

SUMMARY REPORT

Date: August 6, 2022

To: Jay Cassella, Hidden Lake Association

From: Aquatic Ecosystem Research – 1204 Main St. #161, Branford, CT 06405

RE: Results from the sediment study at Hidden Lake

Dear Jay,

Below we have provided a summary report of the work we performed for the Hidden Lake Association this season. These tasks specifically were the development of bathymetric maps of the lake and analysis of soft and firm sediment volumes across the bottom of the lake.

Please review the report and maps and let us know if you have any questions, concerns, or recommended revisions.

We have enjoyed helping the Hidden Lake Association with its management initiatives in 2022 and hope we can assist you with your lake management needs in the future.

Kind regards,

AQUATIC ECOSYSTEM RESEARCH

William Henley

William Henley
Limnologist

Larry Marsicano

Larry Marsicano
Limnologist

Mark June-Wells

Mark June-Wells, PhD
Limnologist

INTRODUCTION

Lake Features

Hidden Lake (41°25'16.2"N, 72°34'09.9"W) is located in Higganum, Connecticut and has a surface area of approximately 39 acres. This man-made waterbody has a maximum depth of just less than 2.5 meters (2.4 m), a mean depth of 1.3 meters and contains approximately 206,000 cubic meters of water (45 million gallons). A single, unnamed tributary feeds the waterbody from the north, in combination with wetlands situated to the north and east. The lake spills over a small dam into Pond Meadow Brook. Pond Meadow Brook in turn flows into Chatfield Hollow Brook, and eventually to the Hammonasset River. Hidden Lake is located in the Chatfield Hollow Brook sub-region of the South Central Eastern watershed complex. The local watershed is roughly 760 acres, which is mostly forested with some urbanization, and the watershed ratio is 18.5.

STUDY PURPOSE

Aquatic Ecosystem Research was contracted by the Hidden Lake Association to conduct a bathymetric survey and sediment analysis of the lake in 2022. No historic bathymetric survey had been conducted prior to 2022. In 2015 and 2018, the Connecticut Agricultural Experiment Station (CAES) collected depth data along four to five transects throughout the lake. However, these studies only collected data to assess current depth, which assumed sedimentation occurring in the waterbody, and did not assess existing sediment volume, thickness or depth.

New bathymetric data for the purpose of planning and for historic comparison was collected, and maps were generated using modern techniques. Sediment depth (thickness) data was also collected and utilized to estimate soft and firm sediment volumes across the waterbody.

METHODOLOGY

Data Collection

Bathymetry

Bathymetric data for Hidden Lake was collected during a site visit on May 14, 2022. Data was collected using a variety of geospatial techniques. A sonar unit

with GPS tracking was utilized to collect the majority of the data utilized for bathymetric mapping. Soundings from a Garmin EchoMap Plus sonar unit were associated with GPS coordinates and then stored onboard the digital charting device. A small boat carrying the sonar equipment motored across the surface of the lake, following north-south and east-west transects with approximately 20-meter spacing. In areas where more specific measurements were required or access was limited, individual points were taken using a stadia rod and handheld Garmin GPS with <2-meter accuracy. To ensure an accurate shoreline for processing the data, GPS and stadia rod readings were taken in areas of high tree cover to augment satellite imagery. In total, over 8,500 data points were collected and processed into a bathymetric dataset.

For future comparison, a benchmark was collected at the Hidden Lake dam. A measurement was taken from the southwest corner of the spillway, down to the lip of the dam. The measurement was taken on the side of the dam which faces the waterbody. The water level was measured and was 8 cm above the spillway elevation at the time of the completion of the survey on May 14th.

Sediment Analysis

Sediment analysis data was also collected during the site visit on May 14th. Data was collected via manual measurement of accumulated sediments along a preset sampling grid. The sampling grid consisted of heuristically modified 45 x 45 meter spacing (Fig. 1), with additional points in key shoreline areas to adequately capture those critical areas. Ninety-six sampling points were visited during the survey effort.

For analysis of sediment depths, three readings were taken at each sampling location. First, lake depth was measured using a weighted tape measure, while soft and firm sediment was measured using a 1.3-centimeter x 5.0-meter steel rod. To determine soft sediment thickness, the steel rod was allowed to penetrate through the light surficial sediments driven only by its own weight. To determine firm sediment, the steel rod was forcefully plunged through the sediments until a “point of refusal” – where normal effort could not achieve further depth. These data were logged and later used for analysis.

Data Processing

Bathymetry

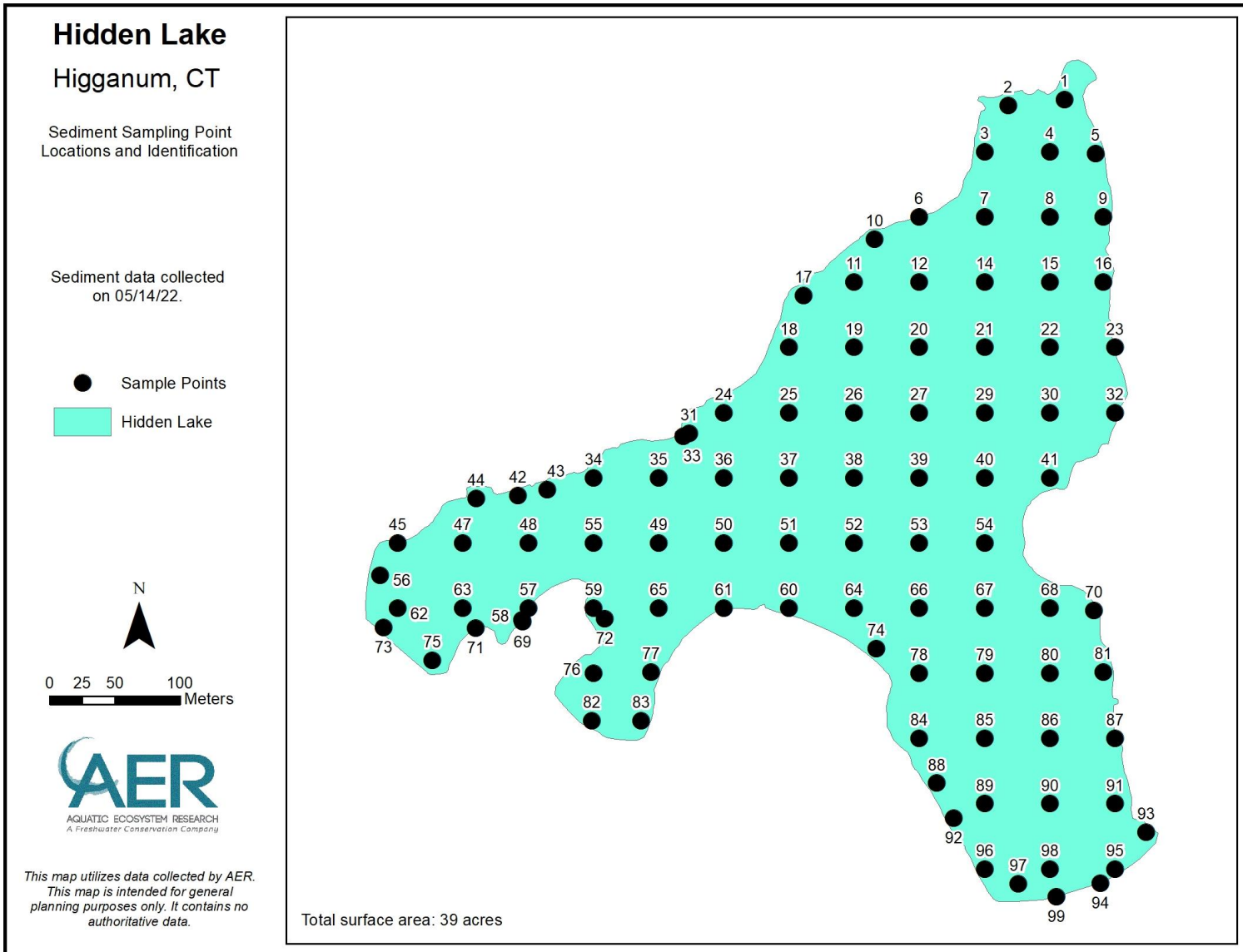


Figure 1. Sediment sampling locations on Hidden Lake visited on May 14, 2022.

Bathymetric data was uploaded into Geographic Information Systems (GIS) software for analysis. A shoreline dataset was created using 2016/2019 leaf-off CT Orthophotography, as well as points collected along the shore of the lake on May 14th. QA/QC of all point sonar data was conducted by visually examining sonar logs, as well as by inspecting raw data displayed on an interactive map. Data was then interpolated within the confines of the lake's shoreline. Adjacent points were used in analysis where they were compared in an iterative fashion throughout the sample. Points which were more closely situated would have greater impact on the resulting surface than those spatially distant. Using these spatial analyses, a digital model of the lake's bathymetry was created. From the generated surface model, various maps were created to display key environmental factors in harmony with the bathymetry. The bathymetric data was also utilized to generate a hypsometric curve, i.e., volumetric estimates by depth.

Sediment Analysis

A database of collected sediment depth measurements and points was created for all data. Data points were renumbered to conform to a logical pattern moving from north to south. Sediment sampling points and collected field data were loaded into GIS software for data analysis and map production.

A cost/distance style analysis was utilized to determine discrete areas for analysis of sediment volumes (Figures 3, 4). This analysis grouped areas as closest to a given sampling point. These designated areas then had sediment data from the closest sampling point associated with them allowing for rough volumetric estimates.

RESULTS

Bathymetry

The survey results and subsequent analysis indicated that the waterbody had a maximum depth of 2.4 m and a mean depth of 1.3 meters. Estimated total volume from the analysis was 206,000 cubic meters or 45.5 million gallons (Table 1). A hypsographic curve was generated, estimating the total volume of the waterbody in addition to divisions in volume by various strata (Fig. 2). The hypsographic analysis revealed that 72% of the water volume was contained within areas from 0-1 meters in depth.

Table 1. Hidden Lake volume by depths. m = meters; m³ = cubic meter; mg = million gallons, mg³ = cubic million gallons.

Depth (m)	Vol. (m ³)	Vol. (mg)	Cumulative Vol. (m ³)	Cumulative Vol. (mg ³)
0.0	0	0.0	0	0.0
0.5	78,189	17.2	78,189	17.2
1.0	70,657	15.5	148,846	32.7
1.5	45,202	9.9	194,048	42.7
2.0	11,938	2.6	205,986	45.3
2.5	30	0.0	206,016	45.3

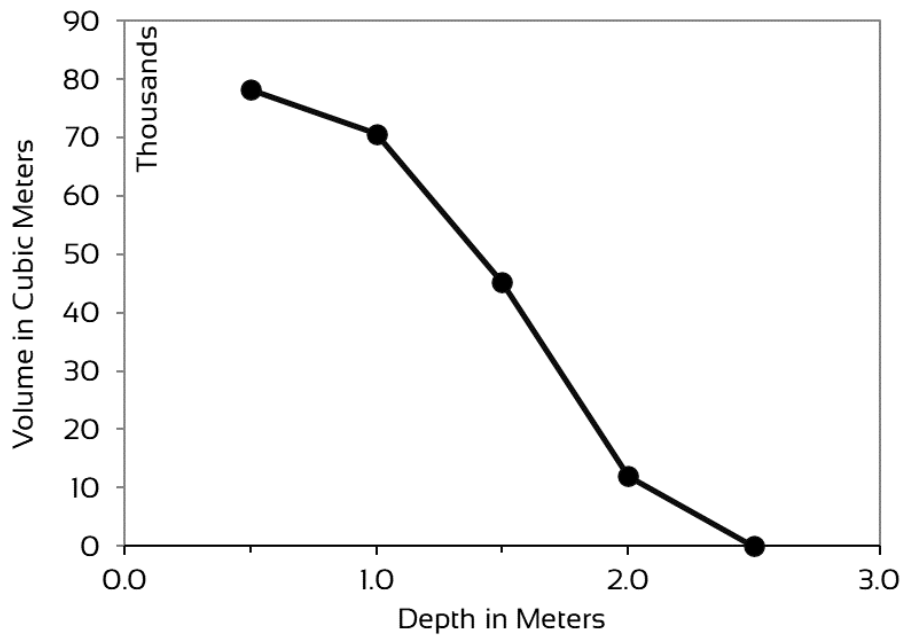


Figure 2. Hypsographic curve for Hidden Lake based on data collected on May 14, 2022.

The bathymetric analysis resulted in the creation of various cartographic products depicting these data. These products are included in Appendix A.

