

2024

Brant Lake AIS Survey

Aquatic Invasive Species Surveys
Survey Team Report

2024 Brant Lake Aquatic Invasive Species Survey

Written by:
Ezra Schwartzberg, Ph.D., Justin Wolford
Adirondack Research
August 2024

Surveyed by:
Morgan Hilliard and Gage Root



Client:

Tom Wynne
Brant Lake Association
PO Box 88, Brant Lake NY 12815
Email: Tomcat114@optimum.net

Consultant:

Dr. Ezra Schwartzberg, Director
Adirondack Research, LLC
73 Church Street, Suite 2
Saranac Lake, NY 12983
Office: (518) 278-6070
Email: ezra@adkres.org.org
Website: www.adkres.org

Cover image: Brant Lake photo by 2024 AIS survey team

Executive Summary

The purpose of this effort was to perform a post treatment point intercept survey after the herbicide ProcettaCOR EC was permitted by the Adirondack Park Agency (APA) and then applied to the waterbody for management of Eurasian watermilfoil.

We surveyed 177 stations (sample points). 72 points were surveyed within the treatment areas and 105 points were surveyed outside of the treatment areas. Our survey design and methodologies followed the APA requirements for permit submission.

Our team documented aquatic plant species occurrence, species cover class, overall plant cover class, depth, and species richness at each of the 177 stations.

Eurasian watermilfoil was documented at none of the stations within the treatment areas, or outside. 22 native species were documented in this survey, including one native milfoil.



Table of Contents

EXECUTIVE SUMMARY	3
OVERVIEW	5
METHODS.....	6
RESULTS	7
MAPS.....	16

Overview

We performed an aquatic invasive species (AIS) and native aquatic plant species survey for Brant Lake, in Warren County on the dates of August 5th, 6th, and 7th 2024. This survey was for The Brant Lake Association after the application of the herbicide ProcettaCOR EC for the control of an aquatic pest (AQV). The results of the survey will be compared to previous surveys done before ProcettaCOR was applied to determine the effectiveness of the herbicide. This is a part of an ongoing process over a multi-year period to compare the success rates of applying ProcettaCOR to control aquatic invasive growth in the lakes. This survey was completed in accordance with all of the required parameters of the linked application requirements:

<https://www.dropbox.com/s/kn7c043b53k7wns/SIR-AquaticHerbicides.pdf?dl=0>

For more information on our qualifications and services, our Qualifications Packet can be accessed via this link: <https://www.dropbox.com/s/2jc37h56z4jkb6i/Lake%20Surveys.pdf?dl=0>

You can also learn more about Adirondack Research at www.adkres.org.

Adirondack Research was able to complete the following tasks as part of this project:

- Survey 177 stations in the waterbody over three days with two crew members using a motorboat.
- Survey, identify, and photograph all native plant species at point intercept survey stations within a survey design to meet Adirondack Park Agency requirements for applying for the use of the herbicide ProcettaCOR EC.
- Draft maps showing survey locations, overall plant abundance, depth, species richness, and abundance for each of the 22 species recorded, in GIS.
- Create tables displaying: station number, GPS coordinates, depth, species richness, and abundance of the target species; abundance of each species at all stations; the total count of station numbers each species is found, including overall percentages; and susceptibility of each species to herbicide ProcettaCOR EC.
- Produced this report of the described survey effort.

Methods

Below is a description of the survey methods used while surveying your lake. We've included a brief description of the equipment used, our cleaning procedure for all of our equipment before accessing your lake, and a description of our survey techniques.

Equipment

Equipment used while completing the Aquatic Invasive Species (AIS) survey of the lake consisted of double-sided rakes for collecting plant samples from under the water, an iPad 4 mini for data collection. All data and observations were recorded using ESRI's Collector for ArcGIS application. Surveys were conducted via motorboat.

Cleaning

As our team is frequently moving from one water body to another, specific precautionary measures were taken to ensure that all equipment used was decontaminated and free of AIS. To ensure that all equipment was free of AIS, we thoroughly washed and decontaminated all of our equipment at one of the Adirondack AIS Prevention Program's free boat wash and decontamination stations. High pressure hot water was used at these sites to ensure that no AIS spread via equipment.

Monitoring Techniques

While out on the waterbody, we surveyed plants at survey stations, or sites, that were predetermined prior to performing the on-the-water survey. These survey stations were selected based on criteria outlined by the Adirondack Park Agency as requirements for applying for a permit application to perform management using the herbicide ProcettaCOR EC. Specifically, we established a sampling design based on the following APA requirements:

1. Perform survey at height of growing season
2. Establish point intercept survey points (stations/Sites) based on a grid size one acre or less.
3. Survey area must include the entire littoral zone (buffer zone) within 0.3 miles of the edge of the proposed treatment area.
4. Perform point intercept surveys at a minimum of 12 sites within the proposed treatment area and at least 24 sites outside of the proposed treatment area and within the 0.3 mile buffer zone.
5. Perform rake toss surveys at each site or sample point by throwing as many rake tosses as needed to find all plants at or near the sample point or site. This method is biased towards finding every plant species that may exist within the vicinity of a sampling location.
6. Record each species along with the following parameters (water depth, overall rake plant abundance, abundance of each species)
7. Additionally, photograph one example of each species identified during the survey.

The littoral zone typically encompasses the area from shoreline to a depth of about 15 feet. We utilized publicly available bathymetric maps of the proposed treatment areas as well as the surrounding area within 0.3 miles to determine the survey extent. We then evenly distributed roughly 105 survey points outside of the proposed treatment areas, for a total of 177 points across the entirety of the lake. We then shifted points to distribute our sampling locations across different habitat types, locations around shorelines, and to be within the water depths of the littoral zones based on maps and aerial imagery.

The team surveyed the area by navigating to each survey point, tossing the rake and by performing visual surveys where possible. All plants retrieved by rake toss or seen by visual inspection were identified to the best of our abilities (usually to the species level, but sometimes to genus). Both native and invasive plants found were identified using the “Maine Field Guide to Invasive Aquatic Plants and their common native look-alikes” by Lake Stewards of Maine.

Based upon how much plant material was observed on the rake toss, we assigned a percent cover for the entire rake and for each species on the rake. Plants that were observed visually and not collected on a rake toss were estimated based on their appearance from the water surface. Based on plant abundance, we used the following density classes:

Density Class	Class Description		Coverage Class (plant density)
T	Trace	1-2 stems	Less than 5%
S	Sparse	3-10 stems	5 - 25%
M	Moderate	Rakeful; no empty tines	26 - 50%
D	Dense	Rakeful; no visible tines	51 - 75%
HD	High Density	Difficult to bring on boat	76 - 100%

Table 1: Note we collect two density classes between 51-100% (51-75% and 75-100%) while some studies combine the two. Colors in the density class correspond to their relative abundance markers on maps (3 and 5-32).

Results

The team surveyed 177 on August 5th, 6th, and 7th 2024: detecting no invasive species and 22 native species including one native milfoil *Myriophyllum sibiricum* (Northern-water milfoil). Table 2 provides a summary of all aquatic vegetation detected in Brant Lake, in addition to their count and frequency of occurrence relative to the 177 points surveyed. Table 2 shows the plant species found in the survey conducted in 2024 after the herbicide treatment.

Table 2. Species recorded during 2024 Brant Lake Post ProcellaCOR survey

Common Name	Scientific Name	Frequency	% occurrence
Common bladderwort	<i>Utricularia macrorhiza</i>	66	18.4
Pickernelweed	<i>Pontederia cordata</i>	8	2.2
Watershield	<i>Brasenia schreberi</i>	14	3.9
Annual hairgrass	<i>Deschampsia danthonioides</i>	15	4.2
Fragrant water lily	<i>Nymphaea odorata</i>	16	4.5
Arrowhead	<i>Syngonium podophyllum</i>	2	0.6
Swamp loosestrife	<i>Decodon verticillatus</i>	2	0.6
Whorled watermilfoil	<i>Myriophyllum verticillatum</i>	1	0.3
Common naiad	<i>Najas flexilis</i>	44	12.3
Robbin's pondweed	<i>Potamogeton robbinsii</i>	38	10.6
Water weed	<i>Elodea sp.</i>	15	4.2
Large-leaved pondweed	<i>Potamogeton amplifolius</i>	23	6.4
Quillwort	<i>Isoetes spp.</i>	12	3.4
American eelgrass	<i>Vallisneria americana</i>	15	4.2
Small pondweed	<i>Potamogeton pusillus</i>	5	1.4
Muskgrass	<i>Chara sp.</i>	5	1.4
Stonewort	<i>Nitella sp.</i>	40	11.2
Spiny hornwort	<i>Ceratophyllum echinatum</i>	1	0.3
Variegated yellow pond-lily	<i>Nuphar variegata</i>	8	2.2
Clasping leaf pondweed	<i>Potamogeton perfoliatus</i>	9	2.5
White water-crowfoot	<i>Ranunculus aquatilis</i>	1	0.3
Water bulrush	<i>Schoenoplectus subterminalis</i>	1	0.3

Recommendations

We recommend a follow-up survey next year, and at regular intervals in following years. Upon viewing the results and finding that there was no Eurasian watermilfoil found at any sites following treatment with ProcellaCOR, we recommend that further surveys be conducted.

Species Distributions

American eelgrass (*Vallisneria americana*)

This plant was found at a total of 15 sample points resulting in 4.1% of occurrences. It was found growing in one stage of cover class, appearing at trace levels, (n=15, 100.0%).

Annual hairgrass (*Deschampsia danthonioides*)

This plant was found at a total of 15 sample points resulting in 4.2% of occurrences. It was found growing in four stages of cover class, appearing at sparse levels, (n=7, 46.6%), moderate levels, (n=4, 26.6%), trace levels (n=3, 20.0%), and highly dense levels (n=1, 6.6%).

Arrowhead (*Syngonium podophyllum*)

This plant was found at a total of 2 sample points resulting in 0.6% of occurrences. It was found growing in two stages of cover class, appearing at trace levels, (n=1, 50.0%), and sparse levels, (n=1, 50.0%).

Clasping leaved-pondweed (*Potamogeton perfoliatus*)

This plant was found at a total of 9 sample points resulting in 2.5% of occurrences. It was found growing in two stages of cover class, appearing at trace levels, (n=5, 55.6%), and sparse levels, (n=4, 44.4%).

Common Bladderwort (*Utricularia macrorhiza*)

This plant was found at a total of 66 sample points resulting in 18.4% of occurrences. It was found growing in two stages of cover class, appearing at trace levels, (n=53, 80.3%), and sparse levels, (n=13, 19.6%).

Common Naiad (*Najas flexilis*)

This plant was found at a total of 44 sample points resulting in 12.3% of occurrences. It was found growing in three stages of cover class, appearing at trace levels, (n=27, 61.4%), sparse levels, (n=16, 36.4%), and moderate levels (n=1, 2.2%).

Fragrant water lily (*Nymphaea odorata*)

This plant was found at a total of 16 sample points resulting in 4.5% of occurrences. It was found growing in three stages of cover class, appearing at trace levels, (n=8, 50.0%), sparse levels, (n=5, 31.3%), and moderate levels (n=3, 18.7%).

Large-leaved pondweed (*Potamogeton amplifolius*)

This plant was found at a total of 23 sample points resulting in 6.4% of occurrences. It was found growing in two stages of cover class, appearing at trace levels, (n=14, 60.9%), and sparse levels, (n=9, 39.1%).

Muskgrass (*Chara sp.*)

This plant was found at a total of 5 sample points resulting in 1.4% of occurrences. It was found growing in two stages of cover class, appearing at sparse levels, (n=3, 60.0%), and trace levels, (n=2, 40.0%).

Pickerelweed (Pontederia cordata)

This plant was found at a total of 8 sample points resulting in 2.2% of occurrences. It was found growing in two stages of cover class, appearing at sparse levels, (n=5, 62.5%), and trace levels, (n=3, 37.5%).

Quillwort (Isoetes sp.)

This plant was found at a total of 12 sample points resulting in 3.4% of occurrences. It was found growing in two stages of cover class, appearing at trace levels, (n=11, 91.7%), and sparse levels, (n=1, 8.3%).

Robbin's pondweed (Potamogeton robbinsii)

This plant was found at a total of 38 sample points resulting in 10.6% of occurrences. It was found growing in three stages of cover class, appearing at sparse levels, (n=19, 50.0%), trace levels, (n=16, 42.1%), and moderate levels (n=3, 7.9%).

Small pondweed (Potamogeton pusillus)

This plant was found at a total of 5 sample points resulting in 1.4% of occurrences. It was found growing in two stages of cover class, appearing at trace levels, (n=4, 80.0%), and sparse levels, (n=1, 20.0%).

Spiny hornwort (Ceratophyllum echinatum)

This plant was found at a total of 1 sample point resulting in 0.3% of occurrences. It was found growing in one stage of cover class, appearing at trace level, (n=1, 100.0%).

Stonewort (Nitella sp.)

This plant was found at a total of 40 sample points resulting in 11.2% of occurrences. It was found growing in three stages of cover class, appearing at sparse levels, (n=19, 50.0%), trace levels, (n=16, 42.1%), and moderate levels (n=3, 7.9%).

Swamp loosestrife (Decodon verticillatus)

This plant was found at a total of 2 sample points resulting in 0.6% of occurrences. It was found growing in two stages of cover class, appearing at sparse levels, (n=1, 50.0%), and moderate levels, (n=1, 50.0%).

Spatardock (Nuphar variegata)

This plant was found at a total of 8 sample points resulting in 2.2% of occurrences. It was found growing in three stages of cover class, appearing at trace levels, (n=3, 37.5%), moderate levels, (n=3, 37.5%), and sparse levels (n=2, 25.0%).

Water bulrush (Schoenoplectus subterminalis)

This plant was found at a total of 1 sample point resulting in 0.3% of occurrences. It was found growing in one stage of cover class, appearing at dense level, (n=1, 100.0%).

Water weed (Elodea sp.)

This plant was found at a total of 15 sample points resulting in 4.2% of occurrences. It was found growing in two stages of cover class, appearing at trace levels, (n=13, 86.7%), and sparse levels, (n=2, 13.3%).

Watershield (Brasenia schreberi)

This plant was found at a total of 14 sample points resulting in 3.9% of occurrences. It was found growing in two stages of cover class, appearing at trace levels, (n=12, 85.7%), and sparse levels, (n=2, 14.3%).

White-water crowfoot (Ranunculus aquatilis)

This plant was found at a total of 1 sample point resulting in 0.3% of occurrences. It was found growing in one stage of cover class, appearing at dense level, (n=1, 100.0%).

Whorled watermilfoil (Myriophyllum verticillatum)

This plant was found at a total of 1 sample point resulting in 0.3% of occurrences. It was found growing in one stage of cover class, appearing at trace level, (n=1, 100.0%).

