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Alan Douglass
Regulatory Compliance Manager

VIA ELECTRONIC FILING

March 31, 2025

Ms. Debbie-Anne Reese, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Housatonic River Project P-2576-058
2024 Annual Report of the Nuisance Species Monitoring Plan (NSMP) Technical Advisory Committee and the 2025 Rocky River Drawdown (RRD) Technical Advisory Committee Meeting Materials

Dear Secretary Reese:

FirstLight Power Services LLC (FirstLight), as agent for FirstLight CT Housatonic LLC, the current licensee for the Housatonic River Project No. 2576-CT (Project) herein submits the 2024 Annual Report of the Nuisance Species Monitoring Plan (NSMP/Plan), as required under License Article 409, and the 2025 Rocky River Drawdown (RRD) Technical Advisory Committee Meeting Materials, as required under License Article 403, to the Federal Energy Regulatory Commission (FERC) in compliance with the Nuisance Species Monitoring Plan (Plan) and subsequent modifications or filings.

FirstLight provided copies of the draft Nuisance Aquatic Plant Report (Report) for 30-day written consultation on December 6, 2024, and closed the consultation on January 6, 2025. FirstLight also informed the stakeholders that the annual meeting was scheduled for March 18, 2025, 9:00-10:30 am for the NSMP Committee and 10:30-11:00 am for the RRD Committee.

FirstLight received one written comment on the draft Report from the Candlewood Lake Authority; this request has been responded to in the attached record of consultation. FirstLight has additionally prepared a revised and updated Plan, the draft of which is attached herein. Consultation with stakeholders for this revised and updated Plan closes on April 16, 2025, after which FirstLight will revise the Plan as needed and submit the Plan, together with the consultation record, for FERC approval.

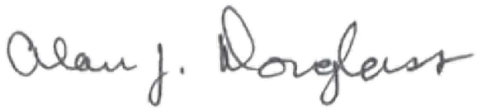
The Nuisance Aquatic Plant Monitoring Report and record of consultation, including comments received and FirstLight's response, are contained below in Attachment A. The annual Nuisance Species Monitoring Plan invitation, agenda and meeting notes are contained in Attachment B. The draft revised Nuisance Species Monitoring Plan currently out for consultation is provided

in Attachment C, and the invitation, agenda, and meeting notes from the Technical Advisory Committee Meeting are contained in Attachment D.

Should you have any questions or require additional information, please contact Alan Douglass at (413) 659-4416 or alan.douglass@firstlight.energy.

Sincerely,

FIRSTLIGHT POWER SERVICES LLC
as agent for FIRSTLIGHT CT HOUSATONIC LLC



Alan Douglass
Regulatory Compliance Manager

Attachments

ATTACHMENT A

2024 Annual Nuisance Species Monitoring Plan Report

Follows This Page

Northeast Aquatic Research

2024 Monitoring Report

Article 409 Nuisance Plant Monitoring of Lakes; Candlewood, Lillinonah, Squantz, and Zoar

Prepared for FirstLight Power
November 2024

Northeast Aquatic Research, LLC ⁘ 74 Higgins Highway, Mansfield, CT 06250

Executive Summary

On February 3, 2006, the Federal Energy Regulatory Commission (FERC) approved methodology for the licensee (FirstLight Power Generation Services or: FirstLight) to conduct Nuisance Plant Monitoring at three of their developments; Rocky River (Candlewood Lake), Shepaug (Lake Lillinonah), and Stevenson (Lake Zoar). These surveys, referred to as the Article 409 monitoring, involve conducting detailed investigations of each impoundment for the presence and extent of invasive aquatic plant species and preparing an annual report documenting the results.

Northeast Aquatic Research, LLC (NEAR) conducted the Article 409 monitoring in 2024, and each of the last 6 years beginning in 2018. The Connecticut Agricultural Experiment Station (CAES) conducted surveys between 2007 and 2017. The first Article 409 monitoring, in 2006, was conducted by Kleinschmidt using unapproved methodology so this data was discarded. Candlewood Lake (including Squantz Pond) has been surveyed annually, while Lake Lillinonah and Lake Zoar have traditionally been surveyed every other year. However, in 2023, a new and highly invasive aquatic plant species, Hydrilla (*Hydrilla verticillata subsp. Peregrina)*, was found in Lake Lillinonah, prompting a decision to conduct annual surveys of this lake as opposed to every other year. The 2024 Article 409 surveys consisted of 13 days at Lake Lillinonah, including one follow-up survey in October, 2 days at Candlewood Lake, 1 day at Squantz Pond, and 4 days at Lake Zoar (**Table 1**).

Table 1. Dates and duration of 2024 aquatic plant surveys.

Lake	Time Period	# of Survey Days
Lillinonah	July 11th - August 13th Follow-up on October 21st	12 1
Candlewood	September 6th & 16th	2
Squantz	August 7th	1
Zoar	September 25th - October 1st	4

Six invasive aquatic plant species were found in Lake Lillinonah in 2024:

- *Glossostigma cleistanthum* (Mudmat)
- *Hydrilla verticillata subsp. peregrina* (Hydrilla-Monecious strain)
- *Myriophyllum spicatum* (Eurasian Milfoil)
- *Najas minor* (Brittle Naiad)
- *Potamogeton crispus* (Curly-Leaf Pondweed)
- *Trapa natans* (Water Chestnut)

Four invasive aquatic plant species were found in Lake Zoar in 2024:

- *Marsilea quadrifolia* (European Water-clover)
- *Myriophyllum spicatum* (Eurasian Milfoil)
- *Potamogeton crispus* (Curly-Leaf Pondweed)
- *Najas minor* (Brittle Naiad)

Three invasive aquatic plant species were found in Candlewood Lake in 2024:

- *Glossostigma cleistanthum* (Mudmat)
- *Myriophyllum spicatum* (Eurasian Milfoil)
- *Najas minor* (Brittle Naiad)

Two invasive aquatic plant species were found in Squantz Pond in 2024:

- *Glossostigma cleistanthum* (Mudmat)
- *Najas minor* (Brittle Naiad)

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2024 Article 409 Survey Methods

GENERAL METHODOLOGY

The original central purpose of the Article 409 monitoring was to census the population of Eurasian Milfoil and to search for new invasive aquatic plant species in the lakes. Beginning in 2024, the focus moved to documenting the population of Hydrilla in Lake Lillinonah, as this was determined to be the most critical concern. The census survey is a diligent search for the target plants in the littoral zone. The littoral zone is the part of the lake where aquatic plants grow, from the shore out to a water depth where plants can no longer grow, ~10-14 feet depending on the lake. Target plants are any invasive aquatic plant species known to be in the impoundment.

The census survey uses a "meander" approach. In areas where the littoral zone is wide (>50ft) the boat is driven in a zig-zag pattern between shore and the outer edge of the littoral zone. In this way, the boat crosses the inner and outer edges of plant beds. In areas where the littoral zone is very narrow, <50ft, the boat is driven in a straight line along the outer edge of the plant beds, rather than the zig-zag pattern. The outer edge of plant growth, which was located in deep water and therefore not visible from the water's surface, was found using SONAR images, which showed a flat featureless line where plants stopped growing.

The plant surveys produce sufficient data to report the surface areal coverage in acres, locations of target invasive aquatic plant species, and qualitative density of each invasive and native species found. Coverage and locations collected in 2024 are compared to prior annual mapping.

Due to the extremely limited plant growth in Candlewood Lake in 2023, the 2024 survey was shortened to 2 days. This survey focused on verifying that Eurasian Milfoil (*Myriophyllum spicatum)* is still virtually nonexistent, verifying that other known invasive aquatic plant species remain in the lake *(Najas minor* and *Glossostigma cleistanthum*), and inspecting the boat ramps that were used during this survey for the presence of Hydrilla (Lattins Cove, Squantz, Sherman, and New Milford ramps).

A Garmin GPSMAP 78 was used to record waypoints and tracks during the survey. GPS waypoints were made when the boat was stopped to improve location accuracy. Waypoints provide geographical sampling units to estimate community species richness, diversity, abundance, and density.

Samples of plants were collected with a pole rake and throw rake at each waypoint where aquatic plants were not entirely visible from the surface. Aquatic plants were identified according to Crow and Hellquist 2000. In addition to waypoints, the GPS continuous survey track from each day recorded the continuous position of the boat.

Additional details pertaining to the down-imaging SONAR technology used during the survey, methodology for determining plant density and plant height, and the GIS mapping of plant data can be found in Appendix 1: Survey Methodology.

Lake Lillinonah Results

PRE-TREATMENT AQUATIC PLANT SURVEY

Lake Lillinonah was surveyed over twelve days between July 11th and August 13th, 2024. A total of 1,446 GPS waypoints were created over the 12 days of surveying (**Map 1**). This is an increase from the 884 waypoints created during the 2023 survey, the 1,043 waypoints created during the 2021 survey, and the 651 waypoints created during the 2019 survey. Waypoints were made at regular intervals or to mark locations of invasive species.

INVASIVE PLANTS

During the survey, the invasive species Hydrilla (*Hydrilla verticillata subsp. peregrina*), Eurasian Milfoil (*Myriophyllum spicatum*), Brittle Naiad (*Najas minor*), Curly-Leaf Pondweed (*Potamogeton crispus*), Mudmat (*Glossostigma cleistanthum*), and Water Chestnut (*Trapa natans*) were found in the lake (**Table 2**). Common Reed (*Phragmites australis*) is an invasive emergent shoreline species that was also documented.

The primary goal of this survey was to search for and document locations of Hydrilla (**Map 2**). The largest beds were located at the Bridgewater Town boat ramp, where the species was first documented in the lake in 2023 (**Map 3**). Smaller patches were also found just north of Bridgewater Town boat ramp, along the shoreline and in a small cove. Small, scattered patches were also found around Goodyear Island and Poison Ivy Island, and in two small coves on the western shoreline across from Poison Ivy Island (**Map 4, Map 5**). Hydrilla was found in water up to 10.5 feet deep using the SONAR imaging, throw rake, and underwater camera. The plants at 10.5 feet were 1-2 feet tall at most. In total, Hydrilla covered ~3 acres.

The most abundant invasive species in Lake Lillinonah was Eurasian Milfoil, totaling ~94 acres (**Map 6, Map 7, Map 8, Map 9**). The growth was split fairly evenly between sparse, moderate, and dense beds. Milfoil beds were present throughout the lake's littoral zone, though it was most abundant in the northern portions of the Housatonic and Shepaug Rivers.

Brittle Naiad more than tripled in coverage between 2023 and 2024. In 2023, the species covered ~13 acres consisting of small, scattered beds mainly in the northern end of the Shepaug arm, and scattered beds along both shores of the lake in the area of Barkwood Cove, including scattered beds within Barkwood Cove. During the 2024 survey, the beds of Brittle Naiad covered ~43 acres, split evenly between sparse, medium, and dense plant growth (**Map 10, Map 11, Map 12, Map 13**). A significant amount of new growth was documented in the Housatonic arm up to the Lovers Leap area, including large dense beds around Goodyear Island, as well as increased growth in the Shepaug arm. Less growth was present south of the confluence of the Housatonic and Shepaug Rivers.

Curly-Leaf Pondweed was also significantly more abundant compared to 2023. In 2023, a single small patch of Curly-Leaf Pondweed was found in the lake. During the 2024 survey, the species covered a total of 5 acres, with small patches spread throughout the lake's littoral zone (**Map 14, Map 15, Map 16, Map 17**).

The Friends of the Lake (FOTL) conducted Water Chestnut search and removal in June and early July 2024. They documented abundant Water Chestnut growth in the northern portion of the lake (**Map 18, Map 19**). The FOTL waypoints are a byproduct of a Water Chestnut removal operation, not a comprehensive Water Chestnut survey. As such, the FOTL waypoints do not document every Water Chestnut plant that was present in the lake at that time, but rather plants that were present in the areas where they were focusing on plant removal. FOTL members removed many hundreds of plants during this operation.

The Lake Lillinonah Authority hired New England Aquatic Services (NEAS) to remove additional Water Chestnut plants at waypoints documented by FOTL. NEAS hand pulled a total volume of 77.5 cubic yards (15,655 gallons) of plant material. NEAS submitted its own report detailing this operation.

During the NEAR survey in mid-July, Water Chestnut was notably reduced in the narrow portion between Lover's Leap Gorge and the Bleachery Dam (**Map 18**). However, Water Chestnut remained abundant between Lovers Leap and Old Bridge Park (the S bend) (**Map 19**), as well as just below the Bleachery Dam and in the cove to the east of the dam. A small number of patches of Water Chestnut were scattered throughout the southern portion of the lake (**Map 20, Map 21**). For the first time, Water Chestnut was documented as far south as the Shepaug Dam.

For purposes of this report, the maps show the locations where Water Chestnut was found in Lake Lillinonah in 2024, but do not estimate acreage because the total bed size changed significantly over the course of the season due to the large hand removal operation. The pre-removal survey conducted by FOTL in June showed significant coverage of Water Chestnut that was gone by the time NEAR surveyed those areas. An estimate of total acres of Water Chestnut would require additional steps in order to account for beds that were removed, without detailed information on coverage prior to removal.

Mudmat was found at just two waypoints, both on the eastern shoreline of the Shepaug arm (**Map 22**).

Map 1. Survey waypoints (yellow dots) made in Lake Lillinonah during NEAR 2024 survey.

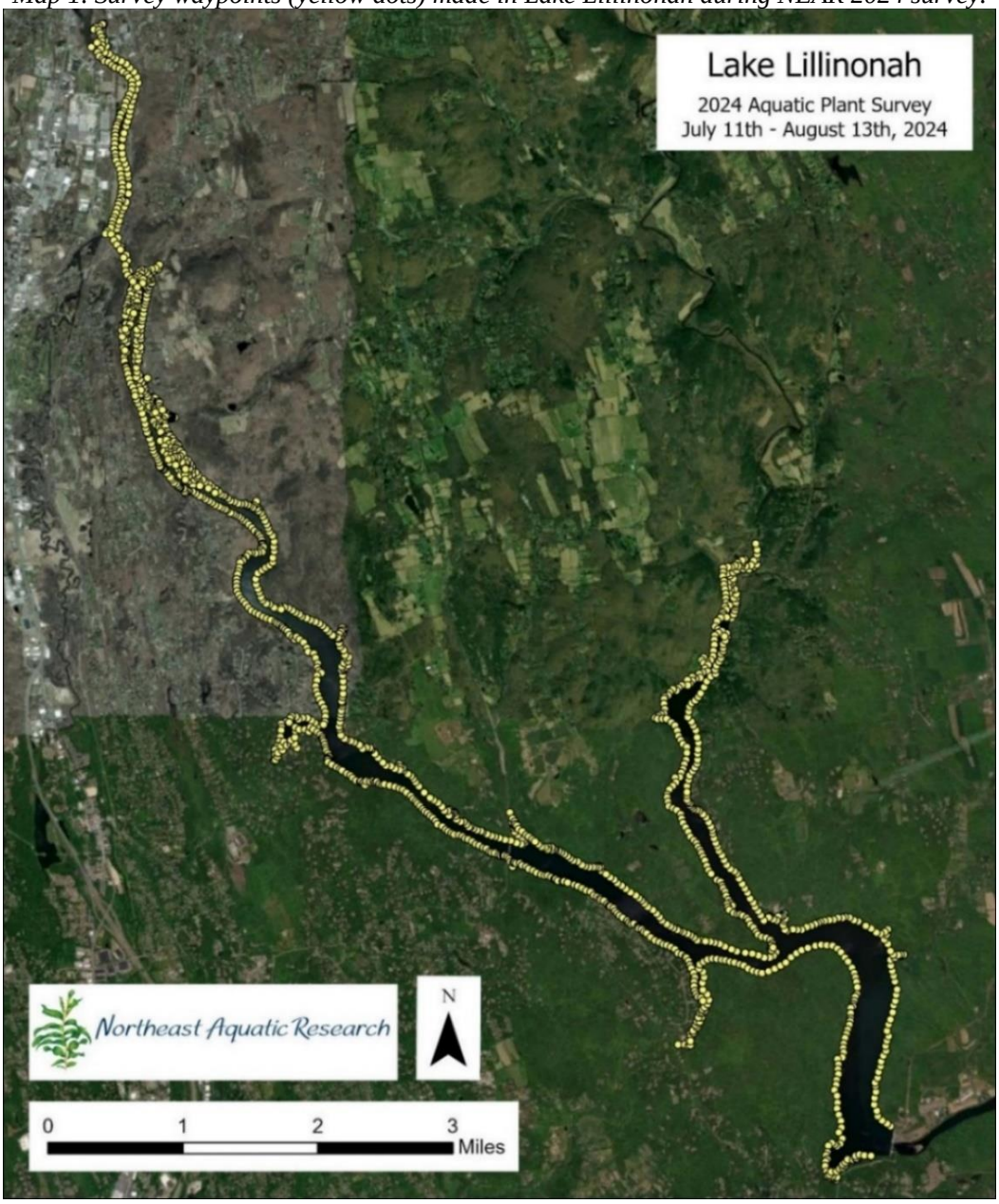
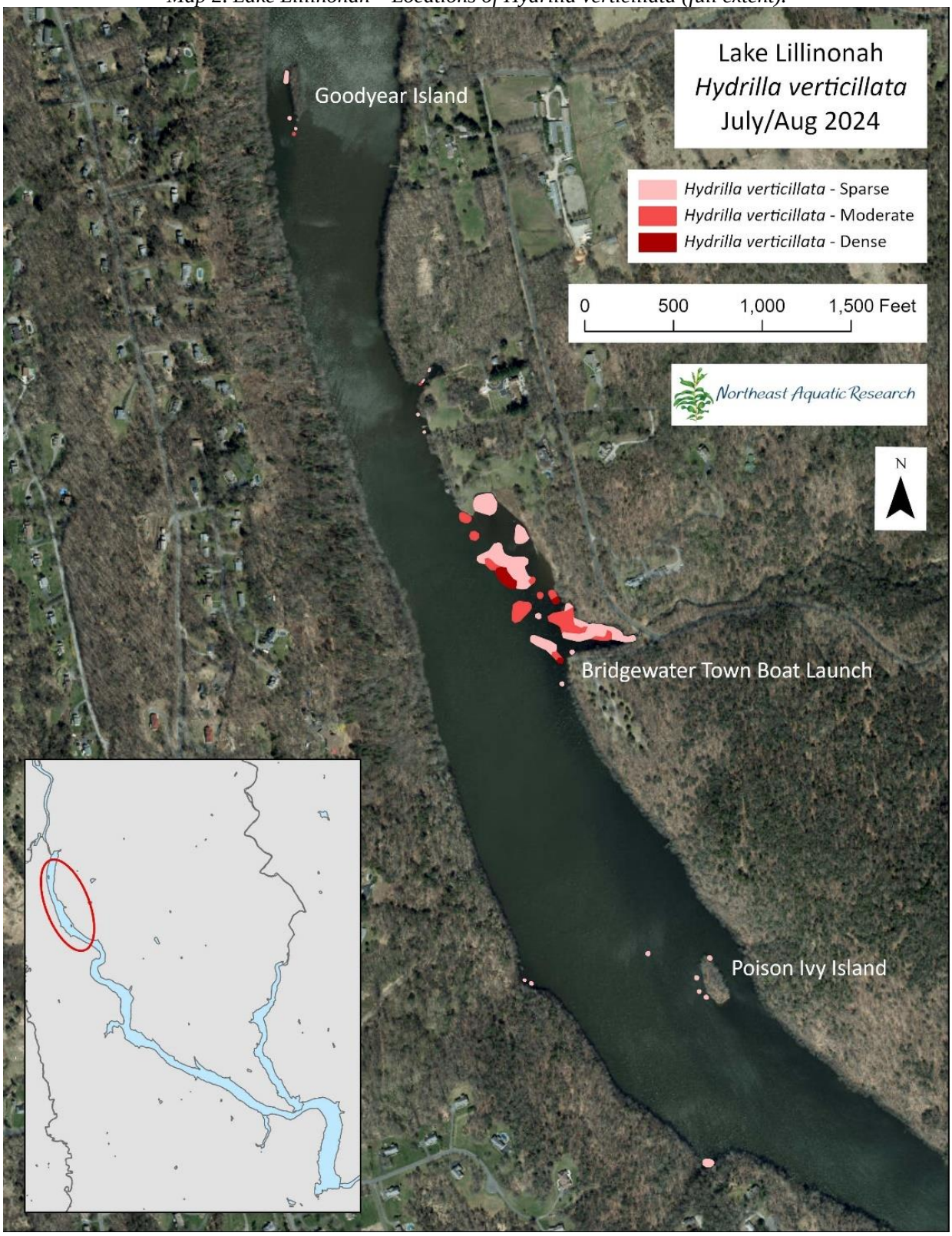