Sediment Analysis

The raw sediment data and subsequent analysis generated products which can be utilized by the client and other stakeholders in future efforts. A detailed table of the completed data analysis is attached (Appendix C). Average estimated soft sediment thickness was 0.33 meters. Average estimated firm sediment thickness was 0.43 meters. Total estimated soft sediment volume was 61,620 cubic meters. Total estimated firm volume was 91,130 cubic meters. The sediment analysis resulted in the creation of cartographic products which depict the spatial distribution of these data. (Appendix B).

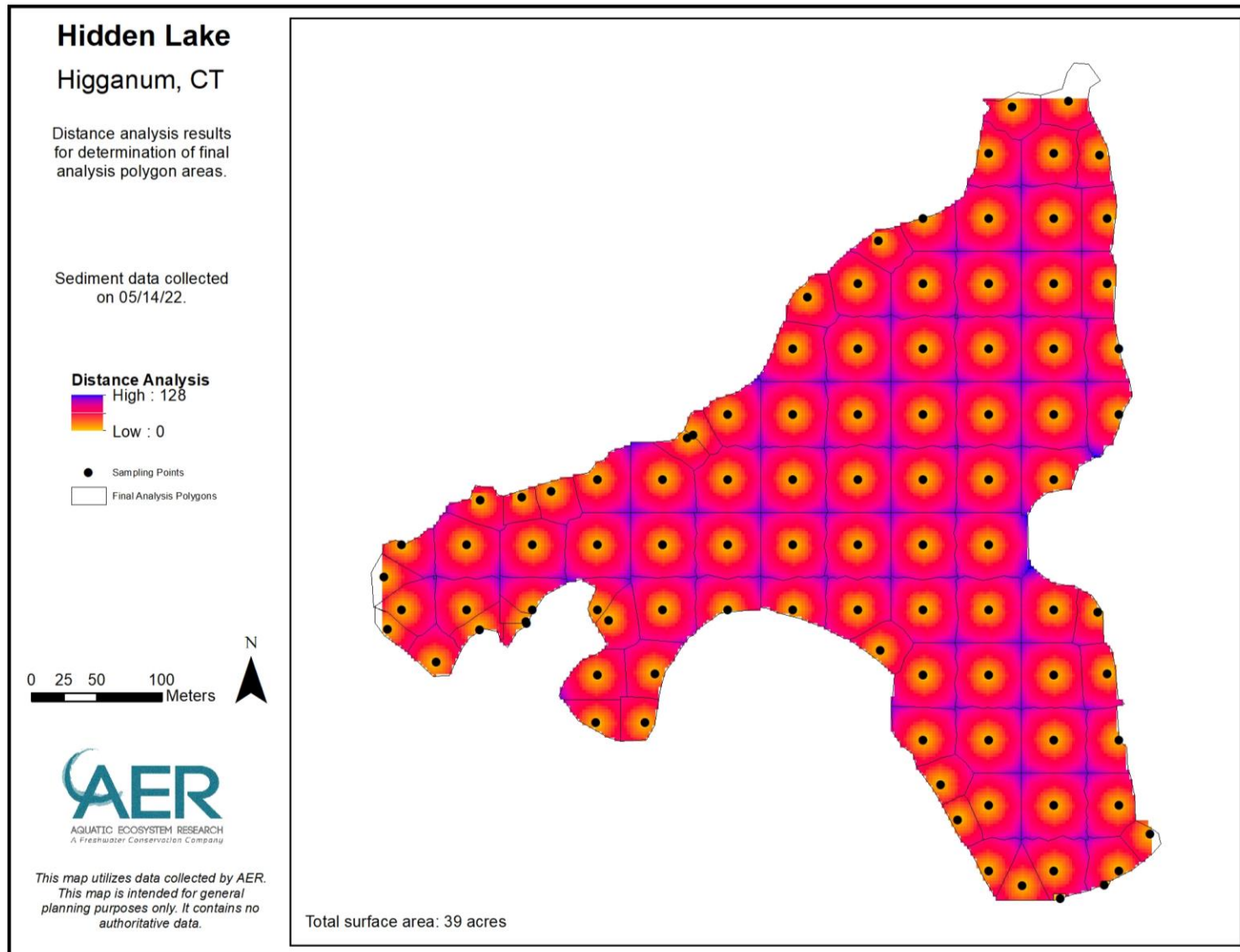


Figure 3. Distance analysis for Hidden Lake.

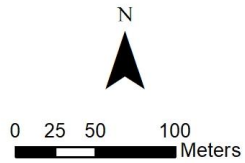
Hidden Lake

Higganum, CT

Cost Distance Analysis:
Analysis polygons as determined
by dividing lake bottom by
the nearest area to a given
sampling location point.

Sediment data collected
on 05/14/22.

 Sediment Areas



*This map utilizes data collected by AER.
This map is intended for general
planning purposes only. It contains no
authoritative data.*

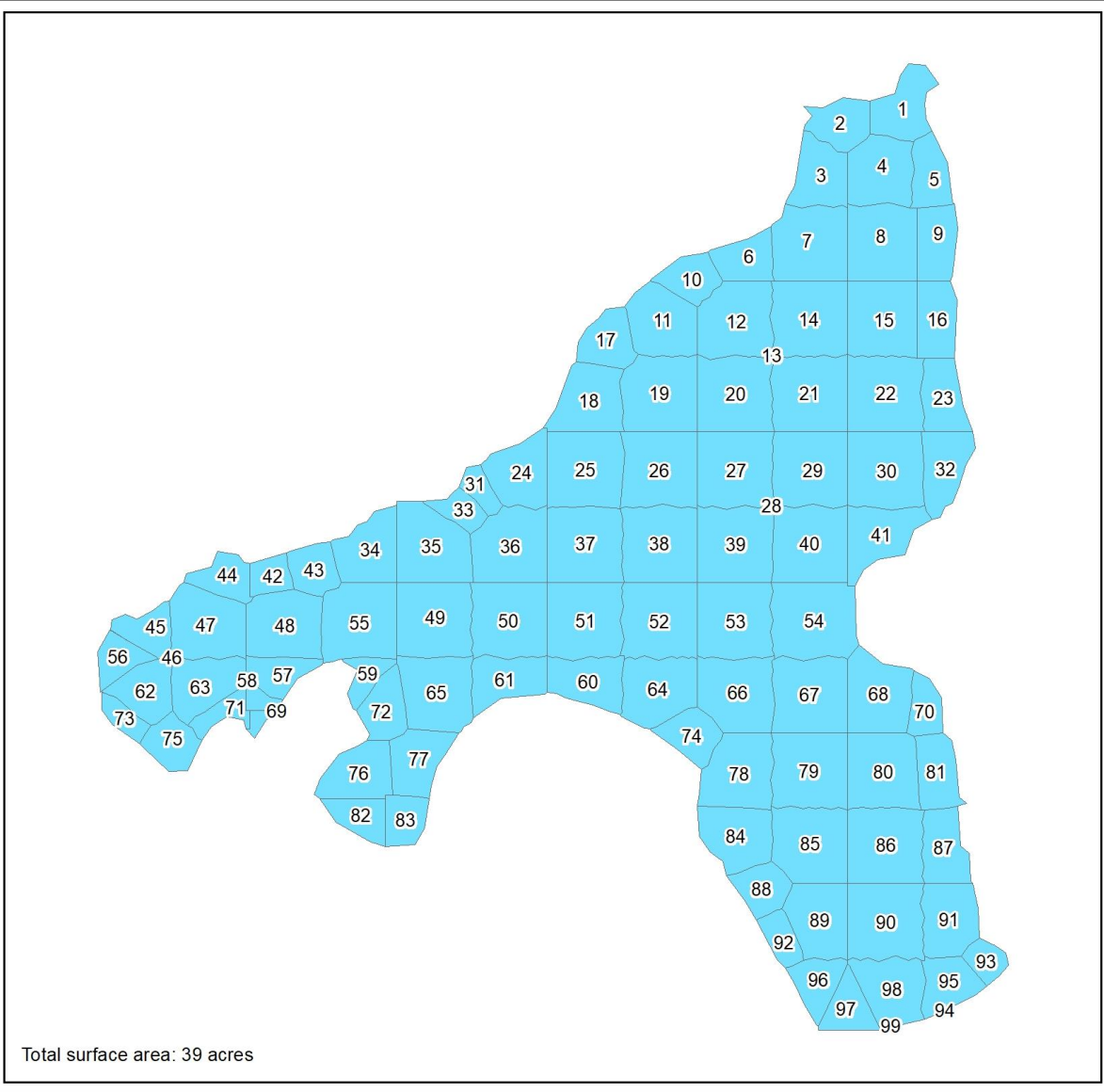


Figure 4. Polygon delineation analysis for Hidden Lake.

Appendix A. Cartographic products depicting bathymetric data for Hidden Lake collected May 14, 2022.



Hidden Lake

Higganum, CT

Bathymetric Map:
1 Foot Contours

Bathymetric data collected
on 05/14/22
utilizing both sonar and
manual depth soundings.

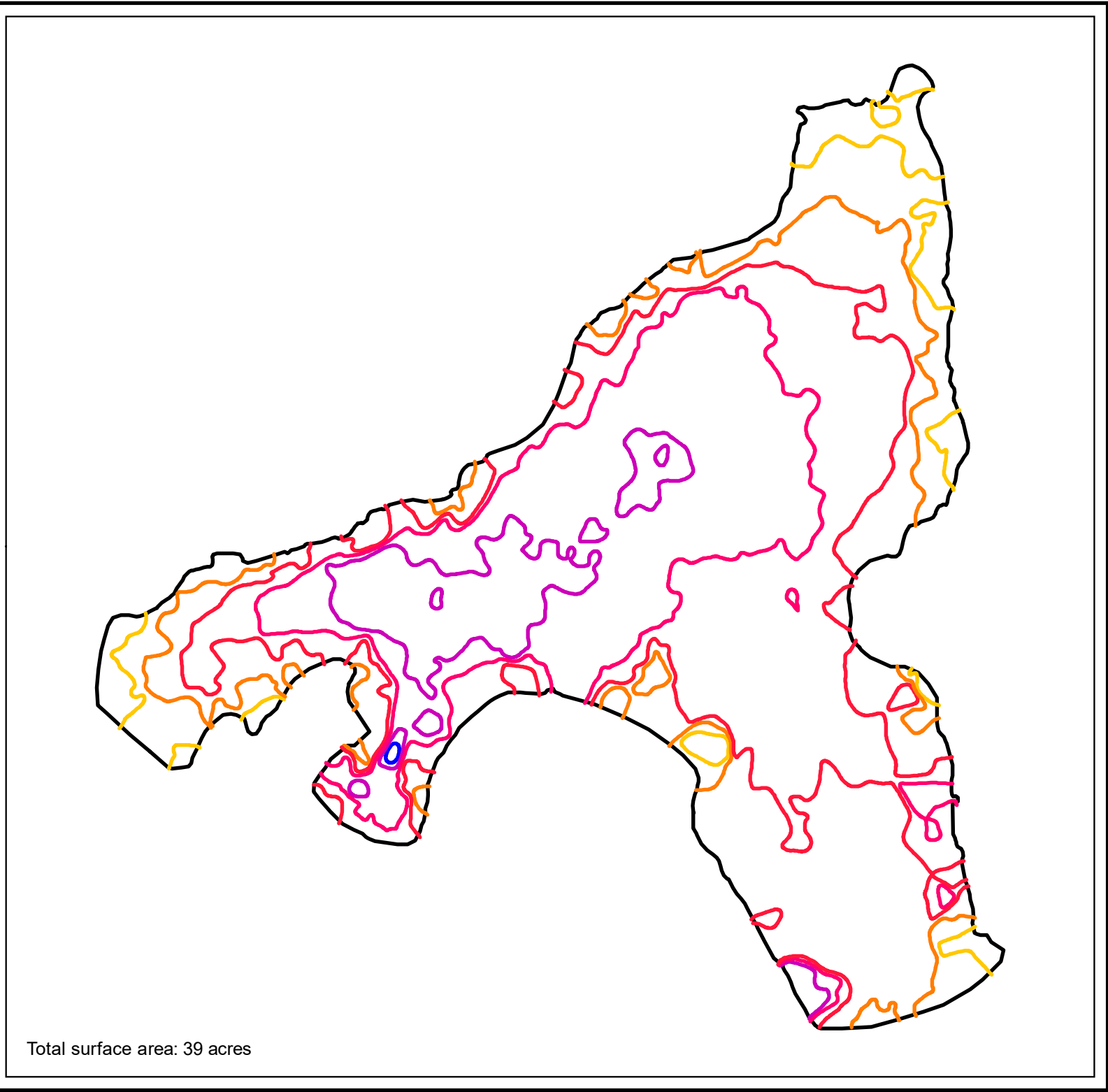
Legend

1 Foot Contour

- 2
- 3
- 4
- 5
- 6
- 7



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authoritative data.*



Total surface area: 39 acres

Hidden Lake

Higganum, CT

Bathymetric Map:
1 Foot Contours

Bathymetric data collected
on 05/14/22
utilizing both sonar and
manual depth soundings.

