Aquatic Invasive Species Early Detection Team 2014 Report

Paul Smith's College
THE COLLEGE OF THE ADIRONDACKS®

ADIRONDACK WATERSHED INSTITUTE

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Great Lakes RESTORATION

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Acknowledgements

The Adirondack Watershed Institute (AWI) is a program of Paul Smith's College that conducts work broadly focused on protecting and conserving water resources. The narrative and results presented in this report were produced by Virginia Brink, Nathan Mills, Dylan Kirk, and Lindsey Pett, who constituted the AWI Early Detection team in 2014. These individuals also conducted the aquatic plant survey and performed the GIS work needed to develop the aquatic plant maps. The field work and reporting was done under the supervision of Daniel L Kelting, AWI Executive Director, with assistance from Corey Laxson, AWI Research Associate. This project was supported with funding from the Great Lakes Restoration Initiative through the US Fish and Wildlife Service.

Introduction

Pimentel, Zuniga, & Morrison (2005)'s study published in the journal of Ecological Economics found on a yearly basis, invasive species cause $120 billion worth of environmental damages and economic losses in the United States. In response, many governments have funded the development of strategies to reduce the above mentioned costs with multi-scale spread prevention measures and early detection-eradication operations (Vander Zanden et al. 2010).

Paul Smith's College's Adirondack Watershed Institute, Nature Conservancy's Adirondack Invasive Plant Program, the Champlain Basin Program, and the Lake George Association utilizing State, Federal, and private funds have facilitated the development and implementation of these strategies in northern New York for over a decade (Holmlund et al. 2014). The works reported below detail the efforts done for early detection and eradication.

The Adirondack Watershed Institute (AWI) of Paul Smith's College has conducted full lake aquatic plant surveys of Adirondack waters since the summer of 2011. Initial funding was from the federally funded Great Lakes Restoration Initiative (GLRI), which restricted the work to one time surveys of waters in the Eastern Lake Ontario Watershed of the Adirondack Park. The goal of AWI's Early Detection Team is to map the diversity of aquatic plants across the Adirondacks and to early detect invasions of aquatic invasive species allowing for effective management of invaded beds.

Methods

Aquatic plant surveys

The AIS early detection team conducted comprehensive aquatic plant surveys of each lake's littoral zone using a combination of visual surveys and rake tosses performed from canoes. Using these techniques, the surveyed the entire littoral zone of each lake in a serpentine search pattern and mapped the location, species composition, and species % cover of all aquatic plant beds discovered according to the taxonomic work of Crow & Hellquist 2000. The perimeters of plant beds were mapped with handheld GPS unit and field data was recorded on a paper datasheet. Visual surveys were supplemented by period (and equidistant) rake tosses. All field data was entered into ArcGIS to create aquatic plant maps for each lake using the NYS Area Hydrography 1:24,000 shapefile. When surveyed, the team worked in two person crews from canoe. Each crew was equipped with a bathymetric map of the lake, portable depth sounder, handheld GPS unit, two-sided rake toss, and a digital camera. For each lake, a plankton tow was used to sample the lakes plankton community (250 micron). One sample per net was taken from the lakes deep hole and towed through the entire water column. All samples were stained and preserved with Formalin and put on ice.

Results

Between June 9 and August 15 2016, 22 lakes were surveyed (Community matrix, map 1). Of these 22 lakes, 14 contained AIS (See community matrix on page 5). Variable leaf milfoil (*Myriophyllum heterophyllum*) was the most common AIS found (11 Lakes), followed by Eurasian watermilfoil (*M. spicatum*) (7 lakes), and Curly Leaf Pondweed (*Potamogeton crispus*) (1 lake).

A total of 212 miles of shoreline was surveyed and a total of 2403 acres of plant beds were mapped. The plant beds ranged in size from 26 square feet to 289 acres with an average of 4.7 acres.

Potamogeton crispus

The most abundant native plant taxa found were white water lilly (*Nymphaea odorata*) (22 lakes), Spadderdock (*Nuphar variegata*) (22 lakes), and bur reed (*Sparganium sp.*) (21 lakes). The least abundant native plant taxa found were spotted pondweed (*Persecaria amphibea*) (1 lake), water marigold (*Megalodonta beckii*) (1 lake), and curly leaf pondweed (*Potamogeton crispus*) (1 lake) (See community matrix on page 8). No invasive animals were detected in plankton tows.

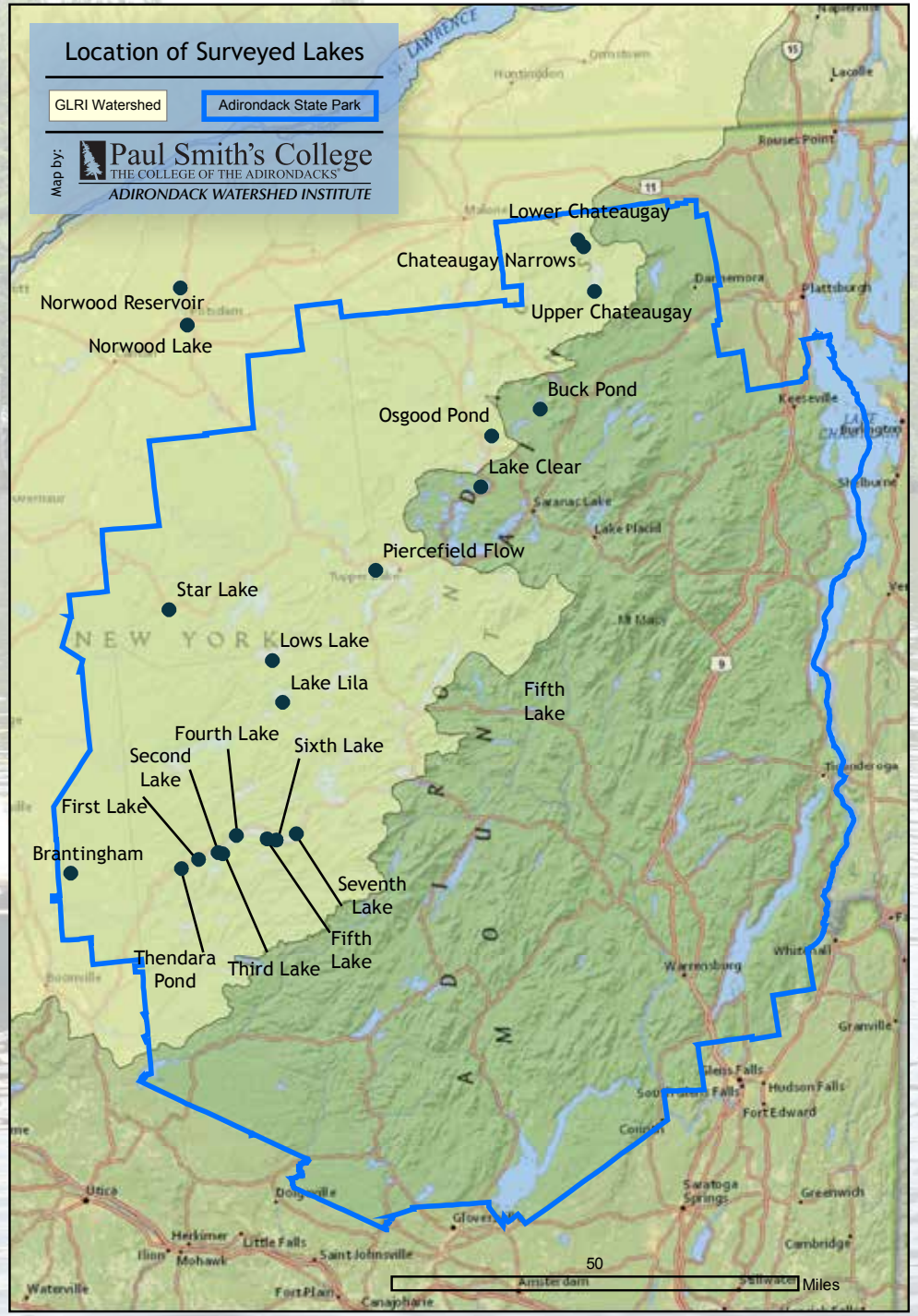
Aquatic Plant Species Presence/Absence Matrix

0 Absent

1 Present

1 Invasive

	Upper Chateaugay	Chateaugay Narrows	First Lake	Norwood Lake	Seventh Lake	Osgood Pond	Buck Pond	Fourth Lake	Lake Clear	Lows Lake	Lower Chateaugay	Piercefield Flow	Thendara Pond	Lake Lila	Sixth Lake	Brantingham	Norwood Reservoir	Third Lake	Fifth Lake	Second Lake	Star Lake
Richness	23	22	20	20	20	19	18	18	16	16	15	15	15	14	14	13	13	13	12	12	8
White water lilly	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Nuphar variegata																					
Spadderdock	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Nymphaeae odorata																					
Bur reed	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1
Sparganium sp.																					
Grassy arrowhead	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1
Sagitaria graminea																					
Watershield	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	0
Brassenia schreberi																					
Hairrass	1	1	1	1	1	1	1	1	0	1	0	1	1	1	1	1	0	1	1	1	1
Eleocharis sp.																					
Common bladderwort	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	1	0
Utricularia vulgaris																					
Ribbon leaf pondweed	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	0	0
Potamogeton epihydrus																					
Nitella algae	0	1	1	1	1	1	1	1	1	0	0	1	1	1	1	0	1	1	1	1	1
Nitella sp.																					
Floatin leaf pondweed	1	1	1	1	1	1	0	0	1	1	0	1	1	1	1	1	0	1	0	1	0
Potamogeton natans																					
Pipewort	1	1	0	1	0	1	1	1	1	1	1	1	1	1	0	1	0	0	0	0	1
Eriocaulon sp.																					
Large leaf pondweeld	1	1	1	0	1	1	1	1	1	0	1	0	1	0	1	1	1	0	0	0	0
Potamogeton ampifolius																					
Clasping leaf pondweed	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	0	1	1	1	1	0
Potamogeton perfoliatus																					
Purple bladderwort	1	1	1	1	1	0	1	1	0	1	0	0	0	1	1	1	0	1	1	1	0
Utricularia purpurea																					
Eel grass	1	1	1	1	1	1	0	1	0	1	1	0	0	0	1	0	1	0	1	0	0
Vallisneria americana																					
Robbin's pondweed	1	1	1	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	0	0	0
Potamogeton robinnsii																					
Variable leaf milfoil	0	0	1	1	1	0	0	1	0	0	0	1	1	0	1	0	1	1	1	1	0
Myriophyllum heterophyllum																					
Grass leaf pondweed	1	1	0	0	1	1	0	1	1	0	1	0	0	0	0	1	0	0	0	1	0
Potamogeton gramineus																					
Little floating heart	1	0	1	0	0	0	1	0	0	1	0	1	1	1	0	0	0	1	0	0	0
Nymphoides cordata																					
Eurasian watermilfoil	1	1	0	1	1	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0
Myriophyllum spicatum																					
Canadian waterweed	1	1	1	1	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Elodea canadensis																					
Dortmann's Cardinal Flower	1	0	1	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1
Lobelia dortmanna																					
Water nymph	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0
Najas sp.																					
White stemmed pondweed	1	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
Potamogeton praelongus																					
Western waterweed	0	1	0	0	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0
Elodea nuElodea nuttallii																					
Small pondweed	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Potamogeton purpurea																					
Interupted bladderwort	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Utricularia intermedia																					
Alpine pondweed	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Potamogeton alpinus																					
Flat stemmed pondweed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Potamogeton zosteriformis																					
Coontail	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Ceratophyllum sp.																					
Mare's tail	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Hippuris vulgaris																					
Smart water weed	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Persecaria amphibea																					
Water marigold	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Megalodonta beckii																					
Curly leaf pondweed	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Potamogeton crispus																					

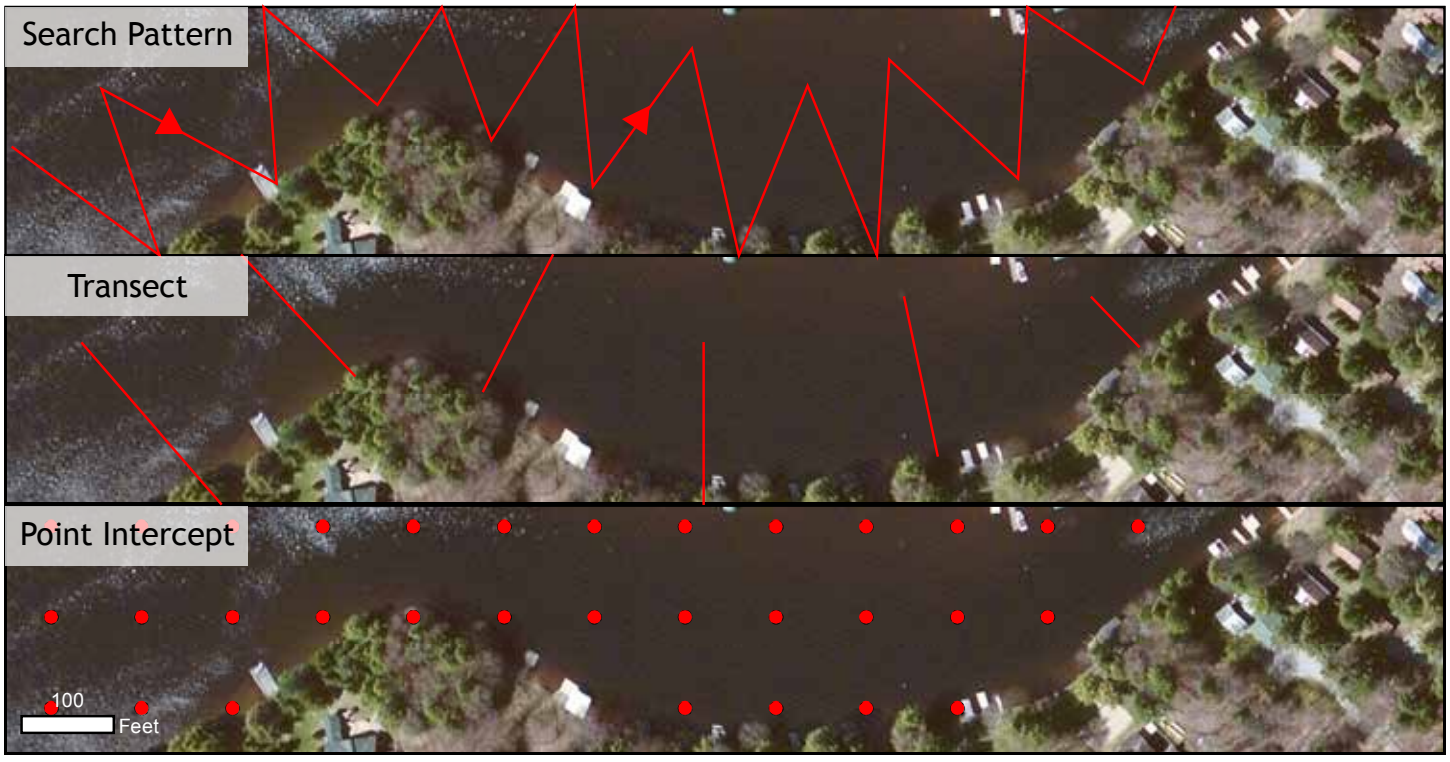


Data Limitations

The methodologies utilized to inventory the aquatic plant community of prioritized lakes have shortfalls in quantitative estimates of species abundance and GPS accuracy.

The serpentine search pattern utilized in our methodology maximizes the total area covered per time spent per lake but may suffer statistically from not stratifying species abundance estimates. Other methodologies used in aquatic plant surveys such as transect and point intercept conversely sacrifice area covered per time spent for more statistically rigorous estimates of species abundance (Madsen 1999). Rigorous assessment of community inventory methods utilized in other systems finds simple visual searches yield the most cost effective study approach when the goal is community inventory (Ellison et al. 2007). The search pattern methodology inductively maximizes the probability AIS discovery. Unfortunately, rigorous statistical analysis of visual searches relative to quantitative approaches specifically in aquatic plant communities has yet to be done.

The Garmin® GPS receivers utilized in our surveys are accurate to no less than 10 feet. Lakes offer a study system where interference from solid objects is minimal. Random accuracy checks throughout the surveys often reported maximum accuracy of 10 feet. In terrestrial, wooded settings accuracy suffers greatly, often surpassing 60 feet of error (Bolstad et al. 2005).



