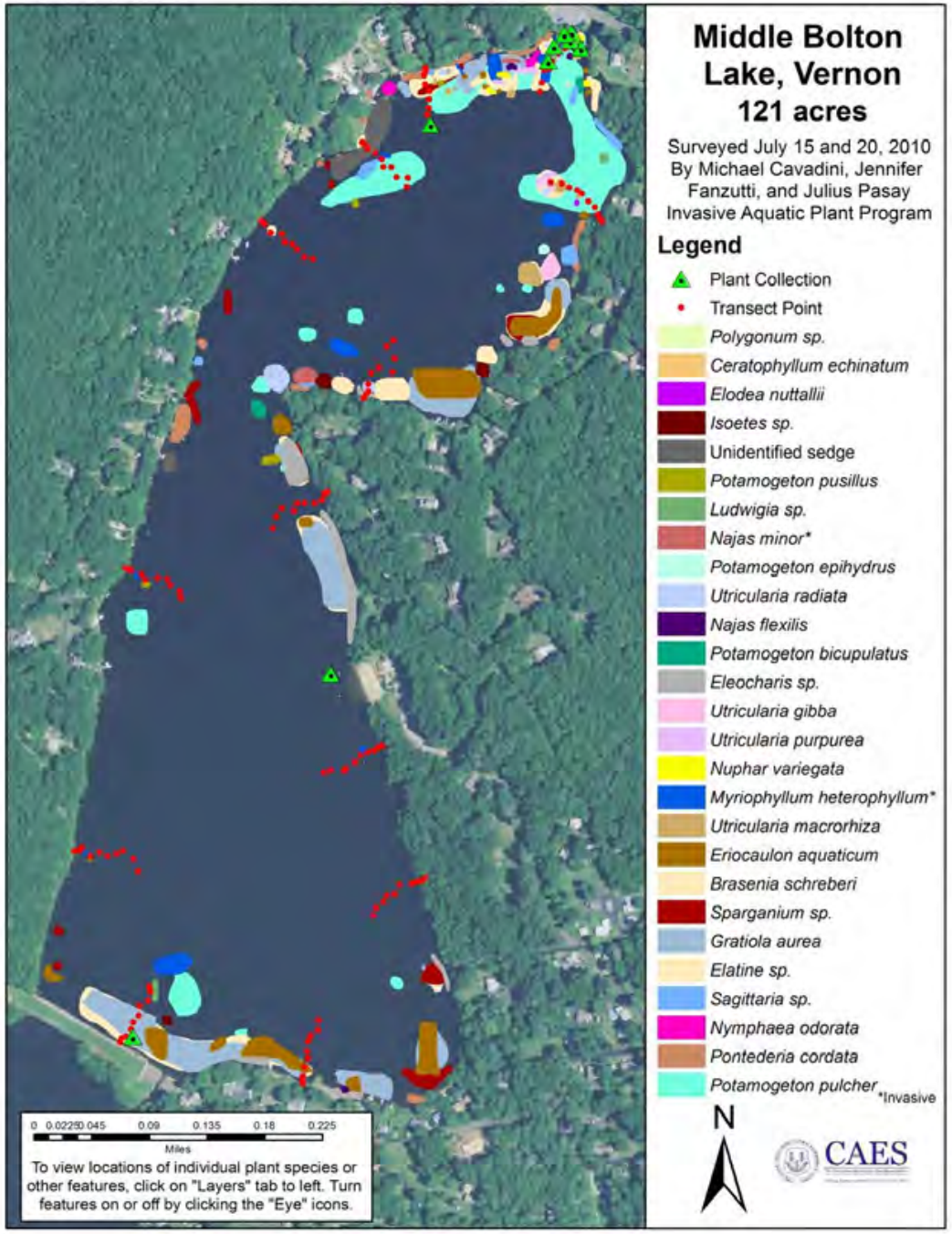
Triangular leaf