Legend

1 Foot Contour

- 2
- 3
- 4
- 5
- 6
- 7

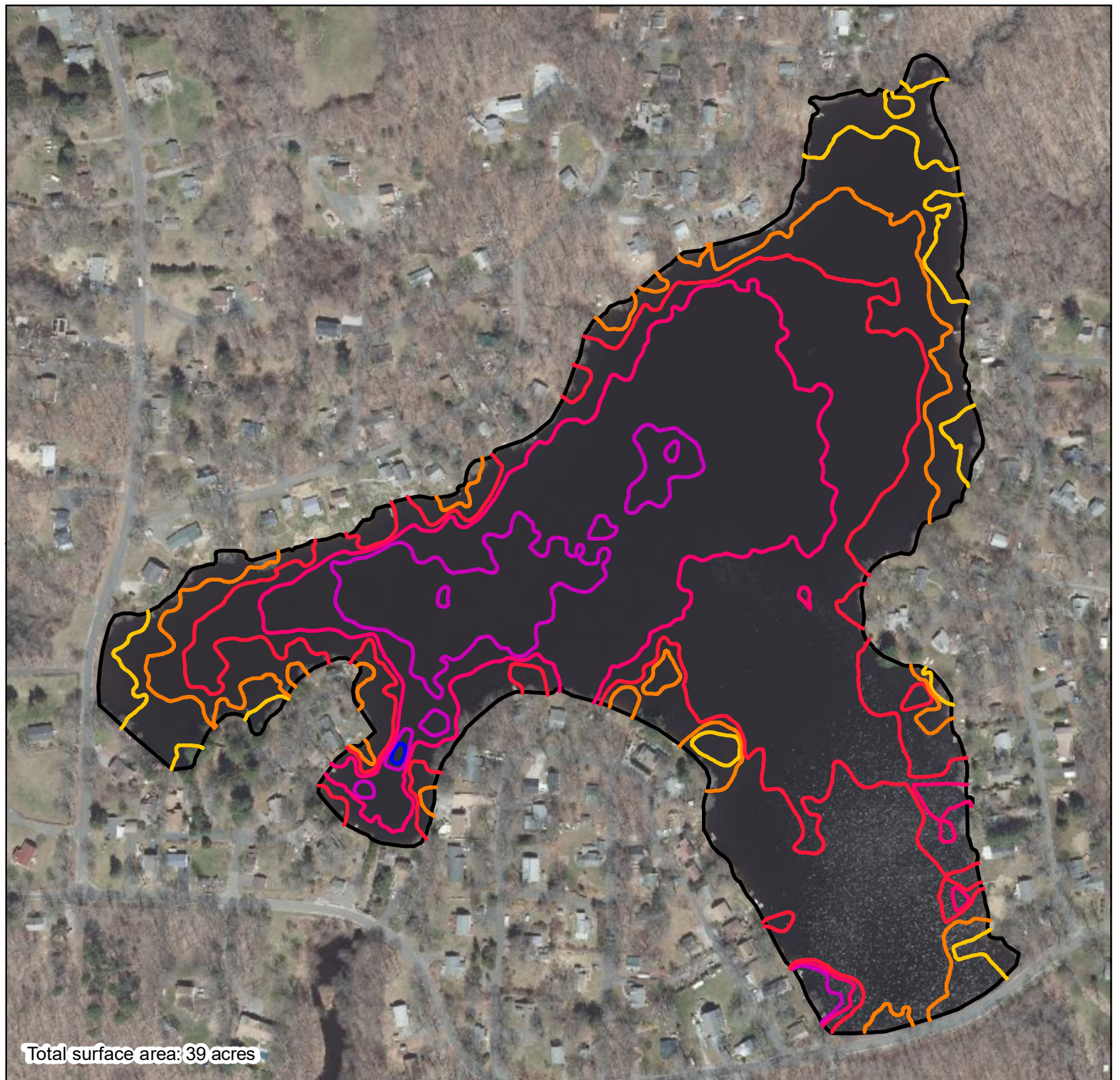
0 100 200 400
Feet



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Total surface area: 39 acres

Hidden Lake

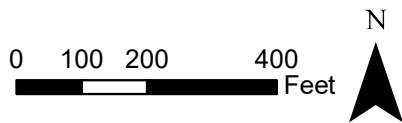
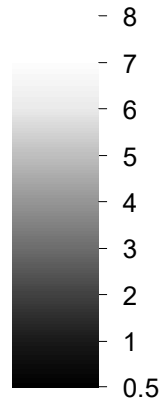
Higganum, CT

Bathymetric Map:
Foot Surface

Bathymetric data collected
on 05/14/22
utilizing both sonar and
manual depth soundings.

Depth (FT)

Value



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Total surface area: 39 acres



Hidden Lake

Higganum, CT

Bathymetric Map:
1 Foot Contours

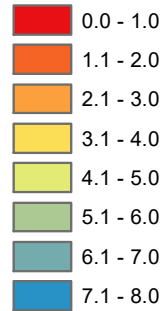
Bathymetric data collected
on 05/14/22
utilizing both sonar and
manual depth soundings.

Legend

—— 1 Foot Contour

Depth

(Feet)



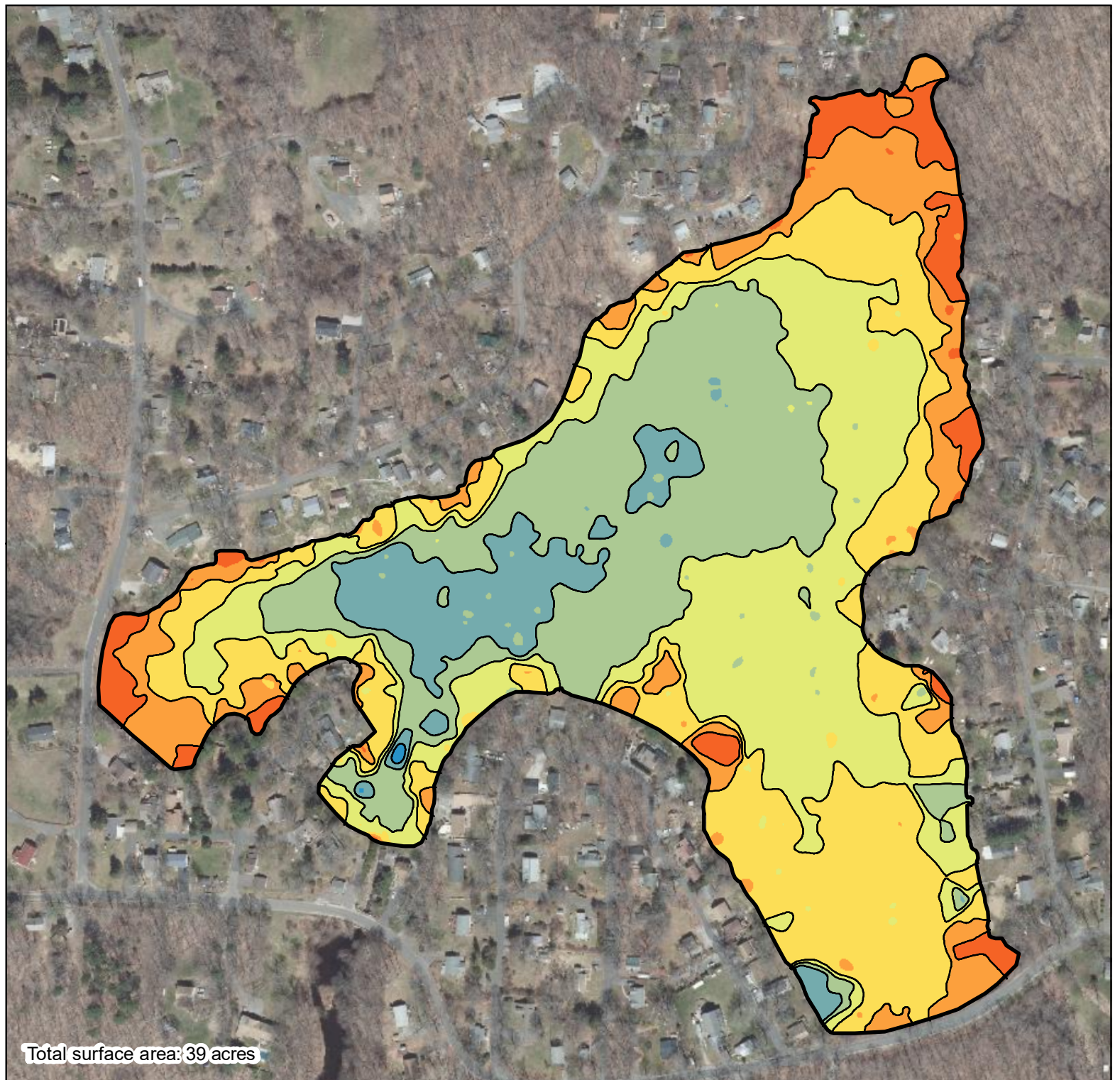
0 100 200 400
Feet



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Total surface area: 39 acres

Hidden Lake

Higganum, CT

Bathymetric Map:
1/2 Meter Contours

Bathymetric data collected
on 05/14/22
utilizing both sonar and
manual depth soundings.

Legend

1/2 Meter Contour

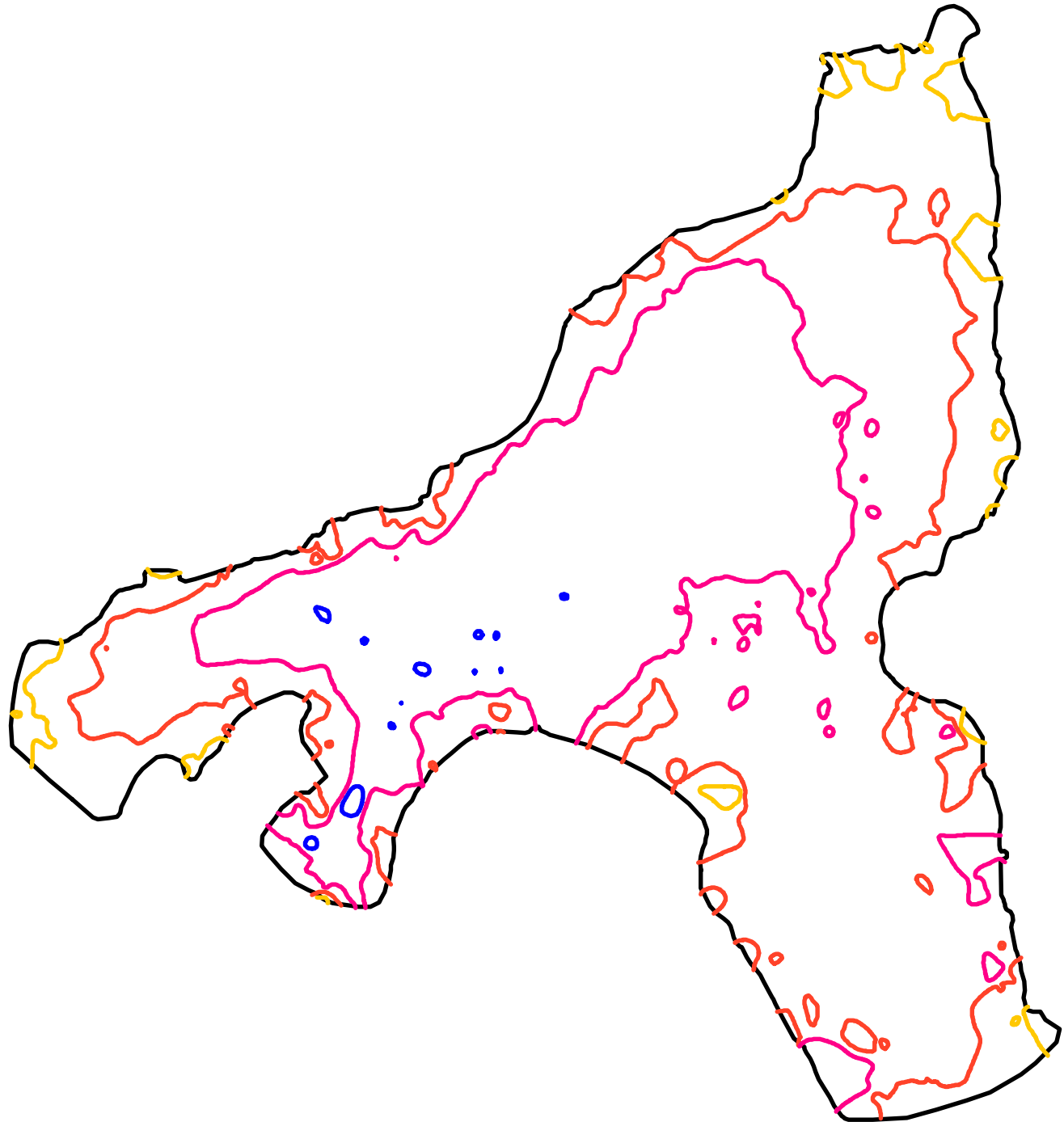
-  0.5
-  1
-  1.5
-  2

0 25 50 100
Meters



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Total surface area: 39 acres



Hidden Lake

Higganum, CT

Bathymetric Map:
1/2 Meter Contours

Bathymetric data collected
on 05/14/22
utilizing both sonar and
manual depth soundings.