Table 3. Abundance of Species by Site – Brant Lake 2024

Station	Depth	American eelgrass	annual hairgrass	arrowhead	clasping leaf pondweed	common bladderwort	common naiad	fragrant water lily	large-leaved pondweed	muskgrass	pickerelweed	quillwort	Robbins pondweed	small pondweed	spiny hornwort	stonewort	swamp loosestrife	variegated yellow pond-lily	water bulrush	water weed	watershield	white water-crowfoot	whorled watermilfoil	Richness	Total Rare Density
1	18																							0	None
2	20																							0	None
3	15																							0	None
4	9																							0	None
5	2																							0	None
6	2		T																					1	Less than 5%
7	9					T			S				T											2	5-25%
8	8					T							T											2	Less than 5%
9	5																				T			1	Less than 5%
10	4																				T			1	Less than 5%
11	11				S				S															2	5-25%
12	10												T			S								2	5-25%
13	12						T																	1	Less than 5%
14	16															T								1	Less than 5%
15	2							M			T							M			T			4	26-50%
16	8						S									T								2	5-25%
18	2							S			S							S			T			4	26-50%
19	3					T							M											2	26-50%
21	1	T											S	T				M	D					5	51-75%
22	13					T	T									T								3	Less than 5%
23	16															T								1	Less than 5%
24	4	T							S			T												3	5-25%
25	2							T				T	M								T			4	5-25%
27	13					T																		1	Less than 5%
28	19					T																		1	Less than 5%
29	6					T	T																	2	Less than 5%
30	14																							0	None
31	10												T											1	Less than 5%
32	8					T							S	T		T				T				5	5-25%
33	0.5																							0	None
34	20																							0	None
35	7				T											S								2	5-25%
36	5					T						T												2	Less than 5%
37	15					T																		1	Less than 5%
38	4		S																					1	5-25%
39	6						T																	1	Less than 5%
40	9					T																		1	Less than 5%
41	7	T																						1	Less than 5%
42	8					T																		1	Less than 5%
43	4					T																		1	Less than 5%
44	5	T										T	T											3	Less than 5%
45	12												T											1	Less than 5%
46	7	T			S								T											3	5-25%
47	10					S	S																	2	5-25%
48	10	T					S						S											3	5-25%
51	3					T																		1	5-25%

Table 3 continued

Station	Depth	American eelgrass	annual hairgrass	arrowhead	clasping leaf pondweed	common bladderwort	common naiad	fragrant water lily	large-leaved pondweed	muskgrass	pickerelweed	quillwort	Robbins pondweed	small pondweed	spiny hornwort	stonewort	swamp loosestrife	variegated yellow pond-lily	water bulrush	water weed	watershield	white water-crowfoot	whorled watermilfoil	Richness	Total Rare Density
52	4		S			T																	T	3	5-25%
53	3.5					S											M				T			3	5-25%
54	1		M	S				S			S										S			5	51-75%
56	5		HD																					1	26-50%
57	4		S			T																		2	5-25%
58	3		M	T			T	S														T		5	26-50%
59	5		T					T					S											3	5-25%
60	6					S	S																	2	5-25%
61	8					T	T																	2	Less than 5%
62	8												S											1	5-25%
63	5					S																		1	5-25%
64	8		S			T	T																	3	5-25%
65	5					T	T																	2	Less than 5%
66	7																							0	None
67	20															M								1	26-50%
68	10					T			T											T				3	Less than 5%
69	7					S	S					T												3	5-25%
70	11					T			T															2	Less than 5%
71	12	T							S				S			S								4	5-25%
72	15													T		S								2	5-25%
73	6					T	T																	2	Less than 5%
74	4	T																						1	Less than 5%
75	11									S														1	5-25%
76	9					S	S		T				S											4	26-50%
77	7								S				S							S				3	5-25%
78	2					S		M																2	26-50%
79	7		S			S										T								3	5-25%
80	10					S	S		T															3	5-25%
81	12					S	S		T											S				4	5-25%
82	9					T	T																	2	Less than 5%
83	8						T														T			2	Less than 5%
84	8					T	S																	2	5-25%
85	10					T							S											2	5-25%
86	5	T							T						T					T				4	Less than 5%
87	5					T	S									T								3	5-25%
88	6					T	S						S											3	5-25%
89	5					S	T									T								3	5-25%
90	3																							0	None
91	11					T							T											2	Less than 5%
92	7						T									T								2	Less than 5%
93	10															T								1	Less than 5%
94	8					T																		1	Less than 5%
95	12															T								1	Less than 5%
96	10						T									T								2	Less than 5%
98	14															T								1	Less than 5%
99	11												T			T								2	Less than 5%

Table 3 continued

Station	Depth	American eelgrass	annual hairgrass	arrowhead	clasping leaf pondweed	common bladderwort	common naiad	fragrant water lily	large-leaved pondweed	muskrass	pickerelweed	quillwort	Robbins pondweed	small pondweed	spiny hornwort	stonewort	swamp loosestrife	variegated yellow pond-lily	water bulrush	water weed	watershield	white water-crowfoot	whorled watermilfoil	Richness	Total Rare Density
100	10						T						S			T								3	5-25%
101	12					T								T										2	Less than 5%
102	12					T																		1	Less than 5%
103	11					T										T								2	Less than 5%
104	6					T																		1	Less than 5%
105	14								T				T											2	Less than 5%
106	14					T										T								2	Less than 5%
107	14								T							T								2	Less than 5%
108	15															T								1	Less than 5%
110	2							T			S							M			T			4	26-50%
111	12					T										T								2	Less than 5%
113	6					T	T																	2	Less than 5%
114	12					T	T																	2	Less than 5%
115	10												S			T								2	5-25%
116	5										T													1	Less than 5%
117	13				T								S											2	5-25%
118	6					T						T												2	Less than 5%
119	12					T				S														2	5-25%
120	14					T																		1	Less than 5%
123	15											S												1	5-25%
124	10								T							T								2	Less than 5%
125	8					T																		1	Less than 5%
126	9					T	T														S			3	5-25%
127	9		T			T												T						3	Less than 5%
128	6					S			S								S							3	26-50%
129	2		S			T		M												T				4	51-75%
131	8				S		T		T															3	5-25%
132	4							T			S	T												3	5-25%
133	10								S			T												2	5-25%
134	8													S						T				2	5-25%
135	10												T							T				2	Less than 5%
137	6								S				S											2	5-25%
138	17					T		T																2	Less than 5%
139	10															S								1	5-25%
140	13																							0	None
141	8						S						T			S				T				4	5-25%
142	4	T											M									D		3	51-75%
143	5		S				S					T												3	5-25%
144	16															S								1	5-25%
145	9					T	S				S													3	5-25%
146	6					S																		1	5-25%
147	1		M					S			S							T		T				5	51-75%
148	5		M			T	T						S											4	26-50%
149	2							S					S					S		T	T			5	26-50%
150	8					T	T																	2	Less than 5%
151	3							T													T			2	Less than 5%

Table 3 continued

Station	Depth	American eelgrass	annual hairgrass	arrowhead	clasping leaf pondweed	common bladderwort	common naiad	fragrant water lily	large-leaved pondweed	muskgrass	pickerelweed	quillwort	Robbins pondweed	small pondweed	spiny hornwort	stonewort	swamp loosestrife	variegated yellow pond-lily	water bulrush	water weed	watershield	white water-crowfoot	whorled watermilfoil	Richness	Total Rare Density
152	5								T												T			2	Less than 5%
153	9					T	S		T															3	5-25%
154	4																							0	None
155	4																				T			1	Less than 5%
156	3	T				T																		2	Less than 5%
157	9	T								T						T								3	Less than 5%
158	14						T						S							T				3	5-25%
159	10						S			T			T											3	5-25%
160	4								S															1	5-25%
161	3											T												1	Less than 5%
162	14					T			T															2	Less than 5%
163	20																							0	None
164	5				T							T												2	Less than 5%
165	8						T																	1	Less than 5%
166	7						T		T															2	Less than 5%
167	11						T						T											2	Less than 5%
168	18																							1	Less than 5%
169	10															T								1	Less than 5%
170	11	T			S	T							T											4	5-25%
171	10	T																		T				2	Less than 5%
172	13						T																	1	Less than 5%
173	7				T			T					T					T						4	Less than 5%
174	11												S							T				2	5-25%
175	16																							0	None
176	9							T					T											2	Less than 5%
177	12				T											T								2	Less than 5%
178	4																							0	None
179	10															T								1	Less than 5%
180	10															T								1	Less than 5%
181	8	T											S											2	5-25%
182	11															S								1	5-25%
183	16					T																		1	Less than 5%
184	8															T								1	Less than 5%
185	1										T													1	Less than 5%
186	15															S								1	5-25%
187	4																							0	None
188	7						M																	1	26-50%
189	16						T																	1	Less than 5%
190	15															S								1	5-25%
191	12																							0	None

Photos



Caption: Common bladderwort (*Utricularia macrorhiza*)



Caption: Pickerelweed (*Pontederia cordata*)



Caption: Watershield (*Brasenia schreberi*)



Caption: Annual hairgrass (*Deschampsia danthonioides*.)



Caption: White water-lily (*Nymphaea odorata*)



Caption: Arrowhead (*Syngonium podophyllum*)



Caption: Swamp loosestrife (*Decodon verticillatus*)



Caption: Whorled milfoil (*Myriophyllum verticillatum*)



Caption: Common naiad (*Najas flexilis*)



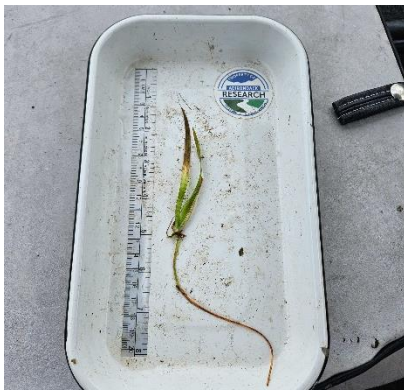
Caption: Robbin's pondweed
(*Potamogeton robbinsii*)



Caption: Waterweed (*Elodea sp.*)



Caption: Large-leaved pondweed
(*Potamogeton amplifolius*)



Caption: Quilwort (*Isoetes spp.*)



Caption: American eelgrass
(*Vallisneria americana*)



Caption: Small pondweed
(*Potamogeton pusillus*)



Caption: Muskgrass (*Chara sp.*)



Caption: Stonewort (*Nitella sp.*)



Caption: Spiny hornwort
(*Ceratophyllum echinatum*)



Caption: Spatterdock (*Nuphar variegata*)



Caption: Clasp leaf pondweed (*Potamogeton perfoliatus*)



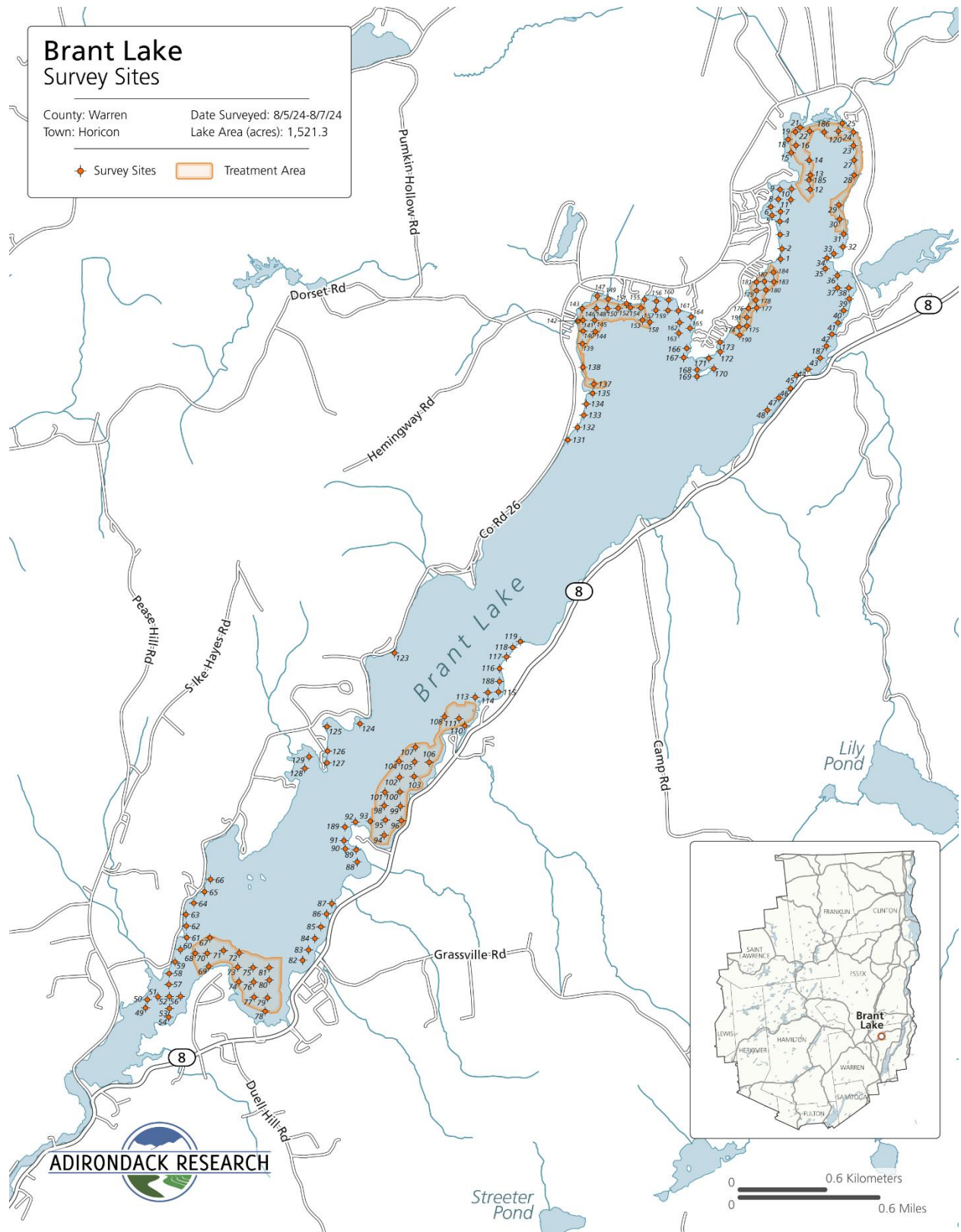
Caption: White water-crowfoot (*Ranunculus aquatilis*)