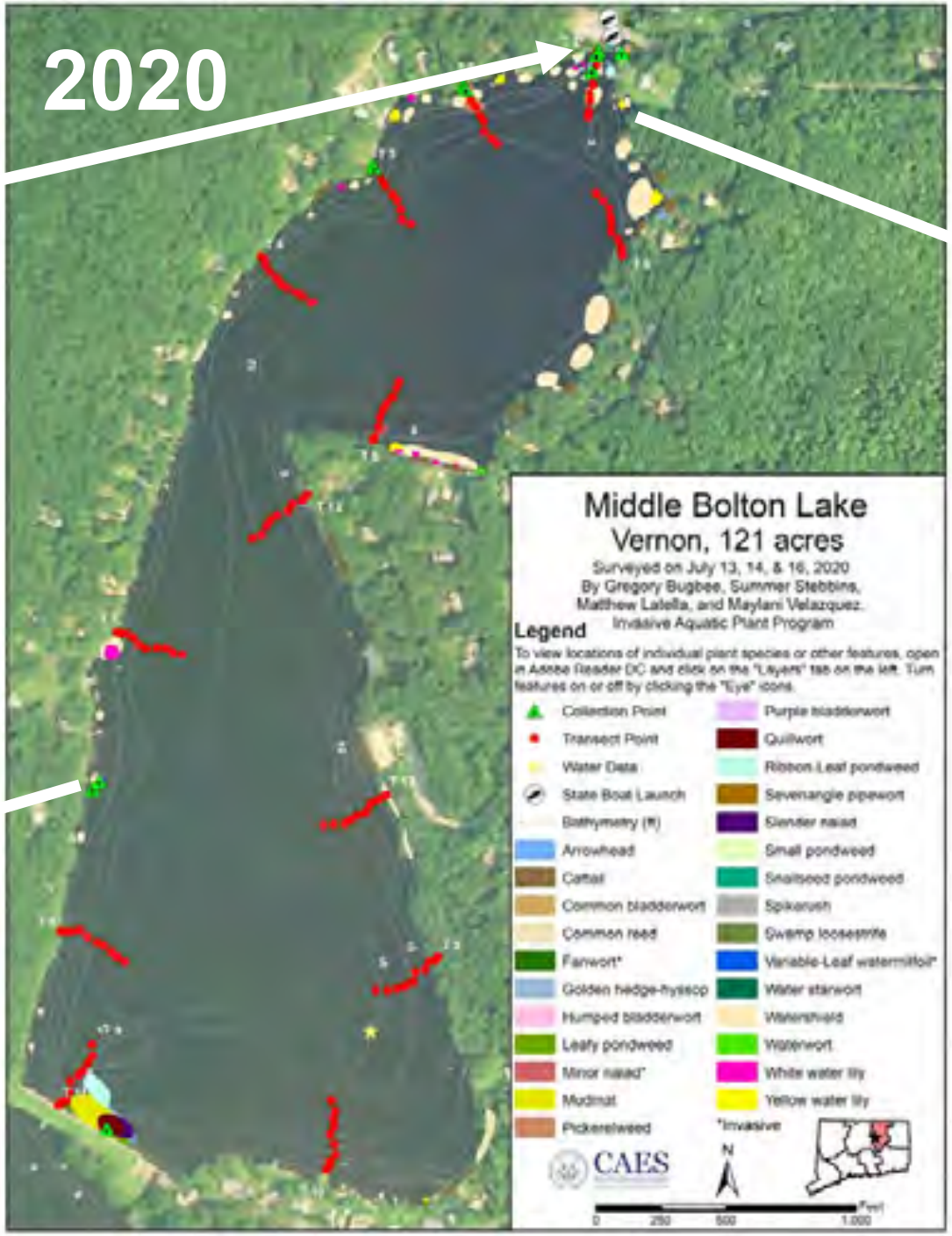
Mudmat
(*Glossostigma cleistanthum*)