Legend

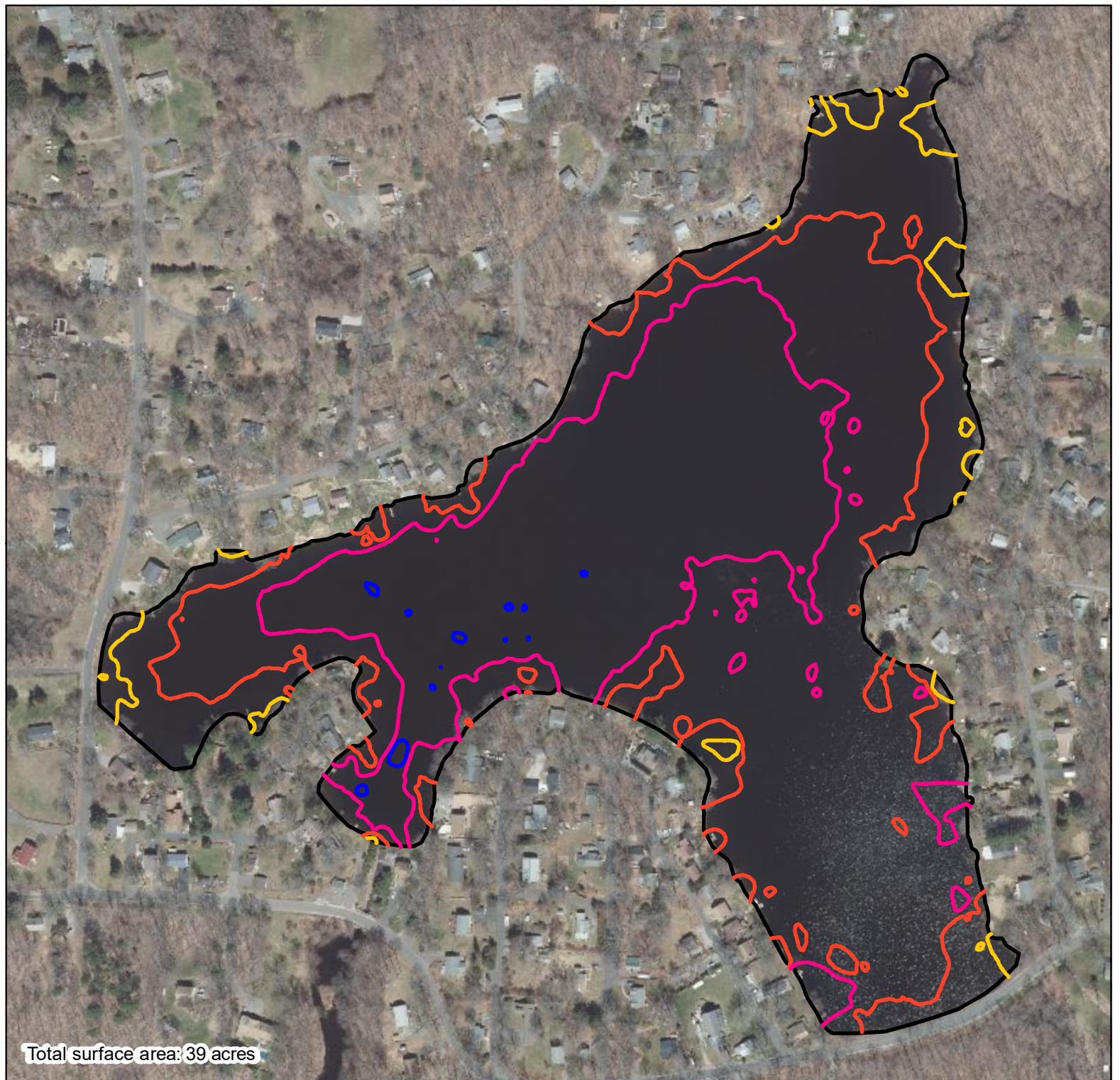
1/2 Meter Contour

-  0.5
-  1
-  1.5
-  2

0 25 50 100
Meters



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Total surface area: 39 acres

Hidden Lake

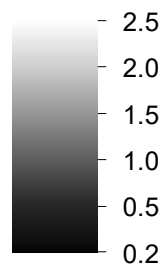
Higganum, CT

Bathymetric Map:
Meter Surface

Bathymetric data collected
on 05/14/22
utilizing both sonar and
manual depth soundings.

Depth (M)

Value



0 25 50 100
Meters



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Total surface area: 39 acres



Hidden Lake

Higganum, CT

Bathymetric Map:
1/2 Meter Contours

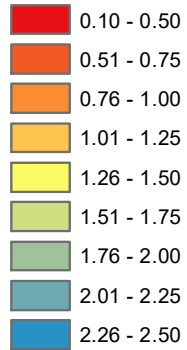
Bathymetric data collected
on 05/14/22
utilizing both sonar and
manual depth soundings.

Legend

— 1/2 Meter Contour

Depth

(Meters)



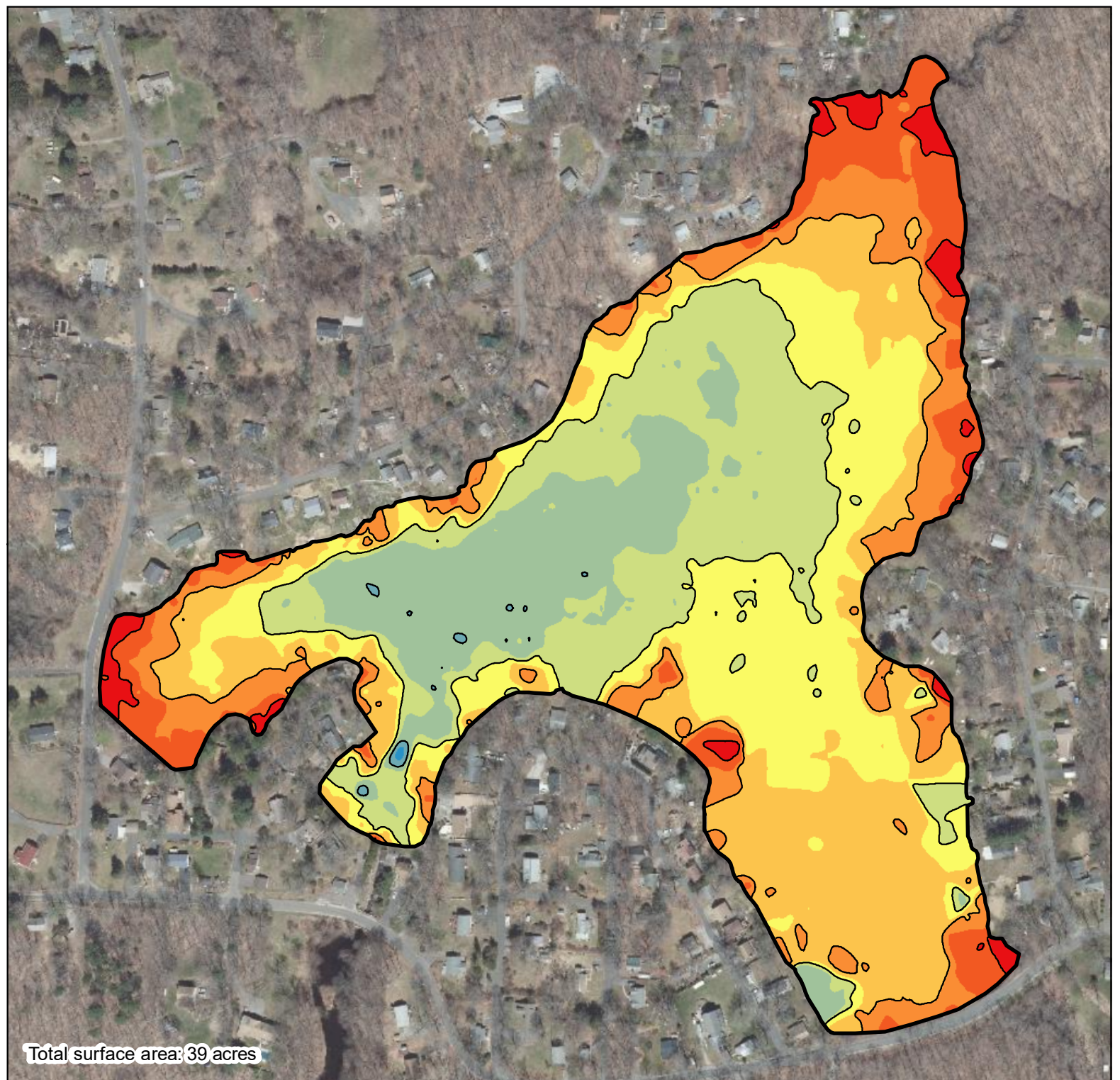
0 25 50 100
Meters



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Total surface area: 39 acres

Appendix B. Cartographic products depicting the spatial distribution of sediment in Hidden Lake.



Hidden Lake

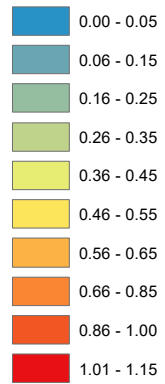
Higganum, CT

Measured Soft Sediment Depth:
Soft sediment depth in meters
(soft sediment thickness)

Mean Depth: 0.33 M
Max Depth: 1.15 M

Sediment data collected
on 05/14/22.

Soft Depth (M)

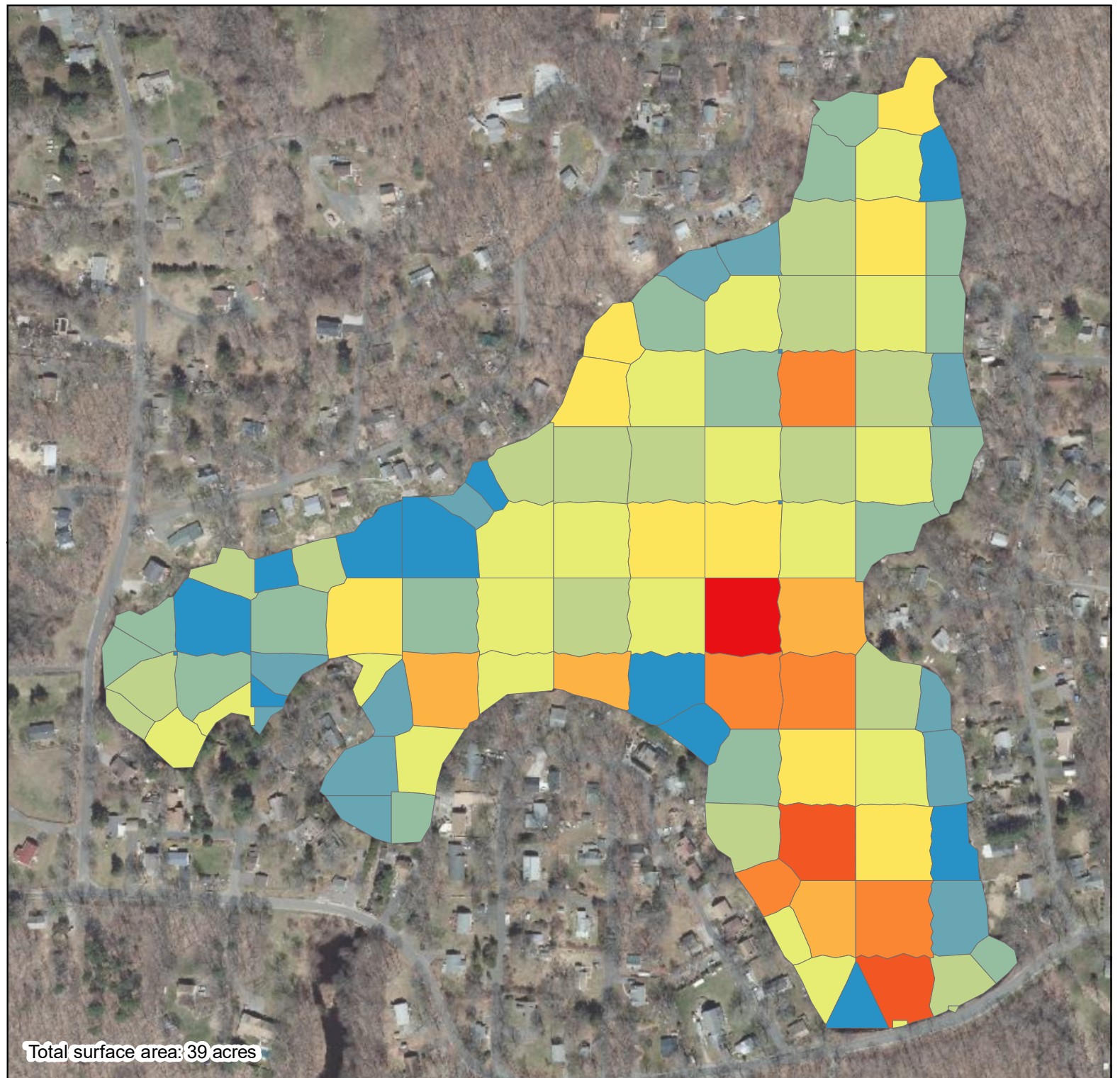


0 25 50 100
Meters



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Hidden Lake

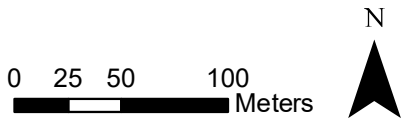
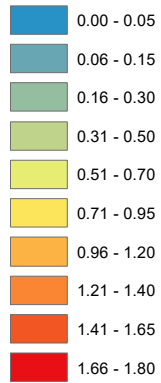
Higganum, CT

Measured Firm Sediment Depth:
Firm sediment depth in meters
(firm sediment thickness).