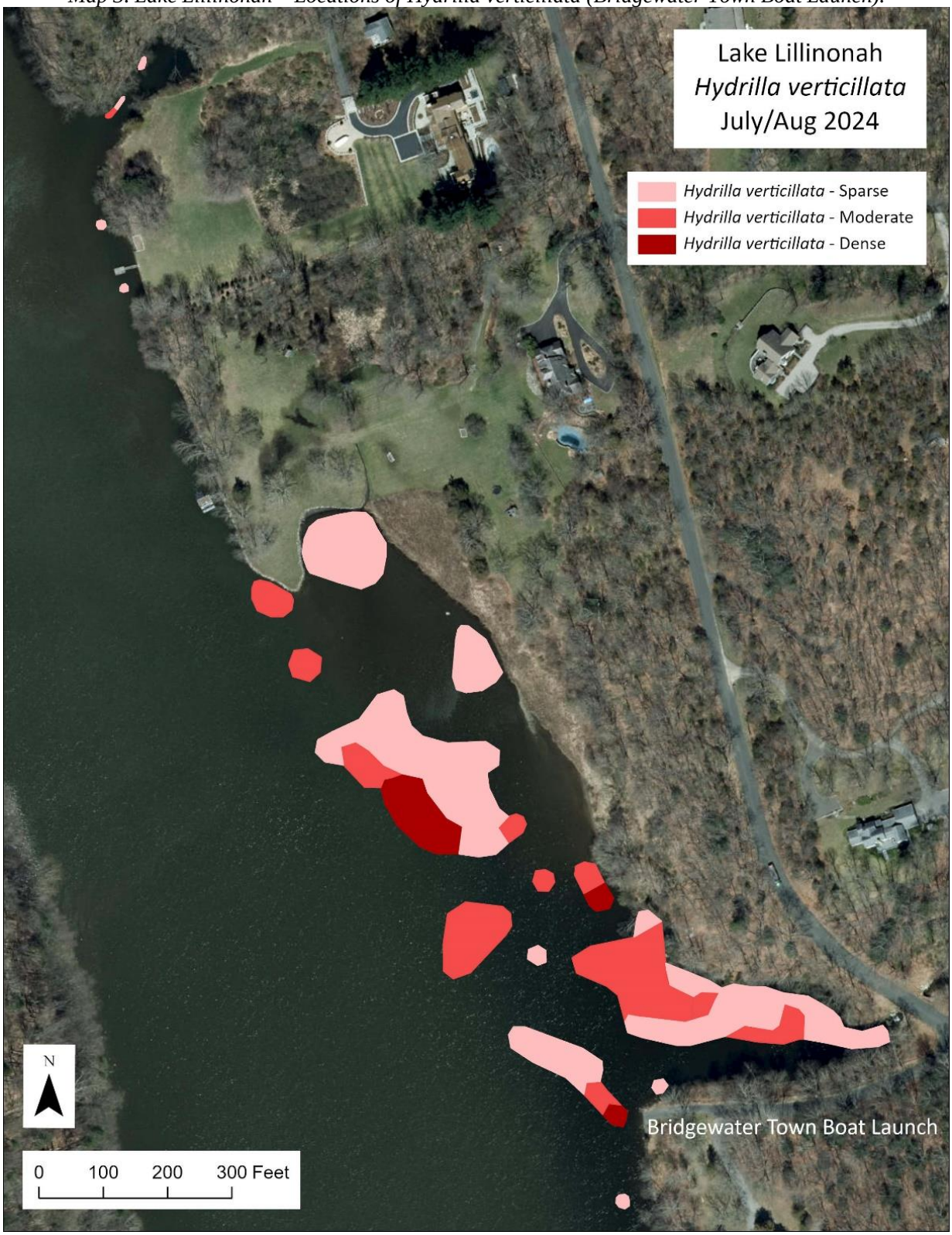
Table 2. Acres of invasive plants found in Lake Lillinonah in 2024.*

Scientific Name	Common Name	Acres			
		Sparse	Moderate	Dense	Total
Glossostigma cleistanthum	Mudmat	<0.1	0	0	<0.1
Hydrilla verticillata subsp. peregrina	Hydrilla	1.89	0.98	0.26	3.13
Myriophyllum spicatum	Eurasian Milfoil	31.4	37.4	25.1	93.9
Najas minor	Brittle Naiad	14.6	13.7	14.6	42.9
Potamogeton crispus	Curly-Leaf Pondweed	4.8	0.2	0	5.0
Trapa natans	Water Chestnut	NA			

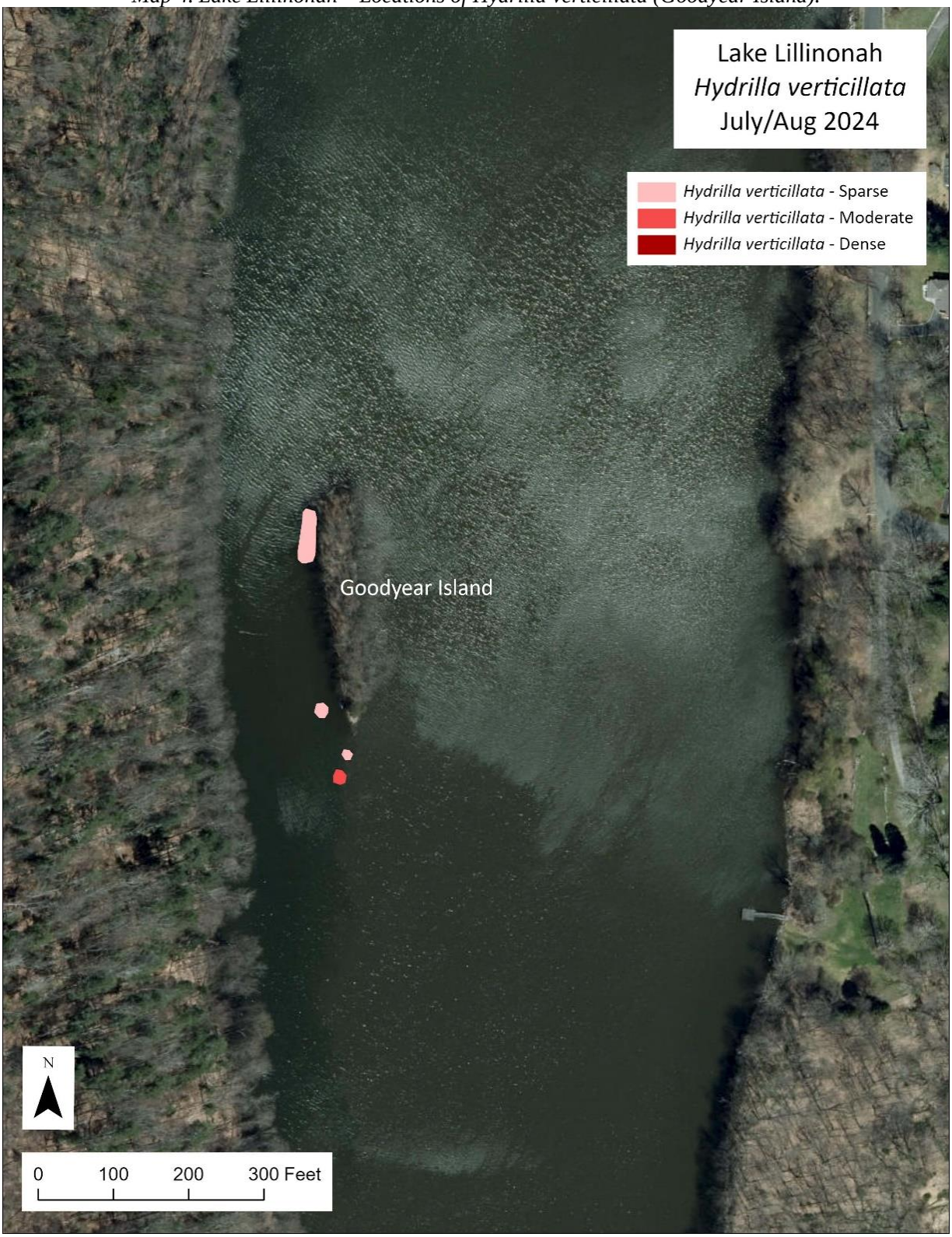
Map 2. Lake Lillinonah – Locations of Hydrilla verticillata (full extent).



Map 3. Lake Lillinonah – Locations of Hydrilla verticillata (Bridgewater Town Boat Launch).

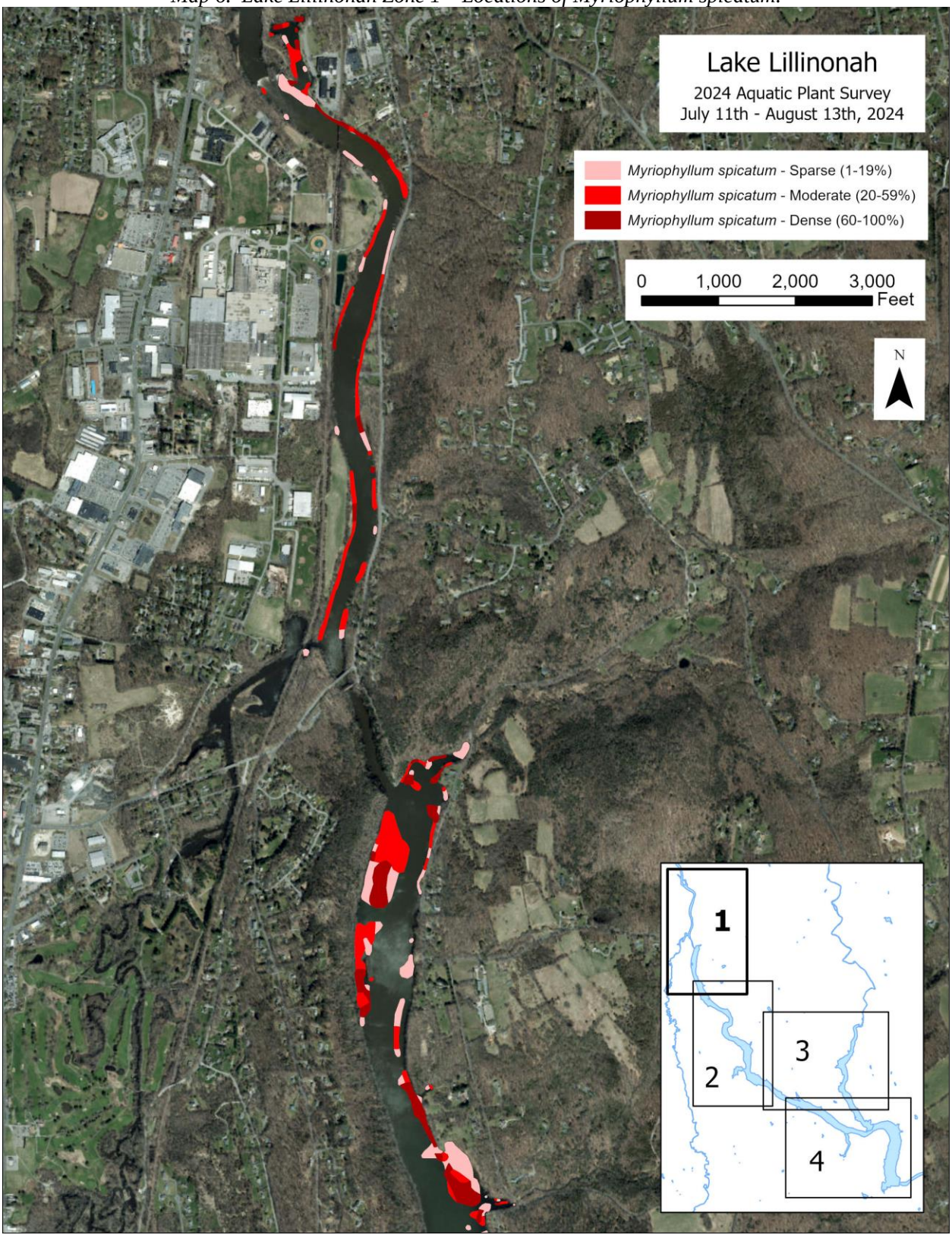


Map 4. Lake Lillinonah – Locations of Hydrilla verticillata (Goodyear Island).