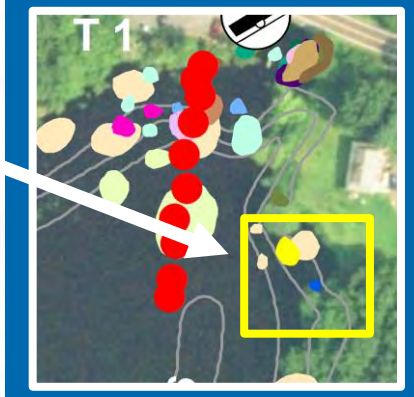


Aquatic Vegetation Survey



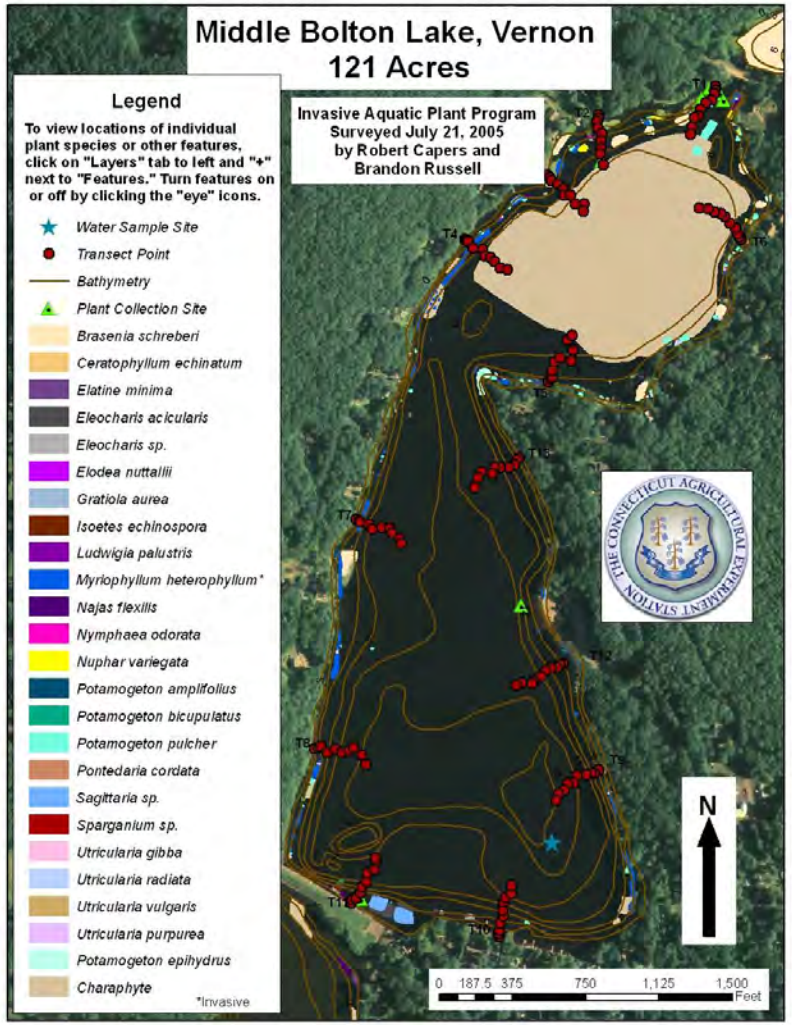




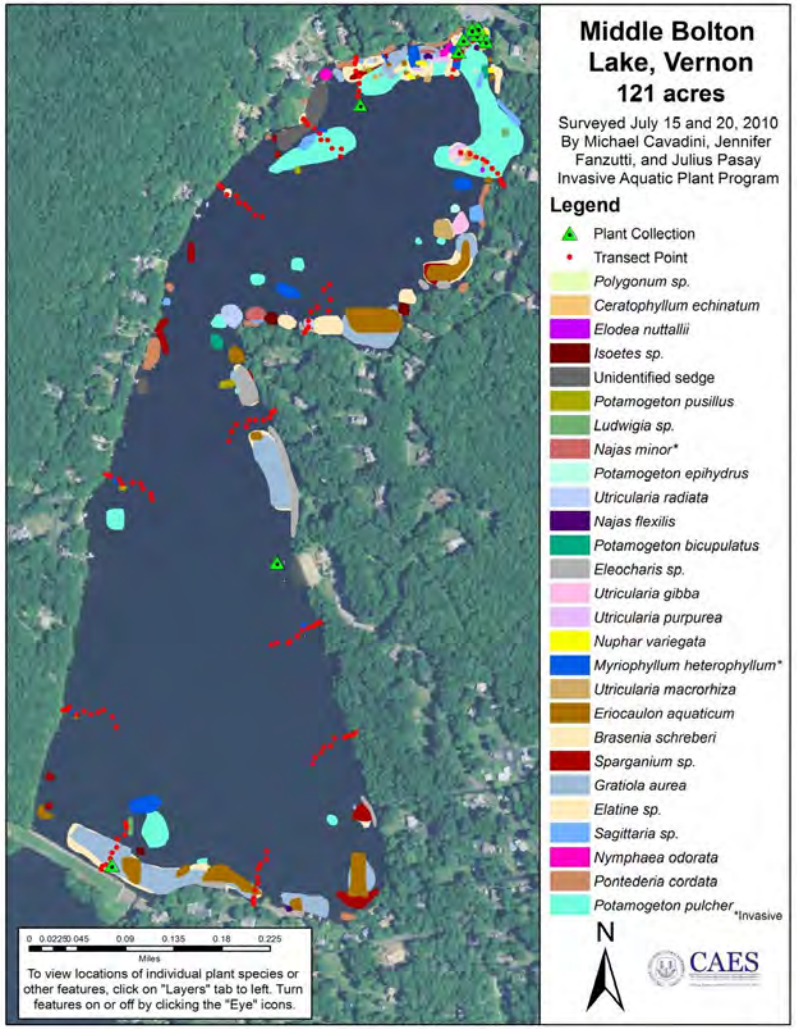


CAES
The Connecticut Agricultural Experiment Station
Putting Science to Work for Society since 1875