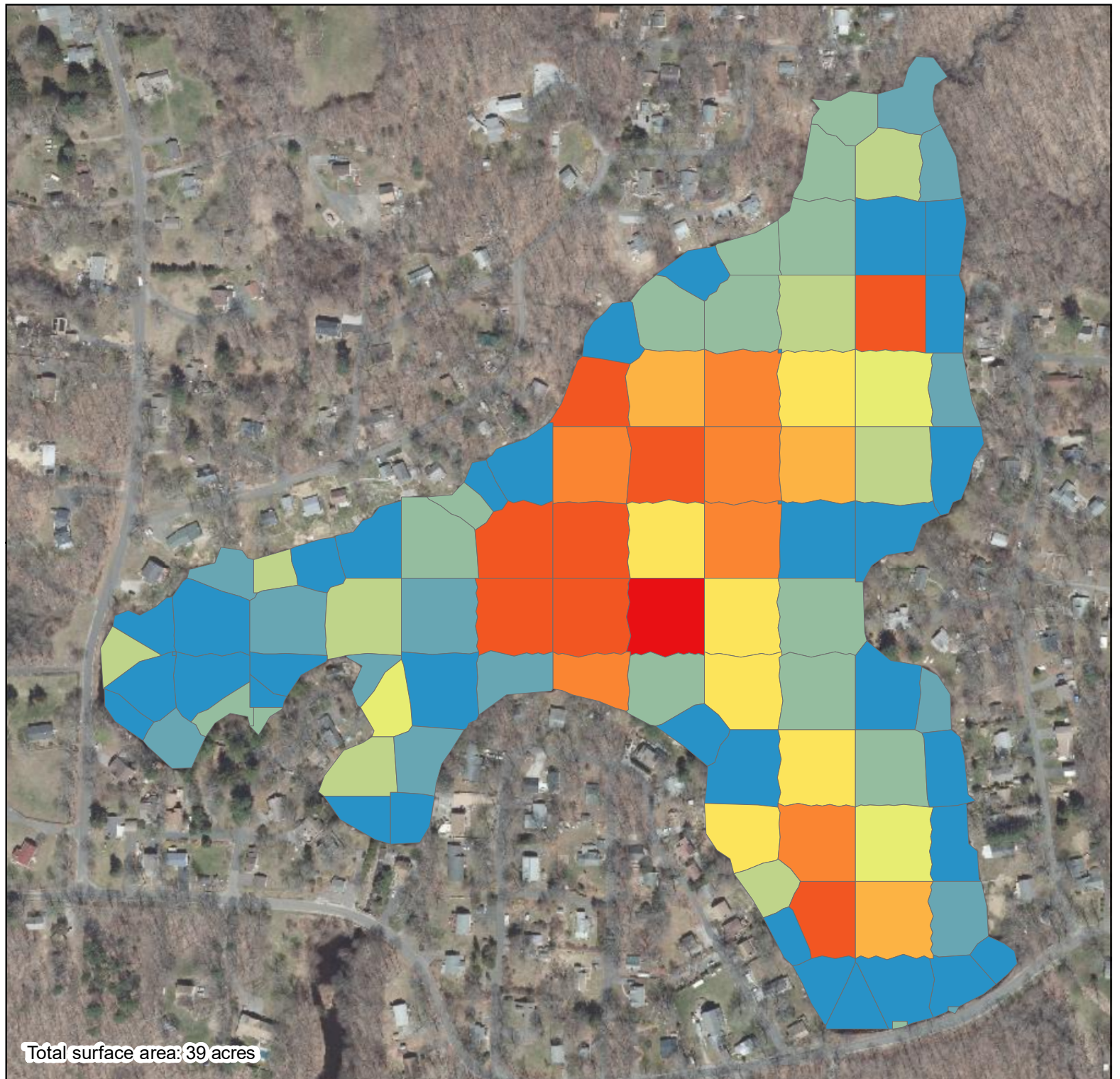
Mean Depth: 0.43 M
Max Depth: 1.80 M

Sediment data collected
on 05/14/22.

Firm Depth (M)



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Hidden Lake

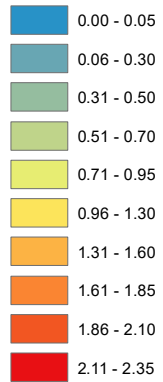
Higganum, CT

Measured Total Sediment Depth:
Total sediment depth in meters
(combined soft and firm sediment).

Mean Depth: 0.75 M
Max Depth: 2.35 M

Sediment data collected
on 05/14/22.

Total Depth (M)

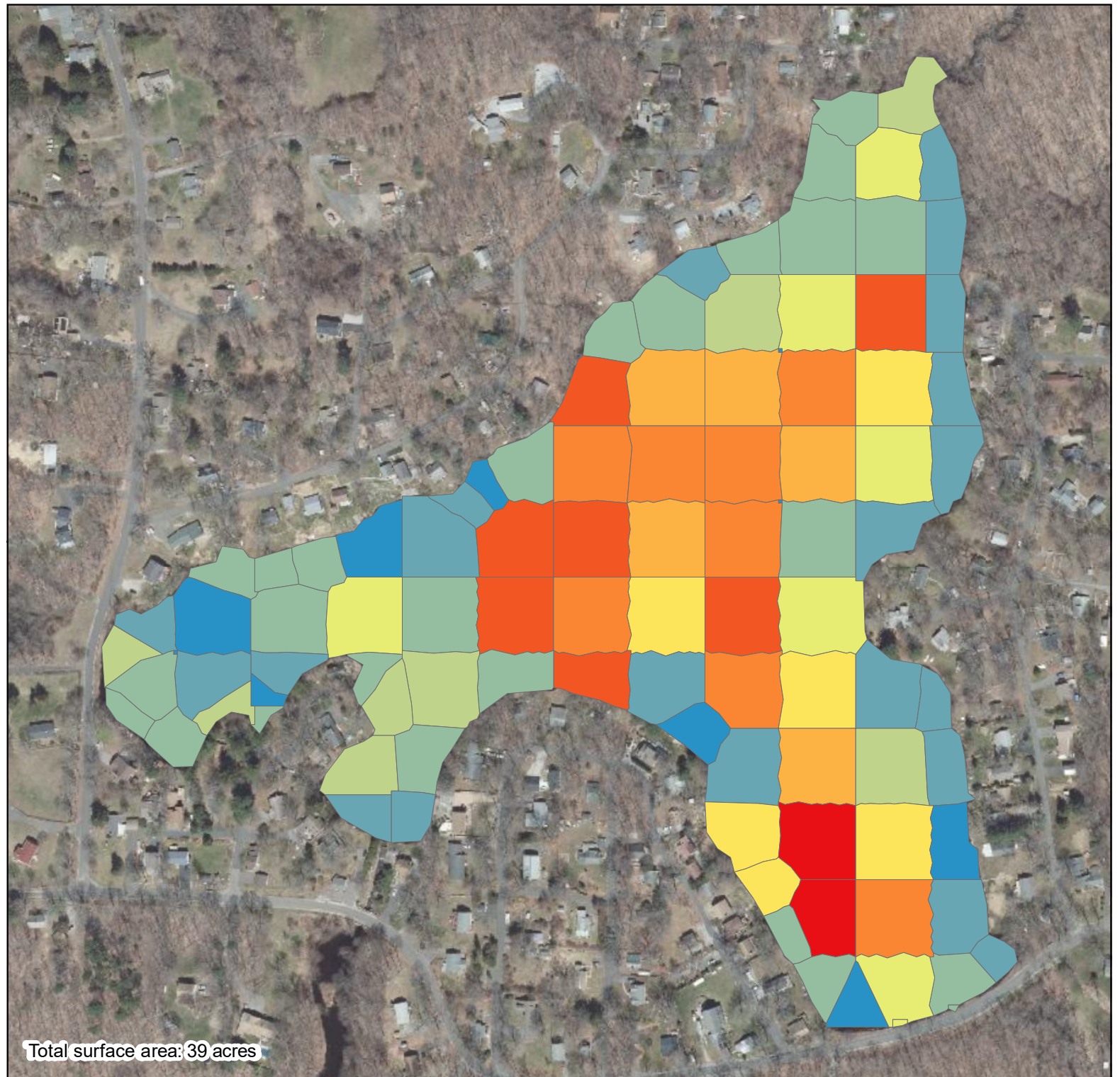


0 25 50 100
Meters



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Total surface area: 39 acres

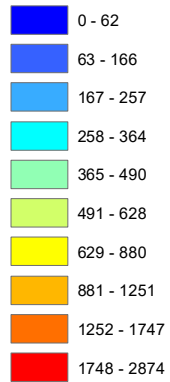
Hidden Lake

Higganum, CT

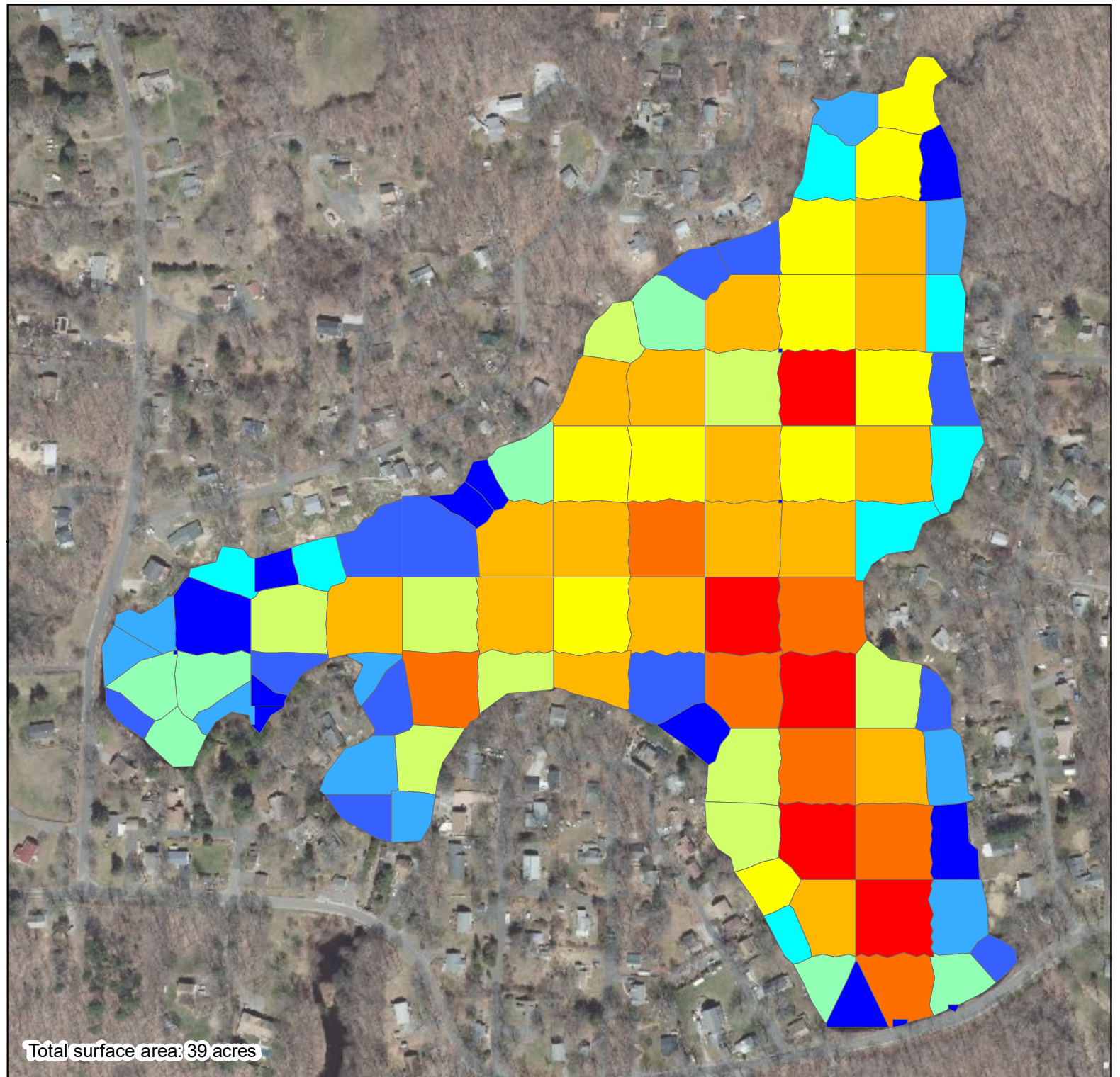
Estimated Soft Sediment Volume: Volume of soft sediment displayed in cubic meters.
1 cubic meter = 1.3 cubic yard.