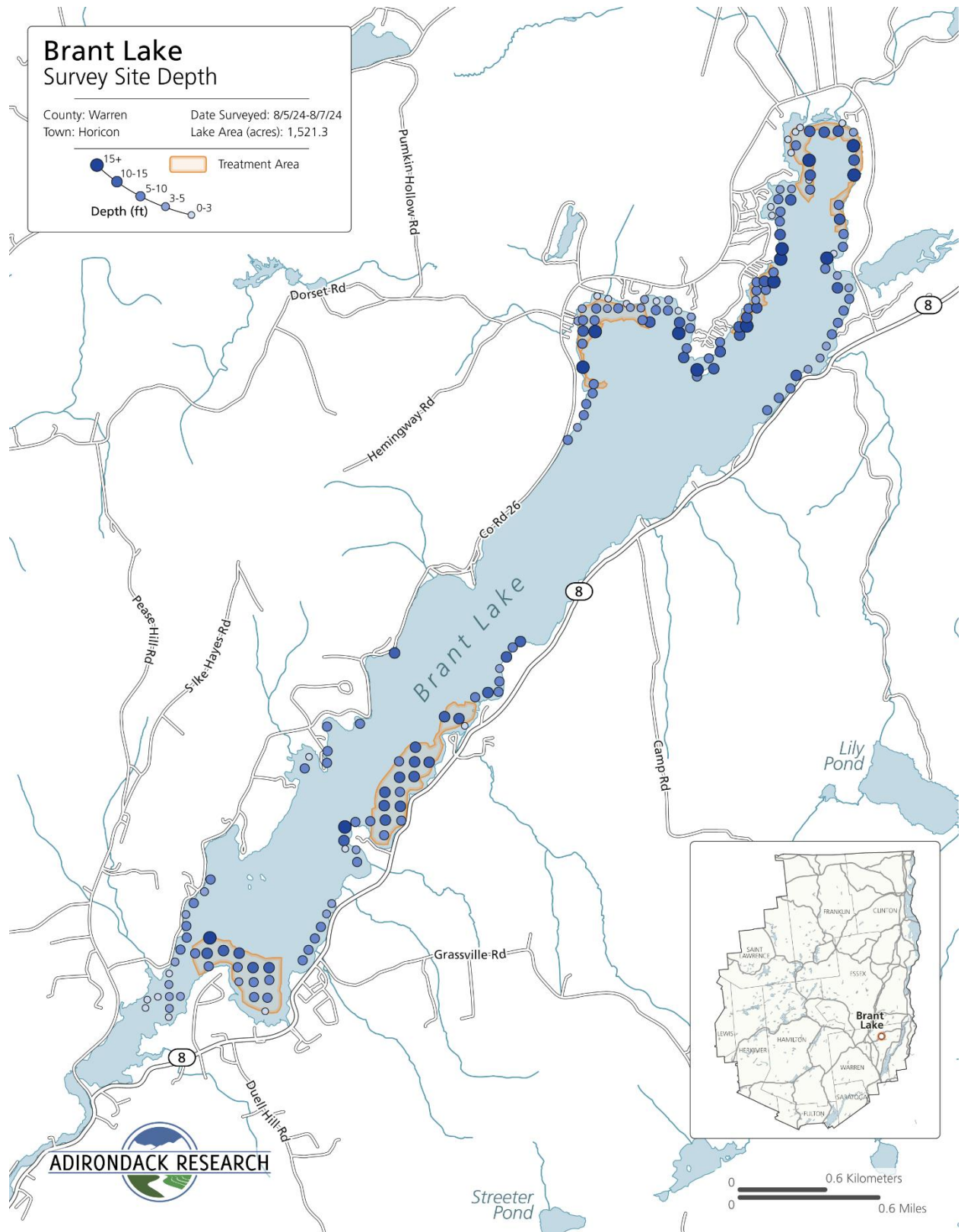


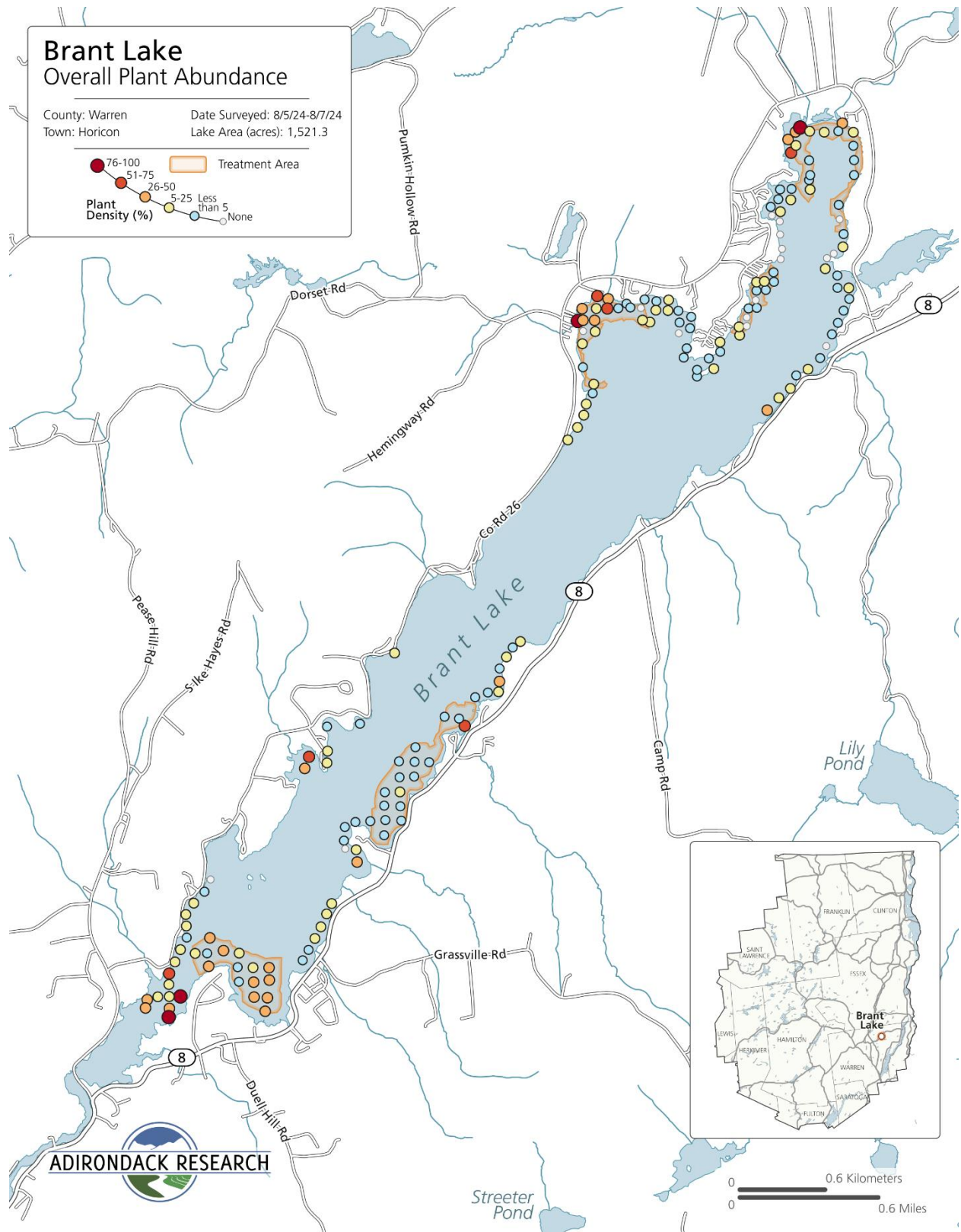
Caption: Water bulrush (*Schoenoplectus subterminalis*)

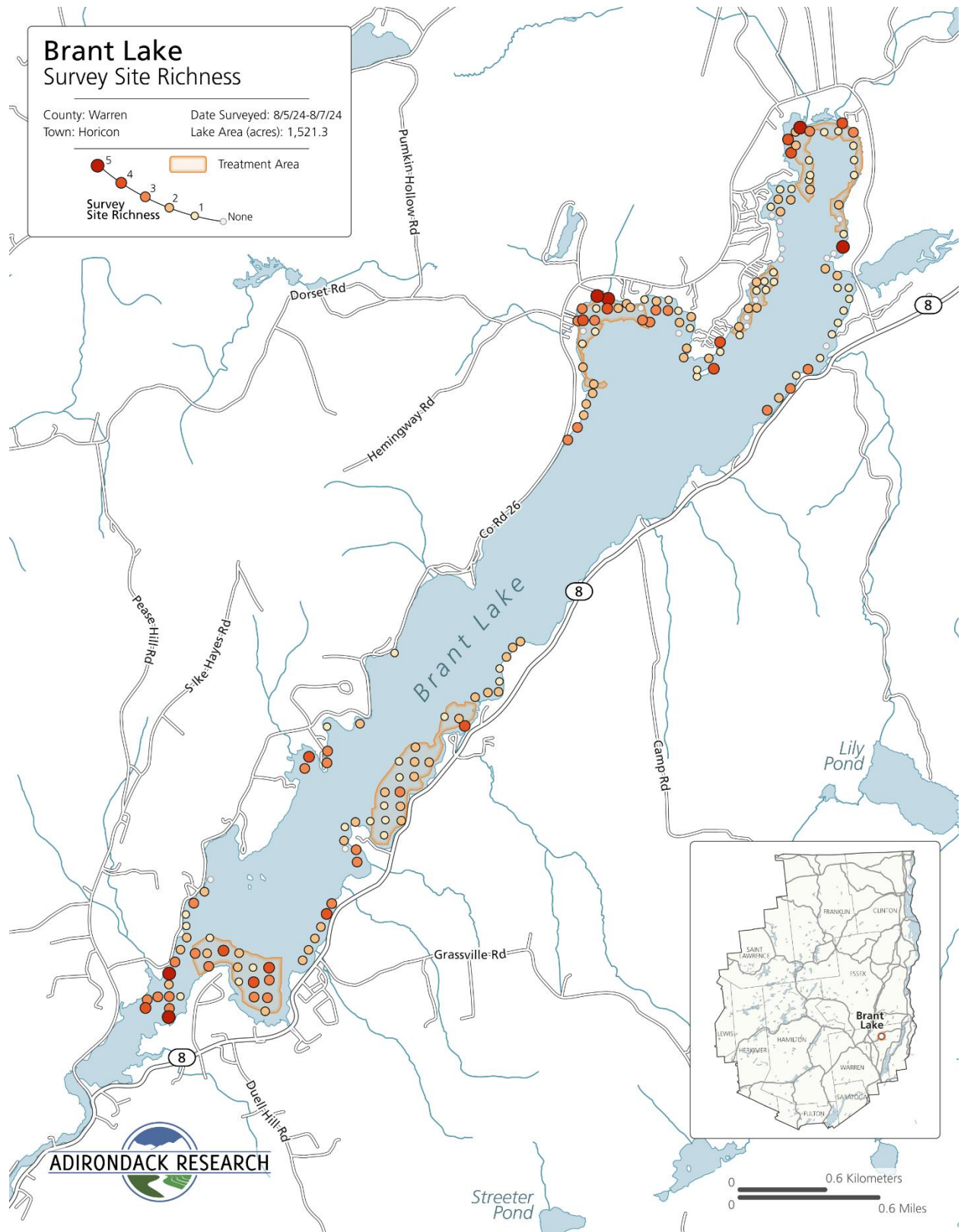
Maps

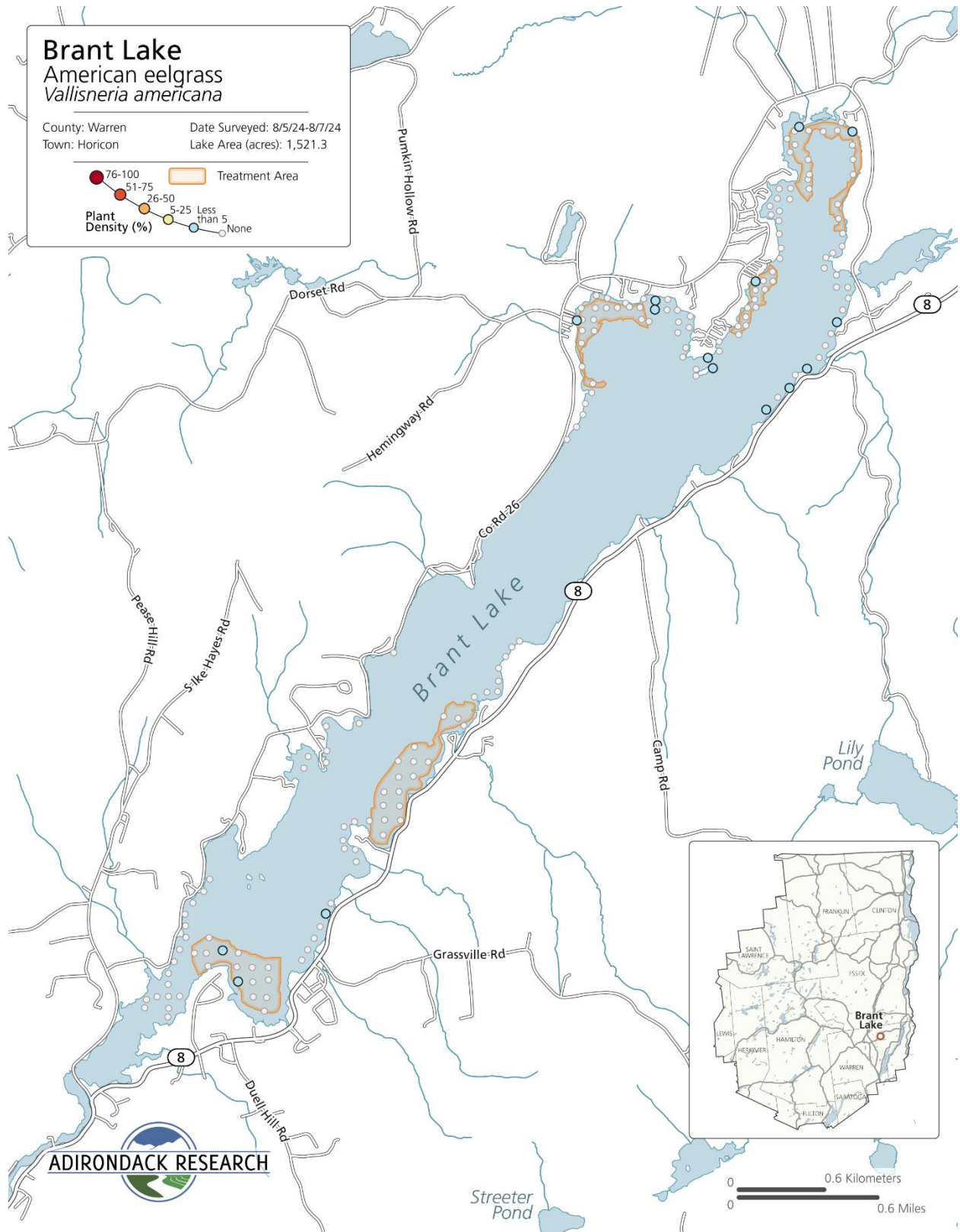
Maps 5-27 display the plant abundance for each species across all survey points. Map 1 marks the numbered station points, Map 2 displays depth at each station point, Map 3 displays overall plant abundance, and Map 4 displays species richness per site.