Literature Cited

Crow, G. E., & Hellquist, C. B. (2006). *Aquatic and Wetland Plants of Northeastern North America, Volume II: A Revised and Enlarged Edition of Norman C. Fassett's A Manual of Aquatic Plants, Volume II: Angiosperms: Monocotyledons* (Vol. 2). Univ of Wisconsin Press.

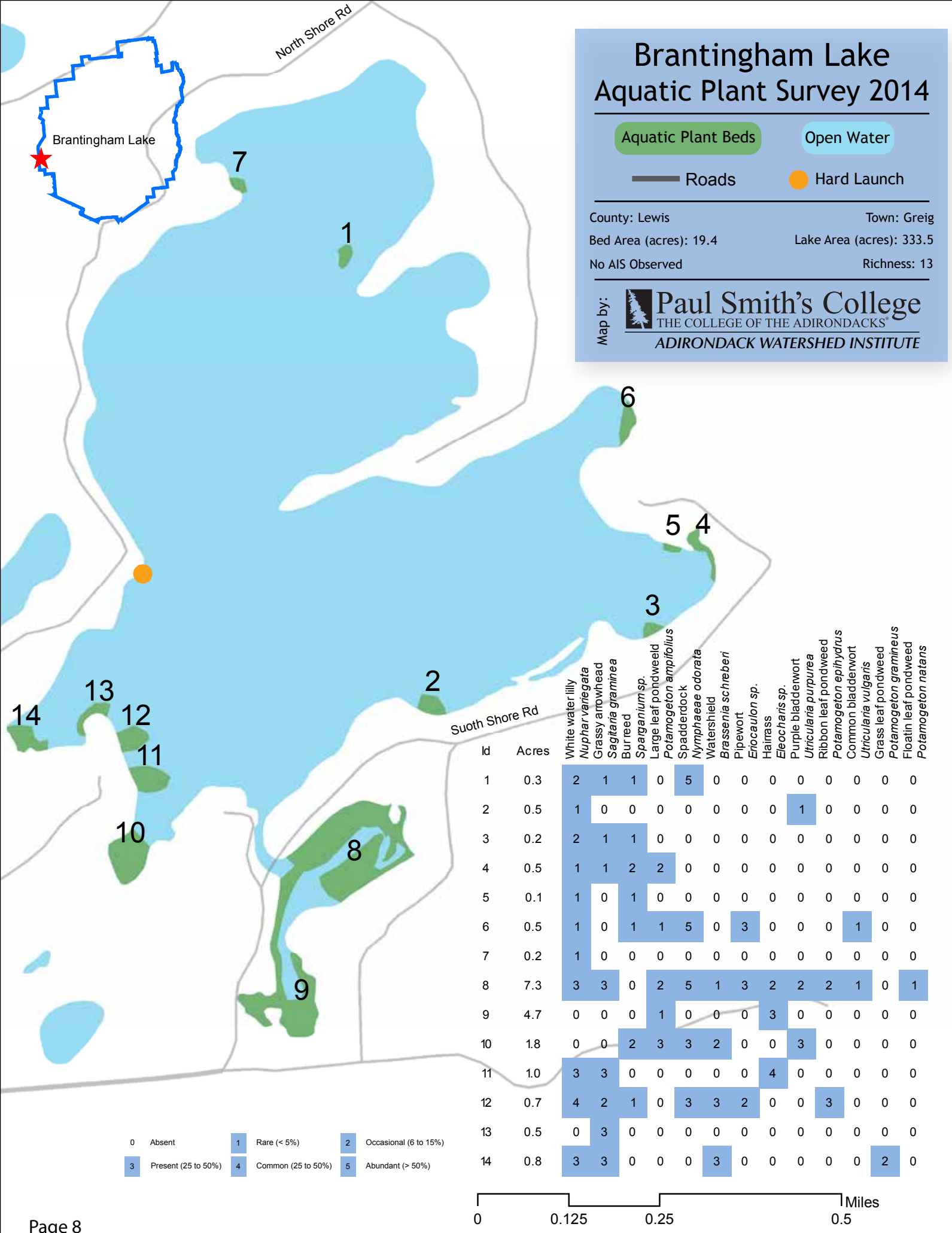
Ellison, A. M., Record, S., Arguello, A., & Gotelli, N. J. (2007). Rapid inventory of the ant assemblage in a temperate hardwood forest: species composition and assessment of sampling methods. *Environmental Entomology*, *36*(4), 766-775.

Johnstone, M., H. Smith, E. Holmlund, M. Modley, E. DeBolt, K. Rohne. 2014.Boat inspection and decontamination for aquatic invasive species prevention: recommendations for the Adirondack region.

Madsen, J. D. (1999). Point intercept and line intercept methods for aquatic plant management (No. WES-MI-02). Army Engineer Waterways Experiment Station Vicksburg Ms.

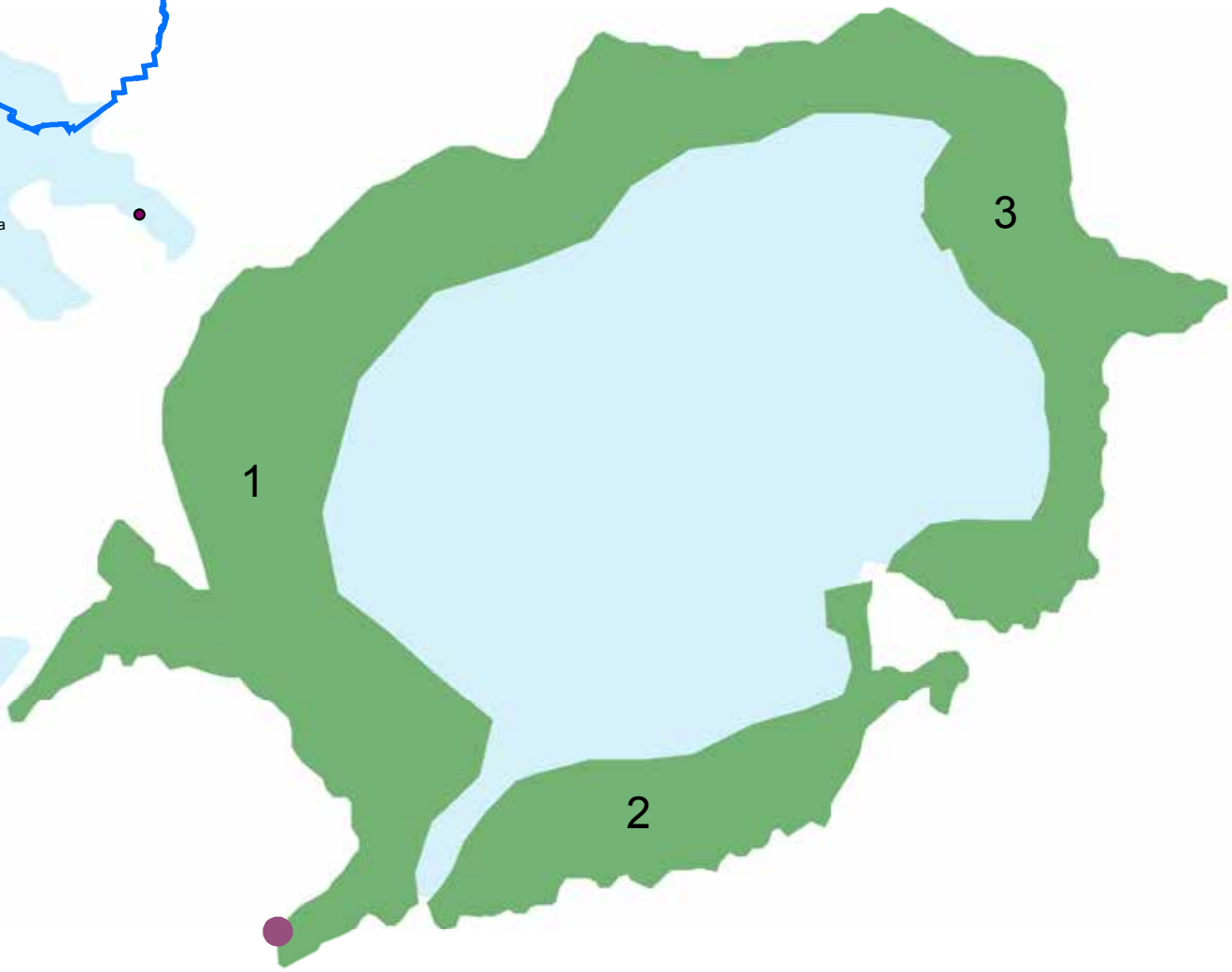
Pimentel, D., Zuniga, R., & Morrison, D. (2005). Update on the environmental and economic costs associated with alien-invasive species in the United States. *Ecological Economics*, *52*, 273-288.

Vander Zanden, M. J., Hansen, G. J., Higgins, S. N., & Kornis, M. S. (2010). A pound of prevention, plus a pound of cure: early detection and eradication of invasive species in the Laurentian Great Lakes. *Journal of Great Lakes Research*, *36*(1), 199-205.



Id	Acres	White water lilly	*Nuphar variegata*	Grassy arrowhead	*Sagitaria graminea*	Bur reed	*Sparganium sp.*	Large leaf pondweed	*Potamogeton ampifolius*	Spadderdock	*Nymphaeae odorata*	Watershield	*Brassenia schreberi*	Pipewort	*Eriocaulon sp.*	Hairtass	*Eleocharis sp.*	Purple bladderwort	*Utricularia purpurea*	Ribbon leaf pondweed	*Potamogeton epihydrus*	Common bladderwort	*Utricularia vulgaris*	Grass leaf pondweed	*Potamogeton gramineus*	Floatin leaf pondweed	*Potamogeton natans*
1	0.3	2	1	1	0	5	0	0	0	0	0	0	0	0	0												
2	0.5	1	0	0	0	0	0	0	0	1	0	0	0	0	0												
3	0.2	2	1	1	0	0	0	0	0	0	0	0	0	0	0												
4	0.5	1	1	2	2	0	0	0	0	0	0	0	0	0	0												
5	0.1	1	0	1	0	0	0	0	0	0	0	0	0	0	0												
6	0.5	1	0	1	1	5	0	3	0	0	0	1	0	0	0												
7	0.2	1	0	0	0	0	0	0	0	0	0	0	0	0	0												
8	7.3	3	3	0	2	5	1	3	2	2	2	1	0	1													
9	4.7	0	0	0	1	0	0	0	3	0	0	0	0	0													
10	1.8	0	0	2	3	3	2	0	0	3	0	0	0	0													
11	1.0	3	3	0	0	0	0	0	4	0	0	0	0	0													
12	0.7	4	2	1	0	3	3	2	0	0	3	0	0	0													
13	0.5	0	3	0	0	0	0	0	0	0	0	0	0	0													
14	0.8	3	3	0	0	0	3	0	0	0	0	0	2	0													

Lake Kushaqua



Buck Pond
Aquatic Plant Survey 2014

Aquatic Plant Beds | Open Water

Roads | Hard Launch

County: Franklin | Town: Franklin

Bed Area (acres): 71.9 | Lake Area (acres): 132.5

No AIS Observed | Richness: 18

Map by: Paul Smith's College
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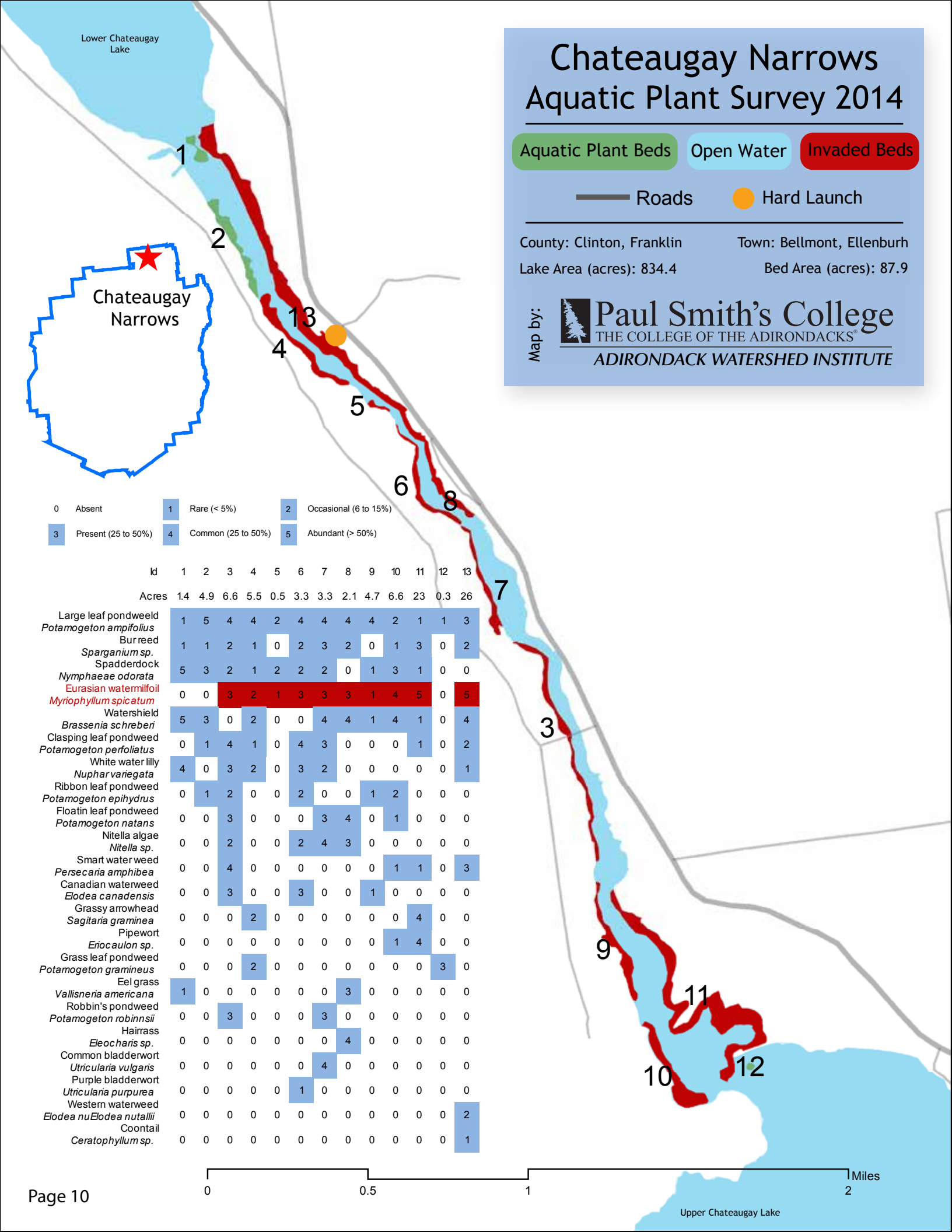
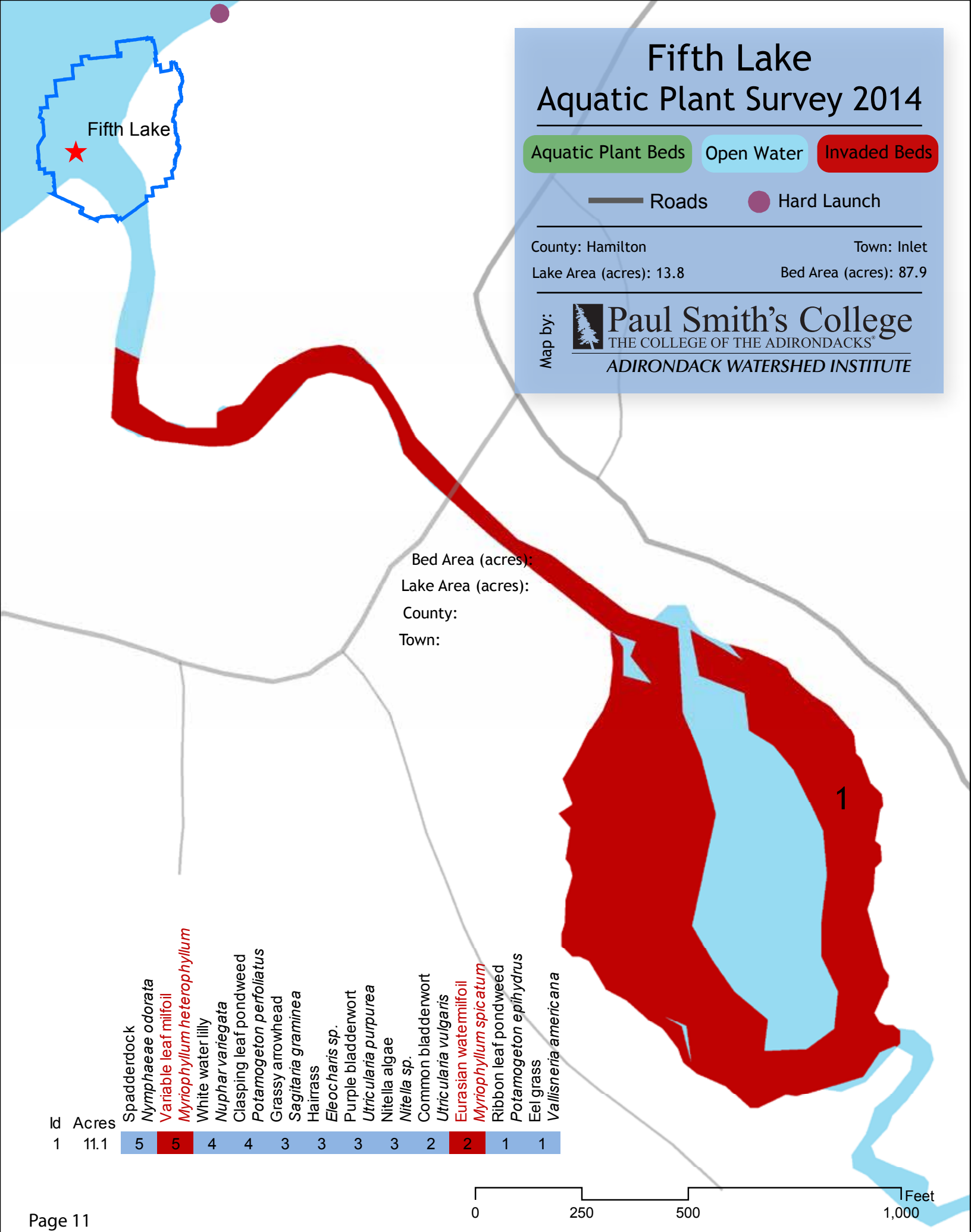
Id	Acres	Bur reed *Sparganium sp.*	White water lilly *Nuphar variegata*	Watershield *Brasenia schreberi*	Grassy arrowhead *Sagitaria graminea*	Pipewort *Eriocaulon sp.*	Large leaf pondweed *Potamogeton ampifolius*	Purple bladderwort *Utricularia purpurea*	Robbin's pondweed *Potamogeton robinnsii*	Water nymph *Najas sp.*	Spadderdock *Nymphaeae odorata*	Hairass *Eleocharis sp.*	Common bladderwort *Utricularia vulgaris*	Dortmann's Cardinal Flower *Lobelia dortmanna*	Western waterweed *Elodea nuElodea nutallii*	Alpine pondweed *Potamogeton alpinus*	Ribbon leaf pondweed *Potamogeton epihydrus*	Little floating heart *Nymphoides cordata*	Nitella algae *Nitella sp.*
1	45.3	3	4	3	4	5	3	2	4	5	0	4	3	0	5	1	2	2	4
2	11.9	2	3	4	2	2	2	1	3	3	4	0	1	3	2	2	0	0	0
3	14.7	2	3	2	2	4	4	2	2	4	2	2	0	2	0	0	0	0	0