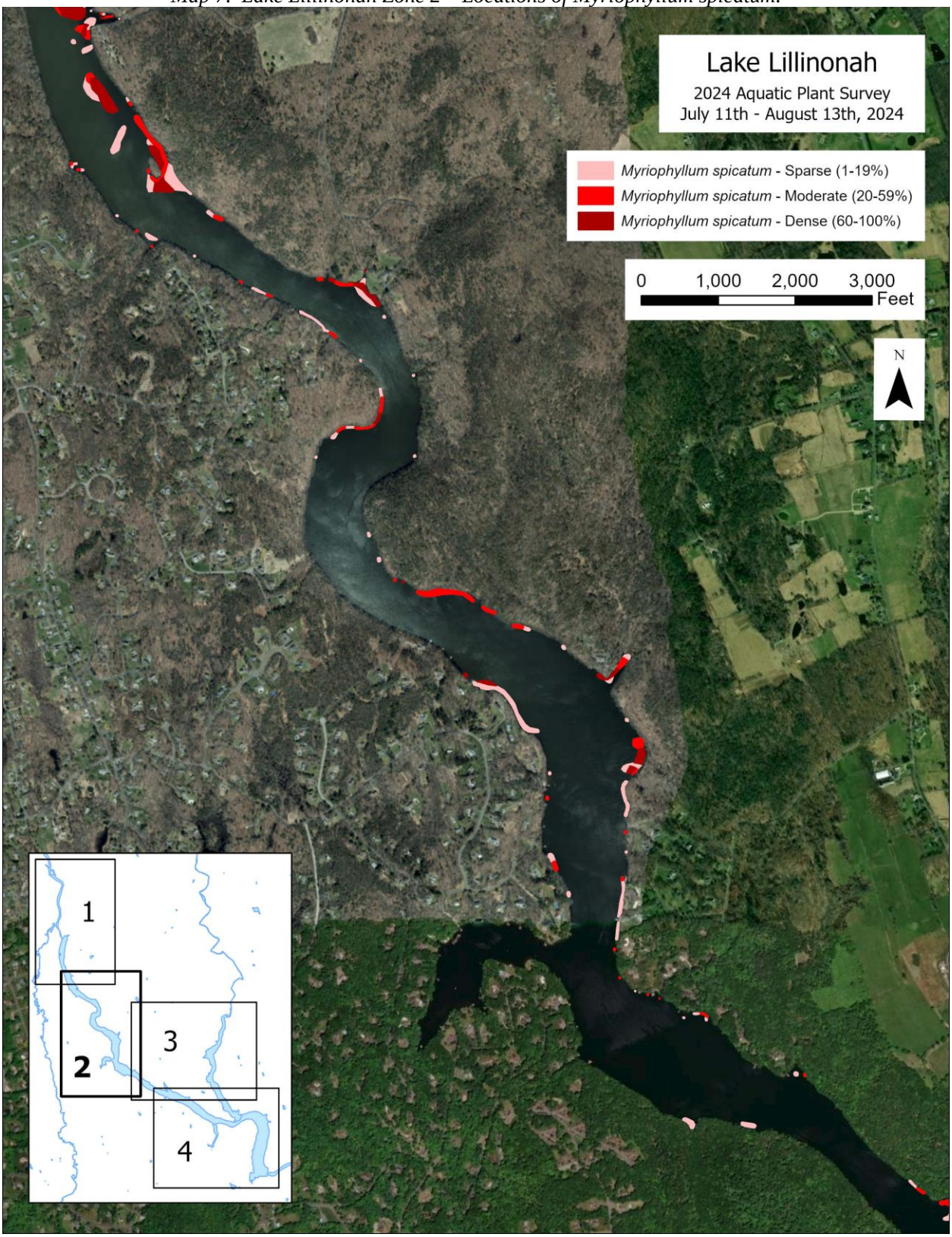


Map 5. Lake Lillinonah – Locations of Hydrilla verticillata (Poison Ivy Island).

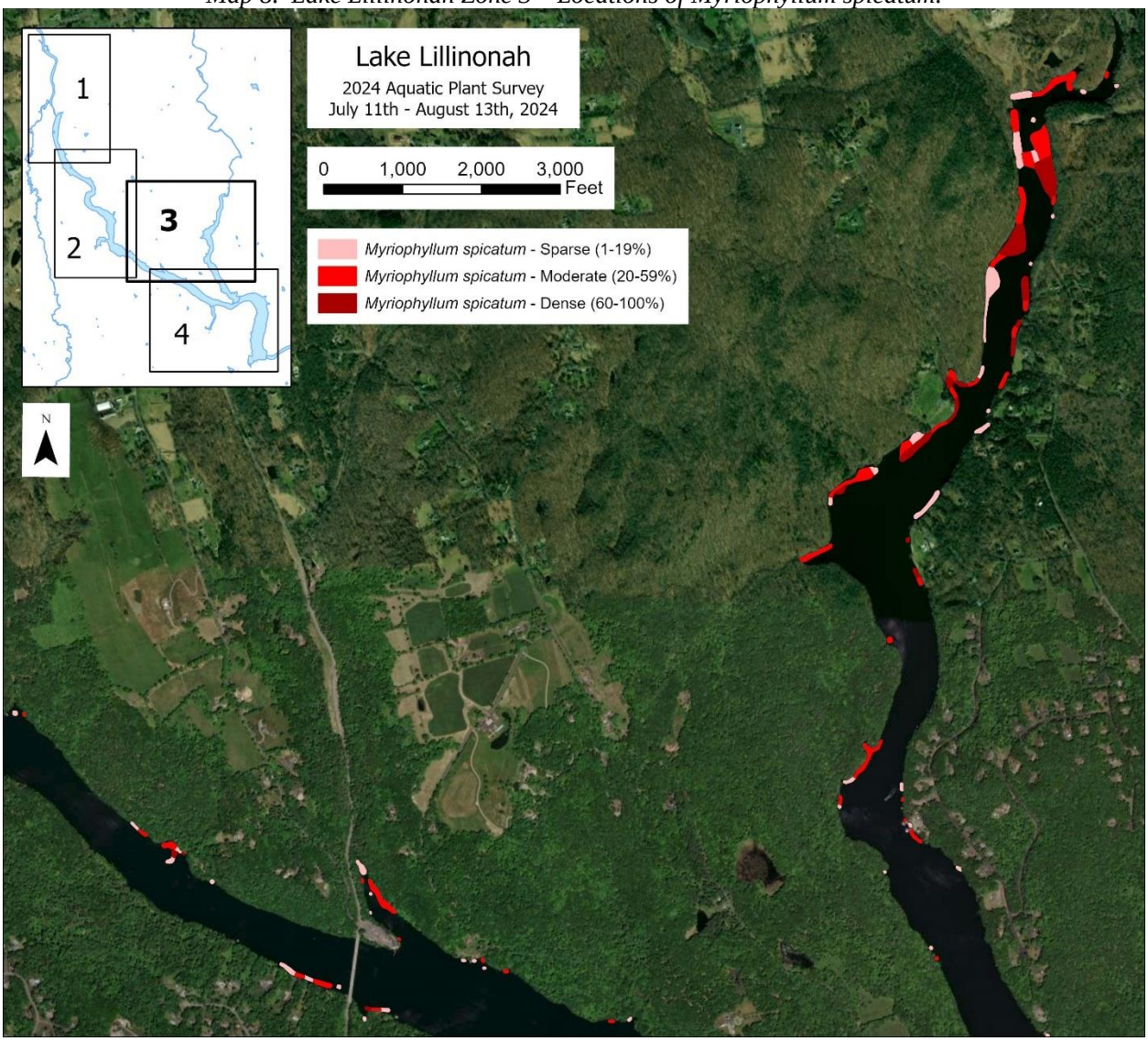
Map 6. Lake Lillinonah Zone 1 – Locations of Myriophyllum spicatum.



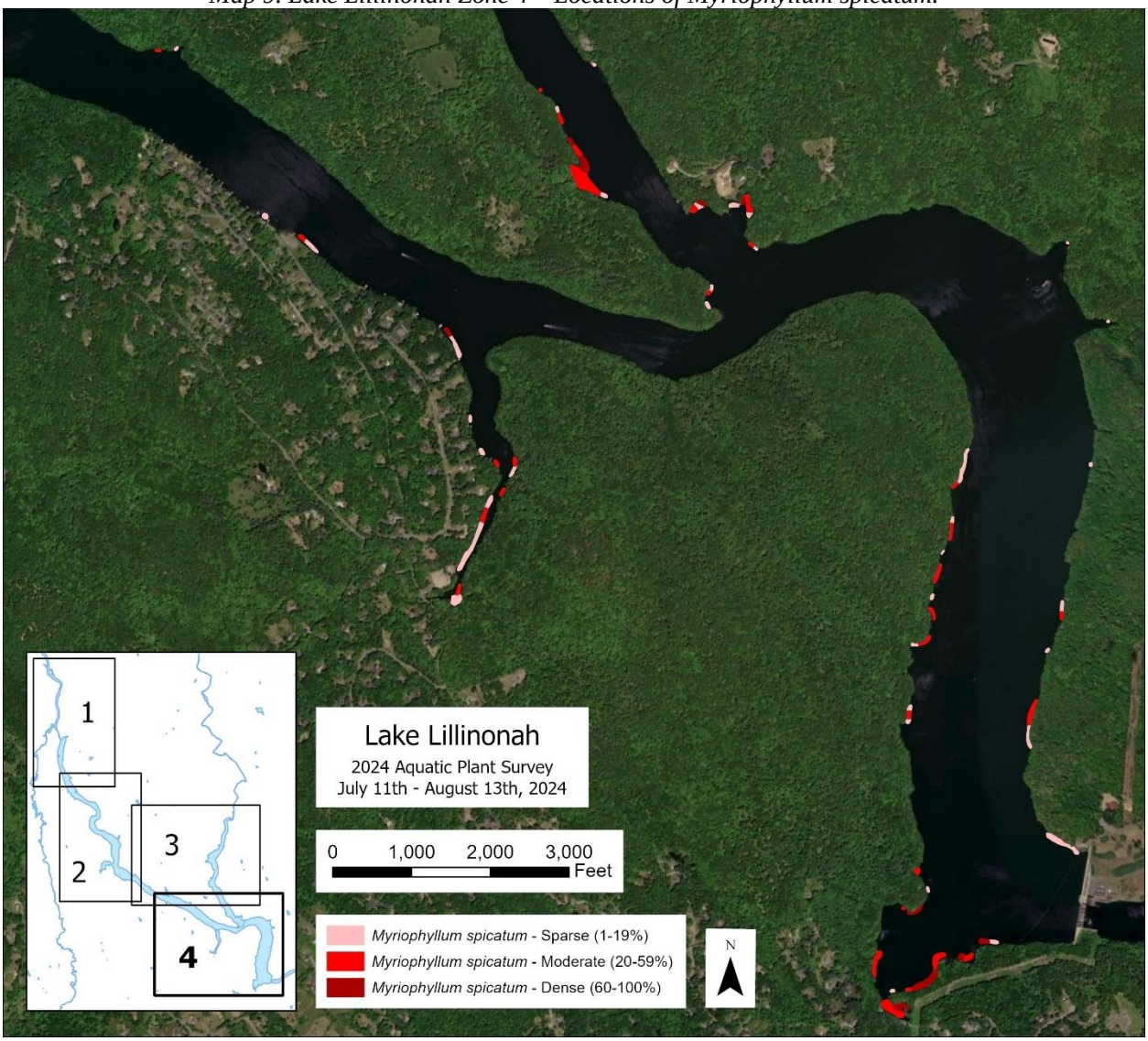
Map 7. Lake Lillinonah Zone 2 – Locations of Myriophyllum spicatum.



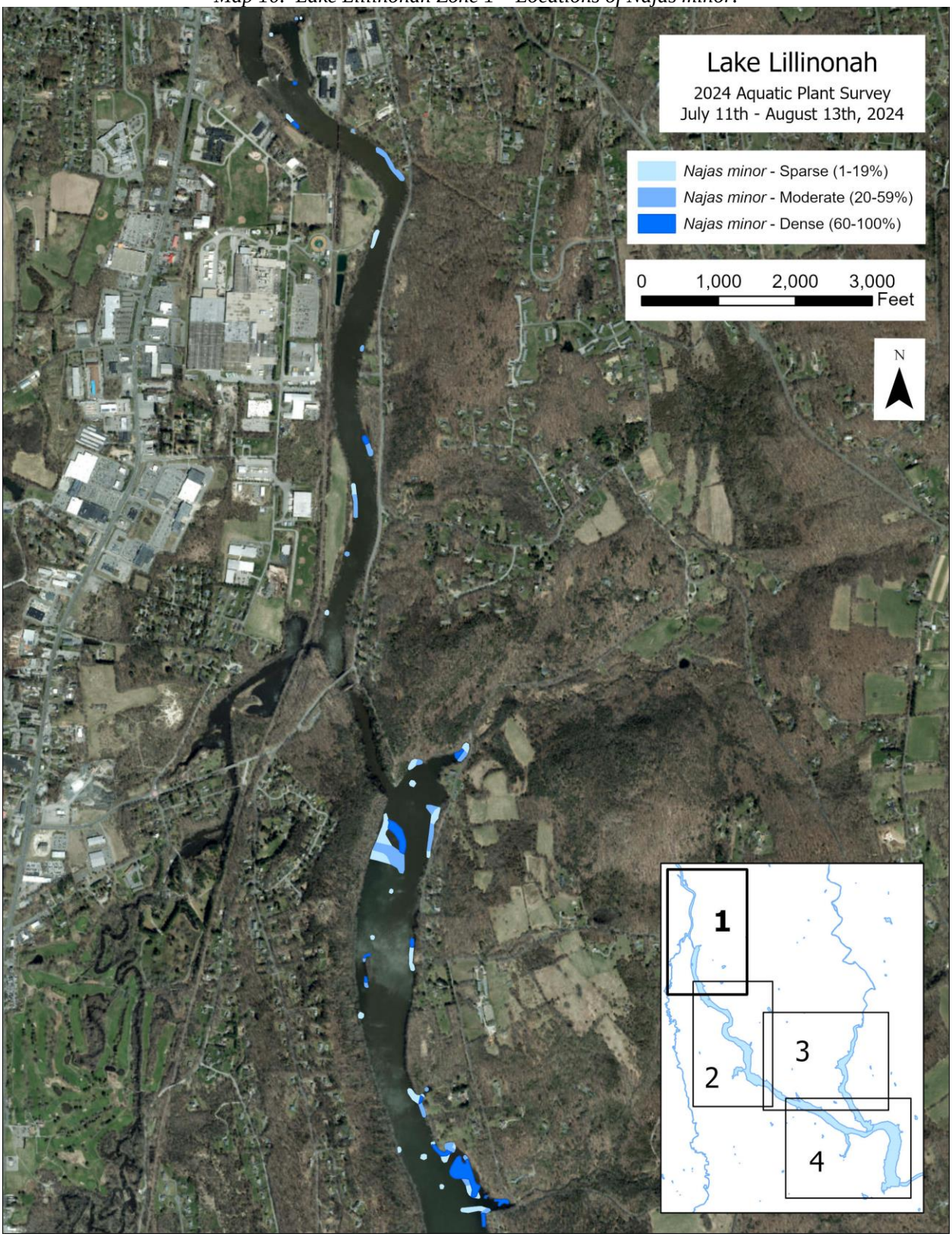
Map 8. Lake Lillinonah Zone 3 – Locations of Myriophyllum spicatum.



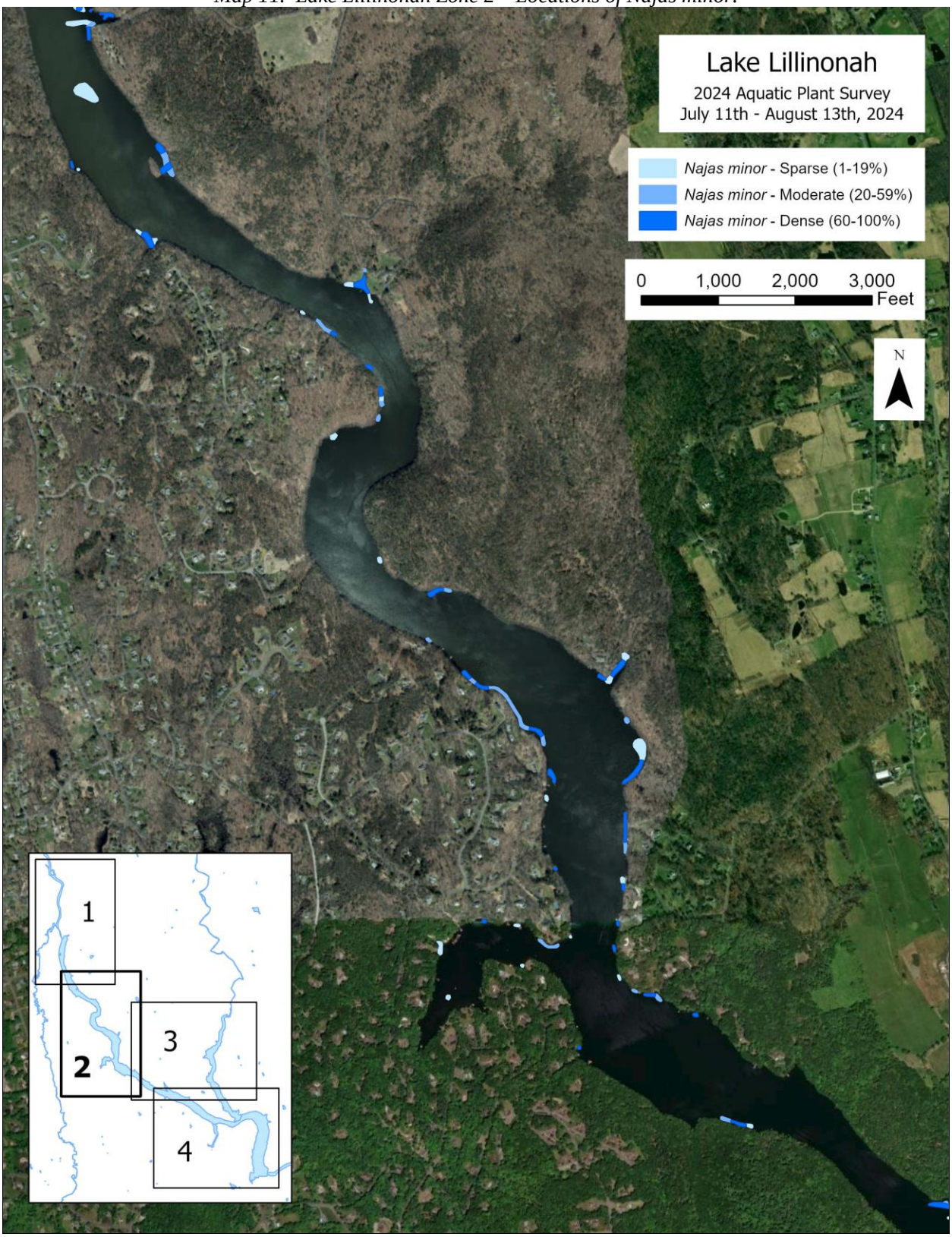
Map 9. Lake Lillinonah Zone 4 – Locations of Myriophyllum spicatum.