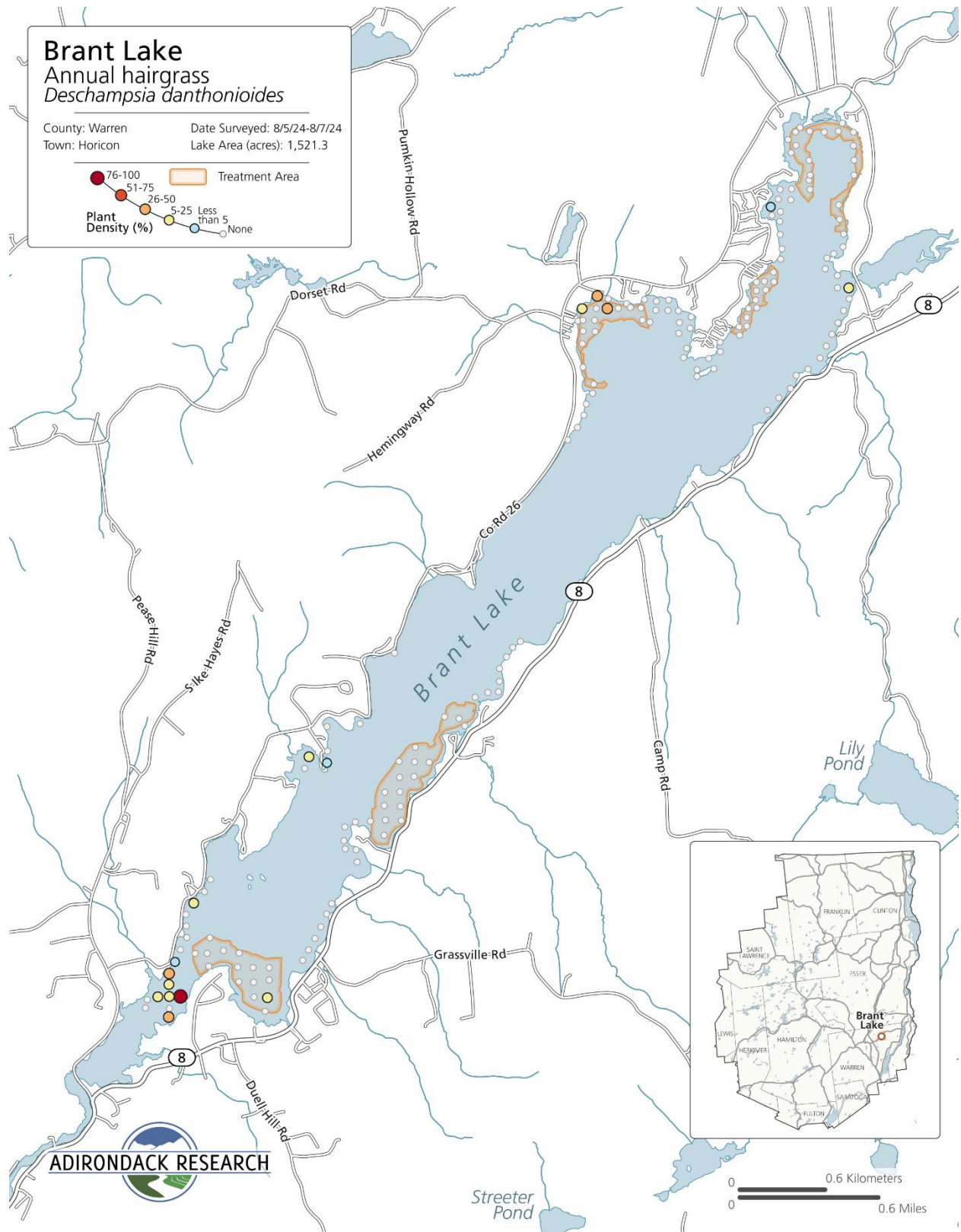


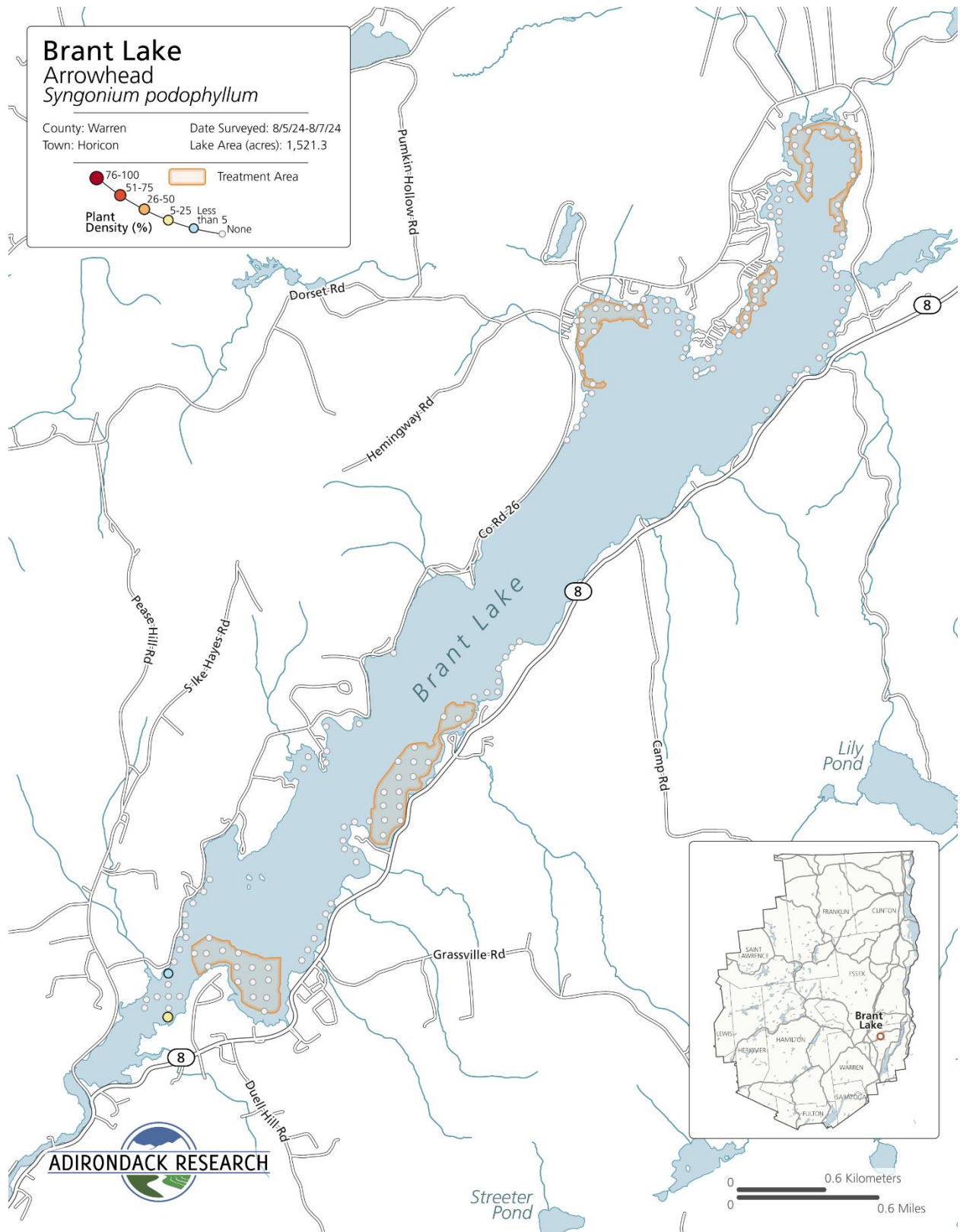


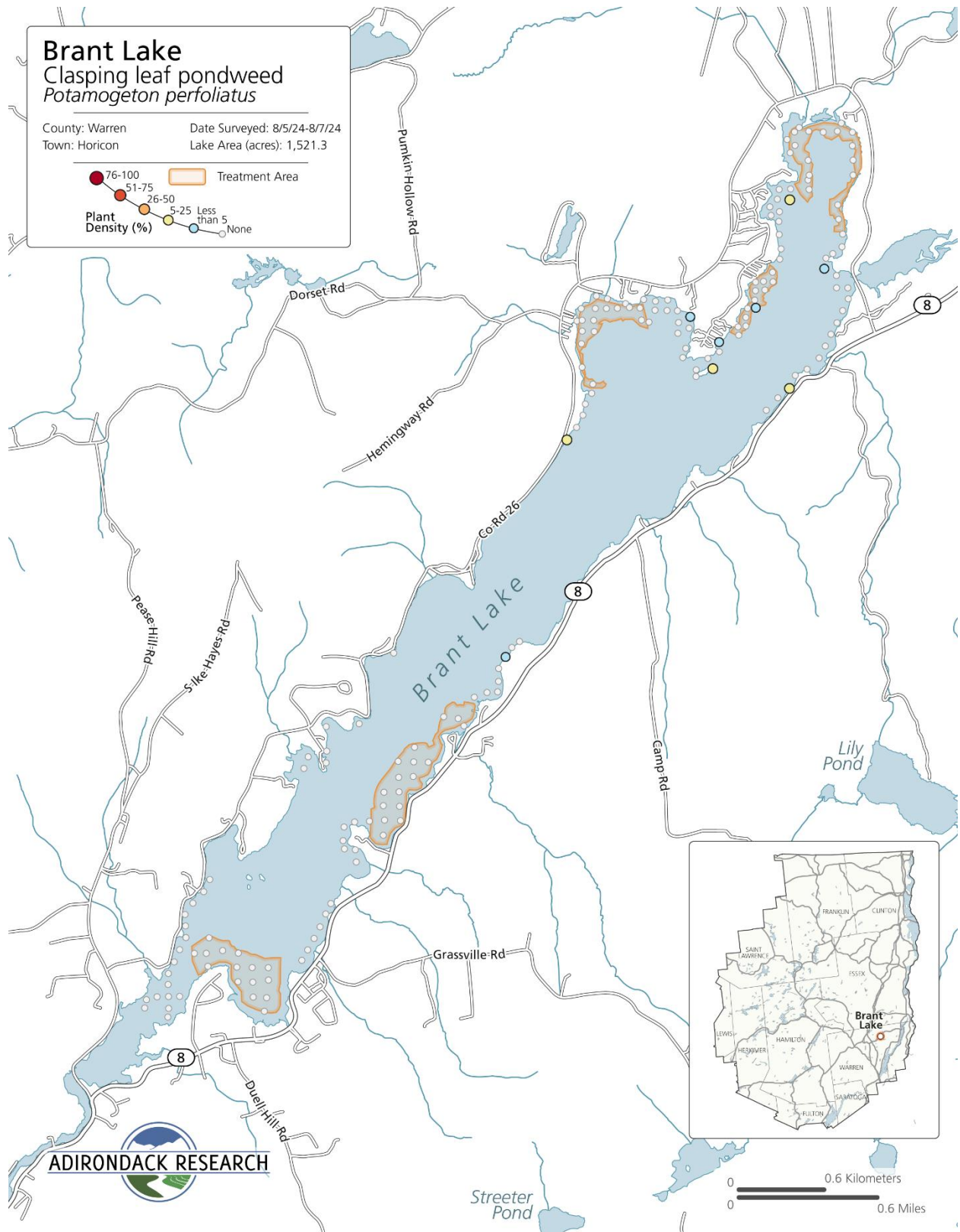


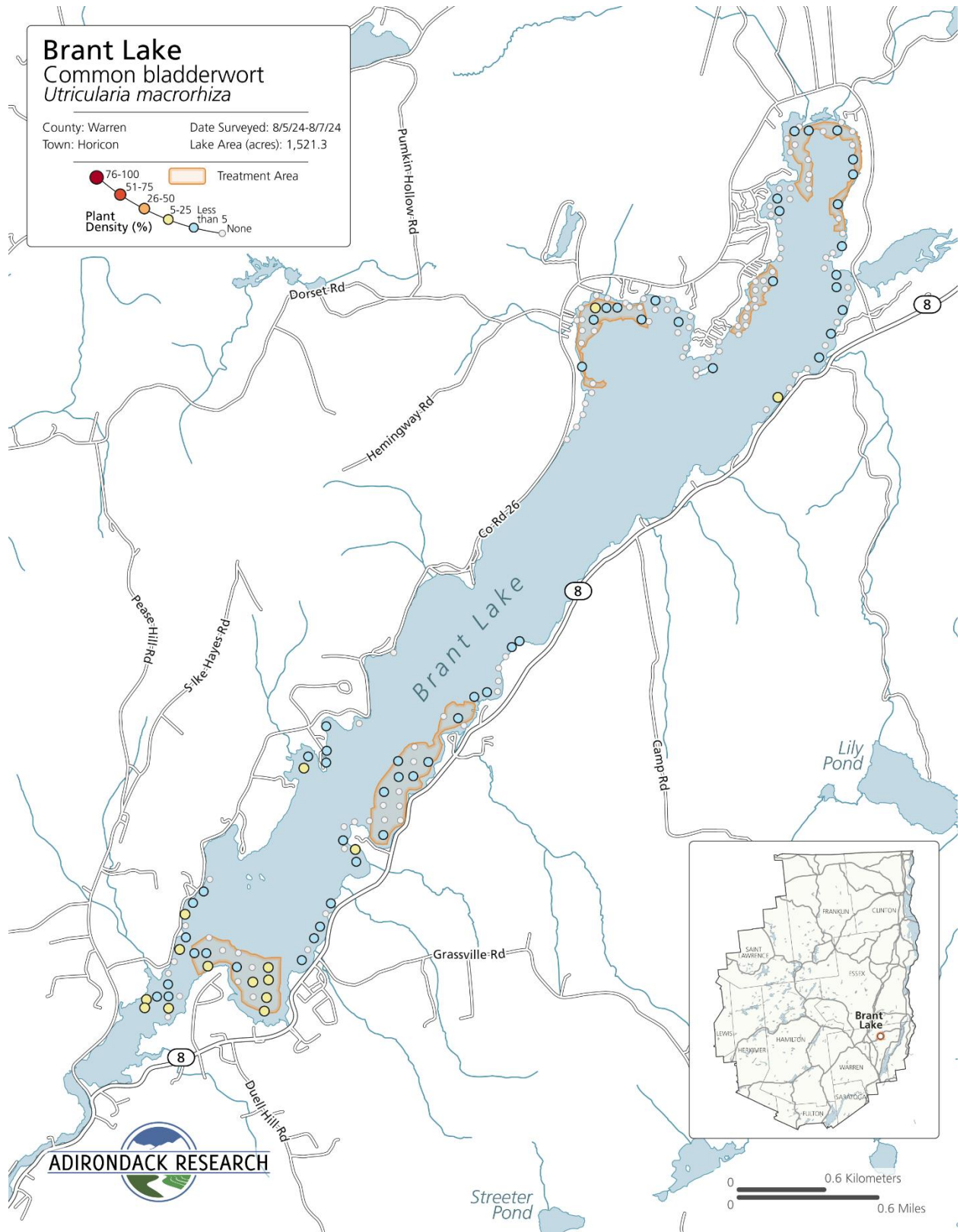


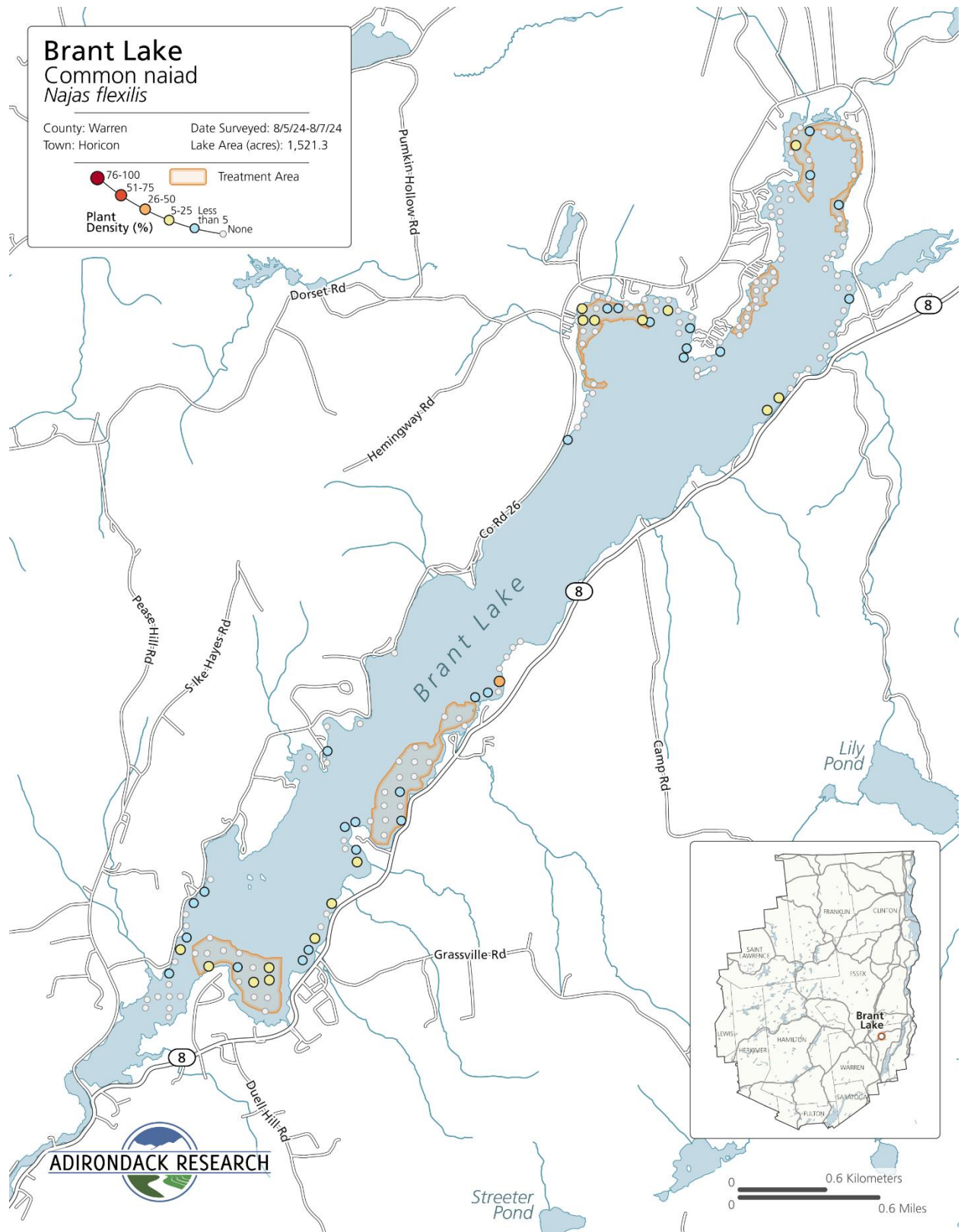