0 0.125 0.25 0.5 Miles

Oregon Pond



Id	1	2	3	4	5	6	7	8	9	10	11	12	13
Acres	1.4	4.9	6.6	5.5	0.5	3.3	3.3	2.1	4.7	6.6	23	0.3	26
Large leaf pondweed *Potamogeton ampifolius*	1	5	4	4	2	4	4	4	4	2	1	1	3
Bur reed *Sparganium sp.*	1	1	2	1	0	2	3	2	0	1	3	0	2
Spadderdock *Nymphaeae odorata*	5	3	2	1	2	2	2	0	1	3	1	0	0
Eurasian watermilfoil *Myriophyllum spicatum*	0	0	3	2	1	3	3	3	1	4	5	0	5
Watershield *Brassenia schreberi*	5	3	0	2	0	0	4	4	1	4	1	0	4
Clasping leaf pondweed *Potamogeton perfoliatus*	0	1	4	1	0	4	3	0	0	0	1	0	2
White water lilly *Nuphar variegata*	4	0	3	2	0	3	2	0	0	0	0	0	1
Ribbon leaf pondweed *Potamogeton epihydrus*	0	1	2	0	0	2	0	0	1	2	0	0	0
Floatin leaf pondweed *Potamogeton natans*	0	0	3	0	0	0	3	4	0	1	0	0	0
Nitella algae *Nitella sp.*	0	0	2	0	0	2	4	3	0	0	0	0	0
Smart water weed *Persecaria amphibea*	0	0	4	0	0	0	0	0	0	1	1	0	3
Canadian waterweed *Elodea canadensis*	0	0	3	0	0	3	0	0	1	0	0	0	0
Grassy arrowhead *Sagitaria graminea*	0	0	0	2	0	0	0	0	0	0	4	0	0
Pipewort *Eriocaulon sp.*	0	0	0	0	0	0	0	0	0	1	4	0	0
Grass leaf pondweed *Potamogeton gramineus*	0	0	0	2	0	0	0	0	0	0	0	3	0
Eel grass *Vallisneria americana*	1	0	0	0	0	0	0	3	0	0	0	0	0
Robbin's pondweed *Potamogeton robinnsii*	0	0	3	0	0	0	3	0	0	0	0	0	0
Hairrass *Eleocharis sp.*	0	0	0	0	0	0	0	4	0	0	0	0	0
Common bladderwort *Utricularia vulgaris*	0	0	0	0	0	0	4	0	0	0	0	0	0
Purple bladderwort *Utricularia purpurea*	0	0	0	0	0	1	0	0	0	0	0	0	0
Western waterweed *Elodea nuElodea nutallii*	0	0	0	0	0	0	0	0	0	0	0	0	2
Coontail *Ceratophyllum sp.*	0	0	0	0	0	0	0	0	0	0	0	0	1


Fifth Lake
Fifth Lake
Aquatic Plant Survey 2014
Aquatic Plant Beds
Open Water
Invaded Beds
Roads
Hard Launch
County: Hamilton
Town: Inlet
Lake Area (acres): 13.8
Bed Area (acres): 87.9
Map by:
Paul Smith's College
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Bed Area (acres):
Lake Area (acres):
County:
Town:
1
Id
Acres
Spadderdock
Nymphaeae odorata
Variable leaf milfoil
Myriophyllum heterophyllum
White water lilly
Nuphar variegata
Clasping leaf pondweed
Potamogeton perfoliatus
Grassy arrowhead
Sagitaria graminea
Hairrass
Eleocharis sp.
Purple bladderwort
Utricularia purpurea
Nitella algae
Nitella sp.
Common bladderwort
Utricularia vulgaris
Eurasian watermilfoil
Myriophyllum spicatum
Ribbon leaf pondweed
Potamogeton epihydrus
Eel grass
Vallisneria americana
1
11.1
5
5
4
4
3
3
3
3
2
2
1
1
0
250
500
Feet
1,000

0 0.25 0.5 Miles 1

State Route 28

1 2 3 4 5 6 7 8 9 11 12 13 14 15 16 17 18 19 20 21 22 23 24

0 Absent | 1 Rare (< 5%) | 2 Occasional (6 to 15%) | 3 Present (25 to 50%) | 4 Common (25 to 50%) | 5 Abundant (> 50%)

Id	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Acres	6.7	29	39	0.1	5.8	3.6	2.6	4.5	0	0	32	0.4	0.1	0.2	22	1.7	0.2	1.4	0.6	0.1	0	0.4	0.2	0.6
Bur reed *Sparganium sp.*	0	3	5	1	1	0	1	1	0	1	4	0	1	1	1	0	1	1	3	1	1	1	1	1
White water lilly	0	1	2	1	2	2	1	0	2	1	1	1	4	1	0	4	0	0	1	4	1	1	0	0
Nuphar variegata	4	3	3	1	1	1	0	1	1	0	1	1	4	5	1	0	0	1	1	0	0	0	1	0
Clasping leaf pondweed *Potamogeton perfoliatus*	0	4	5	5	5	5	0	0	0	0	0	0	1	5	0	5	5	4	5	0	0	0	0	0
Variable leaf milfoil *Myriophyllum heterophyllum*	0	0	3	0	3	0	1	0	0	0	1	0	0	1	0	0	0	1	1	0	1	1	2	0
Watershield *Brassenia schreberi*	0	0	3	3	3	4	0	0	0	0	5	0	1	1	0	0	0	0	0	3	0	0	4	0
Spadderdock Nymphaeae odorata	0	4	5	1	4	0	3	0	0	0	1	0	0	0	0	0	0	1	0	1	4	0	0	0
Hairrass *Eleocharis sp.*	2	0	3	1	0	0	1	0	0	0	0	0	1	0	0	0	0	3	1	0	1	5	0	0
Purple bladderwort Utricularia purpurea	4	0	3	0	0	1	0	0	0	0	1	0	0	0	0	3	0	0	2	0	3	0	0	0
Large leaf pondweed *Potamogeton ampifolius*	0	3	0	1	1	0	0	0	0	0	1	0	0	1	0	0	1	1	0	0	0	0	0	0
Common bladderwort Utricularia vulgaris	0	5	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
Ribbon leaf pondweed *Potamogeton epihydrus*	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
Grassy arrowhead Sagitaria graminea	0	0	0	0	0	5	3	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0
Little floating heart *Nymphoides cordata*	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dortmann's Cardinal Flower Lobelia dortmanna	0	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Robbin's pondweed *Potamogeton robinnsii*	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Canadian waterweed Elodea canadensis	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Eel grass *Vallisneria americana*	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Floatin leaf pondweed Potamogeton natans	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nitella algae *Nitella sp.*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Interupted bladderwort Utricularia intermedia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

First Lake
Aquatic Plant Survey 2014

Aquatic Plant Beds | Open Water | Invaded Beds

Roads | Hard Launch

County: Herkimer | Town: Webb

Lake Area (acres): 728.4 | Bed Area (acres): 151.5

Map by: Paul Smith's College, THE COLLEGE OF THE ADIRONDACKS®, ADIRONDACK WATERSHED INSTITUTE

Fourth Lake West
Aquatic Plant Survey 2014

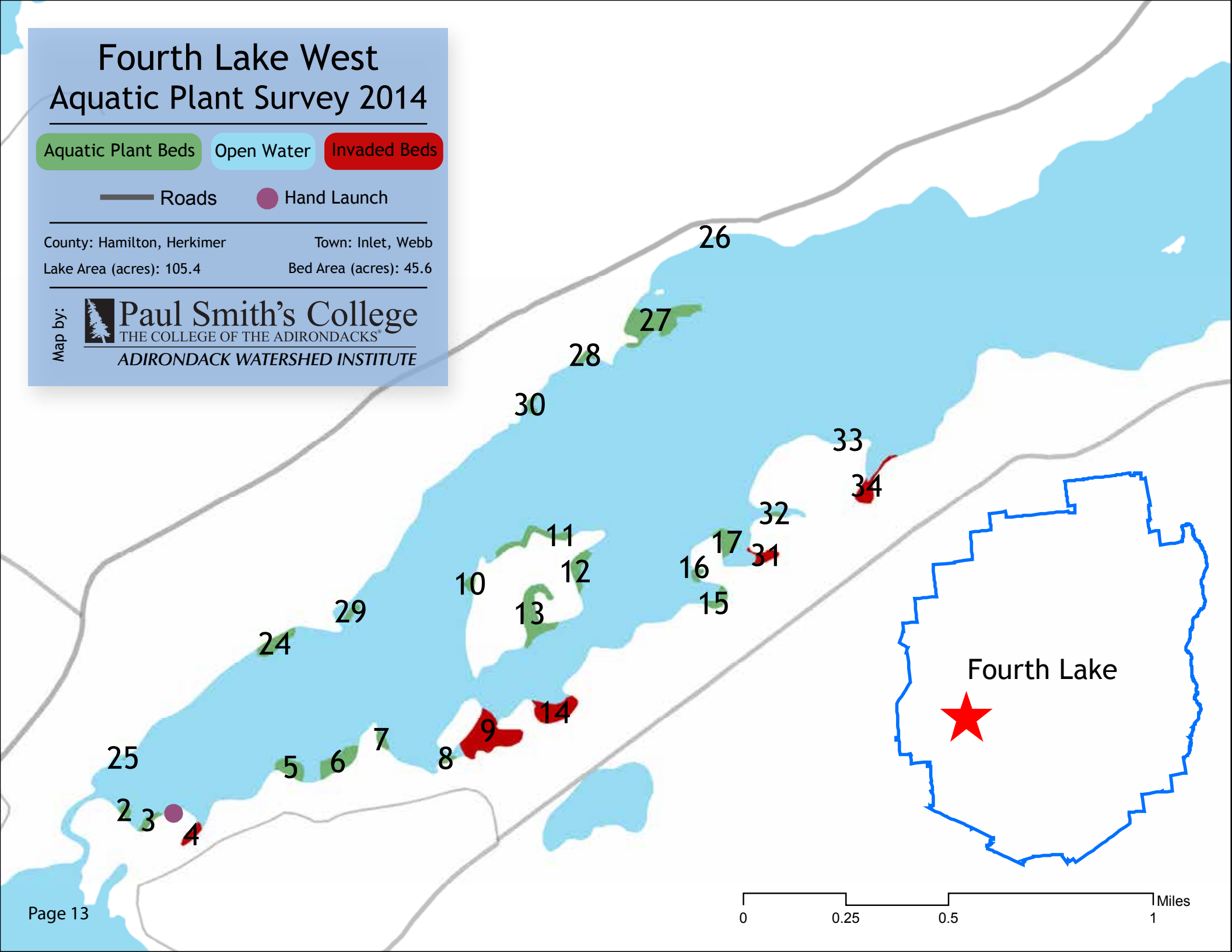
Aquatic Plant Beds | Open Water | Invaded Beds

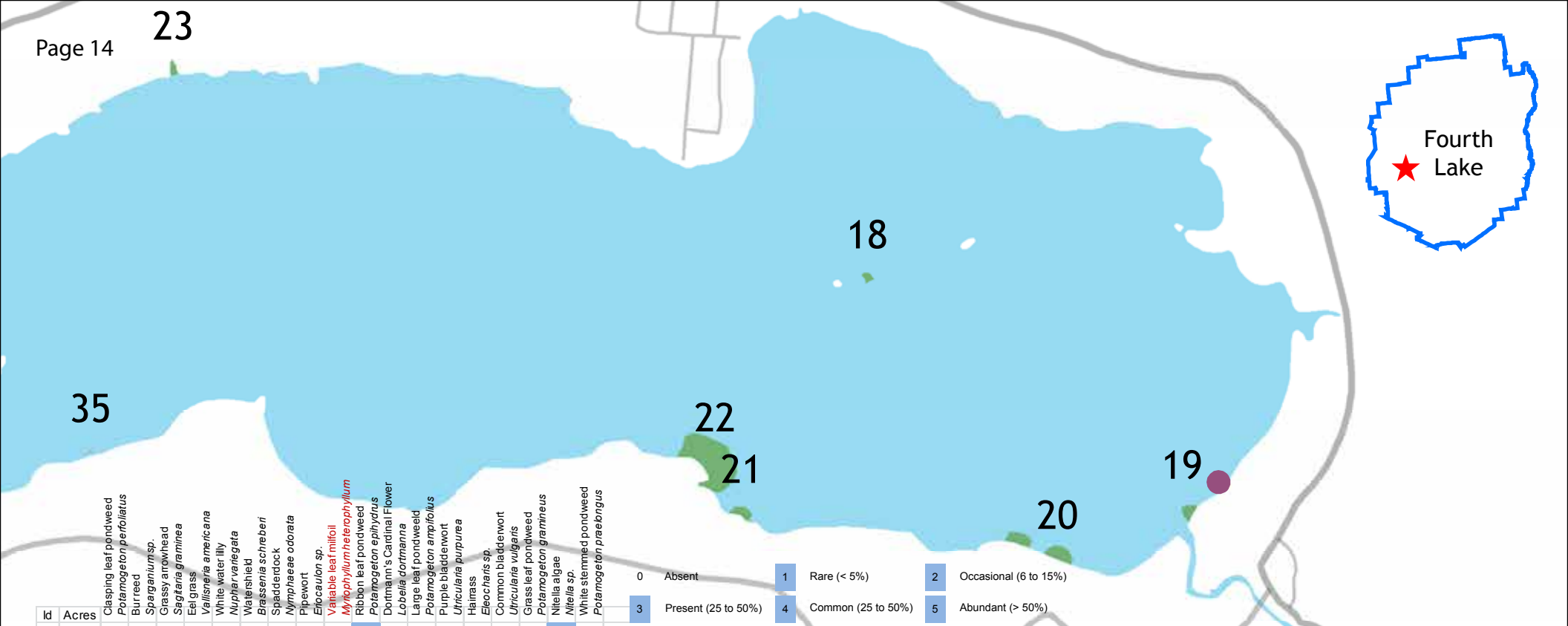
Roads | Hand Launch

County: Hamilton, Herkimer | Town: Inlet, Webb

Lake Area (acres): 105.4 | Bed Area (acres): 45.6

Map by: Paul Smith's College
THE COLLEGE OF THE ADIRONDACKS
ADIRONDACK WATERSHED INSTITUTE