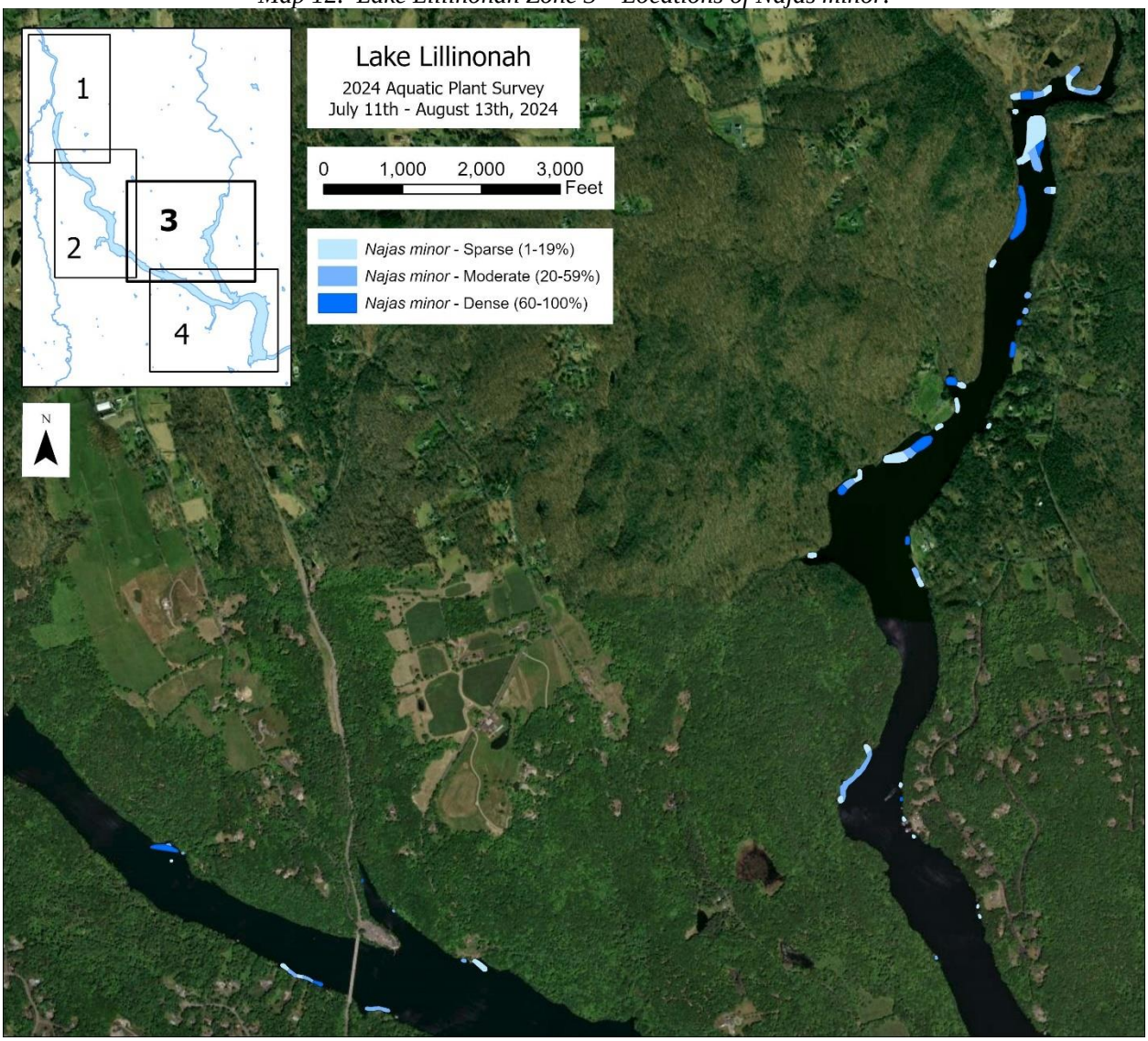
Map 10. Lake Lillinonah Zone 1 – Locations of Najas minor.



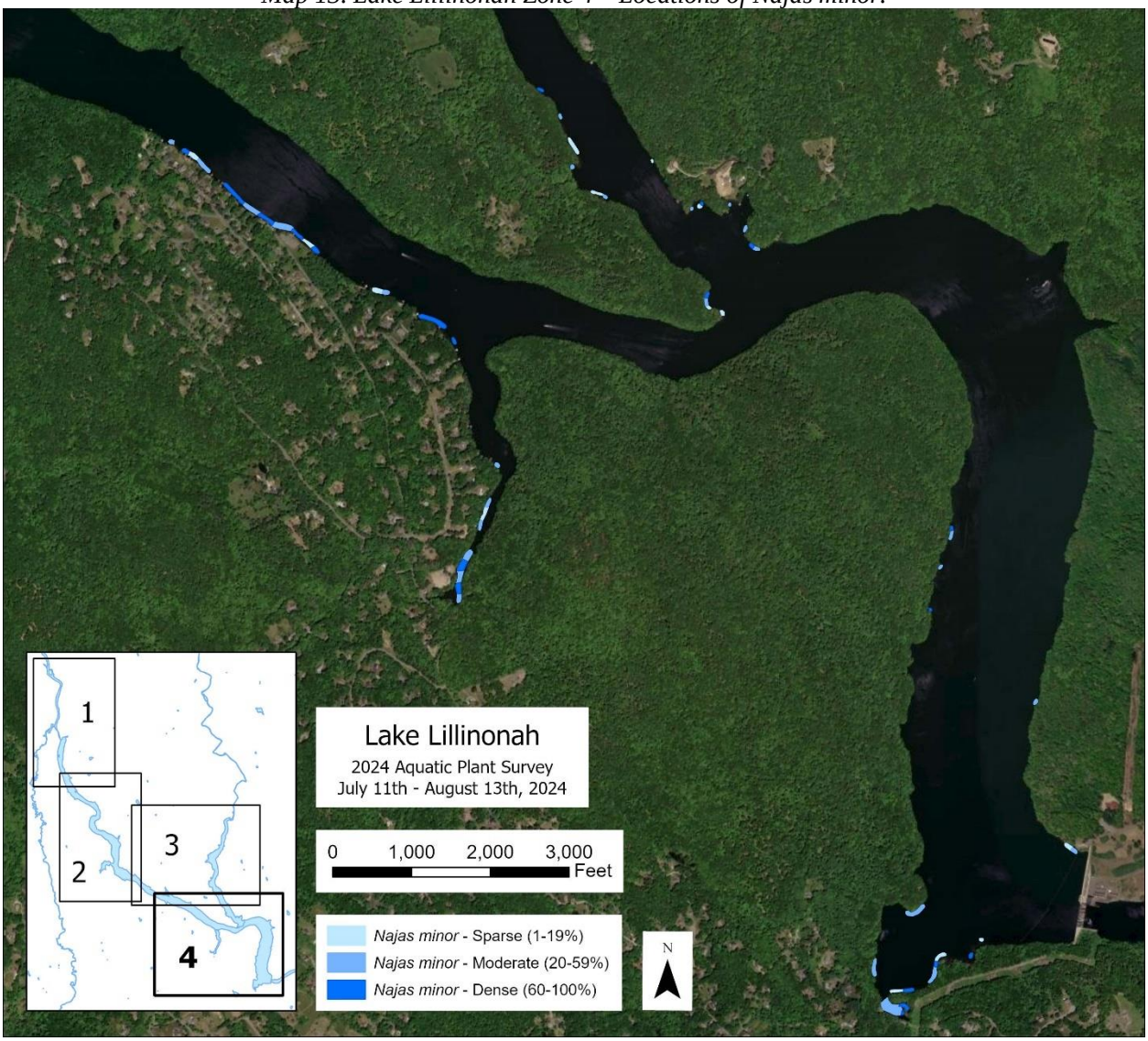
Map 11. Lake Lillinonah Zone 2 – Locations of Najas minor.



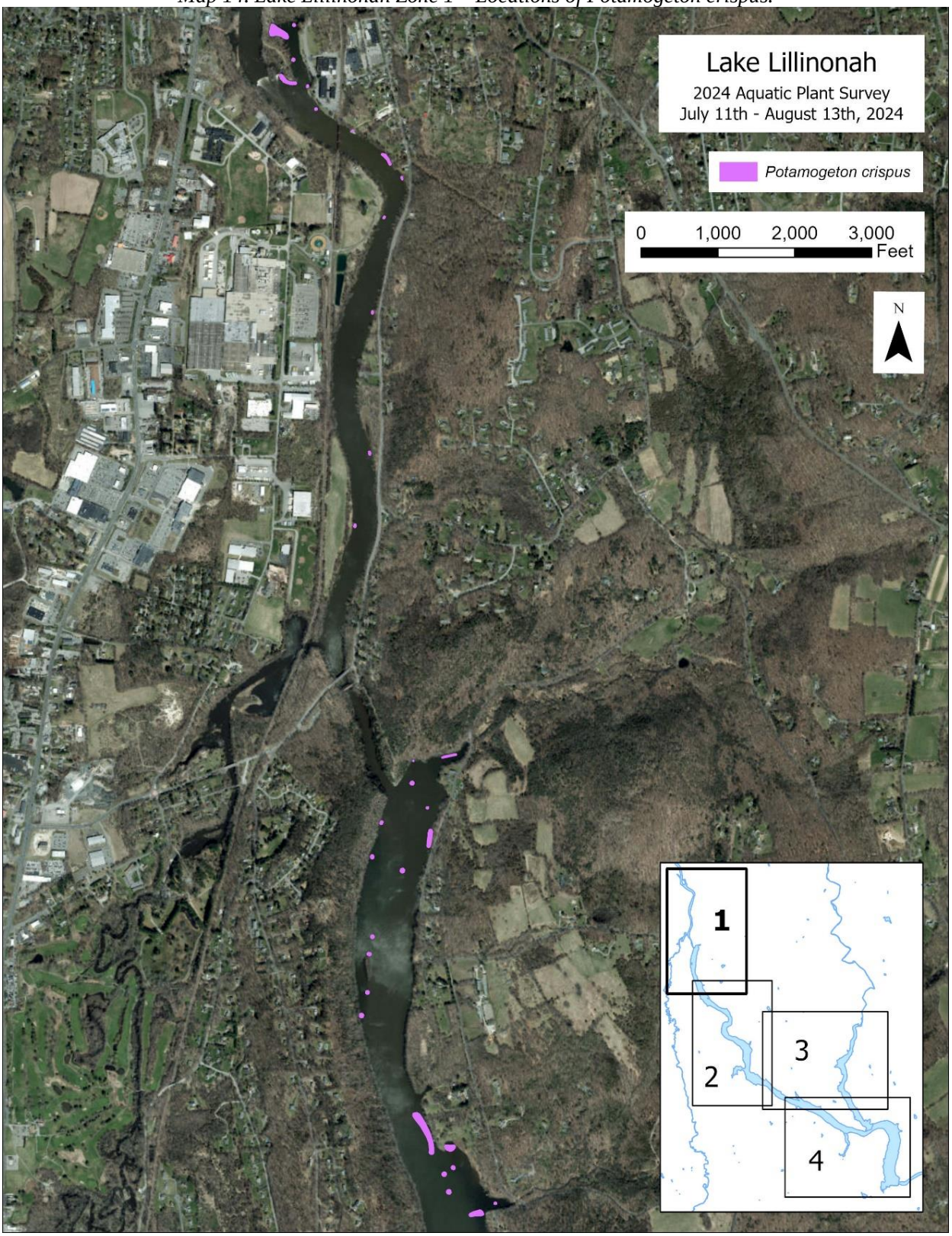
Map 12. Lake Lillinonah Zone 3 – Locations of Najas minor.



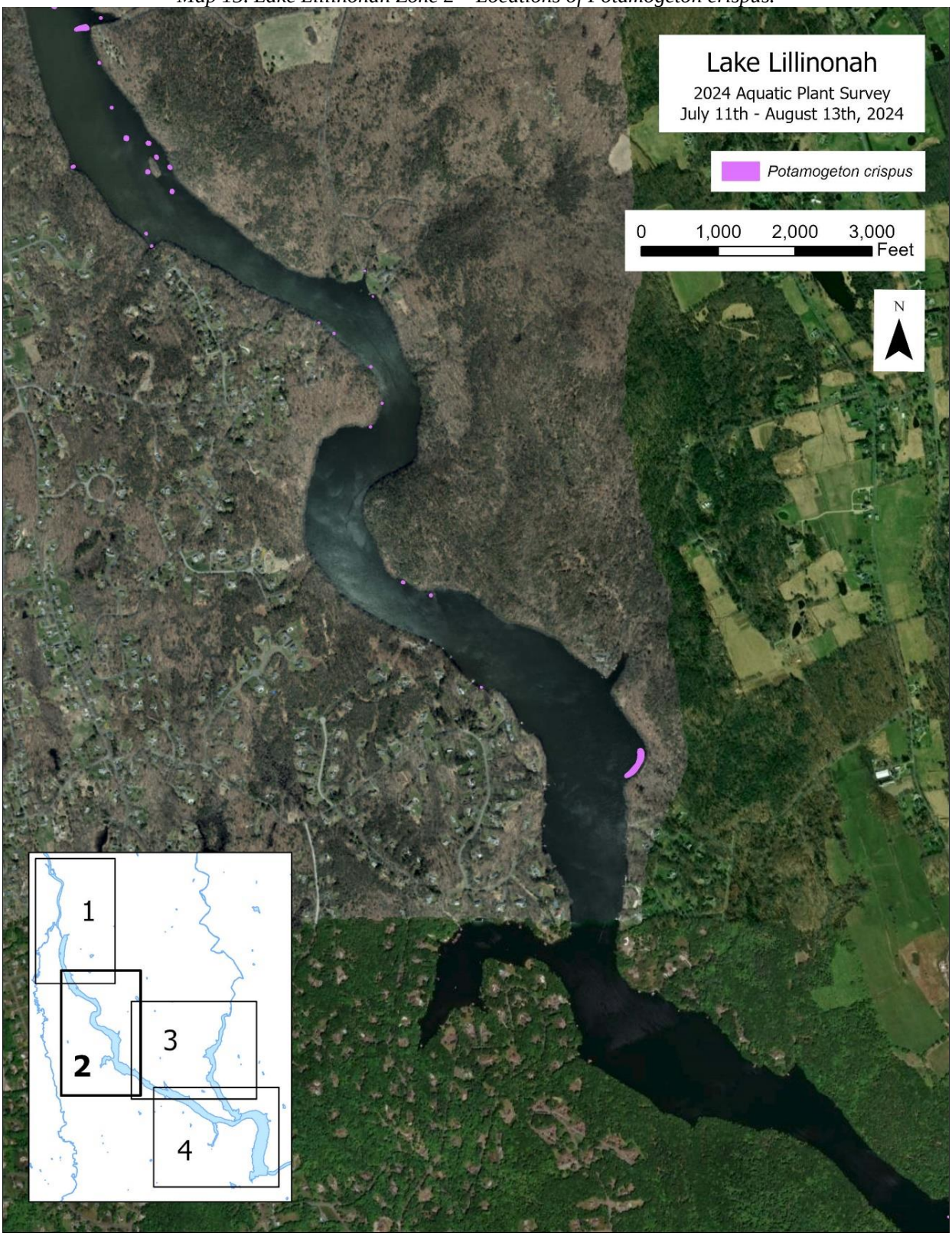
Map 13. Lake Lillinonah Zone 4 – Locations of Najas minor.