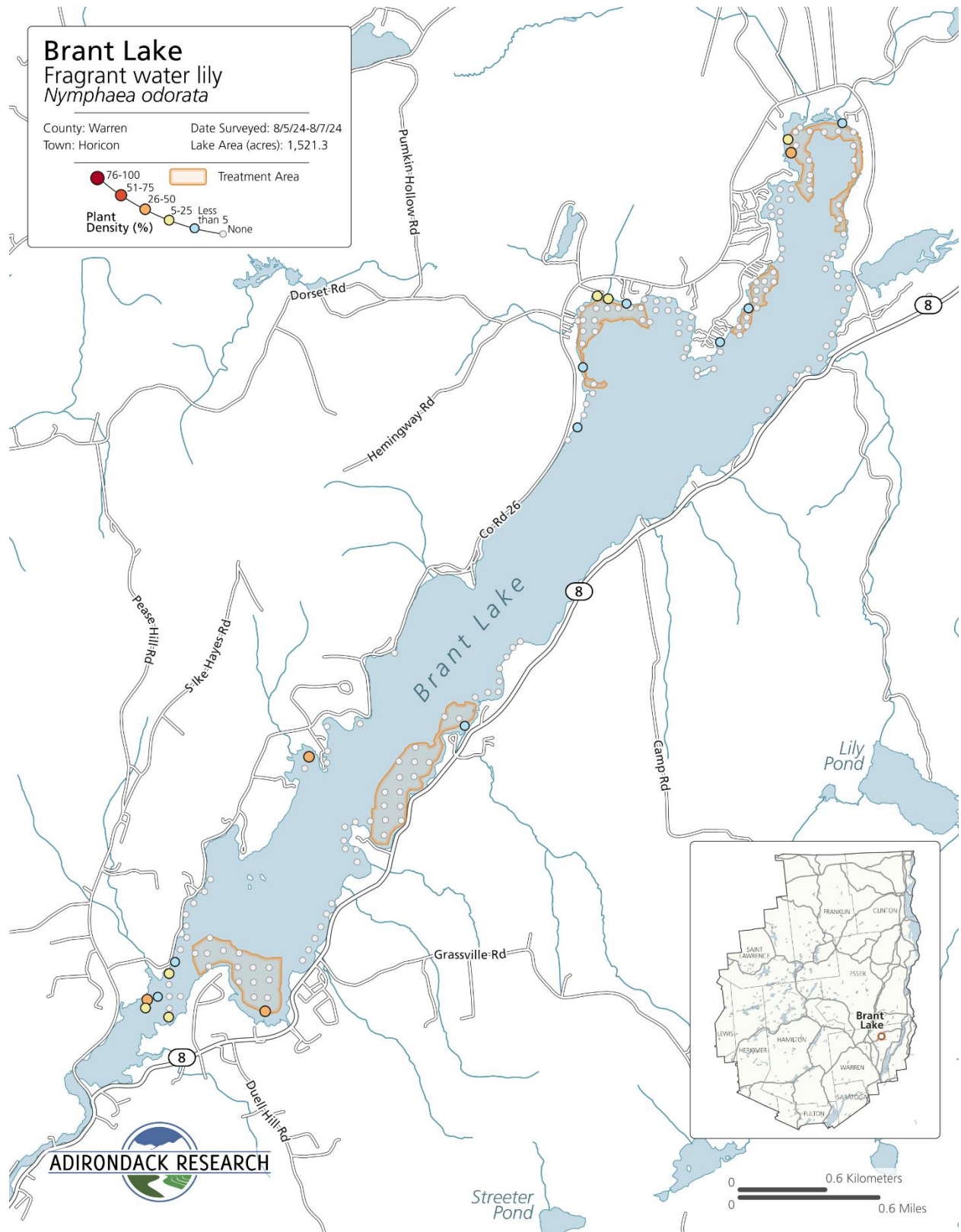


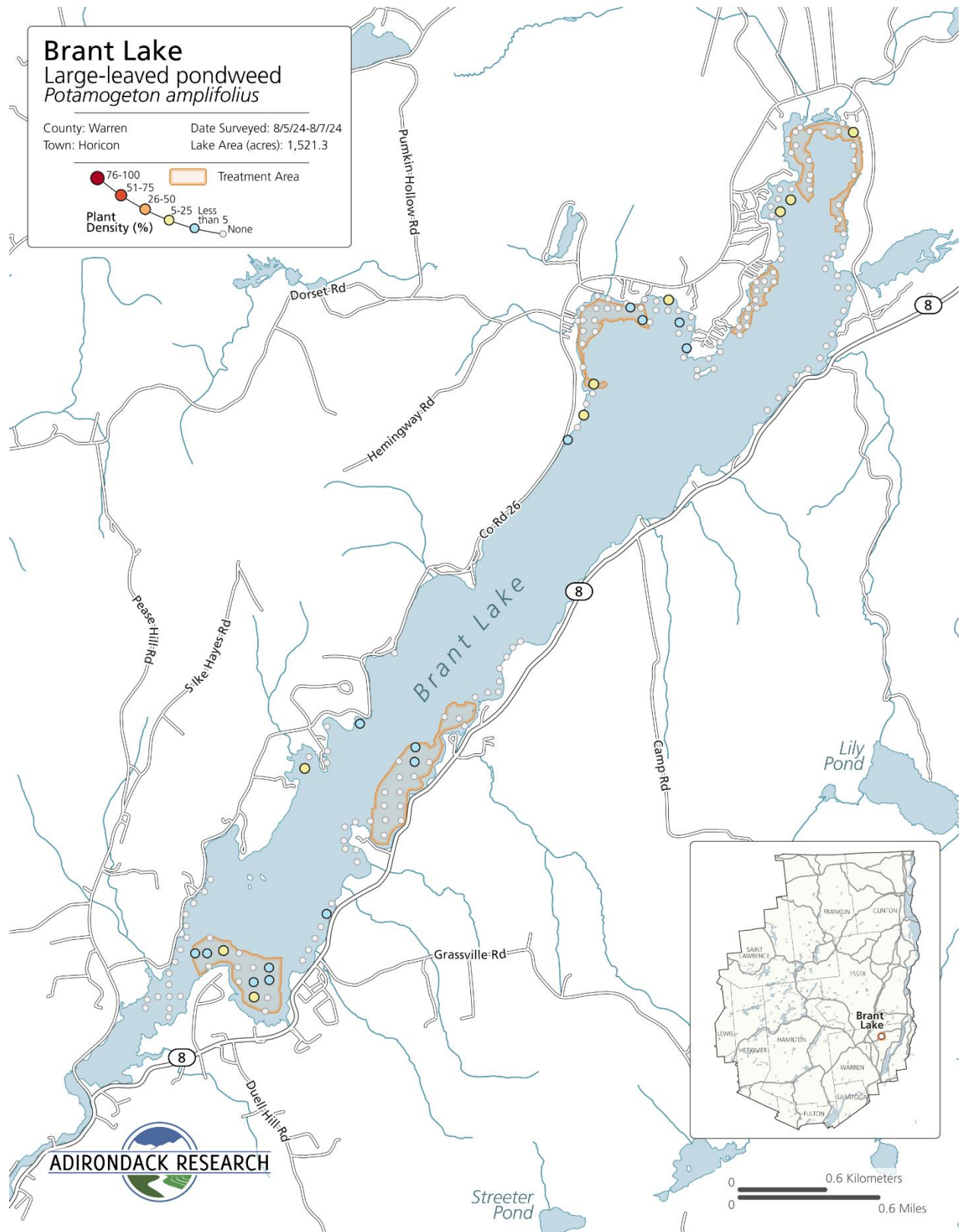


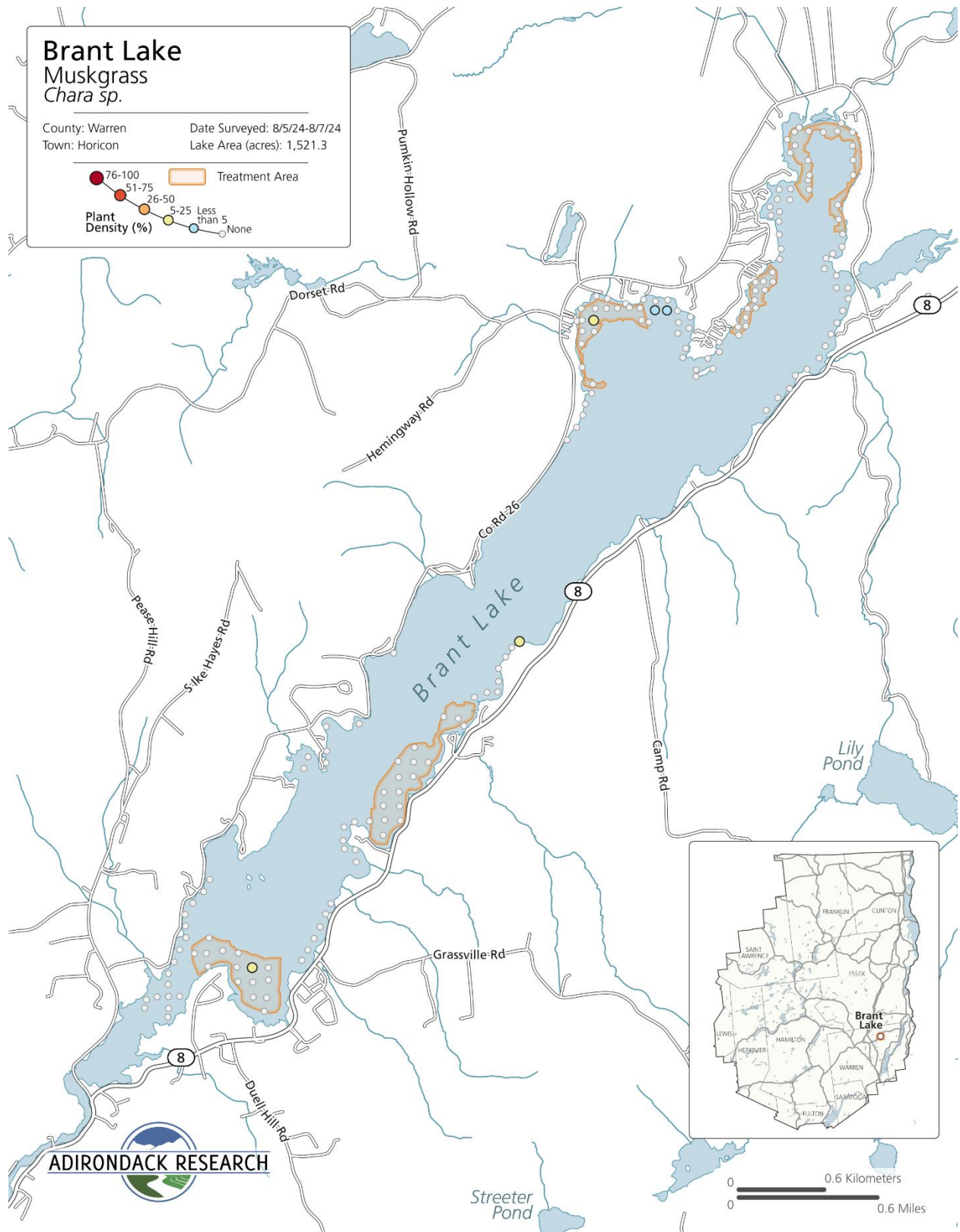


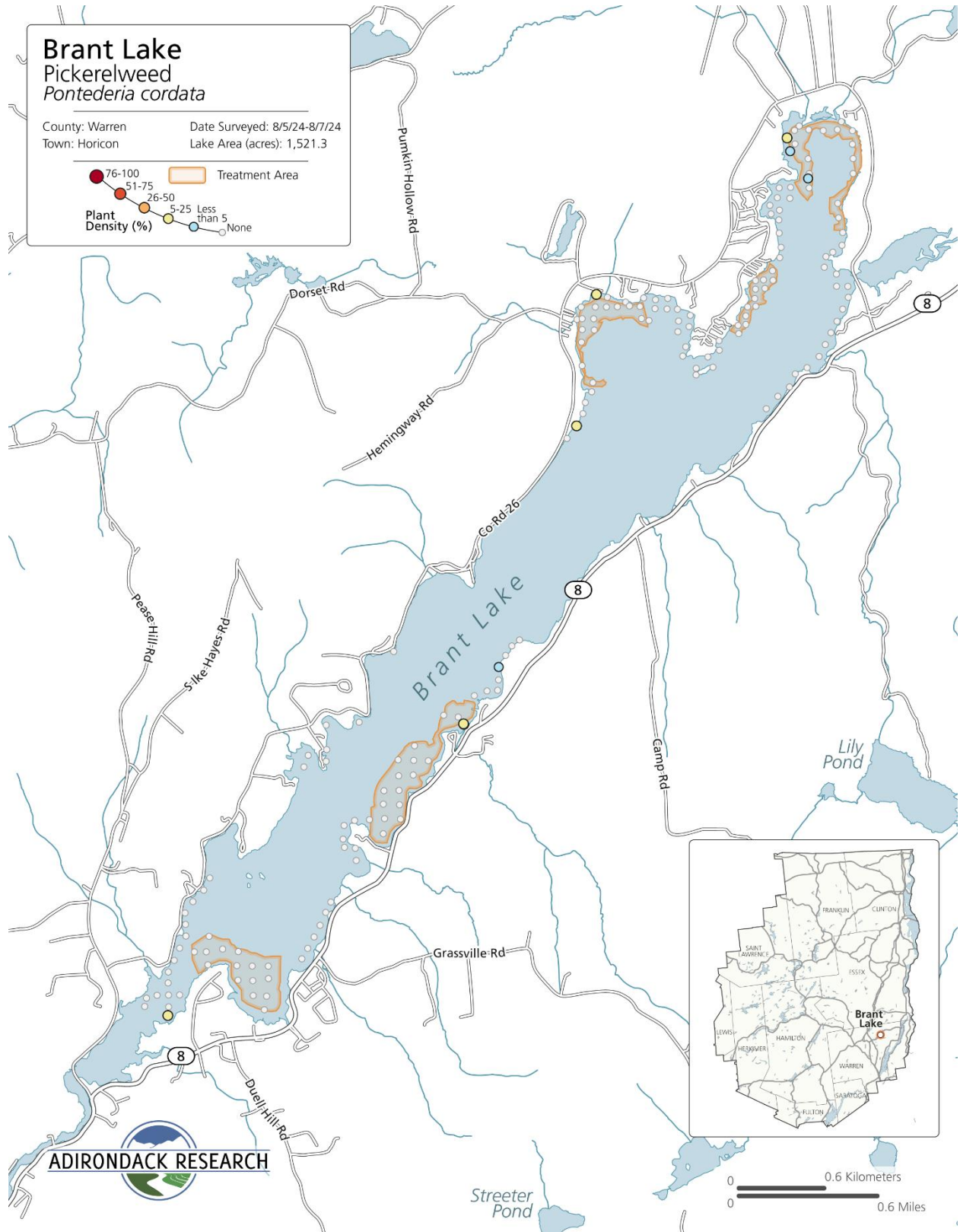


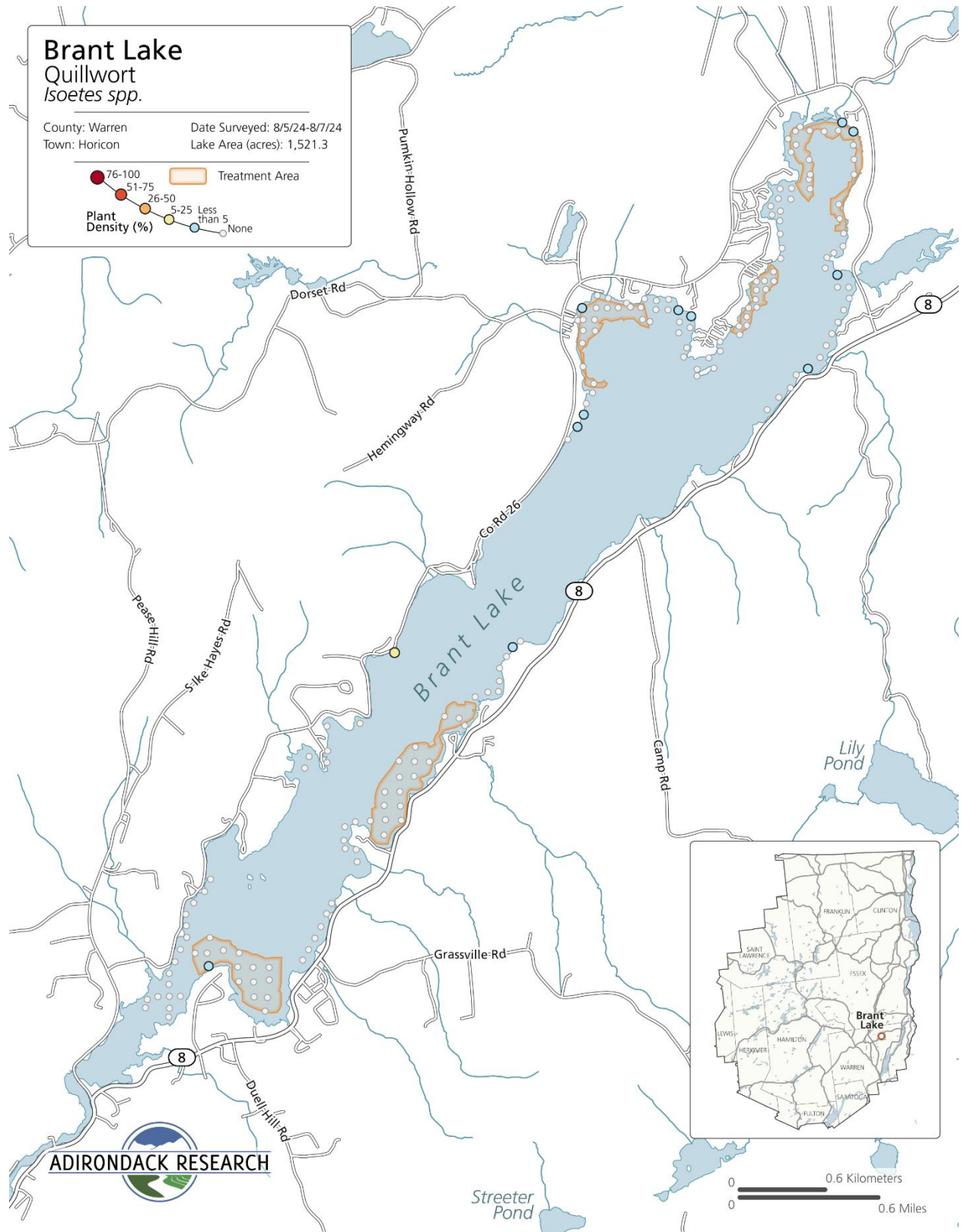