Sediment data collected on 05/14/22.

Soft Sediment Volume



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Total surface area: 39 acres

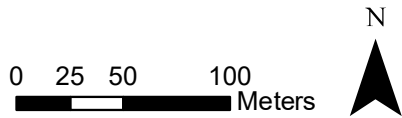
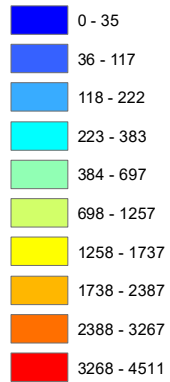
Hidden Lake

Higganum, CT

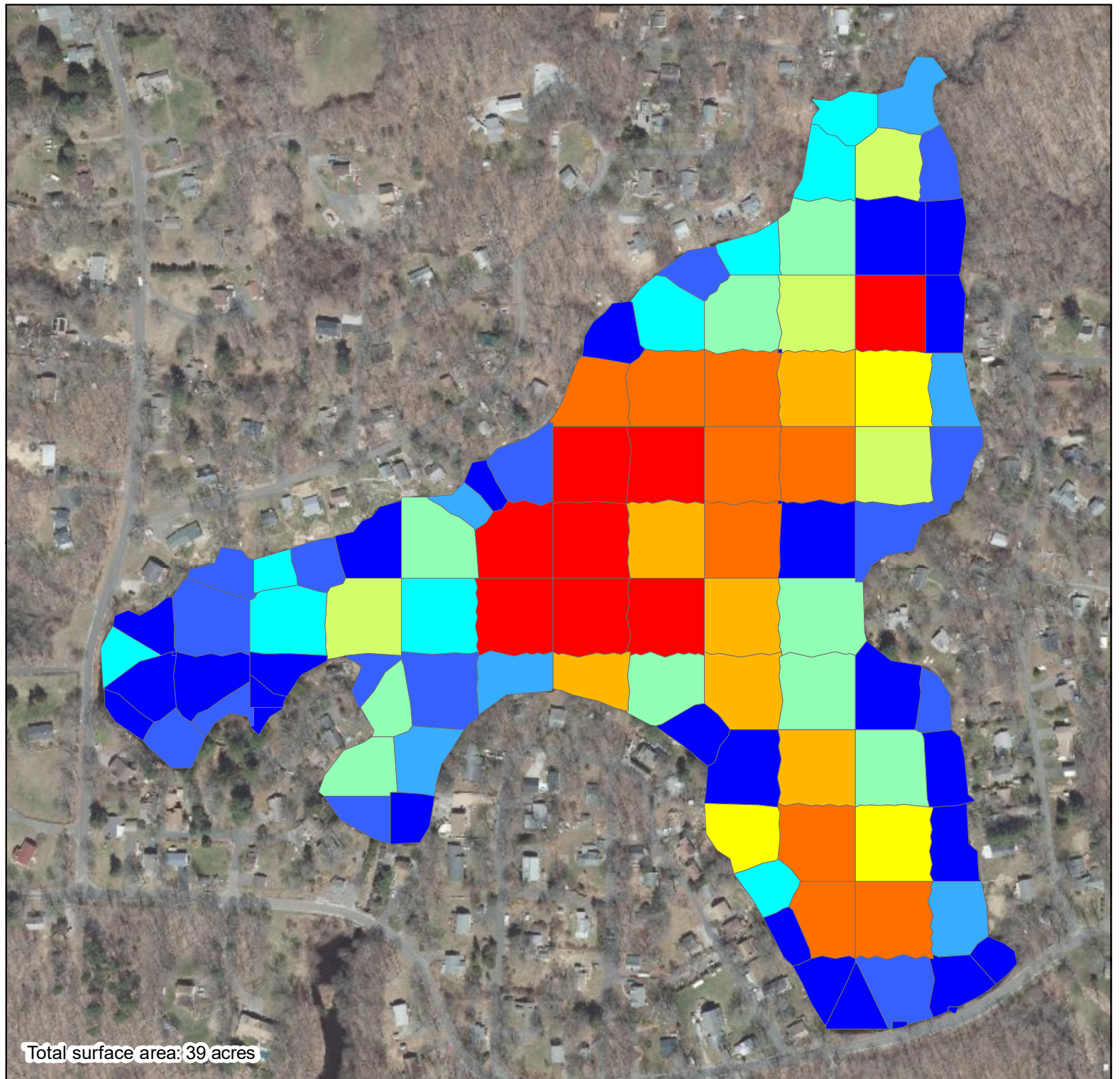
Estimated Total Sediment Volume: Volume of firm sediment displayed in cubic meters.
1 cubic meter = 1.3 cubic yard.

Sediment data collected on 05/14/22.

Firm Sediment Volume



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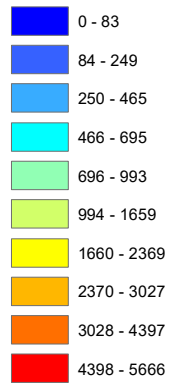
Hidden Lake

Higganum, CT

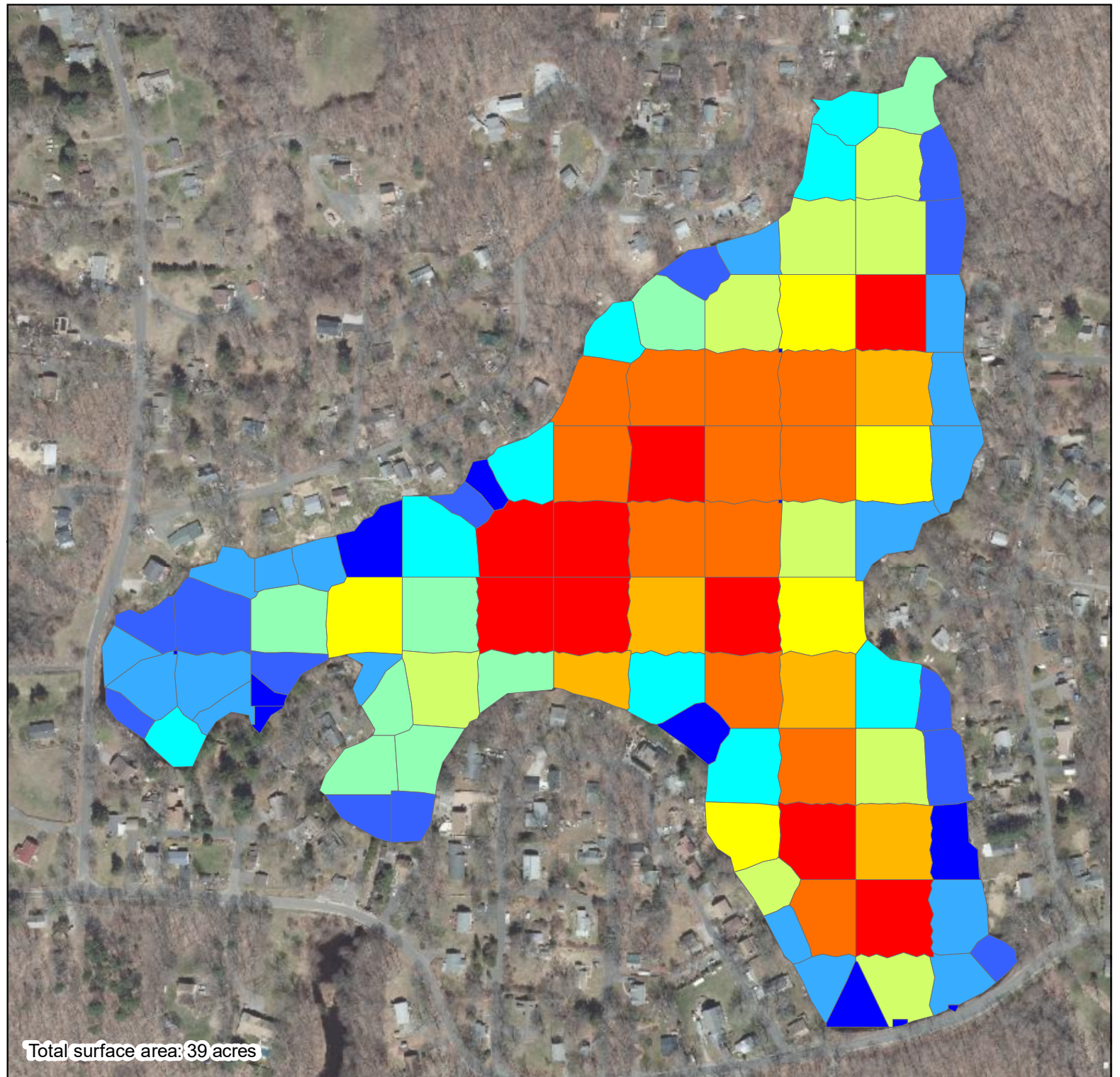
Estimated Total Sediment Volume: Volume of combined soft and firm sediment displayed in cubic meters.
1 cubic meter = 1.3 cubic yard.

Sediment data collected on 05/14/22.

Total Sediment Volume



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Hidden Lake

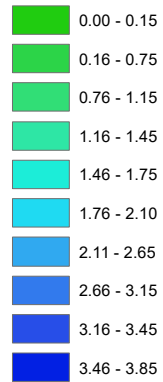
Higganum, CT

Measured Water Depth:
Water depth from sediment
sampling points.

Mean Depth: 1.13 M
Max Depth: 2.05 M

Sediment data collected
on 05/14/22.

Water Depth (M)