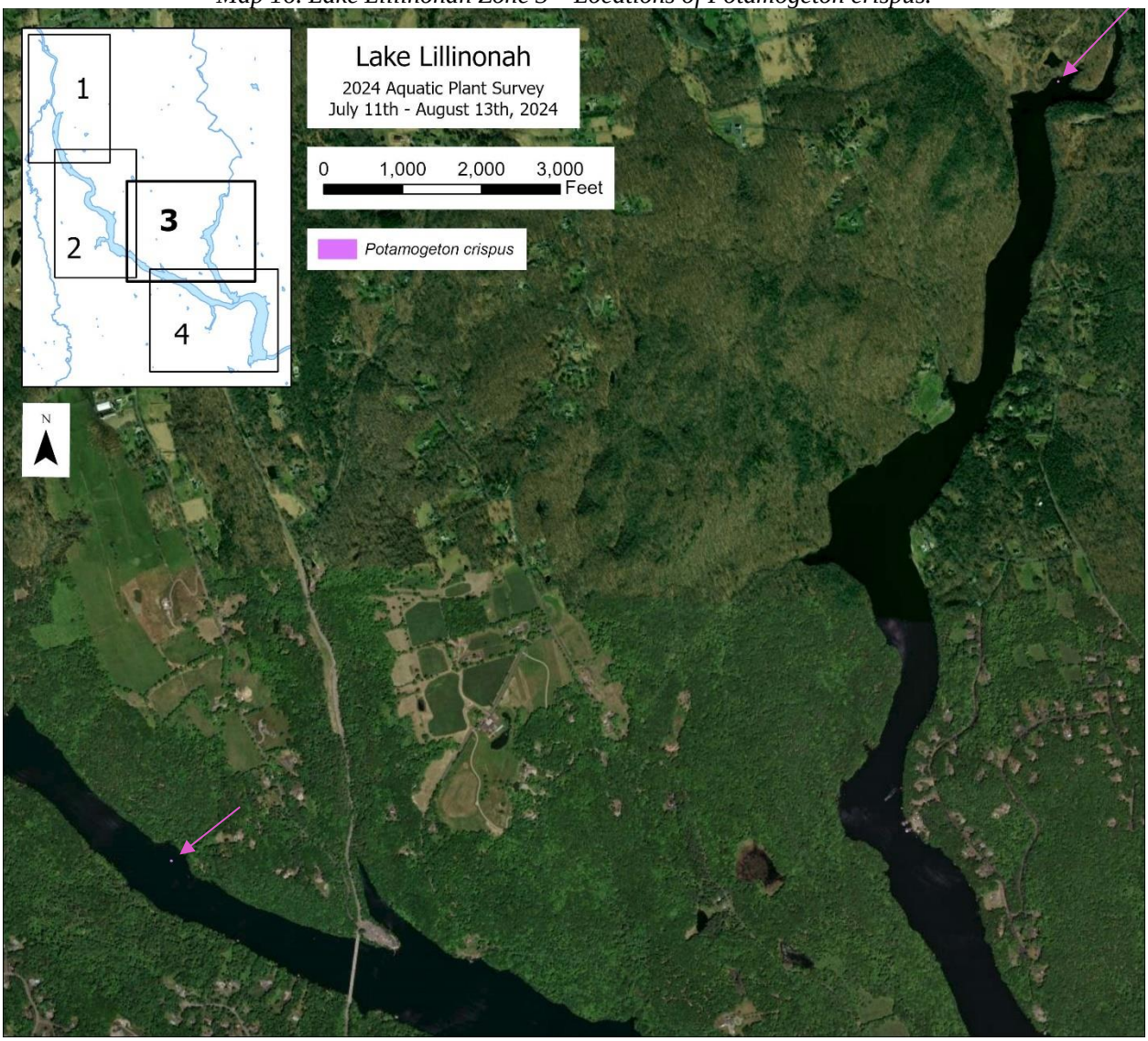
Map 14. Lake Lillinonah Zone 1 – Locations of Potamogeton crispus.



Map 15. Lake Lillinonah Zone 2 – Locations of Potamogeton crispus.

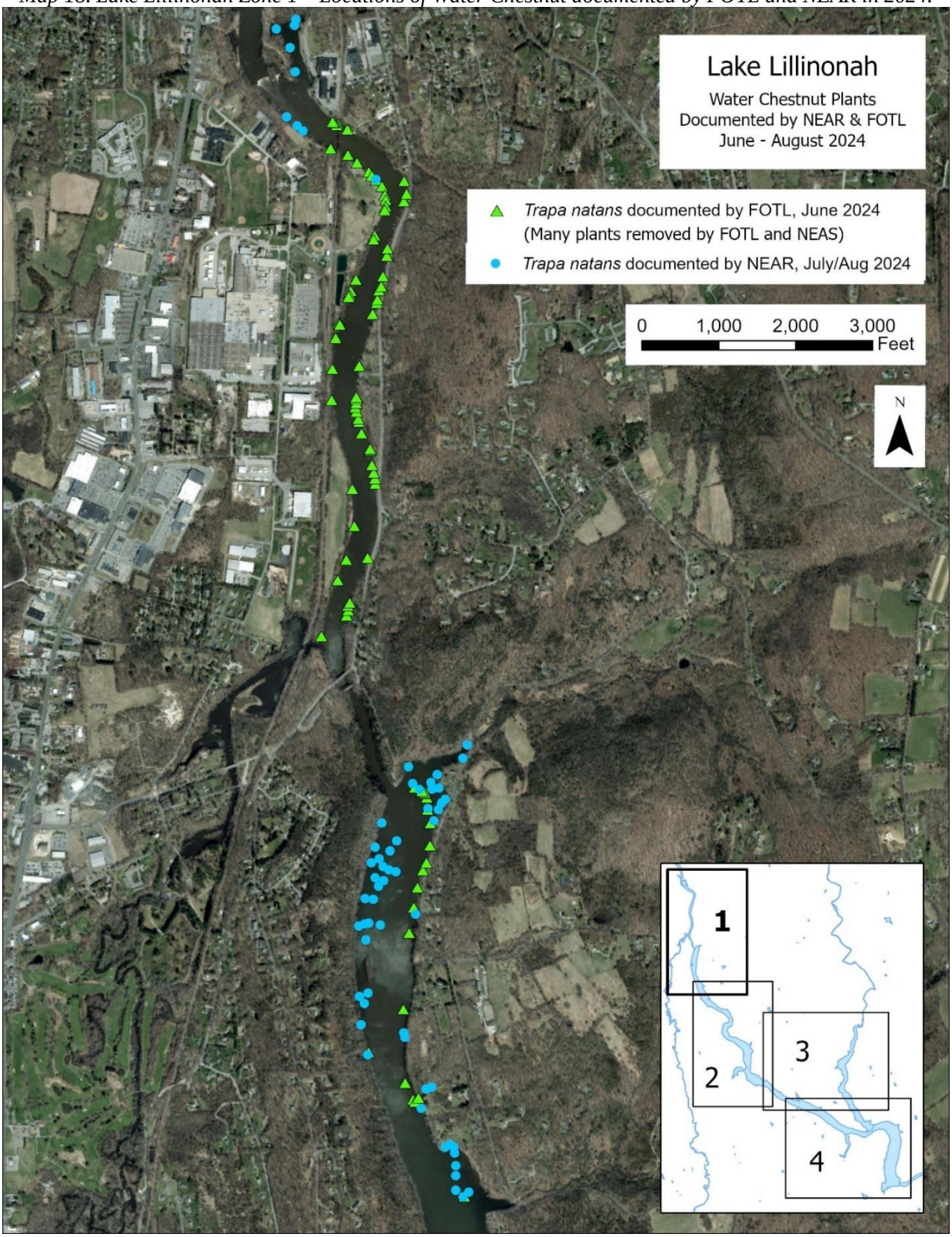


Map 16. Lake Lillinonah Zone 3 – Locations of Potamogeton crispus.

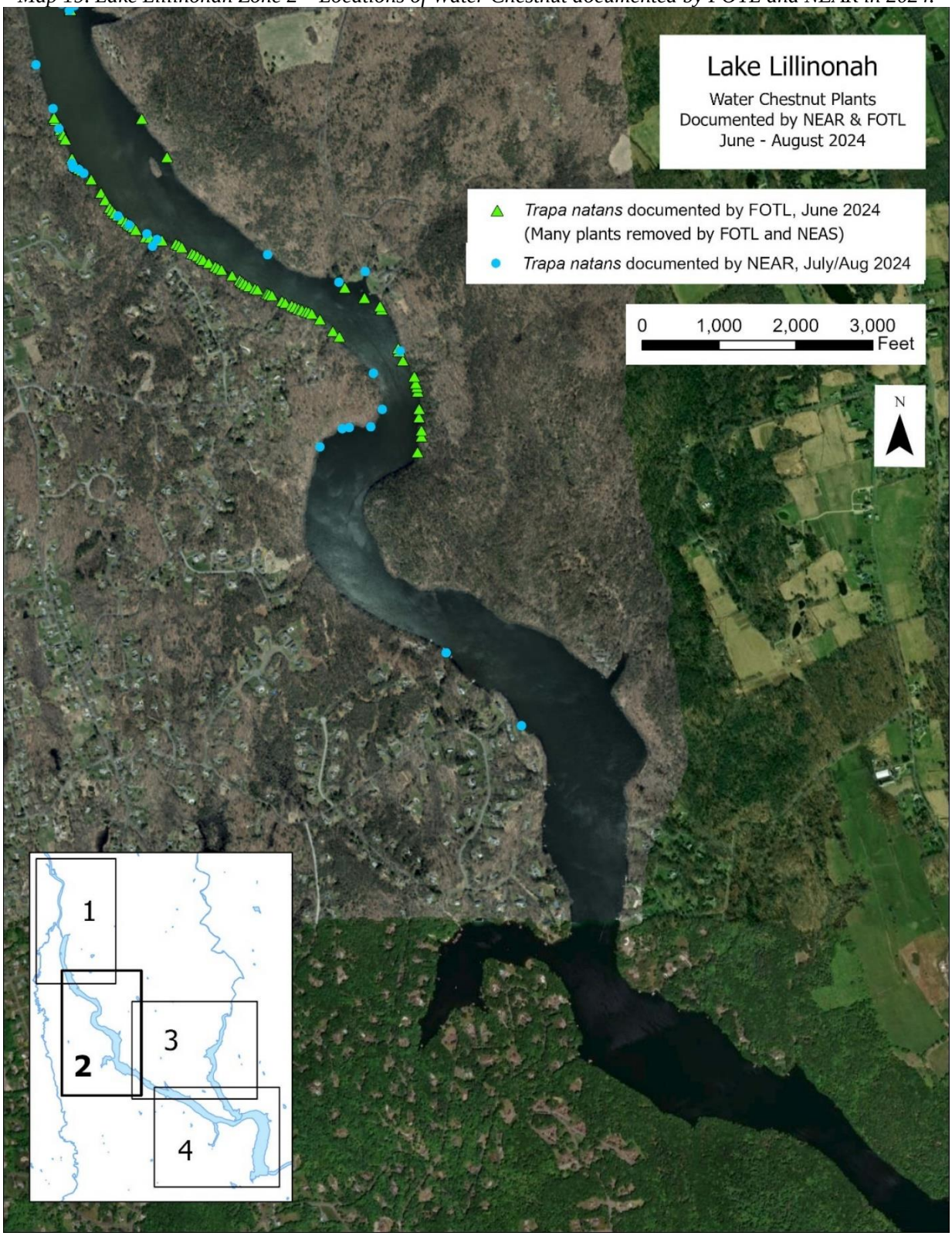


Map 17. Lake Lillinonah Zone 4 – Locations of Potamogeton crispus.

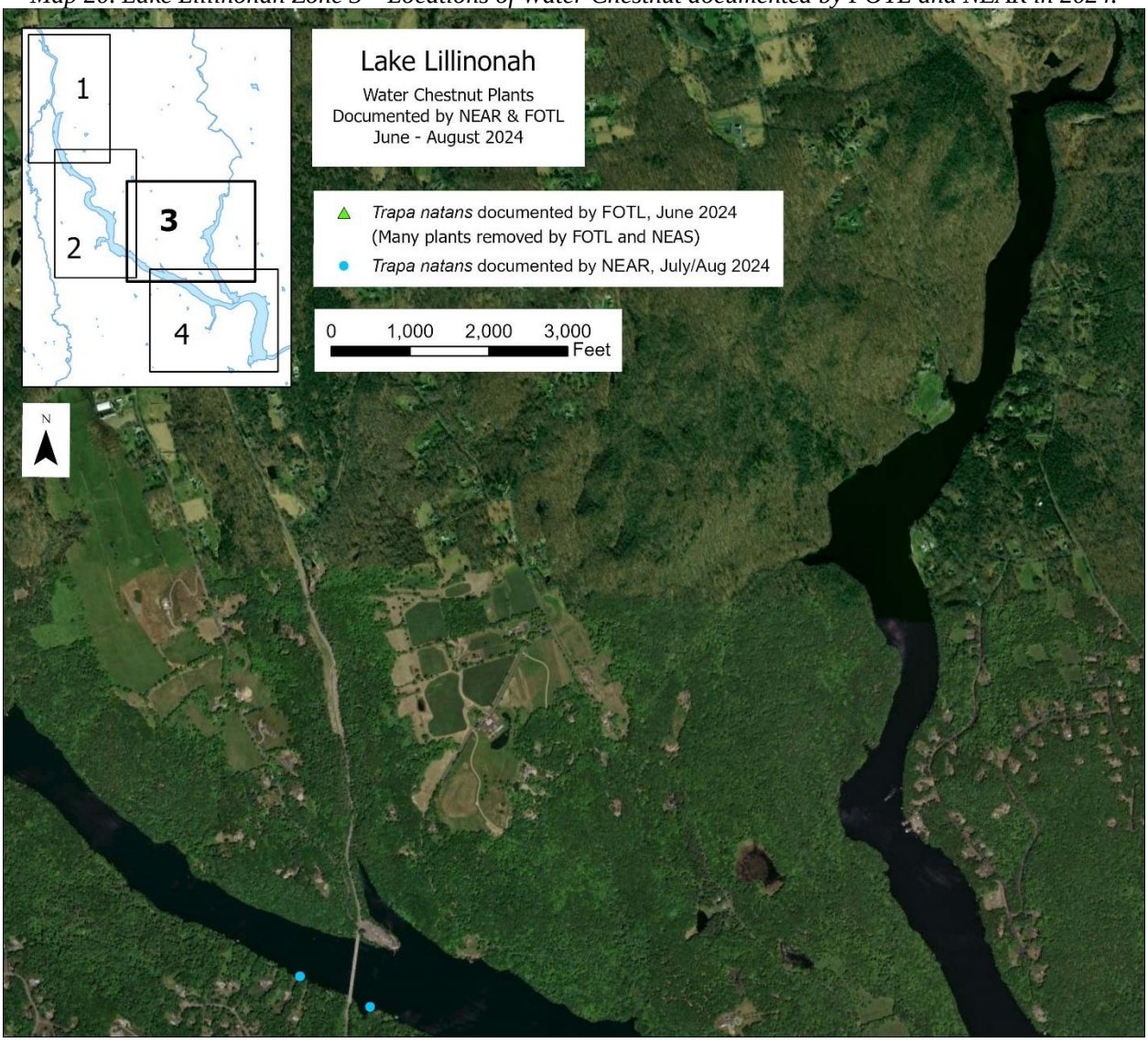
Map 18. Lake Lillinonah Zone 1 – Locations of Water Chestnut documented by FOTL and NEAR in 2024.



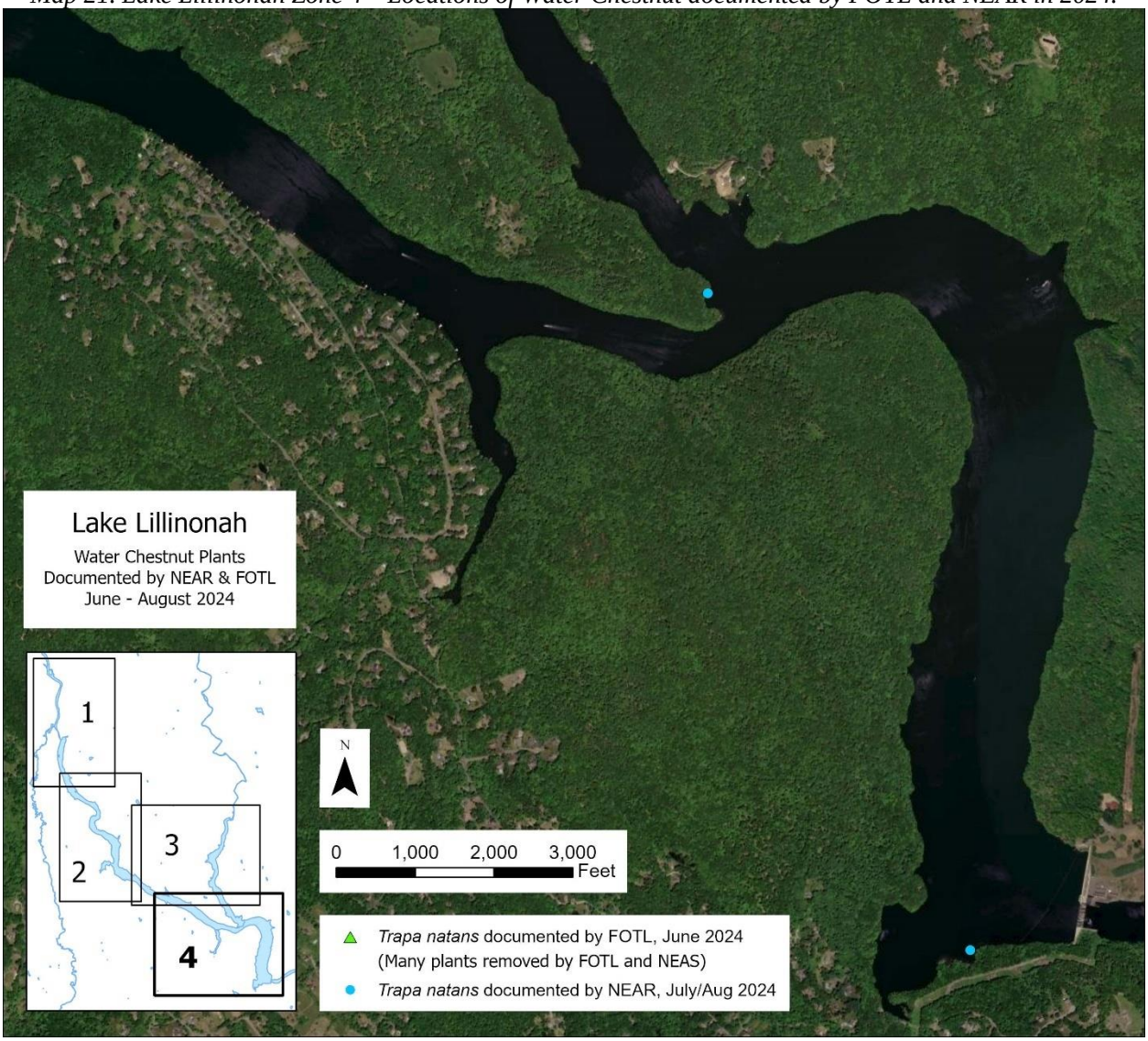
Map 19. Lake Lillinonah Zone 2 – Locations of Water Chestnut documented by FOTL and NEAR in 2024.