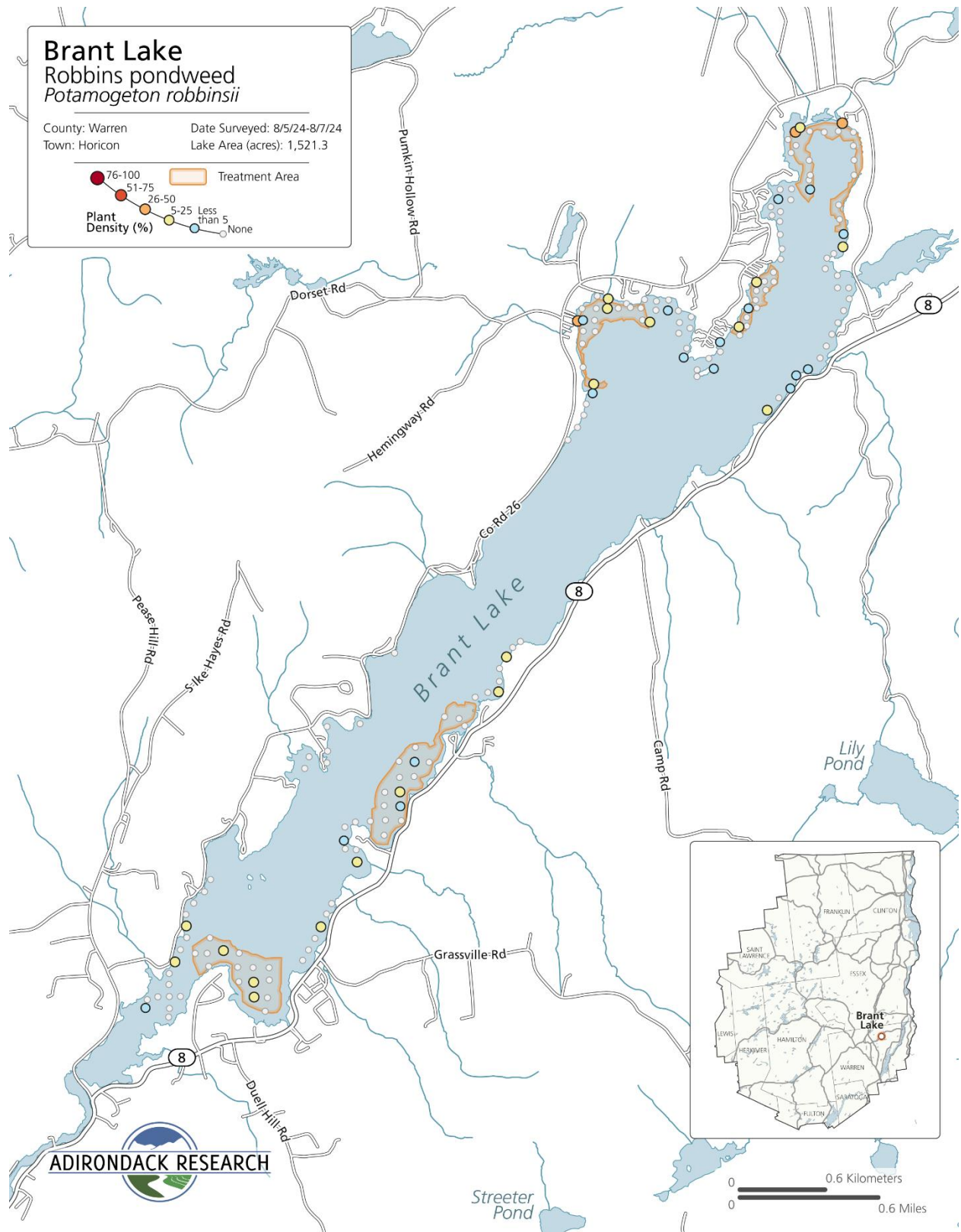


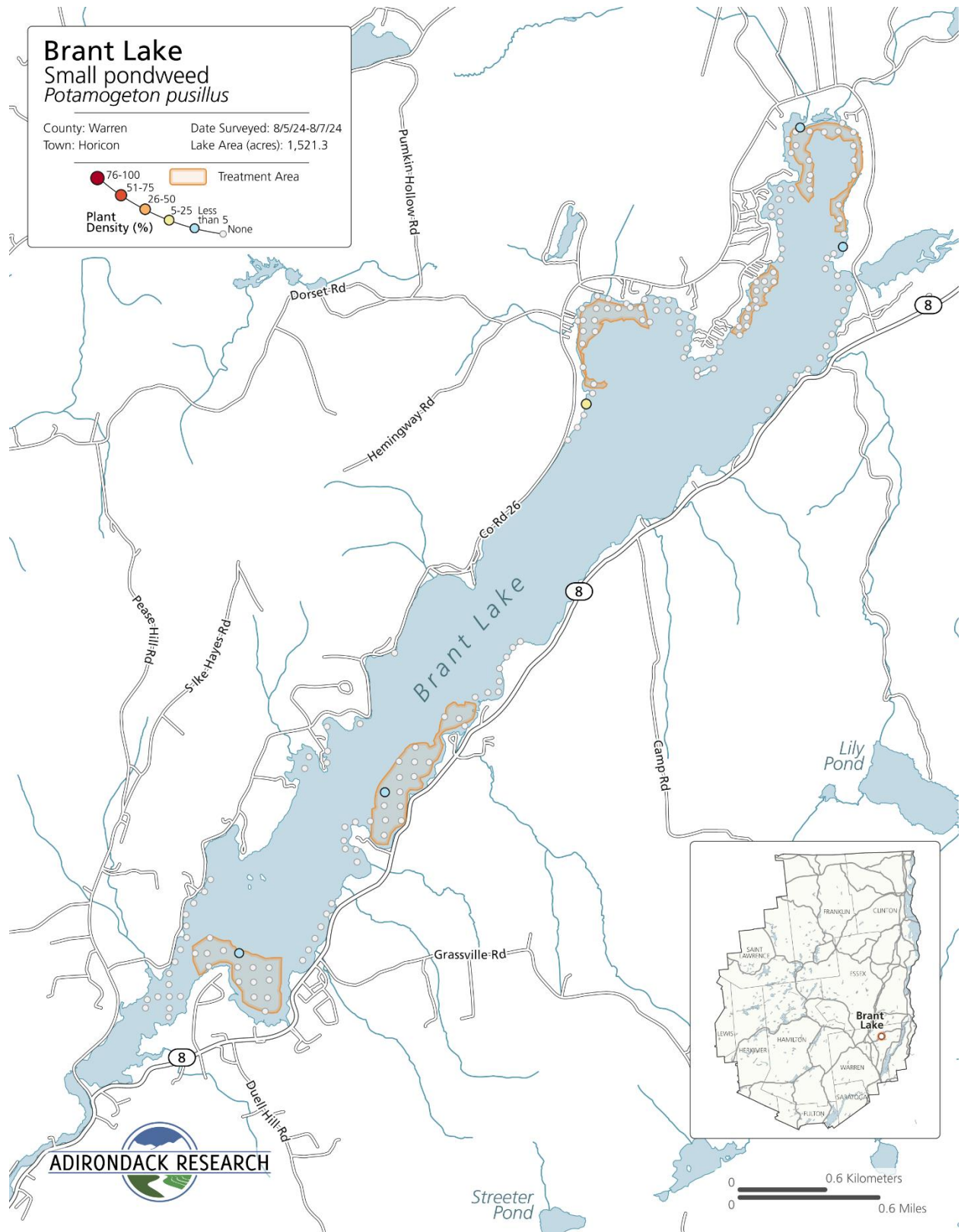


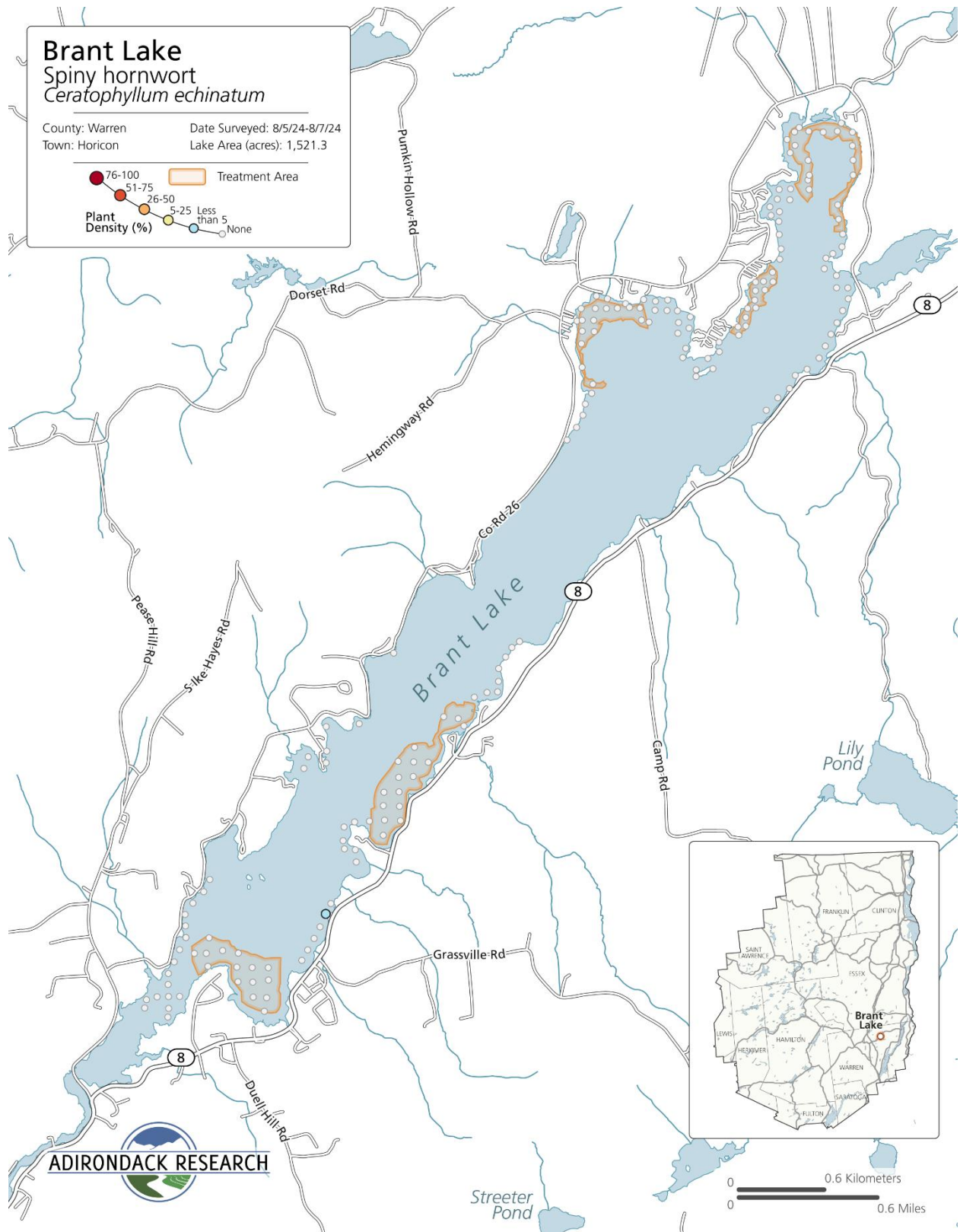


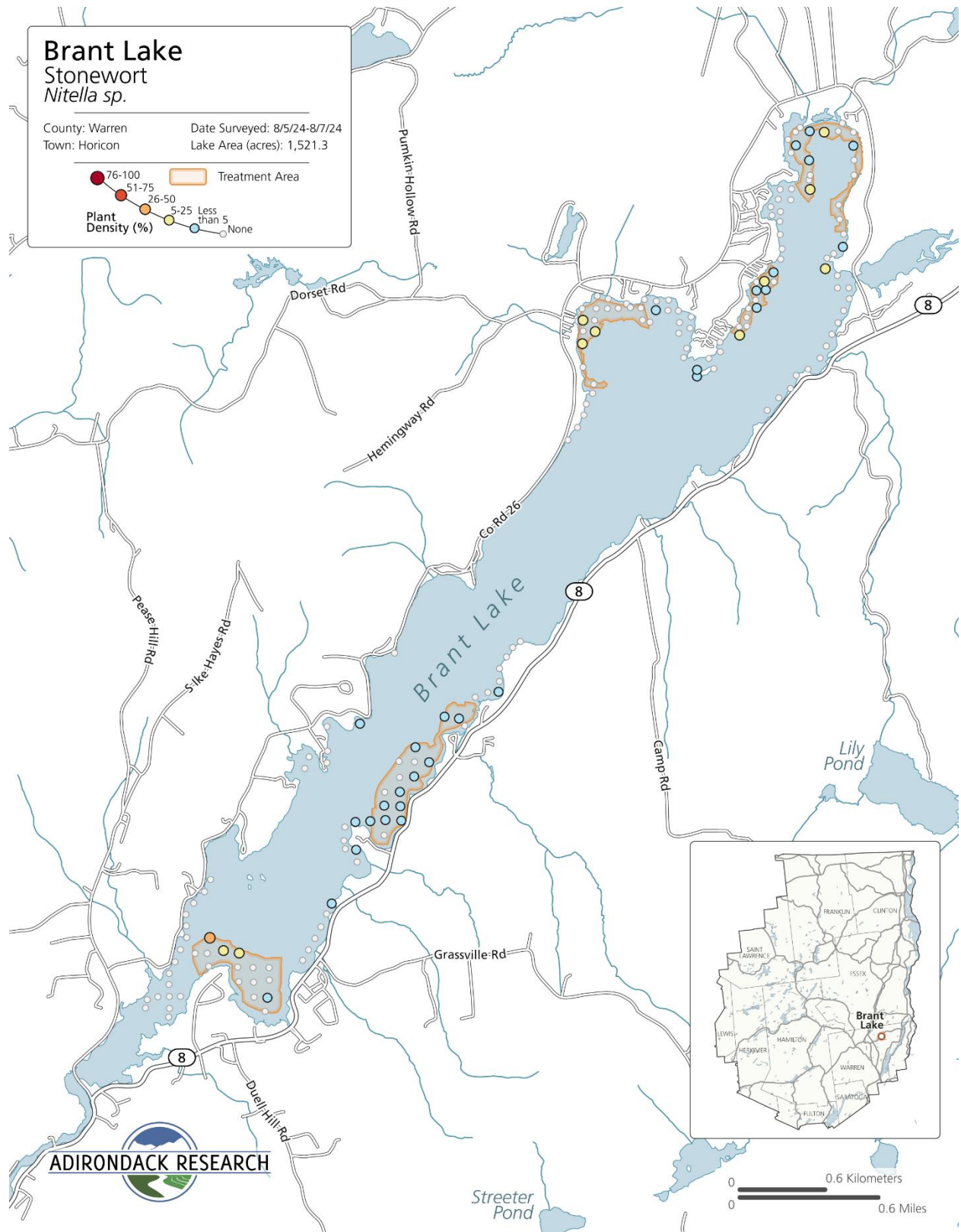


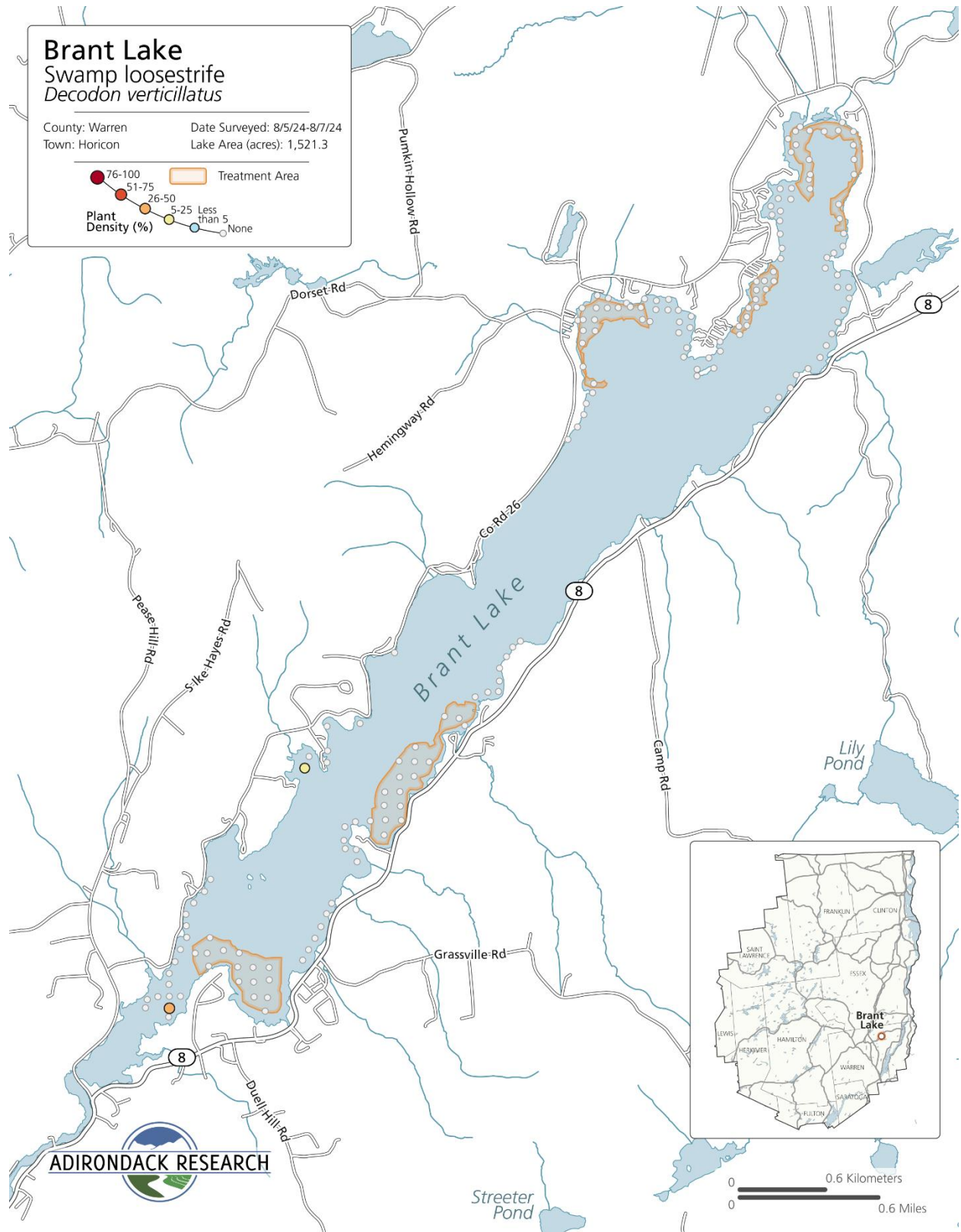