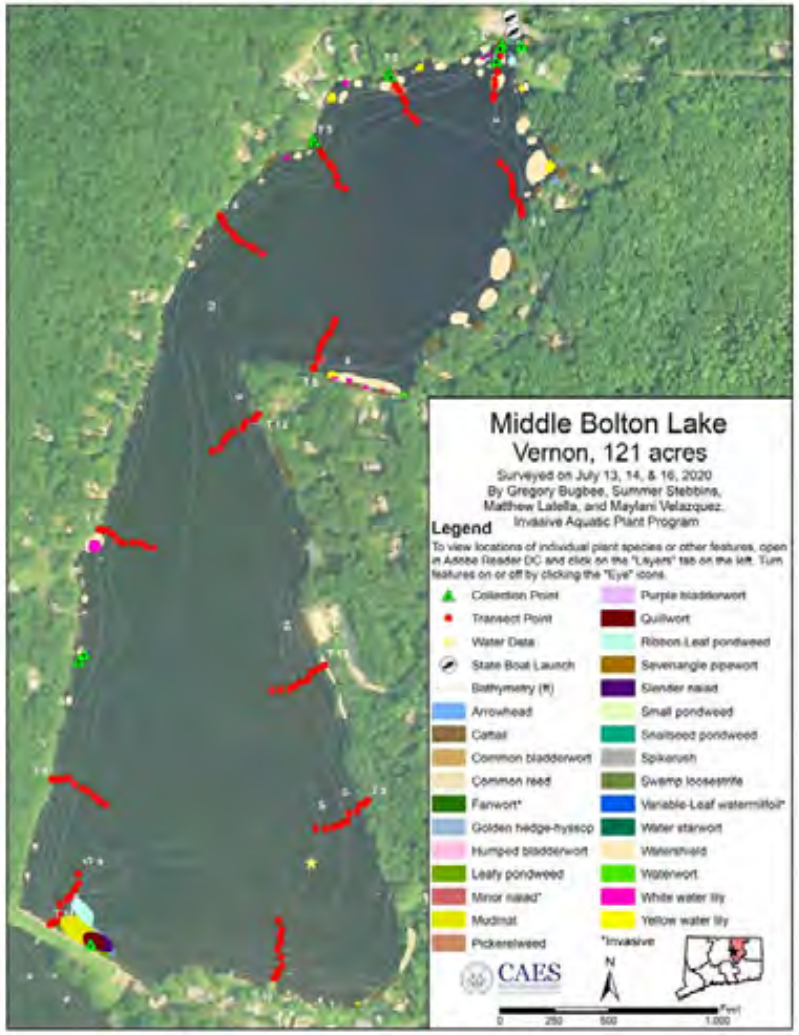
2005



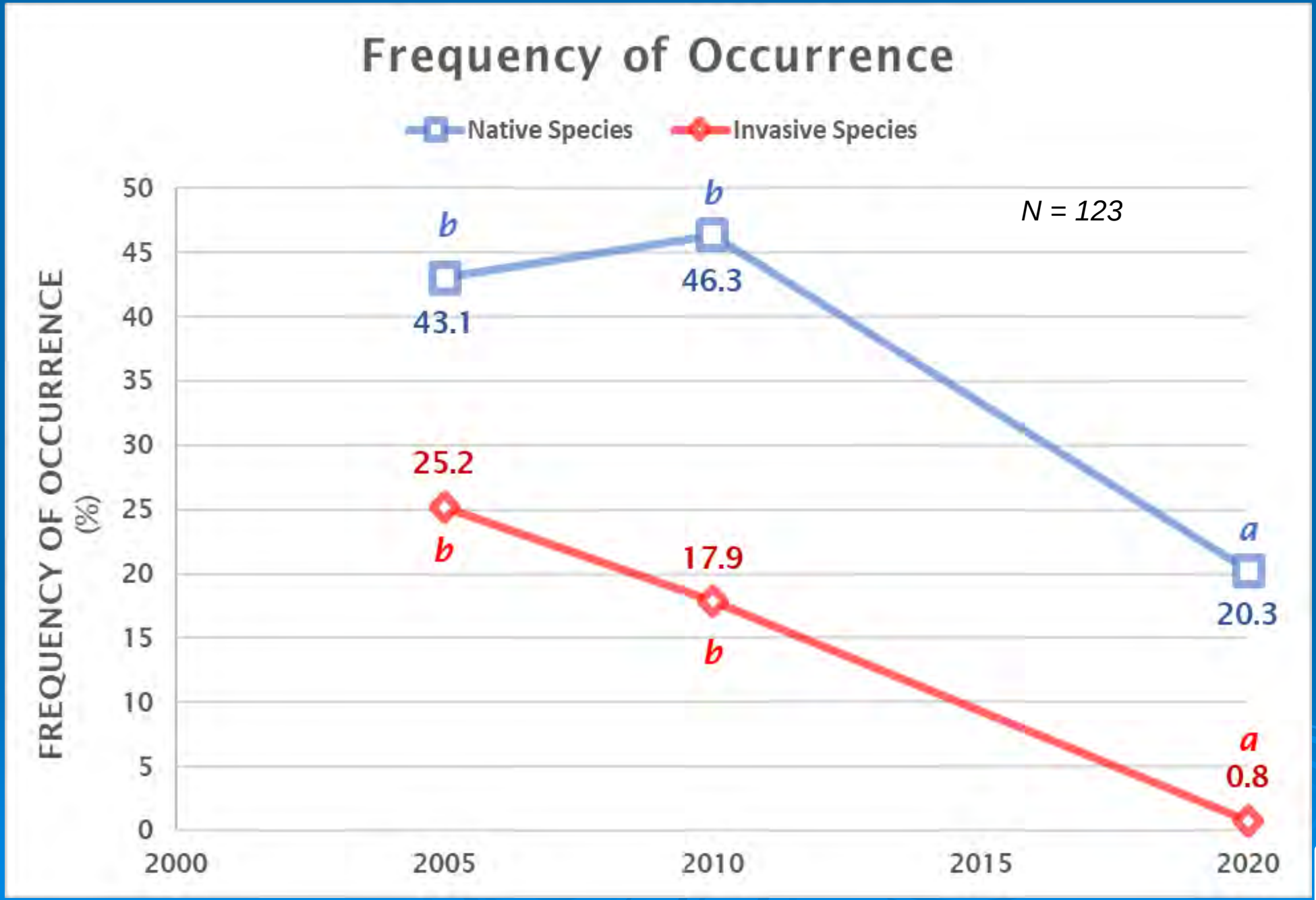
2010

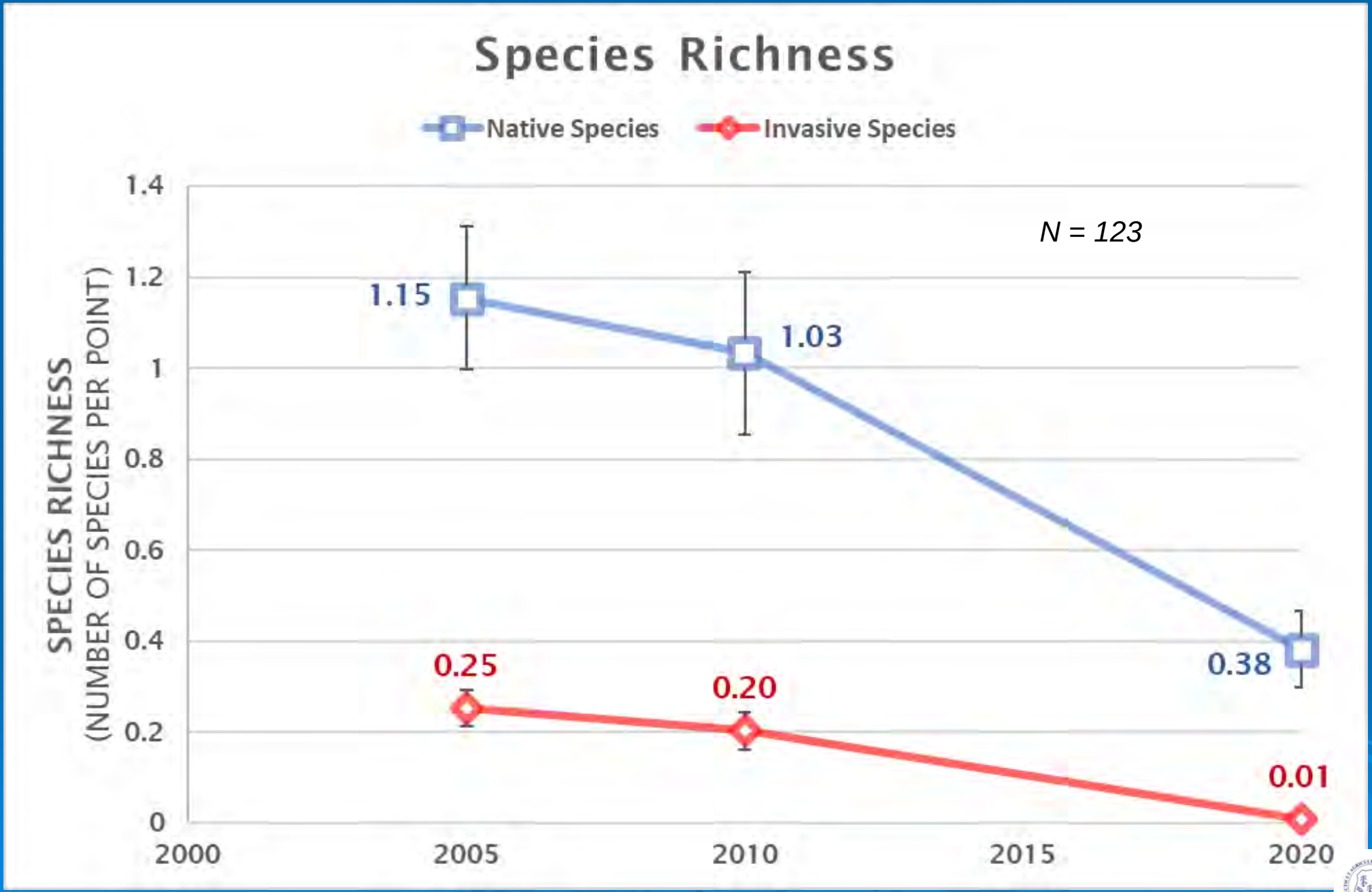


2020



CAES


Frequency of Occurrence
Native Species
Invasive Species
N = 123
FREQUENCY OF OCCURRENCE (%)
50
45
40
35
30
25
20
15
10
5
0
2000
2005
2010
2015
2020
b
43.1
b
46.3
a
20.3
25.2
b
17.9
b
a
0.8


Species Richness
Native Species
Invasive Species
N = 123
SPECIES RICHNESS
(NUMBER OF SPECIES PER POINT)
1.4
1.2
1
0.8
0.6
0.4
0.2
0
2000
2005
2010
2015
2020
1.15
1.03
0.38
0.25
0.20
0.01