Id	Acres	Clasping leaf pondweed *Potamogeton perfoliatus*	Burreed *Sparganium sp.*	Grassy arrowhead *Sagitaria graminea*	Eel grass *Vallisneria americana*	White water lilly *Nuphar variegata*	Watershield *Brasenia schreberi*	Spadderdock *Nymphaeae odorata*	Pipewort *Eriocaulon sp.*	Variable leaf milfoil *Myriophyllum heterophyllum*	Ribbon leaf pondweed *Potamogeton epihydrus*	Dortmann's Cardinal Flower *Lobelia dortmanna*	Large leaf pondweed *Potamogeton amplifolius*	Purple bladderwort *Utricularia purpurea*	Hairgrass *Eleocharis sp.*	Common bladderwort *Utricularia vulgaris*	Grass leaf pondweed *Potamogeton gramineus*	Nitella algae *Nitella sp.*	White stemmed pondweed *Potamogeton praebongus*
1	0.4	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	3	0
2	0.5	0	0	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0.7	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0
4	0.7	3	3	2	0	4	2	2	4	2	0	0	2	0	3	0	0	0	0
5	1.7	4	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
6	2.5	0	0	0	0	0	3	0	0	0	0	2	0	0	0	0	0	0	0
7	0.6	0	0	0	2	0	0	3	0	0	0	2	0	0	0	0	0	0	0
8	0.4	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	5.7	3	0	3	0	4	2	3	0	5	2	0	0	0	0	0	0	0	0
10	0.5	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0
11	2.1	4	0	1	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0
12	1.5	1	0	0	2	0	0	4	3	0	0	0	0	0	0	0	0	0	0
13	3.9	0	0	0	0	4	0	0	3	0	0	0	0	0	0	0	0	0	0
14	3.0	4	4	2	2	0	3	0	0	2	0	0	0	0	0	0	0	0	0
15	0.9	3	2	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0.5	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	1.5	0	0	0	0	0	4	3	0	0	0	0	0	0	0	0	0	0	0
18	0.2	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0.8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0.6	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	3
21	0.4	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	4.6	0	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0.2	1	1	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0
24	1.7	4	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	0.0	3	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
26	0.0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	6.0	3	1	3	1	2	0	0	0	0	0	2	0	0	0	0	0	0	0
28	0.5	3	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0
29	0.5	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
30	0.5	3	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	1.0	1	1	1	0	1	4	0	0	5	1	0	0	0	0	1	0	0	0
32	0.2	3	0	0	1	2	1	0	0	0	1	0	0	1	0	0	0	0	0
33	0.0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34	1.6	2	2	3	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0
35	0.0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 Absent
1 Rare (< 5%)
2 Occasional (6 to 15%)
3 Present (25 to 50%)
4 Common (25 to 50%)
5 Abundant (> 50%)

Fourth Lake East
Aquatic Plant Survey 2014

Aquatic Plant Beds | Open Water | Invaded Beds

Roads | Hard Launch

County: Hamilton, Herkimer
Town: Inlet, Webb
Lake Area (acres): 105.4
Bed Area (acres): 45.6

Map by: Paul Smith's College
THE COLLEGE OF THE ADIRONDACKS®
ADIRONDACK WATERSHED INSTITUTE

0 0.25 0.5 1 Miles

Lake Clear
Aquatic Plant Survey 2014

Aquatic Plant Beds | Open Water

Roads | Hand Launch

County: Franklin | Town: Harrietstown

Bed Area (acres): 62.8 | Lake Area (acres): 998.1

No AIS Observed | Richness: 26

Map by: Paul Smith's College, THE COLLEGE OF THE ADIRONDACKS, ADIRONDACK WATERSHED INSTITUTE

Id	Acres	Bur reed	Spatterdock	White water lily	Nuphar variegata	Spatterdock	Nymphaeae odorata	Watershield	Brasenia schreberi	Ribbon leaf pondweed	Potamogeton epihydrus	Grassy arrowhead	Sagittaria graminea	Pipewort	Eriocaulon sp.	Large leaf pondweed	Potamogeton amplifolius	Hairgrass	Eleocharis sp.	Variable leaf milfoil	Myriophyllum heterophyllum	Clasping leaf pondweed	Potamogeton perfoliatus	Common bladderwort	Utricularia vulgaris	Purple bladderwort	Utricularia purpurea	Grass leaf pondweed	Potamogeton gramineus	Eel grass	Vallisneria americana	Dortmann's Cardinal Flower	Lobelia dortmanna	Little floating heart	Nymphoides cordata	Floatin leaf pondweed	Potamogeton natans	Eurasian watermilfoil	Myriophyllum spicatum	Nitella algae	Nitella sp.	Robbin's pondweed	Potamogeton robinsii	Snail water weed	Persecaria amphibea	Snail pondweed	Potamogeton purpurea	Canadian waterweed	Elodea canadensis	Oak's pondweed	Potamogeton oakensis	White stemmed pondweed	Potamogeton praelongus	Water nymph	Najas sp.	Interupted bladderwort
1	3.8	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
2	1.1	0	0	0	0	0	3	0	3	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	4
3	2.6	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0	0	0
4	6.5	0	0	0	0	0	3	0	4	0	0	2	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
5	1.2	0	0	0	0	0	3	4	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
6	2.7	1	3	0	0	0	0	0	4	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
7	5.5	1	0	0	0	1	3	0	4	0	0	3	0	0	2	0	0	0	0	0	0	0	2	1	0	0	0	0
8	5.8	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0.3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
10	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0.5	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0.7	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0.1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0.2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	2.1	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	3
16	0.2	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0
17	0.1	0	0	0	0	0	1	4	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
18	0.1	0	0	0	0	0	1	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
19	4.0	0	0	0	0	0	1	4	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3
20	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
21	2.1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
22	0.1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
23	0.1	0	0	2	0	0	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
24	1.0	0	0	0	0	0	0	0	3	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2
25	0.0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
26	4.9	0	0	4	2	0	3	3	1	0	0	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	1
27	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
28	0.0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
29	0.7	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
30	5.6	1	0	0	0	3	2	3	4	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	5.7	3	0	0	0	3	3	0	4	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32	0.3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
33	2.6	4	3	0	1	2	5	5	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	0	4
34	1.6	2	3	0	0	2	3	5	0	0	0	4	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0

Lake Lila
Aquatic Plant Survey 2014

Aquatic Plant Beds | Open Water

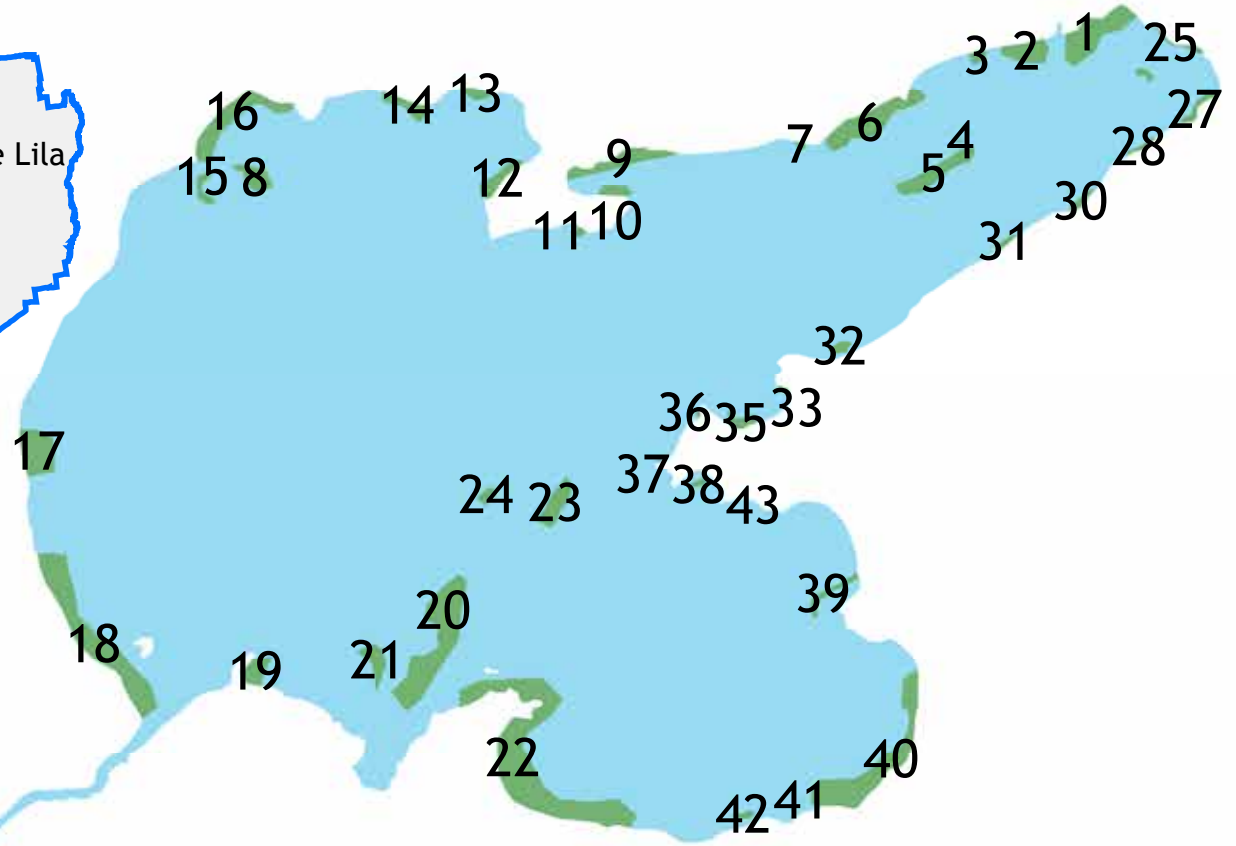
Roads | Hand Launch

County: Hamilton | Town: Long Lake

Bed Area (acres): 62.8 | Lake Area (acres): 998.1

No AIS Observed | Richness: 26

Map by: Paul Smith's College, THE COLLEGE OF THE ADIRONDACKS, ADIRONDACK WATERSHED INSTITUTE

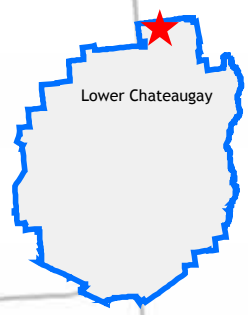


0 0.25 0.5 1 Miles

0 Absent | 1 Rare (< 5%) | 2 Occasional (6 to 15%)

3 Present (25 to 50%) | 4 Common (25 to 50%) | 5 Abundant (> 50%)

Id	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43
Acres	5.0	2.2	0.5	0.1	3.2	5.2	0.2	1.7	2.9	0.8	0.3	1.5	0.7	1.4	0.8	4.6	3.7	10.8	1.4	9.6	1.5	18.4	2.1	0.5	0.4	0.3	0.8	0.3	0.0	0.5	0.3	0.5	0.1	0.0	0.8	0.1	0.0	0.3	1.0	8.6	0.0	0.3	0.0
Bur reed *Sparganium sp.*	4	4	3	2	3	2	0	0	3	2	3	4	3	4	3	3	4	4	0	3	4	3	0	3	1	1	3	3	4	3	4	4	2	4	1	3	2	1	0	3	0	1	1
Little floating heart *Nymphoides cordata*	0	0	0	0	4	3	0	0	3	3	0	0	0	2	0	3	0	3	0	0	0	3	0	2	1	1	2	0	0	0	2	0	2	0	0	0	1	1	3	3	0	1	1
White water lilly *Nuphar variegata*	0	2	0	0	2	3	0	0	0	2	0	0	0	2	0	2	3	5	2	2	0	3	2	1	0	0	0	0	0	3	0	3	0	0	0	0	0	0	1	1	0	1	0
Watershield *Brassenia schreberi*	5	2	0	0	0	3	0	0	5	3	0	0	0	0	4	4	3	0	3	5	0	5	0	0	0	2	0	2	0	2	0	0	4	0	5	0	2	0	0	0	0	0	4
Spadderdock *Nymphaeae odorata*	2	0	0	0	0	1	0	0	2	0	0	1	0	2	2	2	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	1
Ribbon leaf pondweed *Potamogeton epihydrus*	1	1	0	0	0	0	0	0	0	0	0	2	0	3	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Grassy arrowhead *Sagitaria graminea*	0	0	0	0	0	3	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0
Hairrass *Eleocharis sp.*	3	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	3	0	0
Pipewort *Eriocaulon sp.*	0	4	0	0	0	2	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Floatin leaf pondweed *Potamogeton natans*	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Nitella algae *Nitella sp.*	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Common bladderwort *Utricularia vulgaris*	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Robbin's pondweed *Potamogeton robinnsii*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Purple bladderwort *Utricularia purpurea*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Lower Chateaugay
Aquatic Plant Survey 2014

Aquatic Plant Beds | Open Water | Invaded Beds

Roads | Hard Launch

County: Franklin | Town: Bellmont

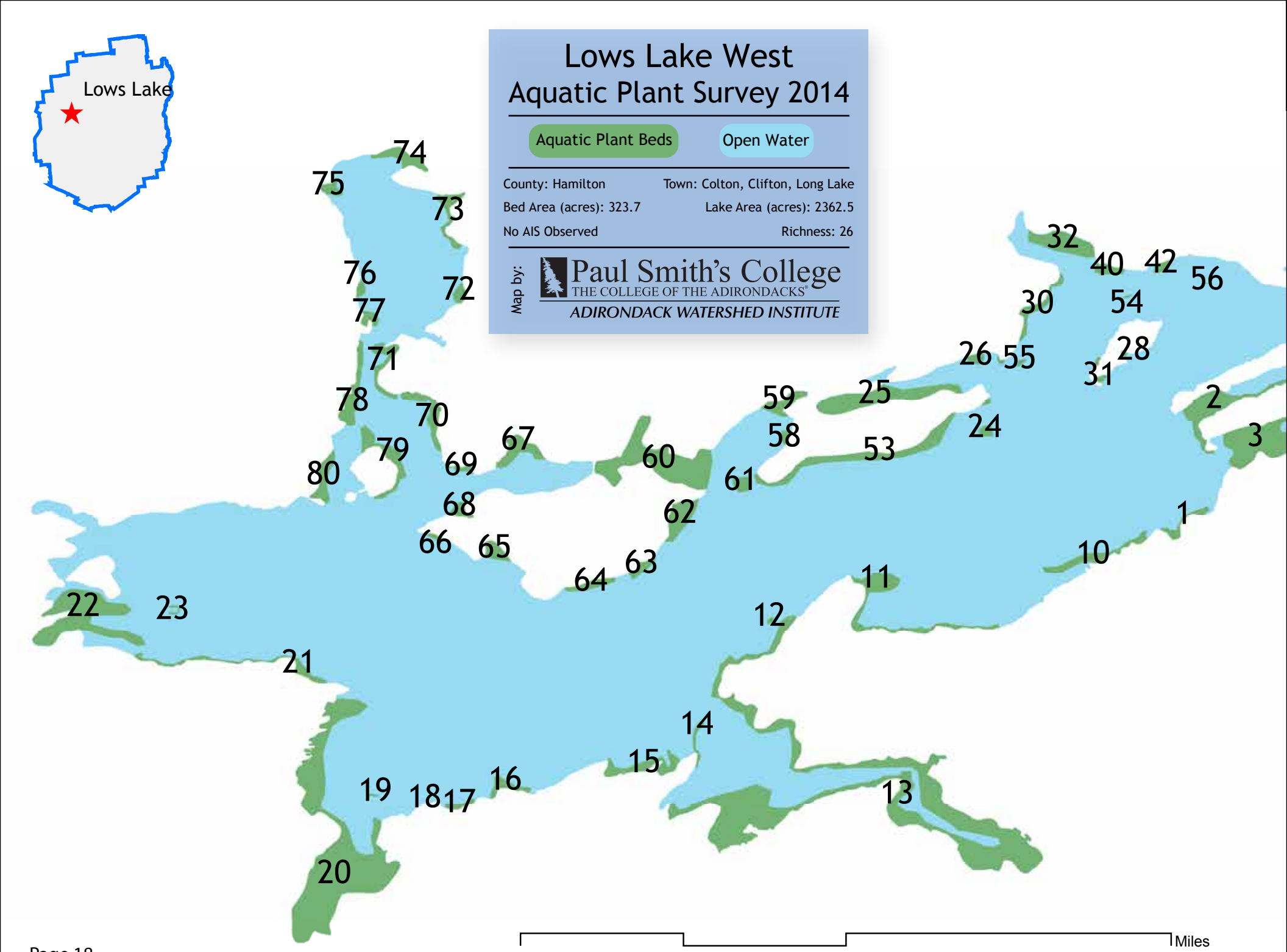
Lake Area (acres): 834.4 | Bed Area (acres): 87.9