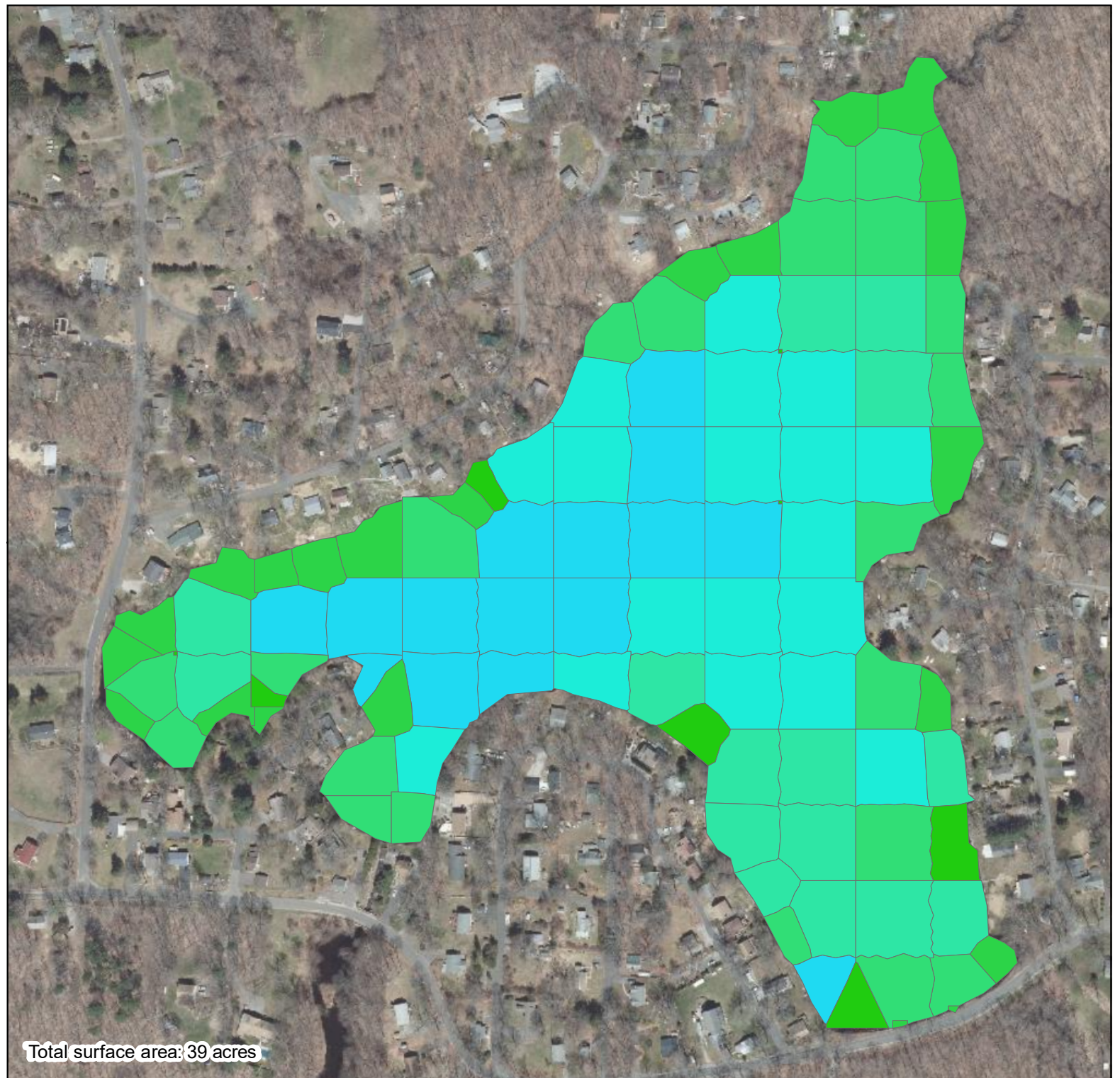


0 25 50 100
Meters



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Total surface area: 39 acres

Hidden Lake

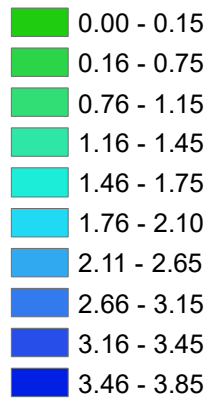
Higganum, CT

Measured Soft Bottom:
Estimated depth of pond with
removal of soft sediments.

Mean Depth: 1.46 M
Max Depth: 2.75 M

Sediment data collected
on 05/14/22.

Soft Bottom (M)

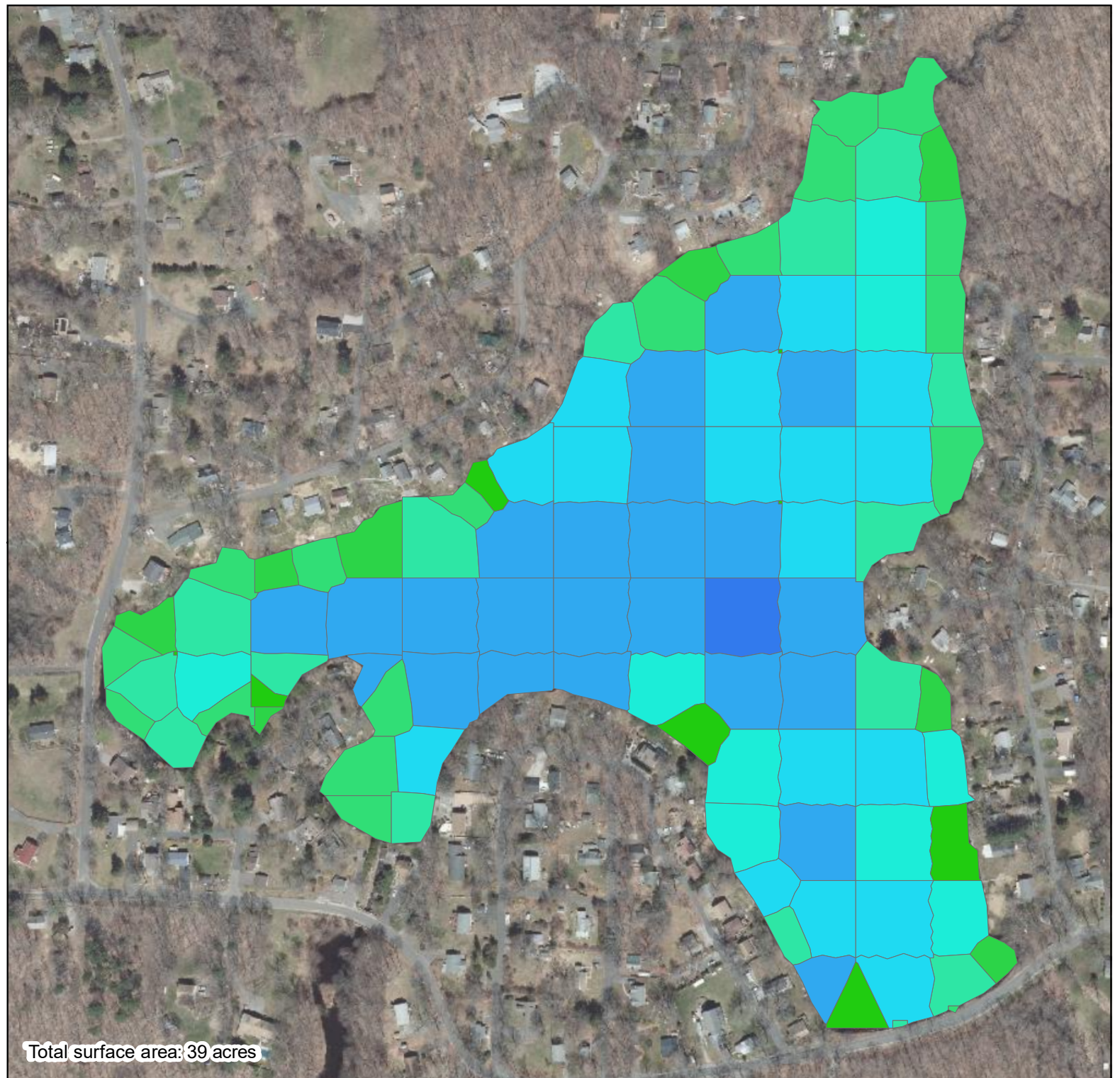


0 25 50 100
Meters



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Hidden Lake

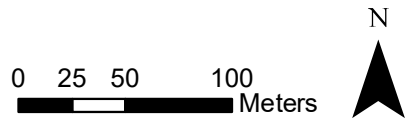
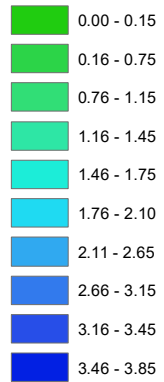
Higganum, CT

Measured Hard Bottom:
Estimated depth of pond with
removal of soft and firm sediments.

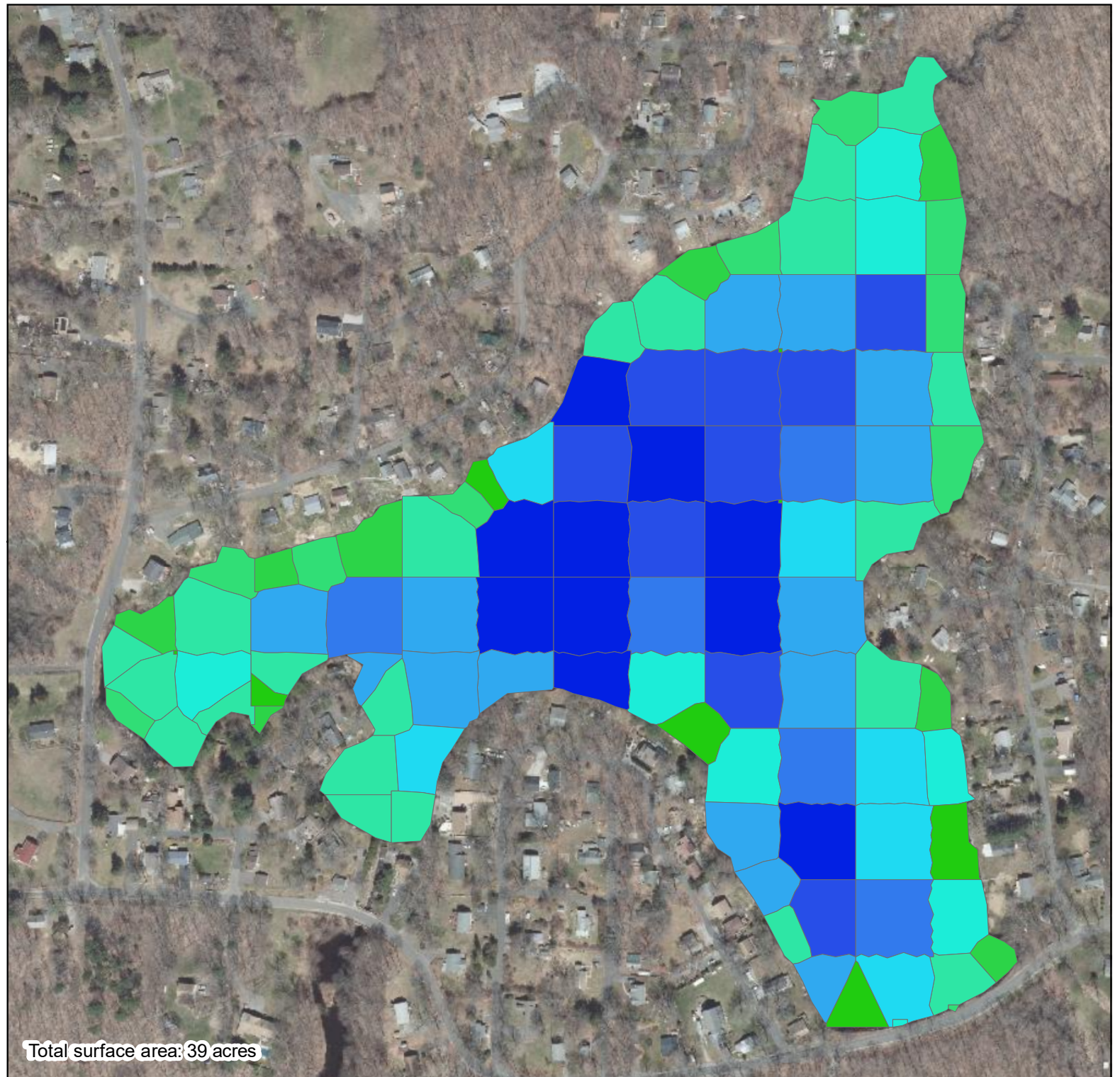
Mean Depth: 1.88 M
Max Depth: 3.85 M

Sediment data collected
on 05/14/22.

Hard Bottom (M)



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Appendix C. Sediment data by numbered plot (Fig. 4), including area and volume in both standard and metric systems of measurement.