Middle Bolton Lake Aquatic Plants

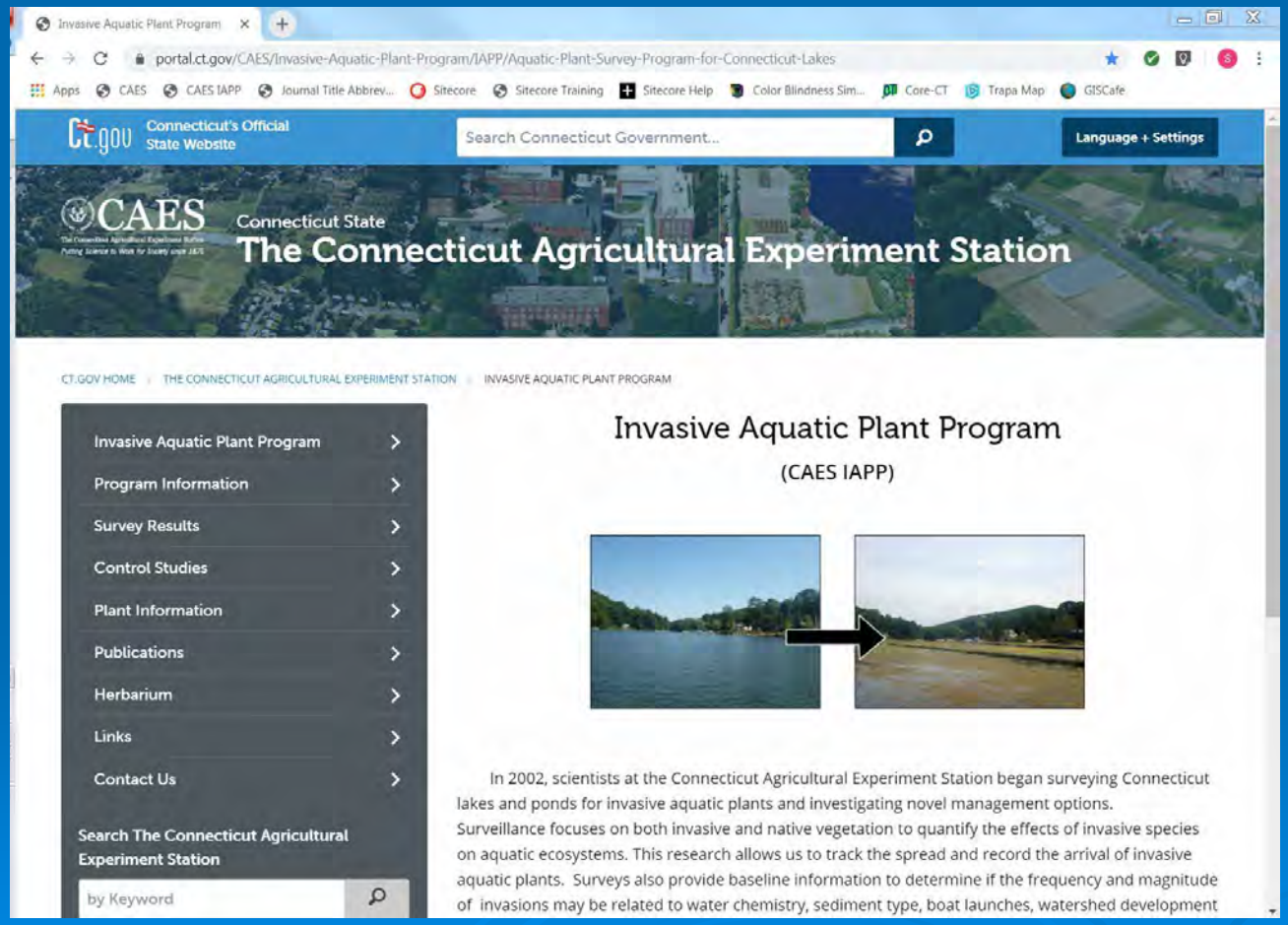
Common Name*	Scientific Name	2005		2010		2020	
		Presence	FOQ	Presence	FOQ	Presence	FOQ
Arrowhead	*Sagittaria* species	X	6.5%	X	4.1%	X	6.5%
Bur-Reed	*Sparganium* species	X	0.0%	X	2.4%		
Common bladderwort	*Utricularia macrorhiza*	X	4.1%	X	2.4%	X	0.0%
Fanwort*	***Cabomba caroliniana***					**X**	**0.0%**
Floating bladderwort	*Utricularia radiata*	X	13.0%	X	6.5%		
Golden hedge-hyssop	*Gratiola aurea*	X	4.9%	X	3.3%	X	0.8%
Humped bladderwort	*Utricularia gibba*	X	6.5%	X	3.3%	X	0.0%
Knotweed	*Polygonum* species			X	0.8%		
Large-Leaf pondweed	*Potamogeton amplifolius*	X	0.0%				
Leafy pondweed	*Potamogeton foliosus*					X	1.6%
Minor naiad*	***Najas minor***			**X**	**2.4%**	**X**	**0.8%**
Mudmat	*Glossostigma cleistanthum*					X	0.0%
Pickerelweed	*Pontederia cordata*	X	4.9%	X	3.3%	X	8.1%
Primrose-Willow	*Ludwigia* species	X	0.8%	X	0.8%		
Purple bladderwort	*Utricularia purpurea*	X	2.4%	X	3.3%	X	0.0%
Quillwort	*Isoetes* species	X	3.3%	X	0.0%	X	0.0%
Ribbon-Leaf pondweed	*Potamogeton epihydrus*	X	3.3%	X	0.0%	X	0.0%