Map by: Paul Smith's College, THE COLLEGE OF THE ADIRONDACKS®, ADIRONDACK WATERSHED INSTITUTE

0 Absent | 1 Rare (< 5%) | 2 Occasional (6 to 15%) | 3 Present (25 to 50%) | 4 Common (25 to 50%) | 5 Abundant (> 50%)

Id	Acres	Large leaf pondweed *Potamogeton amplifolius*	Clasping leaf pondweed *Potamogeton perfoliatus*	Eurasian watermilfoil *Myriophyllum spicatum*	Eelgrass *Vallisneria americana*	Spadderdock *Nymphaeae odorata*	Grassy arrowhead *Sagitaria graminea*	White water lilly *Nuphar variegata*	Canadian waterweed *Elodea canadensis*	Bur reed *Sparganium sp.*	Grass leaf pondweed *Potamogeton gramineus*	Ribbon leaf pondweed *Potamogeton epihydrus*	Pipewort *Eriocaulon sp.*	Common bladderwort *Utricularia vulgaris*	Robbin's pondweed *Potamogeton robinnsii*	Western waterweed *Elodea nuElodea nutallii*
1	0.1	3	2	0	2	0	0	0	0	0	0	0	0	0	0	0
2	0.1	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0.1	0	3	0	1	0	0	0	0	0	0	0	0	0	0	0
4	1.9	4	1	3	0	1	0	0	0	0	0	0	0	0	0	0
5	0.1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0.1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
7	2.9	1	3	2	0	0	0	1	1	0	0	0	0	0	0	0
8	0.0	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0
9	3.2	4	1	1	1	5	1	2	0	0	0	0	0	0	0	0
10	56.9	3	3	4	1	1	1	0	0	0	1	0	1	1	0	1
11	0.5	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0.3	2	0	0	0	4	0	0	0	5	0	0	0	0	0	0
13	7.7	4	2	2	1	1	3	1	1	0	1	0	0	0	1	0
14	45.1	3	0	4	2	0	4	0	3	4	0	2	0	0	0	0

0 0.25 0.5 1 Miles


Lows Lake
Lows Lake West
Aquatic Plant Survey 2014
Aquatic Plant Beds
Open Water
County: Hamilton
Town: Colton, Clifton, Long Lake
Bed Area (acres): 323.7
Lake Area (acres): 2362.5
No AIS Observed
Richness: 26
Map by:
Paul Smith's College
THE COLLEGE OF THE ADIRONDACKS
ADIRONDACK WATERSHED INSTITUTE
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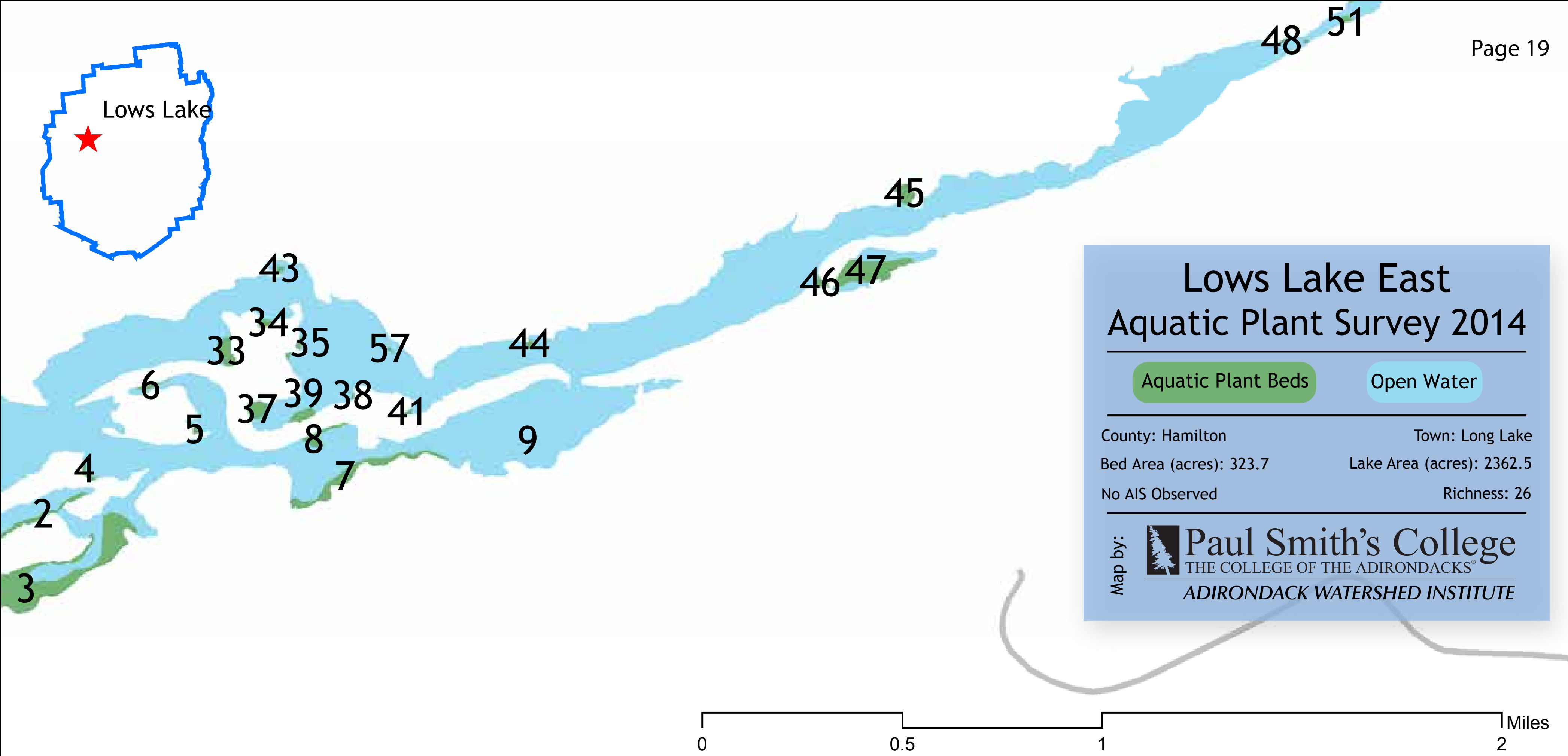


0 Absent; 1 Rare (< 5%); 2 Occasional (6 to 15%); 3 Present (25 to 50%); 4 Common (25 to 50%); 5 Abundant (> 50%)

Id	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
Acres	1.7	9.3	21	0.3	0.2	0.4	4.5	1.1	0	4.3	7.9	0.2	73	1	4.4	1.8	0.8	0	0.2	50	4.2	18	0.3	0.8	11	0.9	0.2	0.2	0.2	2.6	0.4	6.4	1.5	0.4	0.2	0.1	1.2	0.1	0.9	1.5	0.1
Bur reed *Sparganium sp.*	1	1	2	0	0	0	3	3	1	1	1	4	1	3	4	1	4	4	1	2	3	2	2	0	2	0	0	0	0	4	0	4	4	3	0	0	0	1	0	0	0
White water lilly Nuphar variegata	2	2	1	1	1	2	0	0	0	0	1	4	3	2	2	1	2	2	1	3	0	3	4	3	1	2	0	0	0	4	0	4	0	0	0	0	0	2	2	3	1
Spadderdock *Nymphaeae odorata*	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	3	4	1	1	2	4	0	3	3	0	0	0	3	0	0	3	0	2	1	2	2	2
Hairrass Eleocharis sp.	3	0	1	0	0	0	3	3	0	0	0	0	4	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	4	3	5	0	0	0	0	0	0	0	0	0	0
Watershield *Brassenia schreberi*	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pipewort Eriocaulon sp.	0	0	0	0	2	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grassy arrowhead *Sagitaria graminea*	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
Common bladderwort Utricularia vulgaris	0	1	0	0	0	0	4	4	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ribbon leaf pondweed *Potamogeton epihydrus*	1	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Eel grass Vallisneria americana	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	3	0	0	0	0	0
Little floating heart *Nymphoides cordata*	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
Floatin leaf pondweed Potamogeton natans	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Purple bladderwort *Utricularia purpurea*	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Water nymph Najas sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Robbin's pondweed *Potamogeton robinnsii*	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mare's tail Hippuris vulgaris	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Id	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83
Acres	0.8	0.2	0.2	1.2	0.4	5	0.1	0.1	0.1	0.3	0.2	9.9	0.1	0.3	0	0.1	0.6	2.8	20	1.2	4.6	1.2	1.9	1.9	0.4	4.1	1.3	0.7	3.8	3.1	1.1	2.9	3.3	1.3	0.7	1.2	4.7	4.9	3.1	0.1	0.1	1.2
Bur reed *Sparganium sp.*	3	3	4	3	0	0	1	0	0	0	0	2	0	0	0	0	2	3	4	1	4	3	3	4	1	5	1	0	1	2	0	1	0	0	0	1	2	2	4	1	0	1
White water lilly Nuphar variegata	4	2	0	0	0	5	0	0	0	0	0	0	0	0	0	0	2	2	2	0	2	0	0	2	0	5	0	2	4	4	0	4	0	4	4	4	2	3	4	0	0	0
Spadderdock *Nymphaeae odorata*	0	3	0	0	5	5	0	0	0	0	0	1	1	3	1	4	0	0	1	0	1	0	0	1	0	2	1	3	3	4	5	0	5	4	2	4	0	0	4	0	0	0
Hairrass Eleocharis sp.	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	0	0	2	5	4	0	5	0	2	1	0	5	4	2	2	0	5	0	0	0	0	1	0	0	0	0	4
Watershield *Brassenia schreberi*	1	0	2	3	0	0	2	4	0	0	0	1	0	2	3	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	2	0	0
Pipewort Eriocaulon sp.	0	0	0	0	0	0	0	0	0	0	3	4	0	0	0	0	0	0	3	0	4	0	3	3	0	1	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0
Grassy arrowhead *Sagitaria graminea*	0	0	1	2	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	0	0	3	0	0	0	0	0	0
Common bladderwort Utricularia vulgaris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Ribbon leaf pondweed *Potamogeton epihydrus*	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Eel grass Vallisneria americana	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Little floating heart *Nymphoides cordata*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Floatin leaf pondweed Potamogeton natans	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0
Purple bladderwort *Utricularia purpurea*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Water nymph Najas sp.	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Robbin's pondweed *Potamogeton robinnsii*	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mare's tail Hippuris vulgaris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Norwood Lake
Aquatic Plant Survey 2014

Aquatic Plant Beds | Open Water | Invaded Beds

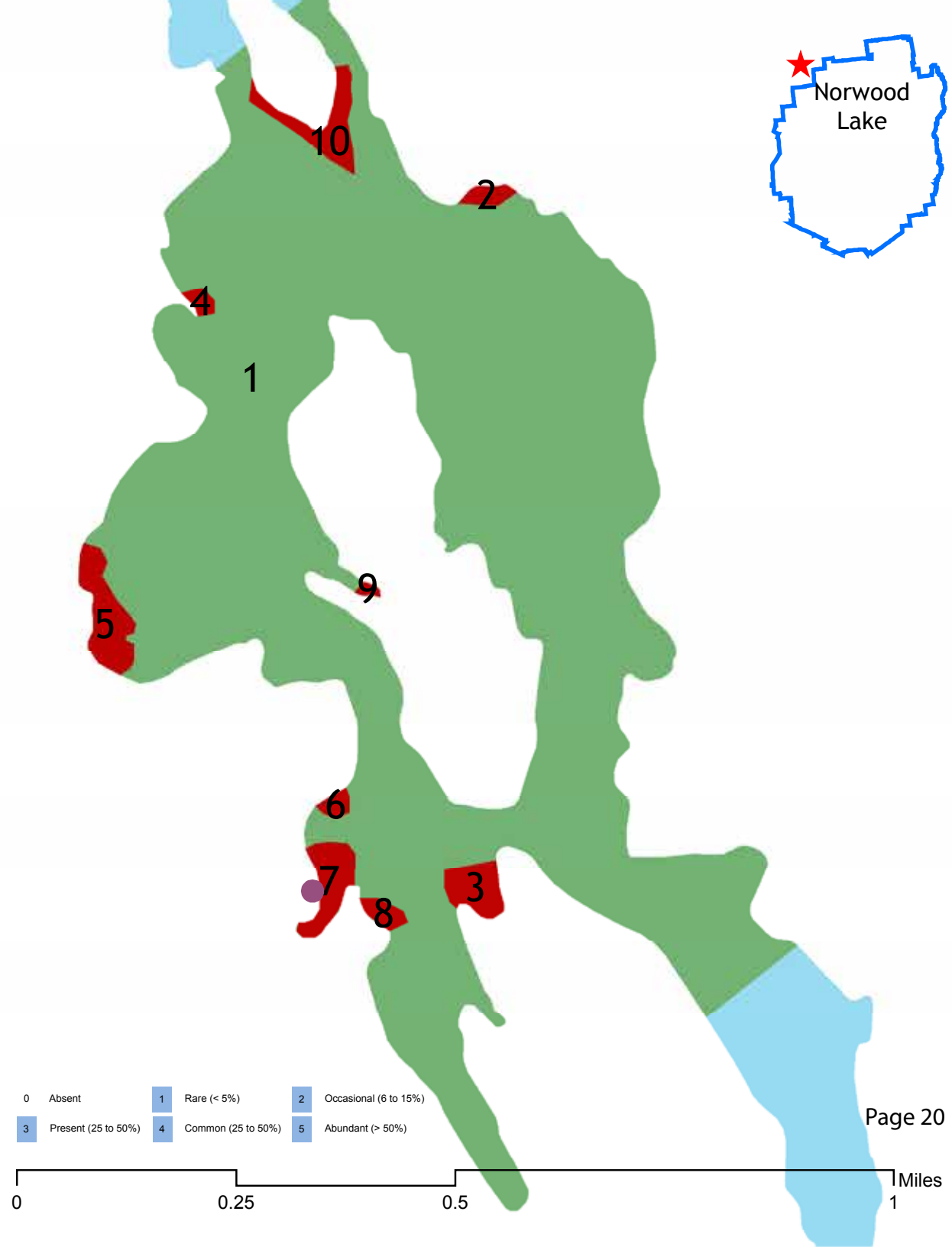
Roads | Hand Launch

County: St. Lawrence | Town: Potsdam

Lake Area (acres): 259.8 | Bed Area (acres): 259.8

Map by: Paul Smith's College, THE COLLEGE OF THE ADIRONDACKS, ADIRONDACK WATERSHED INSTITUTE

Id	1	2	3	4	5	6	7	8	9	10
Acres	251.7	0.7	2.1	0.5	3.4	0.5	2.5	0.8	0.2	2.7
Variable leaf milfoil *Myriophyllum heterophyllum*	0	0	1	4	4	5	5	5	5	1
Bur reed *Sparganium sp.*	5	0	0	0	0	0	0	0	0	0
Grassy arrowhead *Sagitaria graminea*	5	0	0	0	0	0	0	0	0	0
Purple bladderwort *Utricularia purpurea*	5	0	0	0	0	0	0	0	0	0
Eel grass *Vallisneria americana*	5	0	0	0	0	0	0	0	0	0
Nitella algae *Nitella sp.*	5	0	0	0	0	0	0	0	0	0
Small pondweed *Potamogeton purpurea*	5	0	0	0	0	0	0	0	0	0
Spadderdock	4	0	0	0	0	0	0	0	0	0
Pipewort *Eriocaulon sp.*	4	0	0	0	0	0	0	0	0	0
Hairrass *Eleocharis sp.*	4	0	0	0	0	0	0	0	0	0
Canadian waterweed *Elodea canadensis*	4	0	0	0	0	0	0	0	0	0
White water lilly *Nuphar variegata*	3	0	0	0	0	0	0	0	0	0
Clasping leaf pondweed *Potamogeton perfoliatus*	3	0	0	0	0	0	0	0	0	0
Common bladderwort *Utricularia vulgaris*	3	0	0	0	0	0	0	0	0	0
Floatin leaf pondweed *Potamogeton natans*	3	0	0	0	0	0	0	0	0	0
Eurasian watermilfoil *Myriophyllum spicatum*	0	3	0	0	0	0	0	0	0	0
Water nymph *Najas sp.*	3	0	0	0	0	0	0	0	0	0
Watershield *Brassenia schreberi*	2	0	0	0	0	0	0	0	0	0
Ribbon leaf pondweed *Potamogeton epihydrus*	2	0	0	0	0	0	0	0	0	0
Robbin's pondweed	2	0	0	0	0	0	0	0	0	0