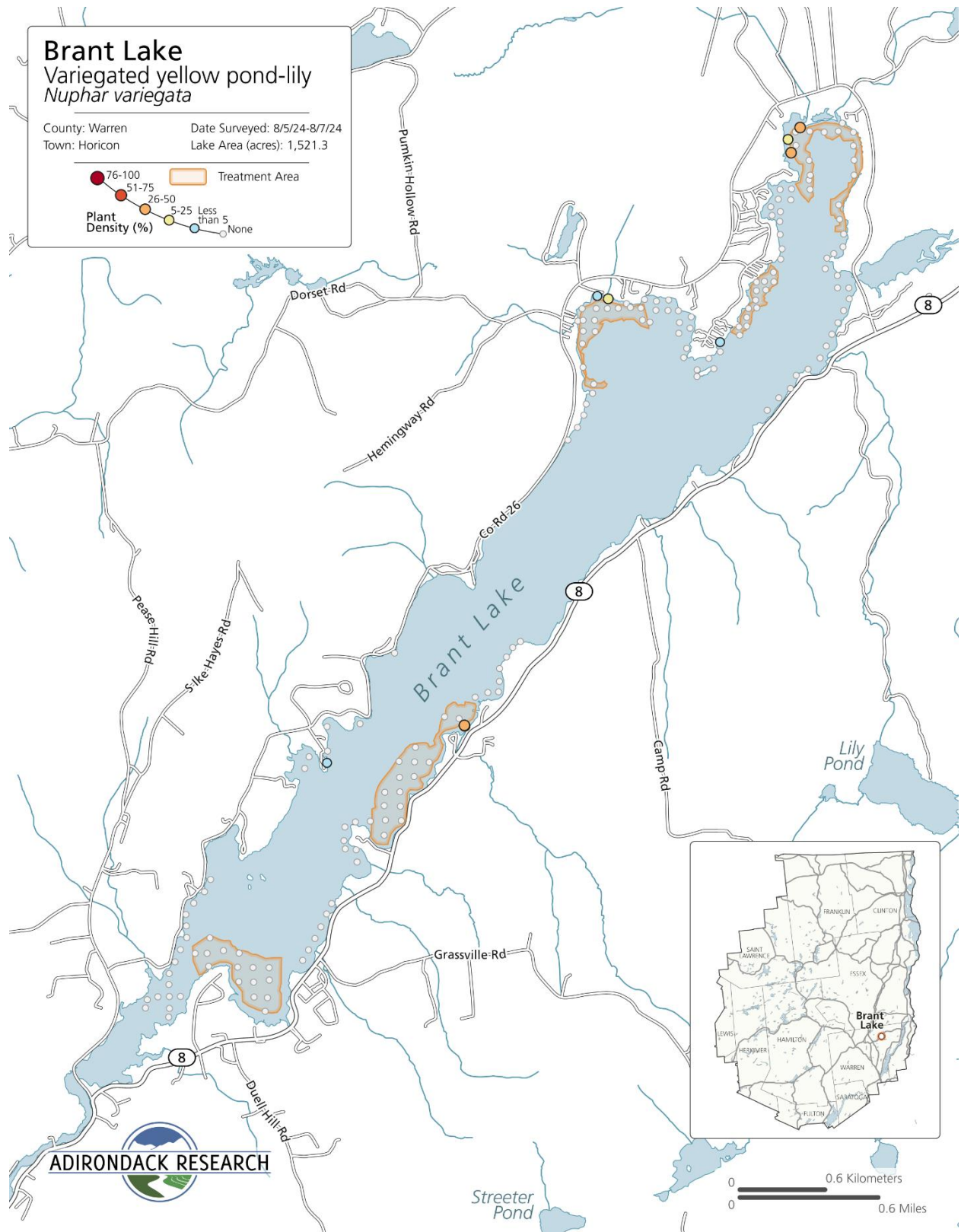


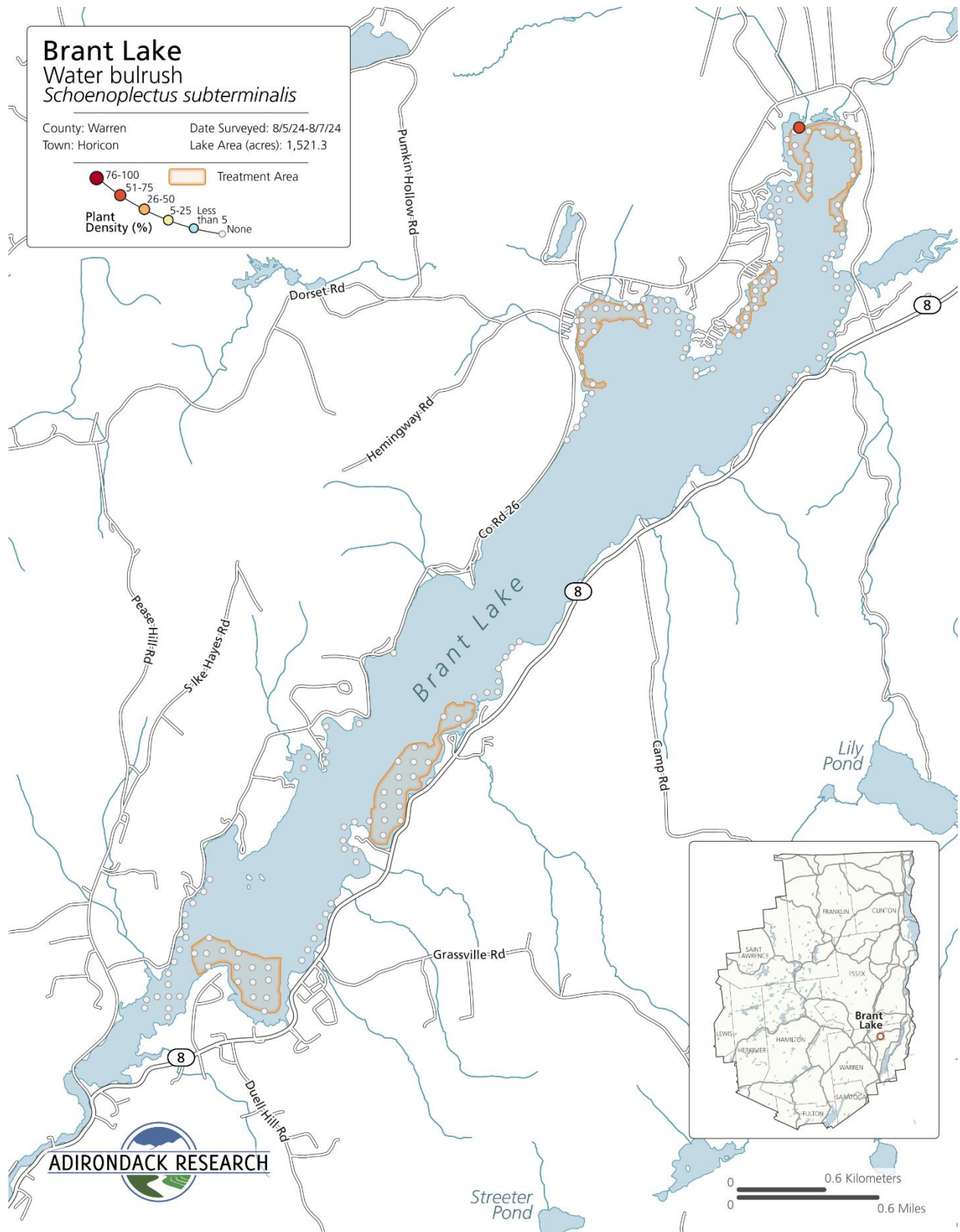


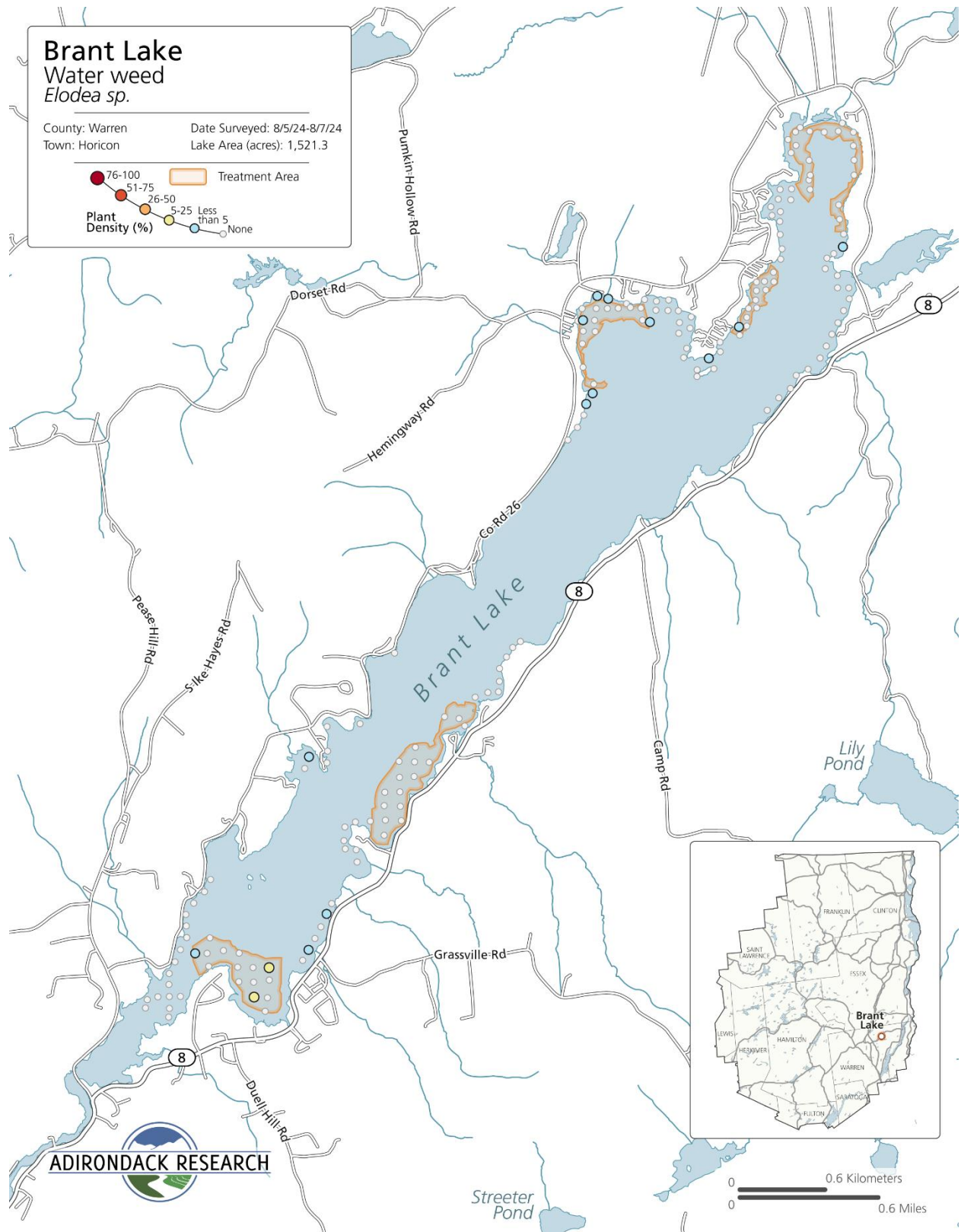


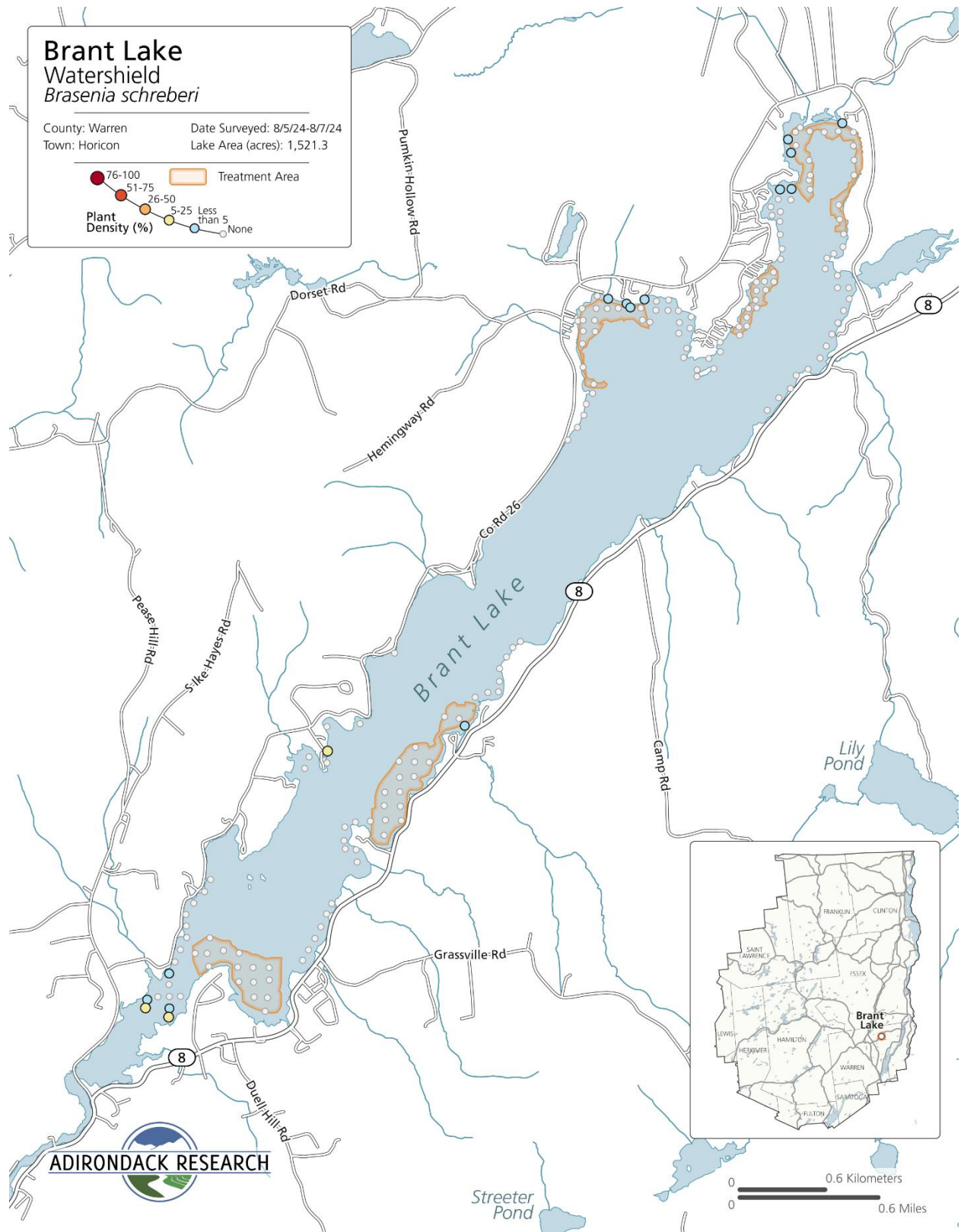


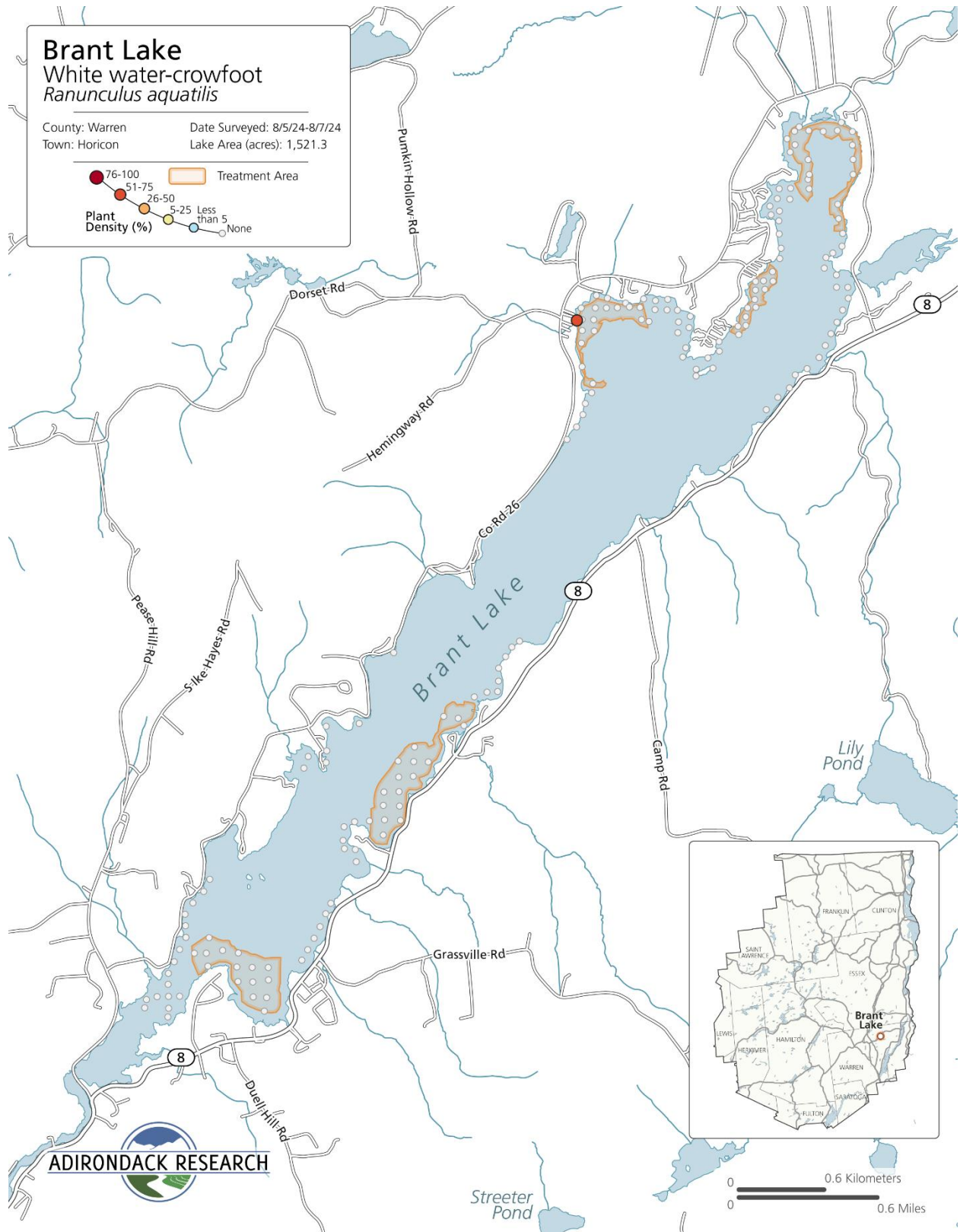