Sedge	*Carex* species			X	11.4%		
Sevenangle pipewort	*Eriocaulon aquaticum*			X	4.9%	X	1.6%
Slender naiad	*Najas flexilis*	X	12.2%	X	1.6%	X	0.8%
Small pondweed	*Potamogeton pusillus*			X	18.7%	X	2.4%
Snailseed pondweed	*Potamogeton bicupulatus*	X	7.3%	X	2.4%	X	0.0%
Spikerush	*Eleocharis* species	X	11.4%	X	2.4%	X	0.8%
Spineless hornwort	*Ceratophyllum echinatum*	X	4.9%	X	4.1%		
Spotted pondweed	*Potamogeton pulcher*	X	11.4%	X	11.4%		
Swamp loosestrife	*Decodon verticillatus*					X	0.0%
Variable-Leaf watermilfoil*	***Myriophyllum heterophyllum***	**X**	**25.2%**	**X**	**17.9%**	**X**	**0.0%**
Water starwort	*Callitriche* species					X	0.0%
Watershield	*Brasenia schreberi*	X	4.9%	X	5.7%	X	8.9%
Waterwort	*Elatine* species	X	8.9%	X	7.3%	X	2.4%
Western waterweed	*Elodea nuttallii*	X	2.4%	X	3.3%		
White water lily	*Nymphaea odorata*	X	0.0%	X	0.0%	X	2.4%
Yellow water lily	*Nuphar variegata*	X	2.4%	X	0.0%	X	0.8%
Total Species Richness	33	23		27		24	
Invasive Species Richness	3	1		2		3	
Native Species Richness	30	22		25		21	