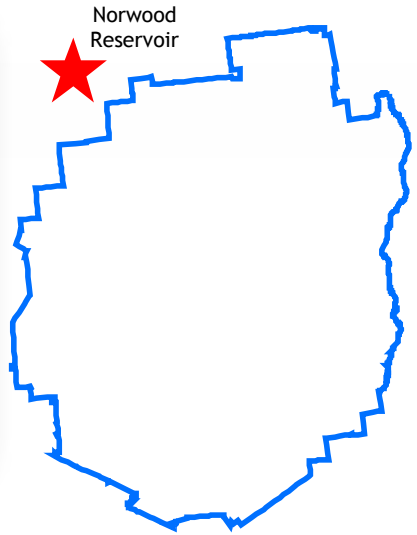
Norwood Reservoir Aquatic Plant Survey 2014

Aquatic Plant Beds | Open Water | Invaded Beds

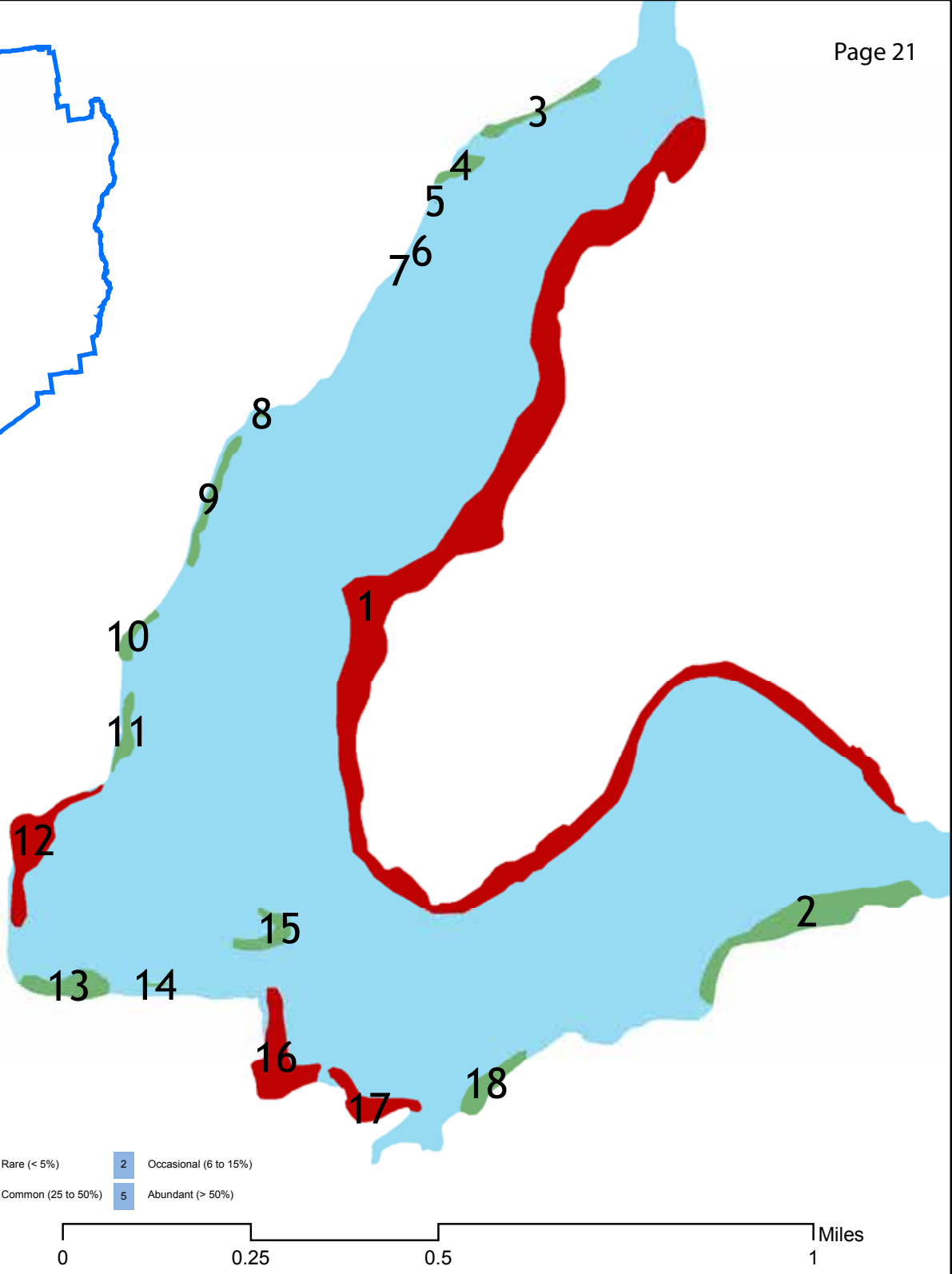
County: St. Lwrence | Town: Potsdam

Lake Area (acres): 452.0 | Bed Area (acres): 67.0

Map by: Paul Smith's College, THE COLLEGE OF THE ADIRONDACKS
ADIRONDACK WATERSHED INSTITUTE



Id	Acres	Spadderdock *Nymphaeae odorata*	Bur reed *Sparganium sp.*	Clasping leaf pondweed *Potamogeton perfoliatus*	Watershield *Brasenia schreberi*	Grassy arrowhead *Sagitaria graminea*	Variable leaf milfoil *Myriophyllum heterophyllum*	Eel grass *Vallisneria americana*	Nitella algae *Nitella sp.*	White water lilly *Nuphar variegata*	Water nymph *Najas sp.*	Ribbon leaf pondweed *Potamogeton epihydrus*	Large leaf pondweed *Potamogeton ampifolius*	Coontail *Ceratophyllum sp.*
1	41.4	3	3	4	1	3	3	4	5	3	5	0	2	4
2	6.3	4	3	3	1	4	0	3	0	3	3	1	0	0
3	1.1	1	3	0	0	0	0	0	0	0	0	0	0	0
4	0.7	4	0	0	4	0	0	0	0	0	0	0	0	0
5	0.1	1	0	0	0	0	0	0	0	0	0	0	0	0
6	0.1	0	2	0	0	0	0	0	0	0	0	0	0	0
7	0.1	3	0	0	0	0	0	0	0	0	0	0	0	0
8	0.1	2	1	0	0	0	0	0	0	0	0	0	0	0
9	1.4	3	0	0	0	0	0	0	0	0	0	0	0	0
10	0.6	2	4	1	4	1	0	1	5	0	0	0	0	0
11	0.9	3	3	0	0	0	0	0	0	0	0	0	0	0
12	3.6	1	3	5	0	0	2	0	0	0	0	0	0	0
13	2.1	3	2	1	0	0	0	0	0	0	0	0	0	0
14	0.1	4	0	0	0	0	0	0	0	0	0	0	0	0
15	1.2	5	4	0	0	0	0	0	0	0	0	0	0	0
16	3.7	3	1	0	0	0	5	0	0	0	0	0	0	0
17	2.0	4	4	2	0	1	2	0	1	0	0	0	0	0
18	1.6	0	2	5	0	0	0	0	0	0	0	0	0	0



Osgood Pond
Aquatic Plant Survey 2014

Aquatic Plant Beds | Open Water

Roads | Hand Launch

County: Franklin | Town: Brighton

Bed Area (acres): 62.9 | Lake Area (acres): 515.1

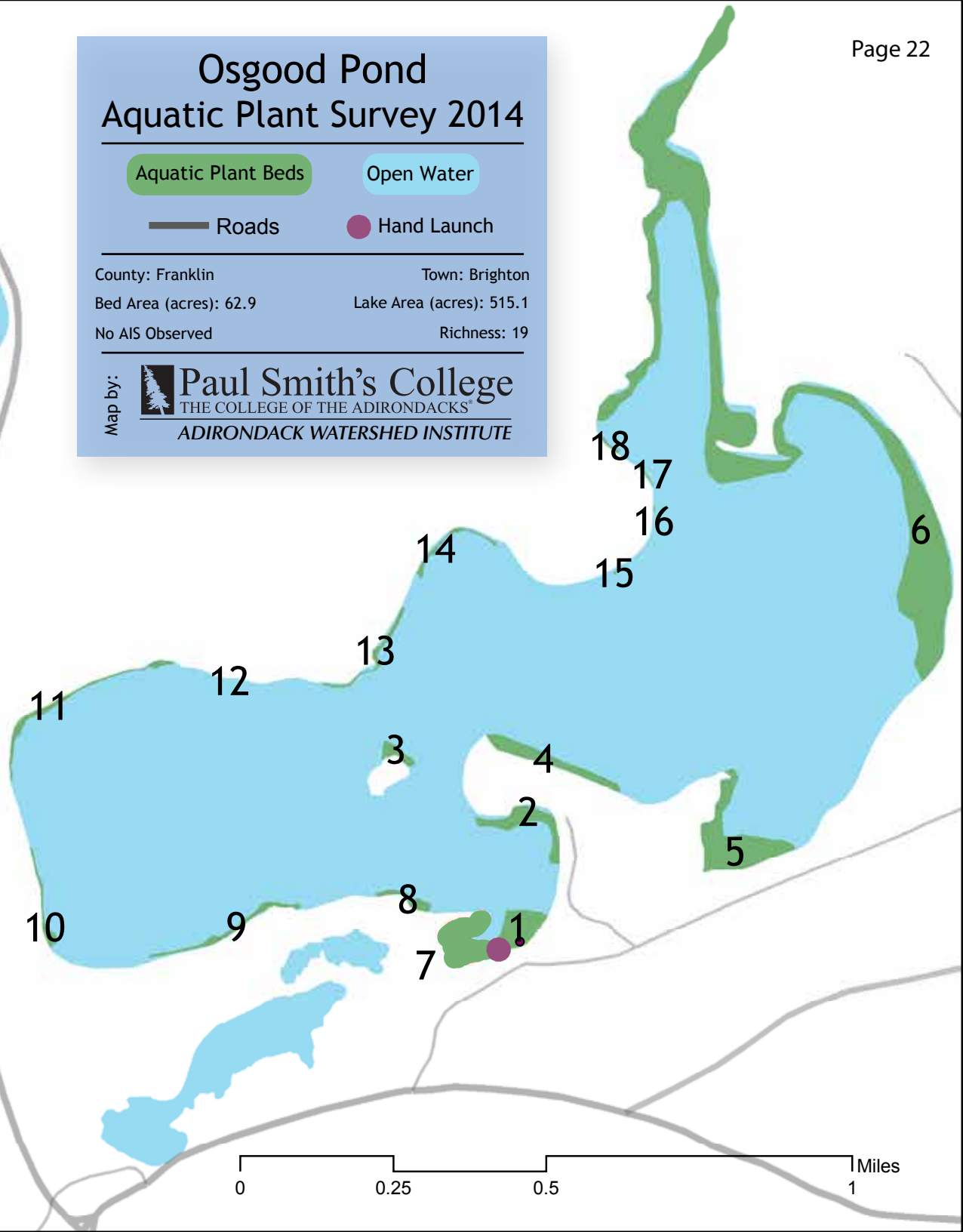
No AIS Observed | Richness: 19

Map by: Paul Smith's College, THE COLLEGE OF THE ADIRONDACKS, ADIRONDACK WATERSHED INSTITUTE

0 Absent | 1 Rare (< 5%) | 2 Occasional (6 to 15%)

3 Present (25 to 50%) | 4 Common (25 to 50%) | 5 Abundant (> 50%)

Id	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Acres	2.5	2.2	0.6	2.4	5.7	41.8	2.3	0.6	1.1	0.6	1.4	0.1	0.7	0.5	0.1	0.1	0.1	0.1
Bur reed *Sparganium sp.*	0	3	2	3	5	4	1	2	3	1	2	2	1	2	4	0	1	0
White water lilly *Nuphar variegata*	0	0	3	0	3	2	2	4	0	3	0	0	0	0	0	1	3	0
Spadderdock *Nymphaeae odorata*	0	1	0	2	0	3	3	0	0	0	2	0	0	3	0	0	0	4
Watershield *Brassenia schreberi*	0	0	0	1	2	5	1	0	0	0	1	0	0	1	0	0	0	3
Grassy arrowhead *Sagitaria graminea*	2	4	0	3	3	3	0	0	1	0	1	0	0	0	0	0	0	0
Pipewort *Eriocaulon sp.*	0	0	0	0	0	4	0	1	1	0	3	0	2	2	0	0	0	0
Ribbon leaf pondweed *Potamogeton epihydrus*	0	0	0	1	0	2	0	1	0	0	1	0	0	0	0	0	0	0
Small pondweed *Potamogeton purpurea*	0	0	0	0	0	0	3	1	1	1	0	0	0	0	0	0	0	0
Common bladderwort *Utricularia vulgaris*	0	2	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0
Robbin's pondweed *Potamogeton robinnsii*	0	2	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0
Clasping leaf pondweed *Potamogeton perfoliatus*	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Eel grass *Vallisneria americana*	0	0	0	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0
Large leaf pondweeld *Potamogeton ampifolius*	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Hairrass *Eleocharis sp.*	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
Grass leaf pondweed *Potamogeton gramineus*	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Floatin leaf pondweed *Potamogeton natans*	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Nitella algae *Nitella sp.*	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Canadian waterweed *Elodea canadensis*	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
White stemmed pondweed *Potamogeton praelongus*	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0



Piercefield Flow
Aquatic Plant Survey 2014

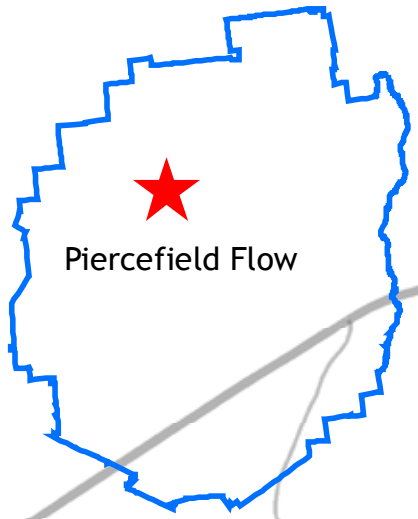
Aquatic Plant Beds | Open Water | Invaded Beds

Roads | Hand Launch

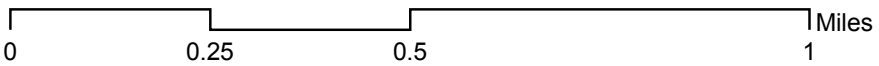
County: St. Lwrence | Town: Piercefield

Lake Area (acres): 375.0 | Bed Area (acres): 151.4

Map by: Paul Smith's College, THE COLLEGE OF THE ADIRONDACKS, ADIRONDACK WATERSHED INSTITUTE