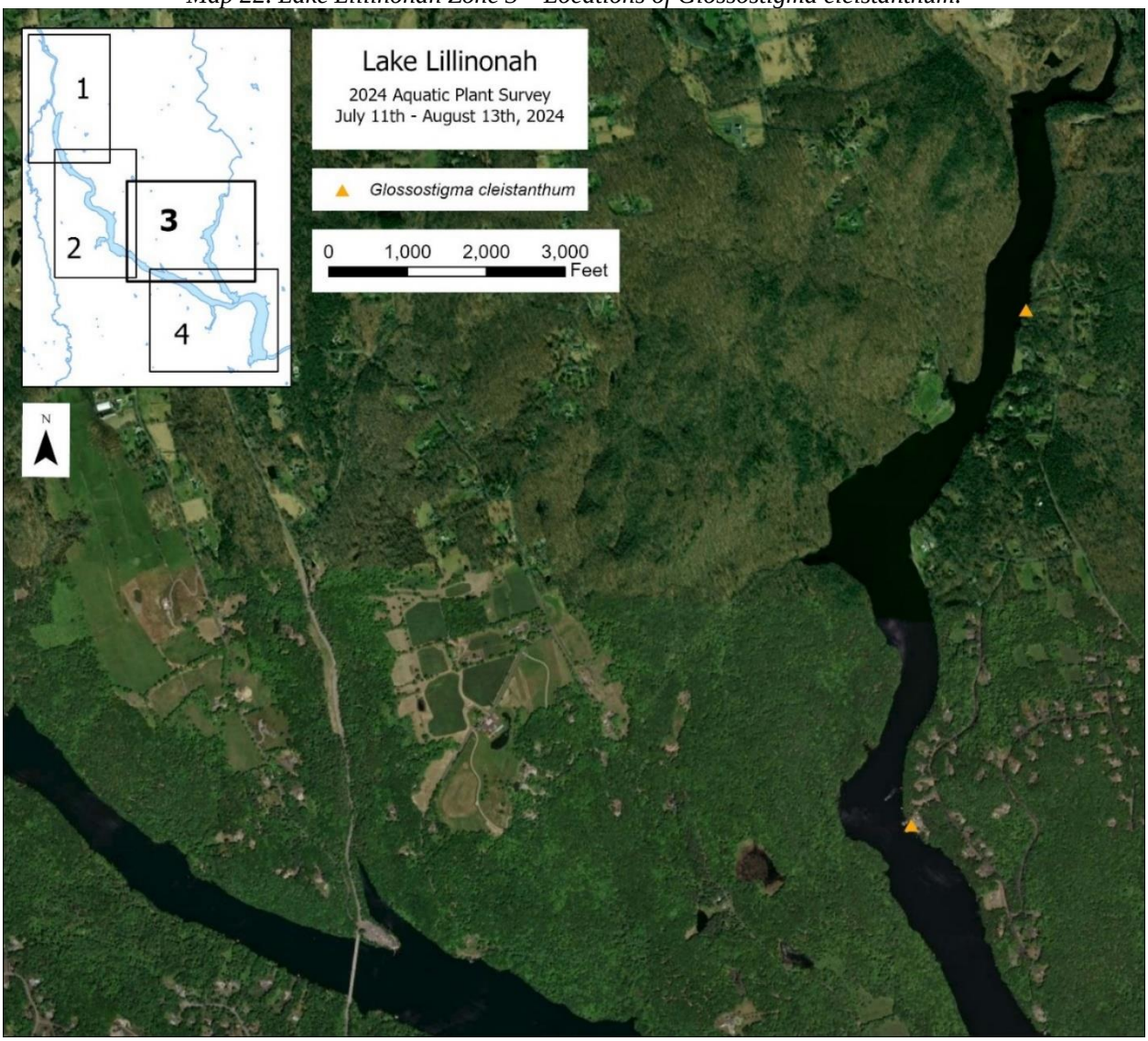
Map 20. Lake Lillinonah Zone 3 – Locations of Water Chestnut documented by FOTL and NEAR in 2024.



Map 21. Lake Lillinonah Zone 4 – Locations of Water Chestnut documented by FOTL and NEAR in 2024.



Map 22. Lake Lillinonah Zone 3 – Locations of Glossostigma cleistanthum.



NATIVE PLANTS

In addition to the six invasive species, 28 native aquatic plant species were recorded during the survey, along with Filamentous Algae (*Spirogyra sp.*) and Cyanobacteria benthic mat (*Lyngbya wollei*) (**Table 3**). Of the native species, only Coontail (*Ceratophyllum demersum*) was dominant (present at greater than 20% frequency). Filamentous Algae was also abundant, present at 18% of survey waypoints. This suggests a serious water quality issue. Remaining native species were present at less than 10% frequency.

Table 3. Aquatic plant species in Lake Lillinonah during the 2024 aquatic plant survey, with associated percent frequencies and average densities. Red text indicates invasive species.

Scientific Name	Common Name	% Frequency	Avg. Density
Ceratophyllum demersum	Coontail	30	13.7
Chara sp	Muskgrass sp.	0.1	5.0
Elatine sp	Waterwort sp.	0.3	5.0
Eleocharis acicularis	Needle Spikerush	0.4	10.8
Elodea nuttallii	Nuttall's Waterweed	0.1	7.5
Spirogyra sp.	Filamentous Algae	18	21.8
Fontinalis sp	Aquatic Moss sp.	0.2	6.7
Glossostigma sp	Mudmat sp.	0.1	5.0
Hydrilla verticillata subsp. peregrina	Monecious Hydrilla	5	20.1
Lemna minor	Common Duckweed	6	7.5
Lyngbya sp	Cyanobacteria Mat	8	15.4
Myriophyllum spicatum	Eurasian Milfoil	43	32.5
Najas flexilis	Nodding Waternymph	0.1	10.0
Najas minor	Brittle Naiad	24	41.8
Nitella sp	Stonewort Sp.	0.1	5.0
Nymphaea odorata	White Water Lily	0.1	5.0
Phragmites australis	Common Reed	0.9	67.3
Potamogeton berchtoldii	Berchtold's Pondweed	0.3	8.8
Potamogeton bicupulatus	Snailseed Pondweed	3	17.6
Potamogeton crispus	Curly-Leaf Pondweed	5	7.8
Potamogeton epihydrus	Ribbon-Leaf Pondweed	0.1	10
Potamogeton oakesianus	Oake's Pondweed	0.2	25.0
Potamogeton nodosus	Long-Leaf Pondweed	1	16.8
Potamogeton perfoliatus	Clasping-Leaf Pondweed	6	14.6
Potamogeton pusillus	Small Pondweed	8	12.6
Sagittaria graminea	Grass-Leaved Arrowhead	0.4	21.7
Spirodela polyrhiza	Great Duckweed	5	7.6
Stuckenia pectinata	Sago Pondweed	1	10.0
Trapa natans	Water Chestnut	6	7.0
Utricularia geminiscapa	Hidden-Fruit Bladderwort	3	6.0
Vallisneria americana	Tapegrass	2	25.0
Wolffia sp	Watermeal sp.	3	15.8
Zannichellia palustris	Horned Pondweed	0.9	14.2
Zosterella dubia	Water Stargrass	8	10.3

POST-TREATMENT HYDRILLA INSPECTION

Three Sonar (Common name: Fluridone) herbicide treatments were administered during the 2024 season on September 5th, September 27th, and October 11th. NEAR conducted a post-treatment inspection on October 21st, as part of the changes to the 2024 monitoring plan.

During the October 21st visit, NEAR returned to all the Hydrilla locations that were documented during the July/August survey to observe treatment impacts (**Map 23**). The Bridgewater Town Boat Launch area still contained the largest infestation, though plants were mostly brown and snapped apart easily, unlike in July/August when NEAR noted plants were more robust (**Photo 1**). On October 21st, some of the plants appeared wilted in the water column. However, green shoots were still present and a majority of the Hydrilla beds were nearly topped out and still contained very dense patches. It is important to note that Sonar requires ~90 days exposure time for full effect; this visit was conducted 56 days after the very *first* treatment. In 2025, the herbicide should be administered on July 1st.

The location in 10.5 feet of water off of the northwest shore of Poison Ivy Island was found using an underwater camera instead of a throw rake to minimize fragmenting the plants. Those plants were 1-2 feet tall so were not visible from the surface.

Map 23. Lake Lillinonah – post-treatment locations of Hydrilla verticillata (full extent).

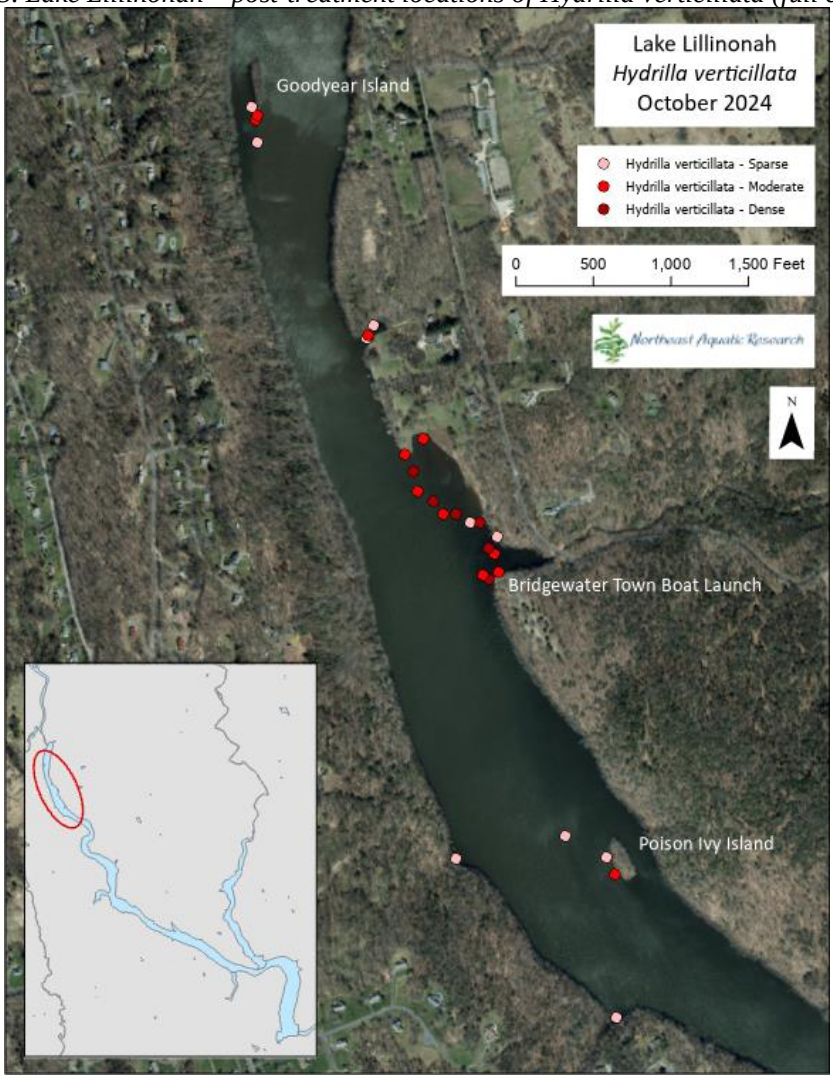


Photo 1. Hydrilla specimen during October 21st post-treatment inspection.

Lake Zoar Results

INVASIVE PLANTS

Four aquatic invasive plant species were found in Lake Zoar during the 2024 survey: European Water Clover *(Marsilea quadrifolia*), Eurasian Watermilfoil (*Myriophyllum spicatum*), Brittle Naiad (*Najas minor*), and Curly-Leaf Pondweed (*Potamogeton crispus*) (**Table 4, Table 5**).

Eurasian Milfoil was the most abundant species in the lake, covering a total of ~50 acres (**Map 24, Map 25, Map 26**). Most of the plant beds were sparse to moderate abundance, with ~6 acres of dense plant growth. The species was most abundant in the western half of the lake, though patches were scattered throughout. There was roughly twice the coverage of Eurasian Milfoil in 2024 (49.8 acres) as compared to 2022 (23 acres)

Curly-Leaf Pondweed covered a total of 5.7 acres, most of which consisted of sparse growth (**Map 27, Map 28, Map 29**). Nearly all the plants were confined to the western portion of the lake (west of the Route 84 crossing). A handful of patches were scattered between this point and the Kettletown Brook cove. Curly-leaf Pondweed also increased in coverage between 2022 and 2024 (3 acres to 5.7 acres).

The area of coverage of both Eurasian Milfoil and Curly-leaf Pondweed increased over that found in 2022, however coverage of both species was higher in 2020, with much higher coverage for Eurasian milfoil in 2018, Both species had been treated with herbicides for several years, leading to the decline in coverage from 2018 to

2022. The last report of an herbicide treatment in Lake Zoar was in 2022. The increase in coverage between 2022 and 2024 is a result of the lack of herbicide treatments since 2022.

Brittle Naiad covered just 1.4 acres, which is notably less than has been recorded in prior years (~20 acres). Patches were scattered throughout the lake, though more were present in the western portion. It is possible that this naiad spreads by seedling success, rather than by cuttings or underground structures.

European Water Clover was found in one location, in the cove on the western shore just north of Glen Road Silver Bridge. NEAR also documented this species in this location in 2020 and 2022.

Table 4. Aquatic invasive species in Lake Zoar during the 2024 survey.

Scientific Name	Common Name	Acres			
		Sparse	Moderate	Dense	Total
Marsilea quadrifolia	European Water Clover	0	<0.1	<0.1	<0.1
Myriophyllum spicatum	Eurasian Milfoil	19.8	24.2	5.8	49.8
Najas minor	Brittle Naiad	0.67	0.73	0	1.4
Potamogeton crispus	Curly-Leaf Pondweed	4.6	1	<0.1	5.7

Table 5. Comparison of invasive species acreages in Lake Zoar, 2018 – 2024.

Scientific Name		Acres			
	Common Name	2024	2022	2020	2018
Marsilea quadrifolia	European Water Clover	0.1	<0.1	<0.1	0
Myriophyllum spicatum	Eurasian Milfoil	49.8	23	64	114
Najas minor	Brittle Naiad	1.4	22	16	21
Potamogeton crispus	Curly-Leaf Pondweed	5.7	3	23	19

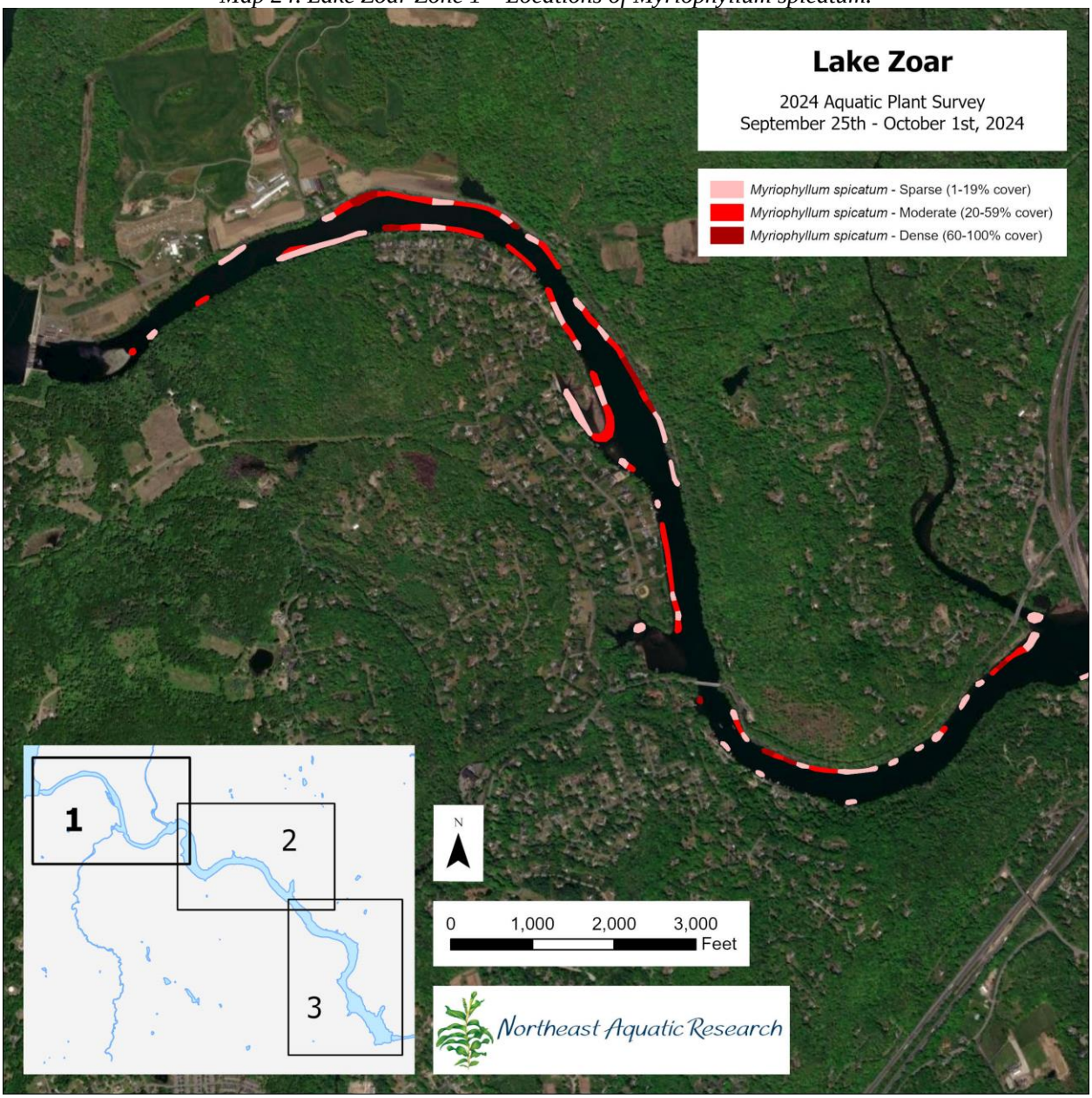
NATIVE PLANTS

In addition to the four invasive species, 19 native aquatic plant species were recorded in the Lake Zoar, along with Filamentous Green algae and Filamentous Cyanobacteria Lyngbya (**Table 6**). Of the native species, Tape Grass (*Vallisneria americana*) and Coontail (*Ceratophyllum demersum*) were dominant, meaning they were present at greater than 20% frequency.