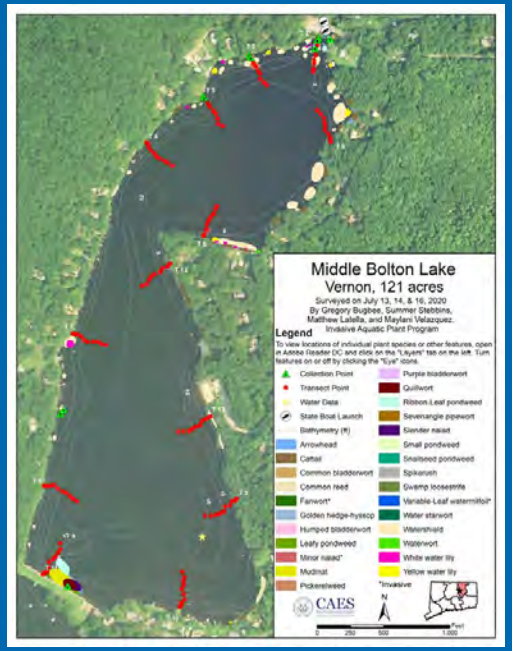
***Invasive Species in Bold**

CAES
The Connecticut Agricultural Experiment Station
Putting Science to Work for Society since 1875

CAES IAPP Website

portal.ct.gov/caes-iapp





Questions?

Greg Bugbee
Gregory.Bugbee@ct.gov
(203) 974-8512

Summer Stebbins
Summer.Stebbins@ct.gov
(203) 974-8545

The Connecticut Agricultural Experiment Station
Invasive Aquatic Plant Program
123 Huntington St.
P.O. Box 1106
New Haven, CT 06504

portal.ct.gov/caes-iapp