Id	Acres	Bur reed	*Sparganium sp.*	Ribbon leaf pondweed	*Potamogeton epihydrus*	Watershield	*Brasenia schreberi*	Variable leaf milfoil	*Myriophyllum heterophyllum*	Spadderdock	*Nymphaeae odorata*	Clasping leaf pondweed	*Potamogeton perfoliatus*	White water lilly	*Nuphar variegata*	Pipewort	*Eriocaulon sp.*	Little floating heart	*Nymphoides cordata*	Nitella algae	*Nitella sp.*	Hairass	*Eleocharis sp.*	Floatin leaf pondweed	*Potamogeton natans*	Grassy arrowhead	*Sagitaria graminea*	Common bladderwort	*Utricularia vulgaris*	Robbin's pondweed	*Potamogeton robinnsii*
1	0.3	2	0	3		1		2		0	0	0		0		0		0		0		0		0		0		0		0	
2	0.1	3	0	2		0		1		0	0	2		0		0		0		0		0		0		0		0		0	
3	17.4	3	2	3		3		3		1	1	2		1		0		1		1		2		2		0		0		0	
4	0.1	3	0	0		0		2		0	0	0		0		0		0		0		0		0		0		0		0	
5	1.1	2	3	0		3		0		3	0	0		0		1		0		0		0		0		0		0		0	
6	1.1	3	1	2		0		0		1	2	3		1		0		2		0		0		0		0		1		0	
7	0.1	0	0	0		0		0		0	4	0		0		0		0		0		0		0		0		0		0	
8	4.5	3	3	2		3		2		0	2	0		1		0		2		3		0		0		0		0		0	
9	100.4	2	1	1		2		0		0	2	0		1		0		3		3		1		0		0		0		0	
10	0.1	1	2	0		0		0		1	0	0		0		1		0		0		0		0		0		0		0	
11	4.0	0	2	4		5		0		0	2	0		0		3		0		0		0		0		0		0		0	
12	12.0	2	2	4		5		0		3	0	2		3		0		0		2		0		0		0		0		0	
13	0.2	0	0	0		2		0		4	0	0		0		0		0		0		0		0		0		0		0	
14	0.1	0	4	1		0		2		0	0	0		0		0		0		0		0		0		0		0		0	
15	2.3	2	2	0		0		4		1	0	0		1		1		0		0		0		0		0		0		0	
16	0.7	2	0	0		3		2		3	0	0		0		0		0		0		0		0		0		0		0	
17	0.6	0	4	0		0		0		4	0	2		0		0		0		0		0		0		0		0		0	
18	0.1	0	2	0		1		0		0	0	0		0		0		0		0		0		0		0		0		0	
19	0.3	2	2	3		1		2		0	1	0		0		0		0		0		0		0		0		0		0	
20	0.1	1	1	5		0		1		0	0	0		0		0		0		0		0		0		1		0		0	
21	0.1	4	0	5		0		2		0	0	0		0		0		0		0		0		0		0		0		0	
22	0.1	3	0	1		2		0		3	0	0		0		0		0		0		0		0		0		0		0	
23	5.6	2	2	5		5		3		0	0	1		0		3		0		0		0		0		0		0		0	



Second Lake
Aquatic Plant Survey 2014

Aquatic Plant Beds | Open Water | Invaded Beds

Roads

County: Herkimer | Town: Webb

Lake Area (acres): 176.9 | Bed Area (acres): 31.6

Map by: Paul Smith's College, THE COLLEGE OF THE ADIRONDACKS, ADIRONDACK WATERSHED INSTITUTE

0 Absent | 1 Rare (< 5%) | 2 Occasional (6 to 15%) | 3 Present (25 to 50%) | 4 Common (25 to 50%) | 5 Abundant (> 50%)

Id	1	2	3	4	5	6	7	8	9	10
Acres	0.1	1.6	0.3	21.8	0.4	6.4	0.3	0.1	0.1	0.5
Bur reed *Sparganium sp.*	3	0	3	4	0	3	0	0	1	3
Clasping leaf pondweed *Potamogeton perfoliatus*	2	2	0	2	0	0	2	1	0	0
White water lilly *Nuphar variegata*	0	1	0	4	2	4	0	0	0	0
Watershield *Brassenia schreberi*	0	0	0	1	4	4	0	0	0	0
Variable leaf milfoil *Myriophyllum heterophyllum*	0	0	0	5	2	3	0	0	0	0
Purple bladderwort *Utricularia purpurea*	0	0	0	0	3	2	0	1	0	0
Spadderdock *Nymphaeae odorata*	0	0	0	2	0	0	0	0	0	0
Hairrass *Eleocharis sp.*	0	0	0	3	0	0	0	0	0	0
Common bladderwort *Utricularia vulgaris*	0	0	0	3	0	0	0	0	0	0
Grass leaf pondweed *Potamogeton gramineus*	0	5	0	0	0	0	0	0	0	0
Floatin leaf pondweed *Potamogeton natans*	0	0	0	2	0	0	0	0	0	0
Nitella algae *Nitella sp.*	0	0	0	4	0	0	0	0	0	0

0 0.125 0.25 0.5 Miles

Seventh Lake
Aquatic Plant Survey 2014

Aquatic Plant Beds | Open Water | Invaded Beds

Roads | Hard Launch

County: Herkimer | Town: Inlet

Lake Area (acres): 834.4 | Bed Area (acres): 75.9

Map by: Paul Smith's College, THE COLLEGE OF THE ADIRONDACKS, ADIRONDACK WATERSHED INSTITUTE

Id	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
Acres	10.9	0.1	0.2	30.8	0.8	4.6	1.8	0.1	1.2	2.0	1.1	0.8	1.0	0.4	0.6	0.9	3.5	0.4	0.9	3.4	0.2	0.9	3.5	0.1	0.5	0.1	0.1	0.2	0.1	3.0	0.1	0.3	0.2	0.5	0.5
Bur reed	2	0	0	2	0	1	1	2	2	0	4	3	4	2	0	3	4	0	0	3	3	0	0	0	1	3	1	3	0	3	1	1	1	1	1
Sparganium sp.																																			
Ribbon leaf pondweed	1	0	0	1	3	0	2	2	1	2	4	0	2	0	2	3	5	1	0	0	0	0	0	1	2	0	2	1	0	1	0	2	1	1	1
Potamogeton epihydrus																																			
Watershield	0	0	0	2	3	1	3	0	3	3	2	0	3	2	1	0	4	4	3	3	3	2	4	0	1	0	4	0	0	0	0	0	1	0	1
Brassenia schreberi																																			
White water lilly	1	3	1	1	2	0	0	0	0	0	3	2	0	0	0	0	3	0	0	4	2	4	0	0	3	0	2	0	0	1	0	0	0	0	2
Nuphar variegata																																			
Spadderdock	0	3	3	5	5	5	3	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	2	0	3	1	0	3	0	3	5
Nymphaeae odorata																																			
Eurasian watermilfoil	0	0	0	5	0	4	1	0	0	1	0	0	0	0	0	0	0	0	0	2	0	2	3	0	0	0	0	0	0	0	0	0	2	1	0
Myriophyllum spicatum																																			
Variable leaf milfoil	0	0	0	5	0	0	0	0	0	0	0	0	3	0	0	0	2	0	0	4	0	3	3	0	3	0	0	0	0	0	0	0	0	0	1
Myriophyllum heterophyllum																																			
Common bladderwort	0	0	0	2	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0
Utricularia vulgaris																																			
Eel grass	0	0	0	0	0	0	0	0	0	0	3	0	2	0	0	0	4	0	0	3	0	0	4	0	1	0	0	0	0	0	0	0	0	1	0
Vallisneria americana																																			
Canadian waterweed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	3	4	0	0	0	0	0	0	2	0	0	0	1	0
Elodea canadensis																																			
Grassy arrowhead	0	0	0	3	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	4	0	0	3	0	0	0	0	0	0	0	0	0	0
Sagitaria graminea																																			
Floatin leaf pondweed	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
Potamogeton natans																																			
Interupted bladderwort	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0
Utricularia intermedia																																			
Large leaf pondweed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Potamogeton ampifolius																																			
Hairrass	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Eleocharis sp.																																			
Purple bladderwort	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
Utricularia purpurea																																			
Grass leaf pondweed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Potamogeton gramineus																																			
Nitella algae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
Nitella sp.																																			
Robbin's pondweed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Alpine pondweed	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Potamogeton alpinus																																			

0 Absent | 1 Rare (< 5%) | 2 Occasional (6 to 15%)

3 Present (25 to 50%) | 4 Common (25 to 50%) | 5 Abundant (> 50%)

Sixth lake
Aquatic Plant Survey 2014

Aquatic Plant Beds | Open Water | Invaded Beds

Roads | Hand Launch

County: Hamilton | Town: inlet

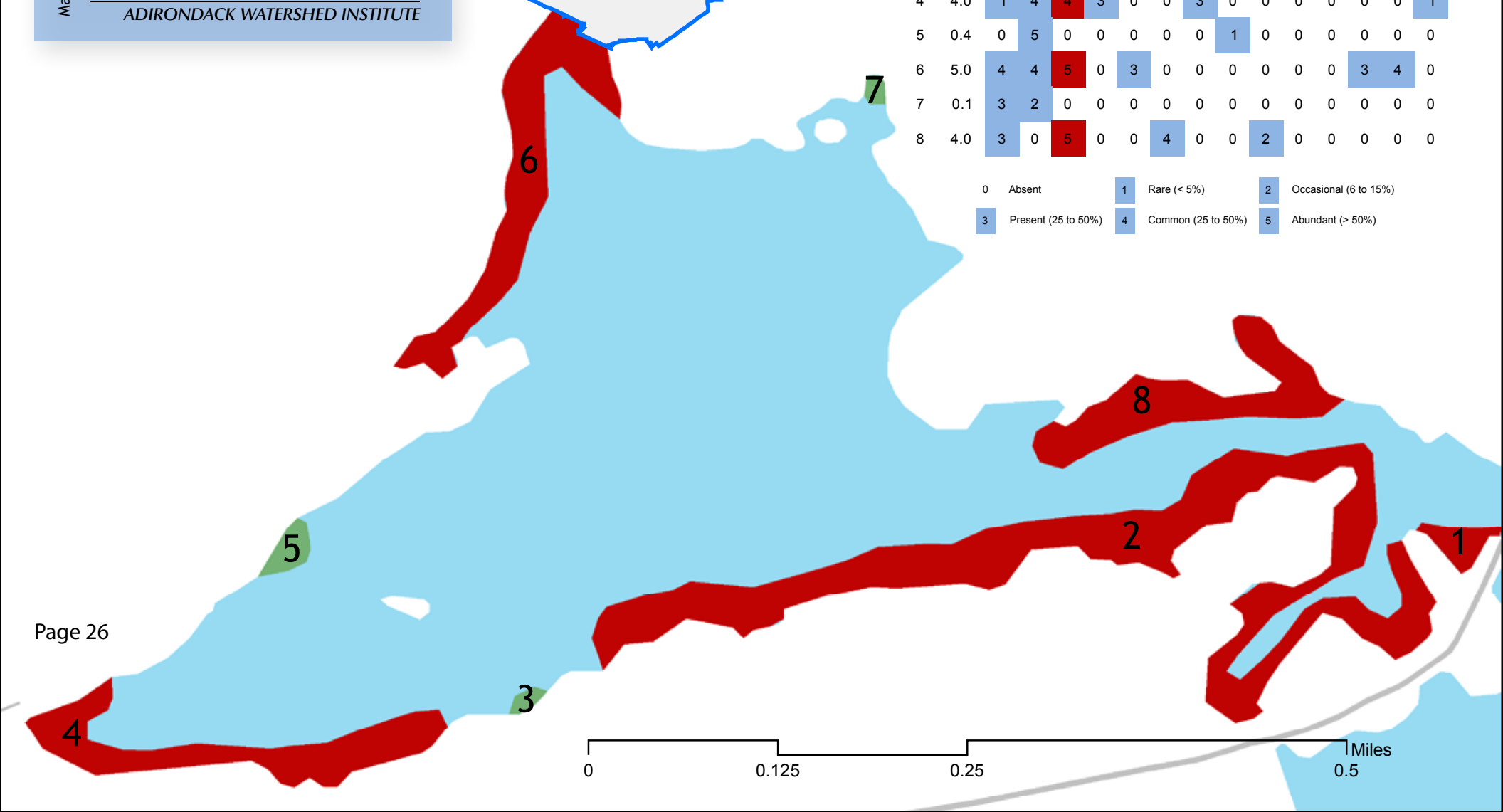
Lake Area (acres): 115.8 | Bed Area (acres): 27.7

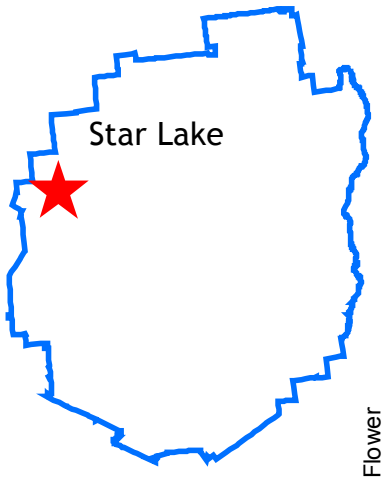
Map by: Paul Smith's College, THE COLLEGE OF THE ADIRONDACKS®, ADIRONDACK WATERSHED INSTITUTE

Id	Acres	White water lilly	*Nuphar variegata* Watershield	*Brasenia schreberi*	*Variable leaf milfoil*	*Myriophyllum heterophyllum*	Floatin leaf pondweed	*Potamogeton natans*	Large leaf pondweed	*Potamogeton ampifolius*	Eel grass	*Vallisneria americana*	Bur reed	*Sparganium sp.*	Spadderdock	*Nymphaeae odorata*	Grassy arrowhead	*Sagitaria graminea*	Purple bladderwort	*Utricularia purpurea*	Eurasian watermilfoil	*Myriophyllum spicatum*	Nitella algae	*Nitella sp.*	Hairrass	*Eleocharis sp.*	Alpine pondweed	*Potamogeton alpinus*
1	0.6	4	3	0	4	4	2	0	0	0	3	3	2	0	0
2	13.5	5	3	5	4	4	3	4	2	4	5	2	0	0	0
3	0.2	0	0	0	4	0	0	0	0	0	0	0	0	0	0
4	4.0	1	4	4	3	0	0	3	0	0	0	0	0	0	1
5	0.4	0	5	0	0	0	0	0	1	0	0	0	0	0	0
6	5.0	4	4	5	0	3	0	0	0	0	0	0	3	4	0
7	0.1	3	2	0	0	0	0	0	0	0	0	0	0	0	0
8	4.0	3	0	5	0	0	4	0	0	2	0	0	0	0	0

0 Absent | 1 Rare (< 5%) | 2 Occasional (6 to 15%)

3 Present (25 to 50%) | 4 Common (25 to 50%) | 5 Abundant (> 50%)





Star Lake
Aquatic Plant Survey 2014

Aquatic Plant Beds | Open Water

Roads | Hand Launch

County: St Lawrence | Town: Fine

Bed Area (acres): 33.7 | Lake Area (acres): 215.7

No AIS Observed | Richness: 8

Map by: Paul Smith's College, THE COLLEGE OF THE ADIRONDACKS®, ADIRONDACK WATERSHED INSTITUTE

Id	Acres	Pipewort *Eriocaulon sp.*	Burreed *Sparganium sp.*	Grassy arrowhead *Sagitaria graminea*	Dortmann's Cardinal Flower *Lobelia dortmanna*	White water lilly *Nuphar variegata*	Nitella algae *Nitella sp.*	Spadderdock *Nymphaeae odorata*	Hairrass *Eleocharis sp.*
1	1.25	0	1	3	0	1	0	0	0
2	0.96	1	0	1	0	0	0	0	0
3	0.05	0	1	0	0	0	0	0	0
4	0.10	0	0	1	0	0	0	0	0
5	0.03	0	0	0	0	0	0	1	0
6	0.23	0	4	0	0	0	0	0	0
7	0.06	0	1	0	0	0	0	0	0
8	0.05	1	1	0	0	0	0	0	0
9	0.35	1	1	1	0	2	0	0	0
10	0.02	0	1	0	0	0	0	0	0
11	0.07	2	1	0	0	0	4	0	0
12	0.20	3	0	0	0	1	1	0	1
13	0.00	0	1	0	0	0	0	0	0
14	0.05	0	2	0	0	0	0	0	0
15	0.01	0	0	3	0	0	0	0	0
16	0.07	1	0	1	0	0	0	0	0
17	0.03	2	0	0	0	0	0	0	0
18	0.08	1	3	1	0	0	0	0	0
19	0.01	1	0	1	0	0	0	0	0
20	0.16	0	0	0	1	0	0	0	0
21	0.20	1	0	0	1	0	0	0	0
22	0.10	4	0	0	4	0	0	0	0
23	0.23	3	0	0	3	0	0	0	0
24	0.08	2	0	0	0	0	0	0	0
25	0.10	2	0	1	0	0	0	0	0
26	0.05	1	0	0	1	0	0	0	0