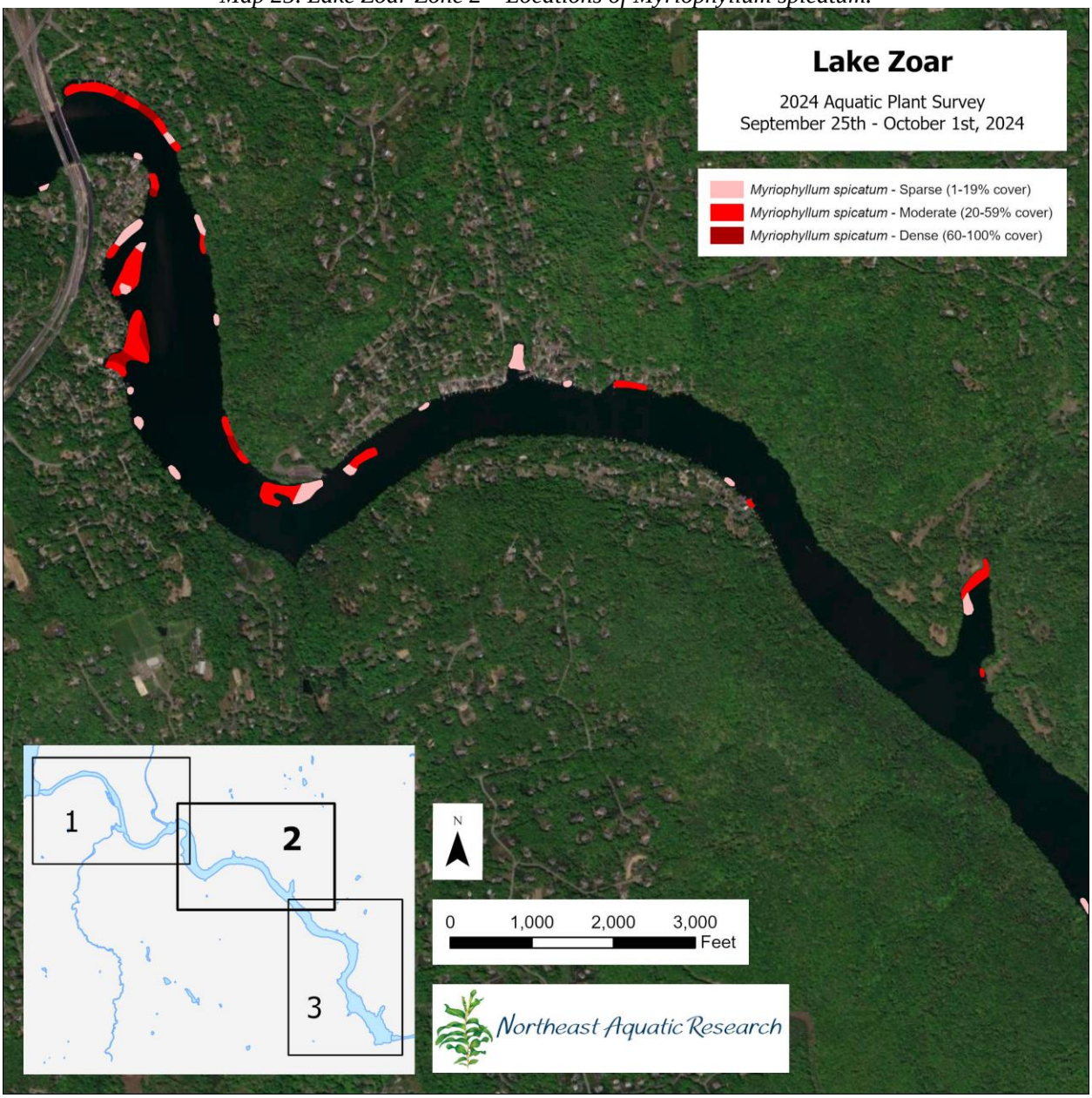
Table 6. Aquatic plants present in Lake Zoar during the 2024 survey. Red text indicates invasive species.

Scientific Name	Common Name	% Frequency	Average Density
Ceratophyllum demersum	Coontail	27	18
Elodea nuttallii	Nuttall's Waterweed	4	10
Spirogyra (Green)-	Filamentous Algae	4	28
Fontinalis sp.	Aquatic Moss sp.	1	12
Lemna minor	Common Duckweed	1	12
Lyngbya sp.	Cyanobacteria Mat	16	39
Marsilea quadrifolia	European Water Clover	0.3	70
Myriophyllum spicatum	Eurasian Milfoil	35	24
Najas guadalupensis	Southern Waternymph	2	13
Najas minor	Brittle Naiad	2	12
Nuphar variegata	Yellow Water Lily	0.5	20
Pontederia cordata	Pickerelweed	0.2	NA
Potamogeton crispus	Curly-Leaf Pondweed	7	12
Potamogeton gramineus	Grassy Pondweed	1	31
Potamogeton nodosus	Long-Leaf Pondweed	11	28
Potamogeton perfoliatus	Clasping-Leaf Pondweed	5	14
Potamogeton praelongus	White-Stem Pondweed	6	20
Potamogeton pusillus	Small Pondweed	7	18
Potamogeton zosteriformis	Flat-Stem Pondweed	0.5	17
Sagittaria graminea	Grassy-Leaved Arrowhead	0.2	10
Spirodela polyrhiza	Great Duckweed	0.3	5
Stuckenia pectinata	Sago Pondweed	0.2	20
Vallisneria americana	Tapegrass	35	35
Zosterella dubia	Water Stargrass	16	23

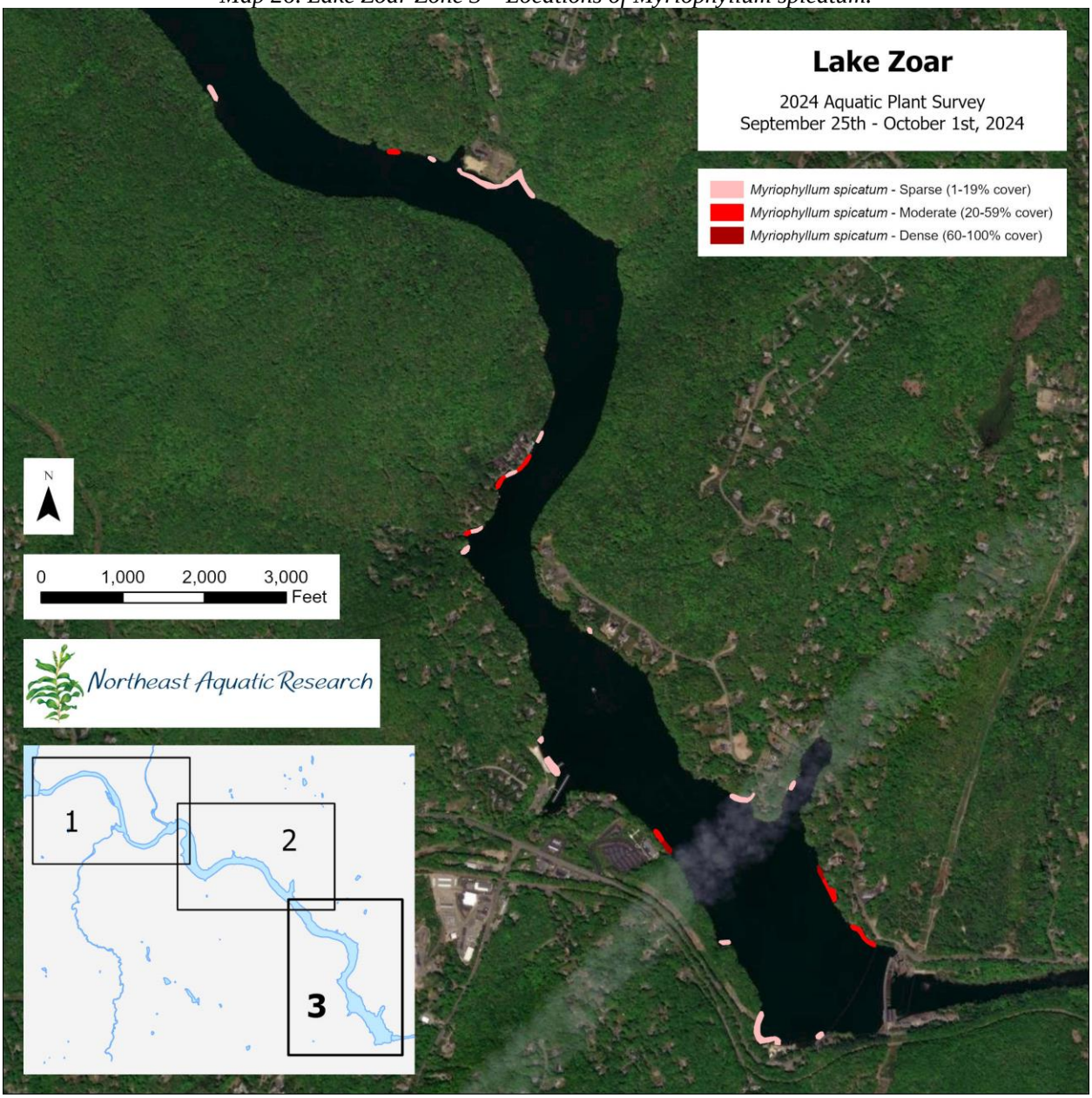
Map 24. Lake Zoar Zone 1 – Locations of Myriophyllum spicatum.



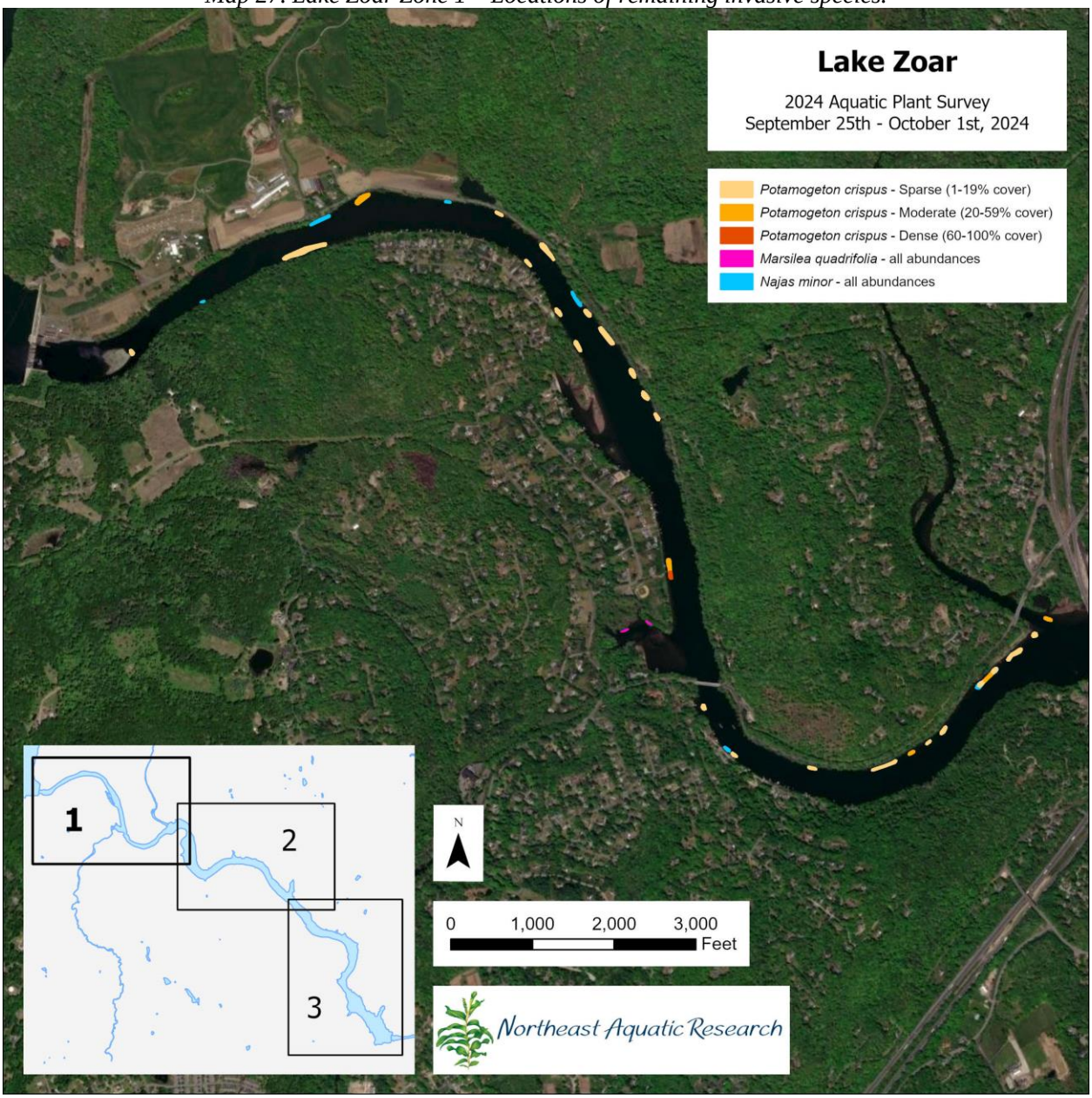
Map 25. Lake Zoar Zone 2 – Locations of Myriophyllum spicatum.