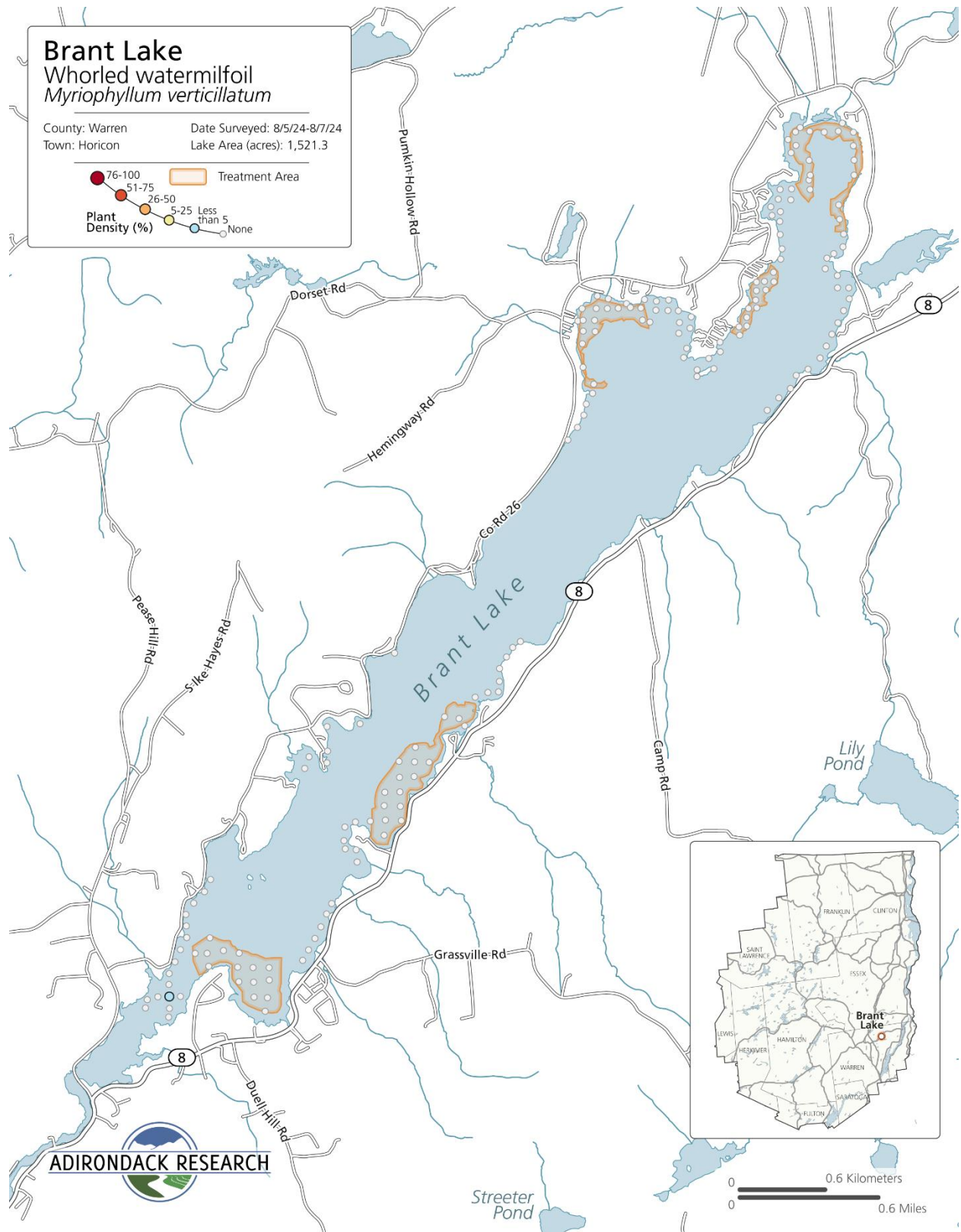














73 Church Street, Suite 2, Saranac Lake, NY 12983 ▪ (518) 278-6070
Adirondack Research uses science to inform decisions. www.adkres.org