0 Absent | 1 Rare (< 5%) | 2 Occasional (6 to 15%)

3 Present (25 to 50%) | 4 Common (25 to 50%) | 5 Abundant (> 50%)

0 0.25 0.5 1 Miles

Thendara Pond
Aquatic Plant Survey 2014

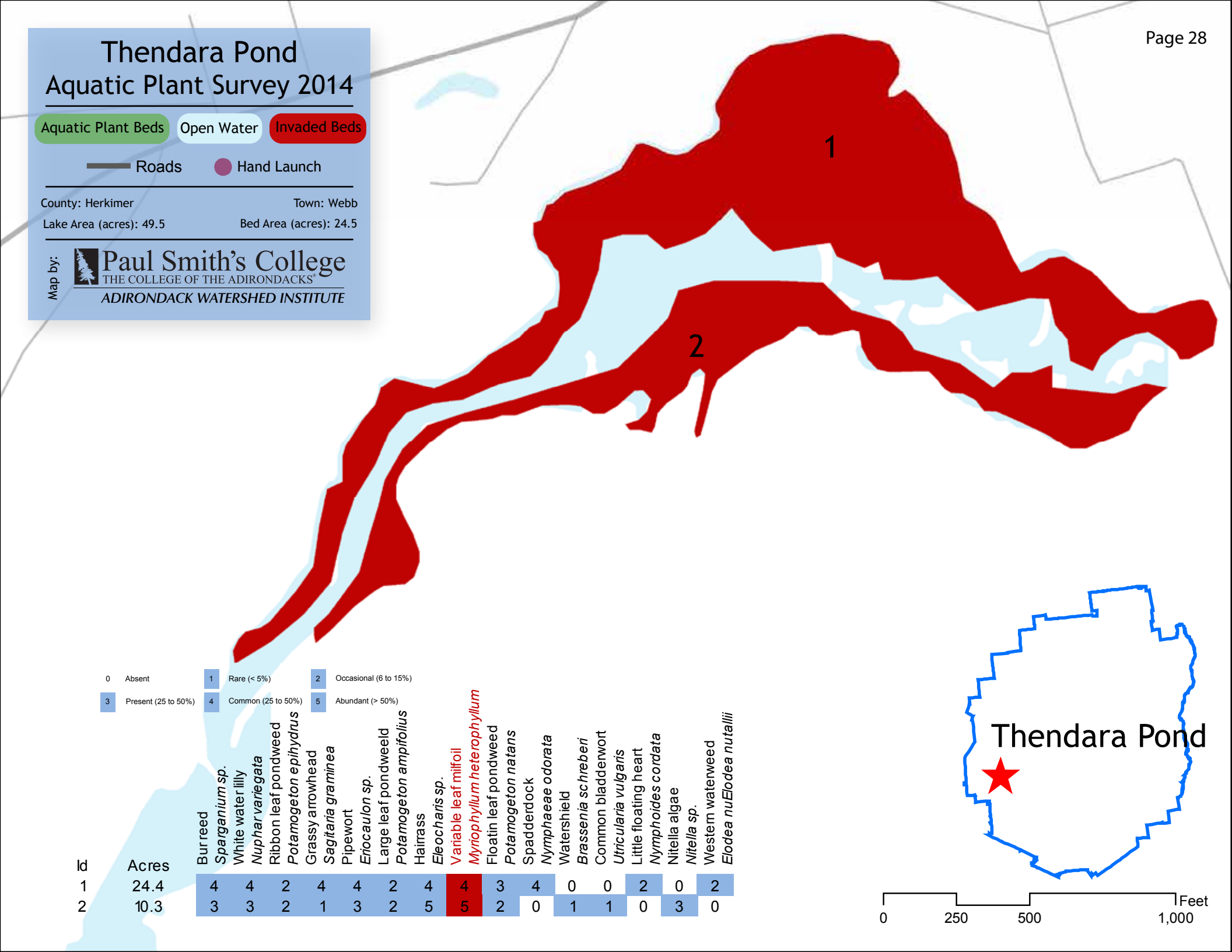
Aquatic Plant Beds | Open Water | Invaded Beds

Roads | Hand Launch

County: Herkimer | Town: Webb

Lake Area (acres): 49.5 | Bed Area (acres): 24.5

Map by: Paul Smith's College, THE COLLEGE OF THE ADIRONDACKS®, ADIRONDACK WATERSHED INSTITUTE

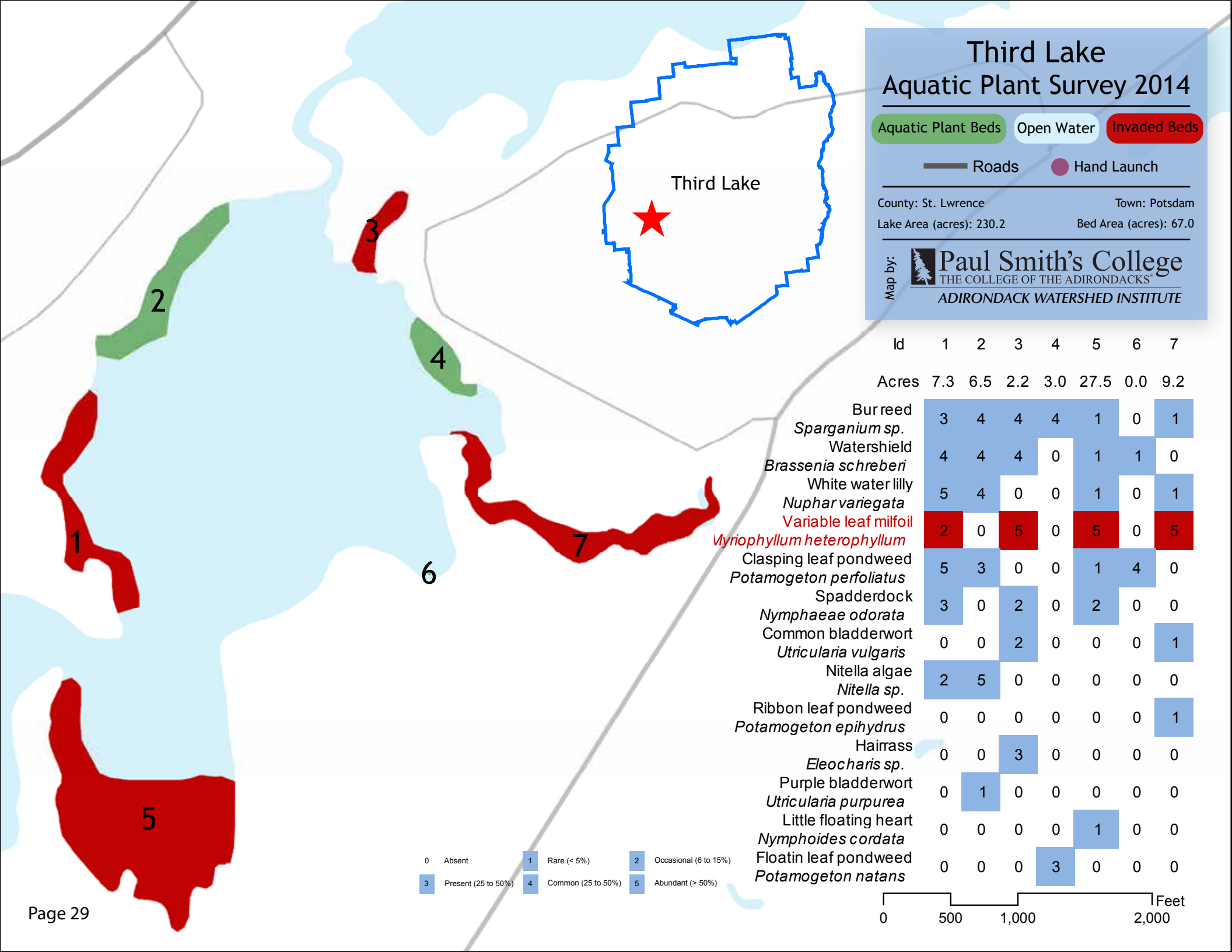


0 Absent | 1 Rare (< 5%) | 2 Occasional (6 to 15%)

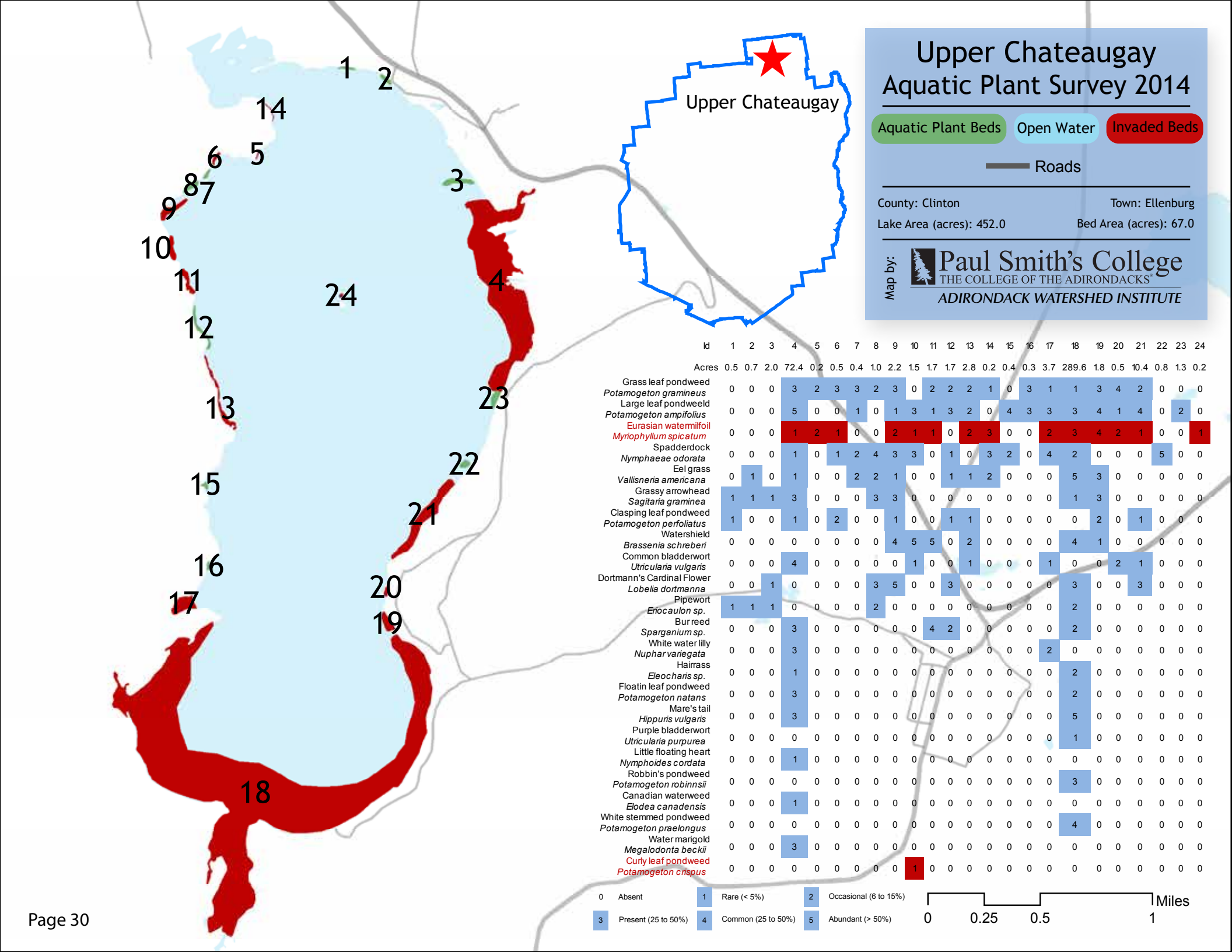
3 Present (25 to 50%) | 4 Common (25 to 50%) | 5 Abundant (> 50%)

Id	Acres	Bur reed *Sparganium sp.*	White water lilly *Nuphar variegata*	Ribbon leaf pondweed *Potamogeton epihydrus*	Grassy arrowhead *Sagitaria graminea*	Pipewort *Eriocaulon sp.*	Large leaf pondweed *Potamogeton ampifolius*	Hairrass *Eleocharis sp.*	Variable leaf milfoil *Myriophyllum heterophyllum*	Floatin leaf pondweed *Potamogeton natans*	Spadderdock *Nymphaeae odorata*	Watershield *Brassenia schreberi*	Common bladderwort *Utricularia vulgaris*	Little floating heart *Nymphoides cordata*	Nitella algae *Nitella sp.*	Western waterweed *Elodea nuElodea nutallii*
1	24.4	4	4	2	4	4	2	4	4	3	4	0	0	2	0	2
2	10.3	3	3	2	1	3	2	5	5	2	0	1	1	0	3	0

0 250 500 1,000 Feet



Id	1	2	3	4	5	6	7
Acres	7.3	6.5	2.2	3.0	27.5	0.0	9.2
Bur reed *Sparganium sp.*	3	4	4	4	1	0	1
Watershield *Brassenia schreberi*	4	4	4	0	1	1	0
White water lilly *Nuphar variegata*	5	4	0	0	1	0	1
Variable leaf milfoil *Myriophyllum heterophyllum*	2	0	5	0	5	0	5
Clasping leaf pondweed *Potamogeton perfoliatus*	5	3	0	0	1	4	0
Spadderdock *Nymphaeae odorata*	3	0	2	0	2	0	0
Common bladderwort *Utricularia vulgaris*	0	0	2	0	0	0	1
Nitella algae *Nitella sp.*	2	5	0	0	0	0	0
Ribbon leaf pondweed *Potamogeton epihydrus*	0	0	0	0	0	0	1
Hairrass *Eleocharis sp.*	0	0	3	0	0	0	0
Purple bladderwort *Utricularia purpurea*	0	1	0	0	0	0	0
Little floating heart *Nymphoides cordata*	0	0	0	0	1	0	0
Floatin leaf pondweed *Potamogeton natans*	0	0	0	3	0	0	0



Upper Chateaugay Aquatic Plant Survey 2014

Aquatic Plant Beds | Open Water | Invaded Beds

Roads

County: Clinton | Town: Ellenburg

Lake Area (acres): 452.0 | Bed Area (acres): 67.0

Map by: Paul Smith's College, THE COLLEGE OF THE ADIRONDACKS, ADIRONDACK WATERSHED INSTITUTE

Id	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Acres	0.5	0.7	2.0	72.4	0.2	0.5	0.4	1.0	2.2	1.5	1.7	1.7	2.8	0.2	0.4	0.3	3.7	289.6	1.8	0.5	10.4	0.8	1.3	0.2
Grass leaf pondweed *Potamogeton gramineus*	0	0	0	3	2	3	3	2	3	0	2	2	2	1	0	3	1	1	3	4	2	0	0	0
Large leaf pondweed *Potamogeton ampifolius*	0	0	0	5	0	0	1	0	1	3	1	3	2	0	4	3	3	3	4	1	4	0	2	0
Eurasian watermilfoil *Myriophyllum spicatum*	0	0	0	1	2	1	0	0	2	1	1	0	2	3	0	0	2	3	4	2	1	0	0	1
Spadderdock *Nymphaeae odorata*	0	0	0	1	0	1	2	4	3	3	0	1	0	3	2	0	4	2	0	0	0	5	0	0
Eel grass *Vallisneria americana*	0	1	0	1	0	0	2	2	1	0	0	1	1	2	0	0	0	5	3	0	0	0	0	0
Grassy arrowhead *Sagitaria graminea*	1	1	1	3	0	0	0	3	3	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0
Clasping leaf pondweed *Potamogeton perfoliatus*	1	0	0	1	0	2	0	0	1	0	0	1	1	0	0	0	0	0	2	0	1	0	0	0
Watershield *Brassenia schreberi*	0	0	0	0	0	0	0	0	4	5	5	0	2	0	0	0	0	4	1	0	0	0	0	0
Common bladderwort *Utricularia vulgaris*	0	0	0	4	0	0	0	0	0	1	0	0	1	0	0	0	1	0	0	2	1	0	0	0
Dortmann's Cardinal Flower *Lobelia dortmanna*	0	0	1	0	0	0	0	3	5	0	0	3	0	0	0	0	0	3	0	0	3	0	0	0
Pipewort *Eriocaulon sp.*	1	1	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
Bur reed *Sparganium sp.*	0	0	0	3	0	0	0	0	0	0	4	2	0	0	0	0	0	2	0	0	0	0	0	0
White water lilly *Nuphar variegata*	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
Hairrass *Eleocharis sp.*	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
Floatin leaf pondweed *Potamogeton natans*	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
Mare's tail *Hippuris vulgaris*	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0
Purple bladderwort *Utricularia purpurea*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Little floating heart *Nymphoides cordata*	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Robbin's pondweed *Potamogeton robinnsii*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0
Canadian waterweed *Elodea canadensis*	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
White stemmed pondweed *Potamogeton praelongus*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0
Water marigold *Megalodonta beckii*	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Curly leaf pondweed *Potamogeton crispus*	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 Absent | 1 Rare (< 5%) | 2 Occasional (6 to 15%) | 3 Present (25 to 50%) | 4 Common (25 to 50%) | 5 Abundant (> 50%)

0 0.25 0.5 1 Miles