Site	Longitude	Latitude	Depth (m)	Soft Sediment Total Depth (ft)	Firm Sediment Total Depth (ft)	Soft Sediment Thickness (ft)	Firm Sediment Thickness (ft)	Total Sediment Thickness (ft)	Area (ft ²)	Volume Soft Sediment (ft ³)	Volume Firm Sediment (ft ³)	Volume Total Sediment (ft ³)
1	-72.5677	41.4237	0.60	3.61	4.10	1.64	0.49	2.13	15,965	26,189	7,857	34,046
2	-72.5682	41.4236	0.60	2.62	3.61	0.66	0.98	1.64	12,322	8,085	12,128	20,213
3	-72.5679	41.4234	0.85	4.10	5.58	1.31	1.48	2.79	20,083	26,355	29,650	56,005
4	-72.5684	41.4233	0.80	3.28	3.94	0.66	0.66	1.31	15,951	10,466	10,466	20,933
5	-72.5675	41.4233	0.55	1.97	2.30	0.16	0.33	0.49	11,504	1,887	3,774	5,661
6	-72.5685	41.4229	0.90	3.94	4.59	0.98	0.66	1.64	26,223	25,810	17,207	43,016
7	-72.5679	41.4229	1.10	5.25	5.25	1.64	0.00	1.64	25,121	41,209	0	41,209
8	-72.5675	41.4229	0.70	2.95	2.95	0.66	0.00	0.66	13,400	8,793	0	8,793
9	-72.5690	41.4228	0.70	2.62	3.44	0.33	0.82	1.15	11,580	3,799	9,498	13,297
10	-72.5694	41.4227	0.50	2.13	2.30	0.49	0.16	0.66	10,558	5,196	1,732	6,928
11	-72.5696	41.4225	0.90	3.61	4.26	0.66	0.66	1.31	20,596	13,514	13,514	27,029
12	-72.5690	41.4225	1.75	7.05	7.87	1.31	0.82	2.13	25,204	33,076	20,673	53,749
13	-72.5685	41.4225	1.45	5.90	7.54	1.15	1.64	2.79	27,063	31,076	44,395	75,471
14	-72.5679	41.4225	1.25	5.58	10.82	1.48	5.25	6.72	24,922	36,794	130,825	167,619
15	-72.5675	41.4225	0.85	3.61	3.61	0.82	0.00	0.82	13,806	11,324	0	11,324
16	-72.5701	41.4223	0.85	4.43	4.43	1.64	0.00	1.64	12,408	20,354	0	20,354
17	-72.5688	41.4223	0.00	0.00	0.00	0.00	0.00	0.00	64	0	0	0
18	-72.5702	41.4220	1.55	6.72	11.81	1.64	5.08	6.72	20,056	32,900	101,990	134,890



Site	Longitude	Latitude	Depth (m)	Soft Sediment Total Depth (ft)	Firm Sediment Total Depth (ft)	Soft Sediment Thickness (ft)	Firm Sediment Thickness (ft)	Total Sediment Thickness (ft)	Area (ft ²)	Volume Soft Sediment (ft ³)	Volume Firm Sediment (ft ³)	Volume Total Sediment (ft ³)
19	-72.5696	41.4220	1.80	7.22	11.15	1.31	3.94	5.25	26,505	34,783	104,349	139,132
20	-72.5691	41.4220	1.75	6.56	10.82	0.82	4.26	5.08	26,581	21,802	113,370	135,172
21	-72.5685	41.4220	1.60	7.71	10.82	2.46	3.12	5.58	27,032	66,515	84,252	150,767
22	-72.5679	41.4220	1.45	5.90	8.20	1.15	2.30	3.44	26,711	30,672	61,345	92,017
23	-72.5674	41.4220	1.10	3.94	4.43	0.33	0.49	0.82	13,741	4,508	6,762	11,270
24	-72.5708	41.4216	1.55	6.07	6.23	0.98	0.16	1.15	17,568	17,291	2,882	20,173
25	-72.5703	41.4216	1.70	6.56	11.15	0.98	4.59	5.58	27,119	26,692	124,563	151,255
26	-72.5697	41.4216	1.85	7.22	12.14	1.15	4.92	6.07	26,648	30,599	131,140	161,740
27	-72.5691	41.4216	1.55	6.56	10.82	1.48	4.26	5.74	27,048	39,933	115,361	155,294
28	-72.5685	41.4216	1.70	6.56	10.17	0.98	3.61	4.59	26,619	26,200	96,068	122,268
29	-72.5679	41.4216	1.55	6.40	7.71	1.31	1.31	2.62	27,200	35,695	35,695	71,390
30	-72.5674	41.4216	0.65	2.95	3.12	0.82	0.16	0.98	15,675	12,857	2,571	15,428
31	-72.5711	41.4215	0.00	0.00	0.00	0.00	0.00	0.00	5,311	0	0	0
32	-72.5688	41.4214	0.00	0.00	0.00	0.00	0.00	0.00	64	0	0	0
33	-72.5712	41.4213	0.75	2.79	3.44	0.33	0.66	0.98	6,702	2,199	4,397	6,596
34	-72.5679	41.4212	1.15	4.43	4.59	0.66	0.16	0.82	18,571	12,186	3,046	15,232
35	-72.5720	41.4211	0.55	1.97	1.97	0.16	0.00	0.16	17,769	2,915	0	2,915
36	-72.5715	41.4211	1.15	3.94	4.76	0.16	0.82	0.98	24,919	4,088	20,439	24,527
37	-72.5708	41.4211	1.90	7.54	12.63	1.31	5.08	6.40	24,977	32,779	127,017	159,796
38	-72.5703	41.4211	1.85	7.38	12.46	1.31	5.08	6.40	26,877	35,271	136,676	171,948
39	-72.5697	41.4211	1.90	8.04	11.15	1.80	3.12	4.92	26,942	48,616	83,972	132,588
40	-72.5691	41.4211	1.80	7.54	11.64	1.64	4.10	5.74	26,931	44,178	110,444	154,622



Site	Longitude	Latitude	Depth (m)	Soft Sediment Total Depth (ft)	Firm Sediment Total Depth (ft)	Soft Sediment Thickness (ft)	Firm Sediment Thickness (ft)	Total Sediment Thickness (ft)	Area (ft ²)	Volume Soft Sediment (ft ³)	Volume Firm Sediment (ft ³)	Volume Total Sediment (ft ³)
41	-72.5685	41.4211	1.65	6.89	6.89	1.48	0.00	1.48	26,923	39,749	0	39,749
42	-72.5724	41.4210	0.75	3.61	3.77	1.15	0.16	1.31	10,323	11,854	1,693	13,548
43	-72.5731	41.4209	0.55	2.95	3.28	1.15	0.33	1.48	9,974	11,453	3,272	14,725
44	-72.5728	41.4209	0.30	0.98	2.46	0.00	1.48	1.48	6,769	0	9,993	9,993
45	-72.5733	41.4207	1.25	4.10	4.26	0.00	0.16	0.16	23,478	0	3,851	3,851
46	-72.5726	41.4207	1.95	7.22	7.71	0.82	0.49	1.31	22,970	18,840	11,304	30,144
47	-72.5720	41.4207	2.00	8.20	9.35	1.64	1.15	2.79	26,547	43,548	30,483	74,031
48	-72.5715	41.4207	1.95	7.22	7.71	0.82	0.49	1.31	26,719	21,915	13,149	35,064
49	-72.5709	41.4207	1.85	7.38	12.46	1.31	5.08	6.40	26,808	35,181	136,327	171,508
50	-72.5703	41.4207	1.90	7.22	12.30	0.98	5.08	6.07	27,050	26,624	137,556	164,180
51	-72.5697	41.4207	1.75	7.05	9.68	1.31	5.90	7.22	26,974	35,399	159,296	194,695
52	-72.5691	41.4207	1.60	9.02	12.14	3.77	3.12	6.89	26,898	101,485	83,836	185,321
53	-72.5684	41.4207	1.65	7.38	8.20	1.97	0.82	2.79	30,001	59,057	24,607	83,664
54	-72.5737	41.4206	0.40	1.97	1.97	0.66	0.00	0.66	9,839	6,456	0	6,456
55	-72.5740	41.4205	0.75	3.28	4.43	0.82	1.15	1.97	8,338	6,839	9,575	16,413
56	-72.5735	41.4205	0.00	0.00	0.00	0.00	0.00	0.00	64	0	0	0
57	-72.5727	41.4204	1.15	4.26	4.26	0.49	0.00	0.49	9,675	4,761	0	4,761
58	-72.5737	41.4203	1.05	4.59	4.59	1.15	0.00	1.15	13,783	15,827	0	15,827
59	-72.5733	41.4203	1.45	5.58	5.58	0.82	0.00	0.82	17,345	14,227	0	14,227
60	-72.5720	41.4203	1.80	7.22	7.54	1.31	0.33	1.64	6,366	8,354	2,089	10,443
61	-72.5709	41.4203	1.80	7.22	7.54	1.31	0.33	1.64	15,507	20,351	5,088	25,439
62	-72.5702	41.4203	1.70	7.71	12.14	2.13	4.43	6.56	16,289	34,738	72,149	106,887



Site	Longitude	Latitude	Depth (m)	Soft Sediment Total Depth (ft)	Firm Sediment Total Depth (ft)	Soft Sediment Thickness (ft)	Firm Sediment Thickness (ft)	Total Sediment Thickness (ft)	Area (ft ²)	Volume Soft Sediment (ft ³)	Volume Firm Sediment (ft ³)	Volume Total Sediment (ft ³)
63	-72.5697	41.4203	1.45	4.92	5.74	0.16	0.82	0.98	22,039	3,615	18,077	21,692
64	-72.5728	41.4202	0.15	0.49	0.49	0.00	0.00	0.00	0	0	0	0
65	-72.5718	41.4202	0.75	2.95	4.76	0.49	1.80	2.30	11,884	5,848	21,444	27,293
66	-72.5714	41.4202	1.90	8.20	8.36	1.97	0.16	2.13	24,121	47,483	3,957	51,440
67	-72.5690	41.4202	1.65	7.87	10.99	2.46	3.12	5.58	25,077	61,706	78,161	139,868
68	-72.5685	41.4202	1.60	7.87	8.69	2.62	0.82	3.44	26,557	69,704	21,783	91,487
69	-72.5679	41.4202	1.10	4.59	4.59	0.98	0.00	0.98	22,049	21,702	0	21,702
70	-72.5676	41.4202	0.45	1.97	2.30	0.49	0.33	0.82	8,233	4,052	2,701	6,753
71	-72.5739	41.4201	0.55	2.79	2.95	0.98	0.16	1.15	5,401	5,316	886	6,202
72	-72.5731	41.4201	0.70	3.61	4.26	1.31	0.66	1.97	6,313	8,285	4,143	12,428
73	-72.5728	41.4201	0.25	1.31	1.97	0.49	0.66	1.15	1,905	937	1,250	2,187
74	-72.5694	41.4200	0.00	0.00	0.00	0.00	0.00	0.00	11,436	0	0	0
75	-72.5735	41.4199	0.80	3.94	4.26	1.31	0.33	1.64	10,774	14,139	3,535	17,673
76	-72.5721	41.4198	0.80	3.12	4.59	0.49	1.48	1.97	16,650	8,194	24,582	32,776
77	-72.5716	41.4198	1.60	6.56	6.89	1.31	0.33	1.64	15,352	20,147	5,037	25,183
78	-72.5690	41.4198	1.30	5.08	5.08	0.82	0.00	0.82	23,314	19,122	0	19,122
79	-72.5685	41.4198	1.40	6.40	9.51	1.80	3.12	4.92	27,042	48,797	84,286	133,082
80	-72.5679	41.4198	1.50	6.23	6.89	1.31	0.66	1.97	24,898	32,674	16,337	49,011
81	-72.5675	41.4198	1.35	4.92	4.92	0.49	0.00	0.49	13,838	6,810	0	6,810
82	-72.5720	41.4195	1.00	3.77	3.94	0.49	0.16	0.66	9,663	4,755	1,585	6,340
83	-72.5717	41.4195	1.15	4.59	4.59	0.82	0.00	0.82	9,146	7,501	0	7,501
84	-72.5690	41.4194	1.35	5.58	8.69	1.15	3.12	4.26	19,308	22,172	60,181	82,352



Site	Longitude	Latitude	Depth (m)	Soft Sediment Total Depth (ft)	Firm Sediment Total Depth (ft)	Soft Sediment Thickness (ft)	Firm Sediment Thickness (ft)	Total Sediment Thickness (ft)	Area (ft ²)	Volume Soft Sediment (ft ³)	Volume Firm Sediment (ft ³)	Volume Total Sediment (ft ³)
85	-72.5685	41.4193	1.35	7.71	12.14	3.28	4.43	7.71	25,954	85,153	114,956	200,109
86	-72.5679	41.4193	0.95	4.92	6.89	1.80	1.97	3.77	26,778	48,319	52,712	101,032
87	-72.5674	41.4193	0.00	0.00	0.00	0.00	0.00	0.00	14,581	0	0	0
88	-72.5688	41.4191	1.25	6.89	8.04	2.79	1.15	3.94	10,680	29,782	12,263	42,046
89	-72.5684	41.4189	1.20	5.90	11.32	1.97	5.41	7.38	20,040	39,448	108,482	147,930
90	-72.5679	41.4189	1.30	6.72	10.33	2.46	3.61	6.07	27,070	66,610	97,695	164,306
91	-72.5674	41.4189	1.35	4.92	5.25	0.49	0.33	0.82	18,425	9,068	6,045	15,113
92	-72.5687	41.4188	0.95	4.59	4.76	1.48	0.16	1.64	7,271	10,734	1,193	11,927
93	-72.5671	41.4186	0.40	1.97	2.13	0.66	0.16	0.82	6,173	4,051	1,013	5,063
94	-72.5684	41.4185	2.05	8.20	8.20	1.48	0.00	1.48	10,867	16,044	0	16,044
95	-72.5678	41.4185	1.05	6.40	6.56	2.95	0.16	3.12	18,797	55,504	3,084	58,588
96	-72.5674	41.4185	0.95	4.26	4.26	1.15	0.00	1.15	12,473	14,322	0	14,322
97	-72.5682	41.4184	0.15	0.49	0.49	0.00	0.00	0.00	0	0	0	0
98	-72.5678	41.4183	0.75	3.94	4.92	1.48	0.98	2.46	426	629	420	1,049
99	-72.5674	41.4183	0.60	2.95	3.44	0.98	0.49	1.48	255	251	125	376