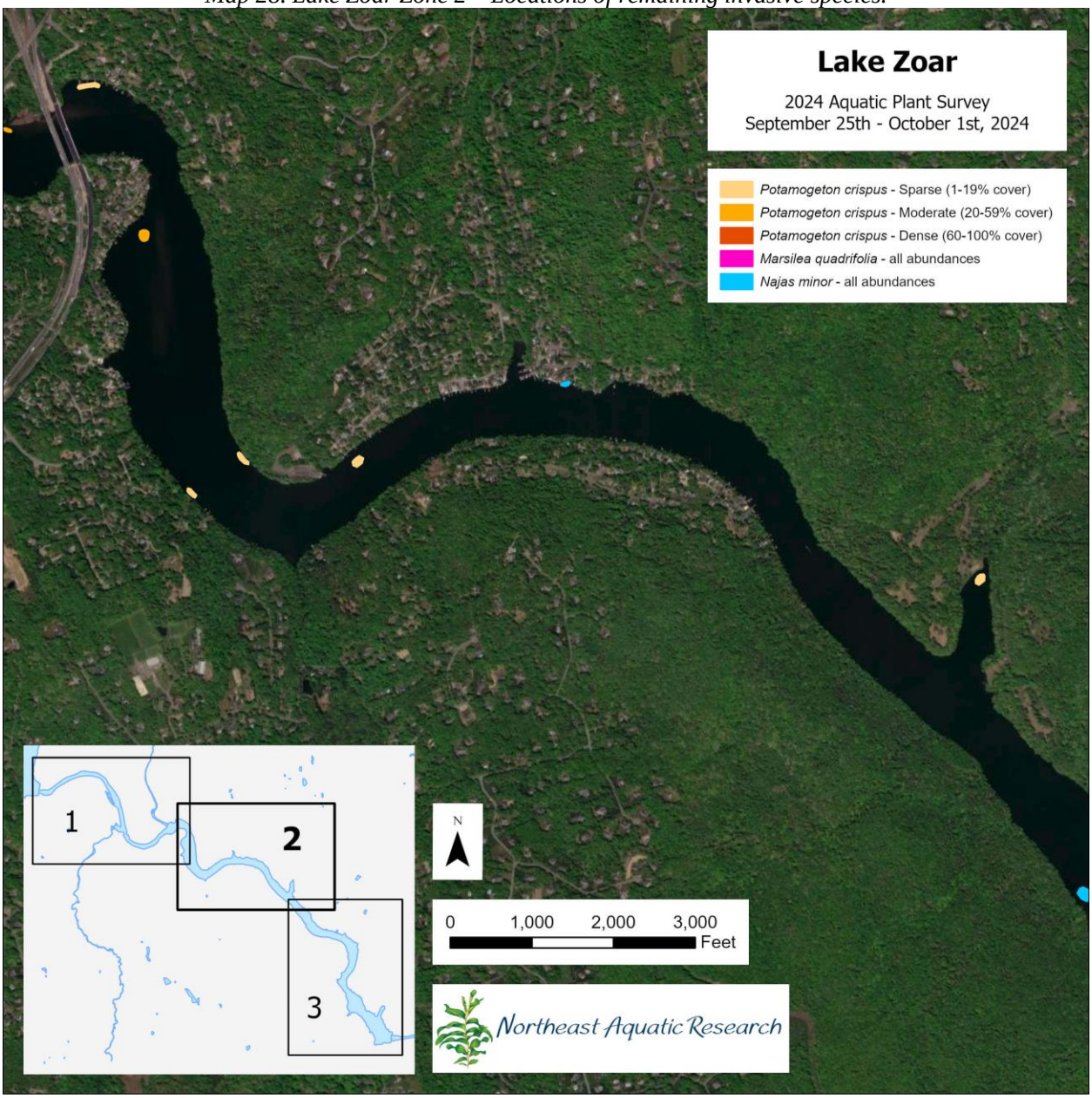
Map 26. Lake Zoar Zone 3 – Locations of Myriophyllum spicatum.



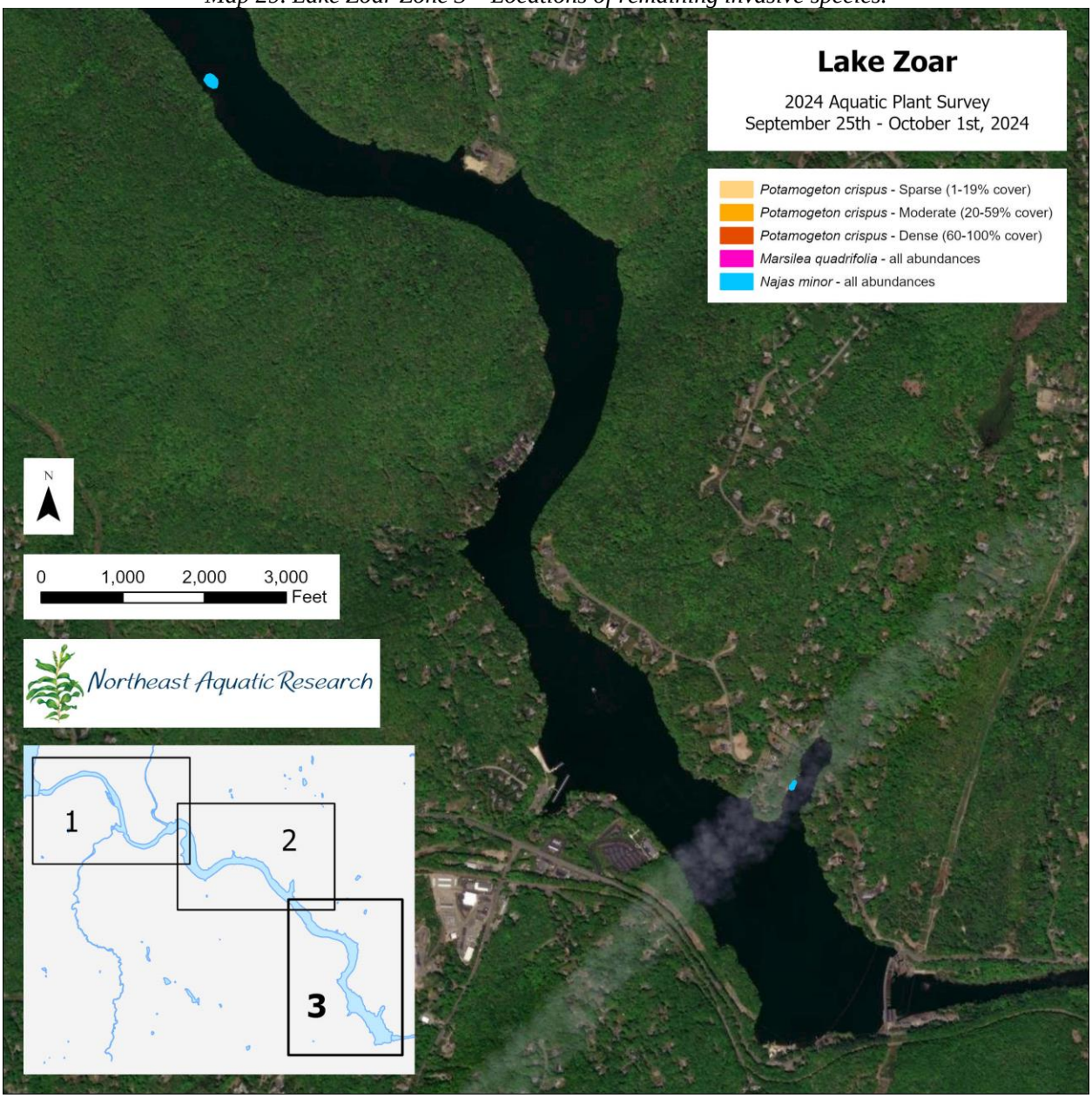
Map 27. Lake Zoar Zone 1 – Locations of remaining invasive species.



Map 28. Lake Zoar Zone 2 – Locations of remaining invasive species.



Map 29. Lake Zoar Zone 3 – Locations of remaining invasive species.



Candlewood Lake Results

INVASIVE PLANTS

The three invasives species that were documented in Candlewood Lake in 2023 were present again in 2024: Mudmat (*Glossostigma cleistanthum*), Eurasian Milfoil (*Myriophyllum spicatum*), and Brittle Naiad (*Najas minor*) (**Map 30**).

Only a select number of beds of Mudmat were visited in 2024 to confirm its presence. Mudmat is a tiny plant with ¼ inch leaves that grows as a carpet over and within sandy substrate where water is only a few inches deep. Mudmat is very likely un-grazed by the Grass Carp, so would be present in all locations where this plant has been found in prior surveys. Mudmat was found at each of the sites we visited where we had recorded it in the past.

In 2023, Eurasian Milfoil was found at just three waypoints despite thorough surveying of the entire littoral zone. In 2024, this species was found at two of those three locations, along with a third location near the Lattins Cove Boat Launch. In each case, only one or a few plants were found, always in less than 3.5ft of water.

Brittle Naiad was found at just one waypoint, in moderate abundance, near the southern end of Danbury Bay. The species was not found at some waypoints where it was recorded in 2023. Brittle Naiad was found as tiny plants less than 1 inch in height, often as a carpet in shallow water of 1-2 feet deep. Brittle Naiad typically grows to be a bush a couple of feet tall.

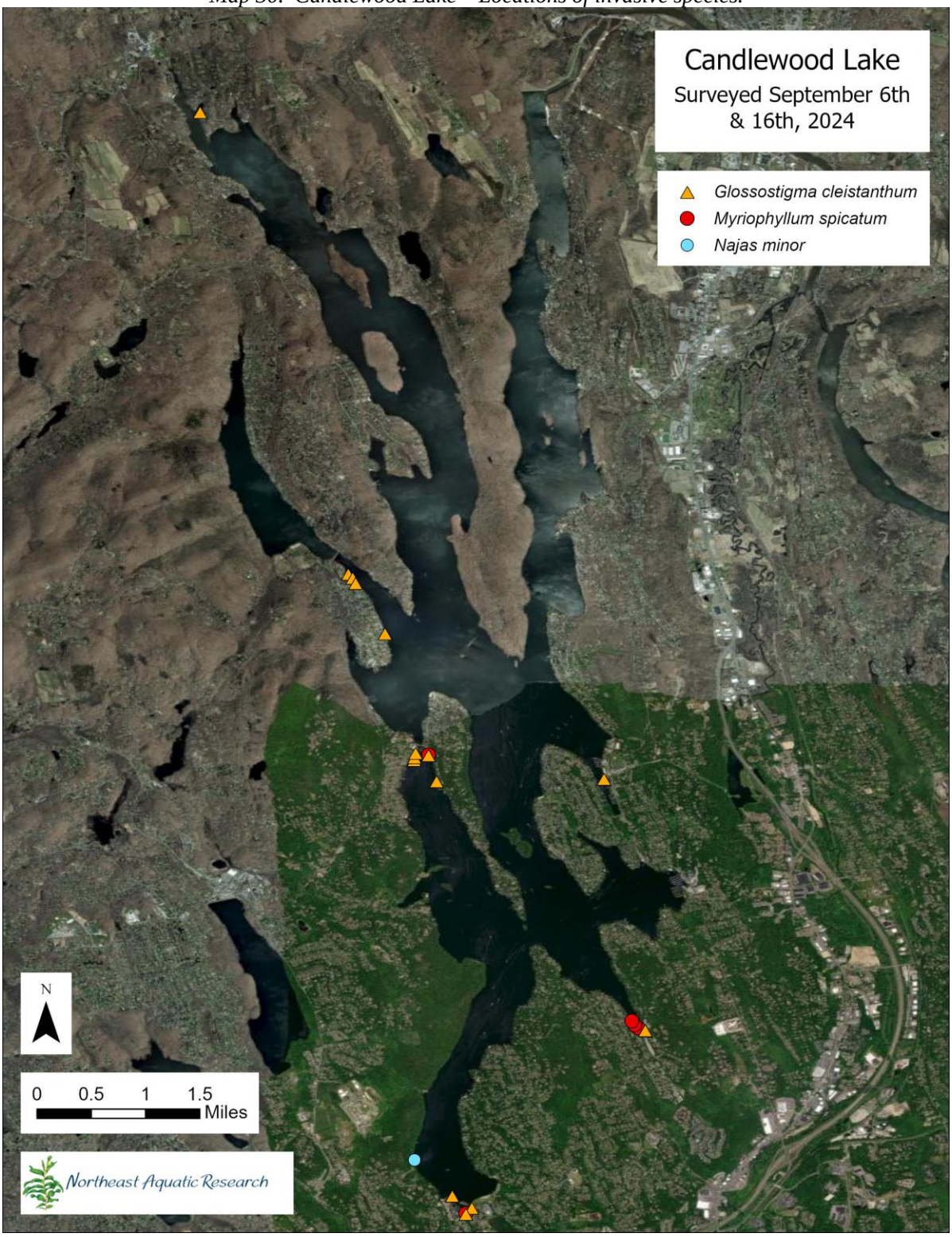
NATIVE PLANTS

During the invasive species search, the following native plant species were documented in Candlewood Lake:

- *Callitriche sp.* (Water Starwort)
- *Elatine sp.* (Waterwort)
- *Eleocharis acicularis* (Needle Spikerush)
- *Potamogeton bicupulatus* (Snail-seed Pondweed)
- *Zannichellia palustris* (Horned Pondweed)

This list is not comprehensive because only a small number of waypoints were visited. Each of these species can exist as tiny plant forms, often less than 1 inch in height. We tend to find these species in shallow water, less than 1 foot deep. The plants were found after a significant amount of searching and often found growing inside loose gravel or sand.

Map 30. Candlewood Lake – Locations of invasive species.



Squantz Pond Results

INVASIVE PLANTS

Two invasive plant species were documented in Squantz Pond during the 2024 survey: Brittle Naiad (*Najas minor*) and Mudmat (*Glossostigma cleistanthum*) (**Table 7, Map 31**). Mudmat is a very tiny plant with ¼ leaves that grow on sandy substrates in water usually only a few inches deep. The species was observed in five locations along the lake's shoreline at sparse to moderate abundances. Brittle Naiad was found at sparse abundance in one location near the boat ramp. This is the first time this species has been found in the lake since 2019.

Table 7. Invasive aquatic plant species found by NEAR in Squantz Pond, 2020-2024.

Invasive Species	Common Name	# of Sites 2024	# of Sites 2023	# of Sites 2022	# of Sites 2021	# of Sites 2020
Myriophyllum spicatum	Eurasian Milfoil	0	0	0	0	0
Najas minor	Brittle Naiad	1	0	0	0	0
Glossostigma cleistanthum	Mudmat	5	5	2	2	6

NATIVE PLANTS

Three native plant species were found in Squantz Pond in 2024: Waterwort (*Elatine minima*), Spike Rush (*Eleocharis acicularis*), and Snail-Seed Pondweed (*Potamogeton bicupulatus*) (**Table 8**). This is the first record of Snail-Seed Pondweed in Squantz Pond since at least 2018. NEAR believes that a seed stock of Snail-seed pondweed exists in the mouth of a small creek that enters the lake at the boat ramp. The water here is too shallow for Grass Carp to access. Filamentous Algae was also documented in the lake. The Spike Rush and the Waterwort are both tiny plants that can exist as ¼ inch plants tucked into gravel and sand grains.

Table 8. Native aquatic plant species found by NEAR in Squantz Pond, 2020-2024. Bold lettering indicates species found in 2024.

Scientific Name	Common Name	# of sites 2024	# of sites 2023	# of sites 2022	# of sites 2021	# of sites 2020
Elatine minima	**Waterwort**	1	7	2	0	6
Eleocharis acicularis	**Spike Rush**	2	0	2	0	1
Spirogyra sp.	**Filamentous Algae**	1	0	0	0	0
Fontinalis	Aquatic Moss	0	0	0	0	1
Potamogeton bicupulatus	**Snail-Seed Pondweed**	1	0	0	0	0

Map 31. Squantz Pond – Locations of invasive species.

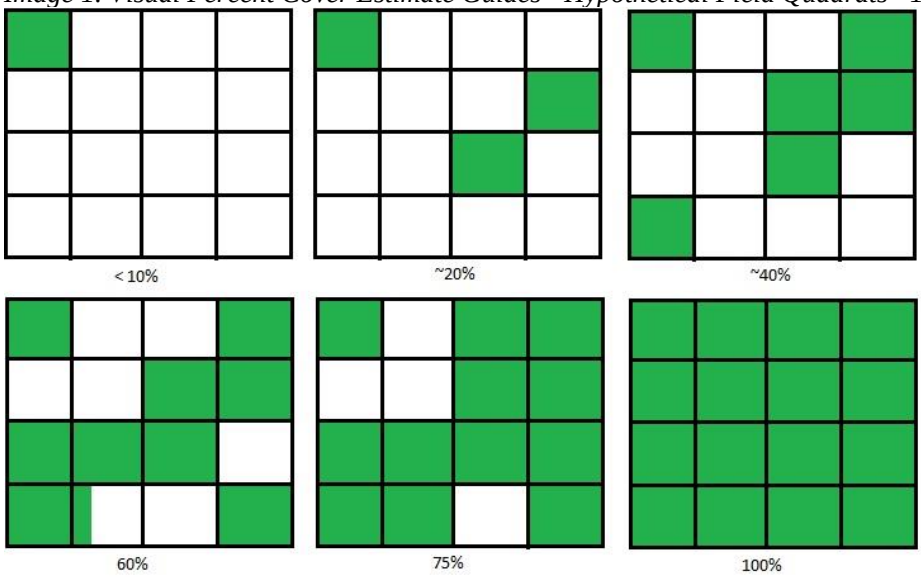
Appendix 1: Survey Methodology

The 2024 surveys were conducted using high resolution down-imaging SONAR devices (Humminbird 688ciHD and/or Lowrance Hook Reveal 5 Slipshot) transfixed to a survey boat.

Waypoint Data: Density & Plant Height

Plant density was determined using a combination of three methods. The first method, visual density determination, is based solely on what is seen from the surface within 10 feet of the boat. This method involves a scaled-up version of quadrat vegetation percent cover assessments. In this method, one visually assesses how much area is covered by the plant in question. **Appendix Image 1** below demonstrates approximate ranges in visual percent cover of aquatic plants as seen from the surface. Yet, using an actual quadrat in the field is not appropriate for the large scale of aquatic plant surveys. For that reason, surveyors visualize a hypothetical quadrat, approximately 10ft in length, and then estimate coverage accordingly within the plant beds.

Appendix Image 1. Visual Percent Cover Estimate Guides - Hypothetical Field Quadrats ~10ft across.



Visual estimates are made by a single person throughout the survey, but survey team members do input their perceived percent coverage estimates if the primary surveyor's estimate seems too low or too high. Team collaboration encourages objectivity and more accurate estimates.

The second method used to estimate percent cover of vegetation is to use down-imaging SONAR, which shows a detailed image of the plants as the boat passes above .

SONAR imaging is used to corroborate visual percent cover estimates in areas where plants can be seen from the surface. In areas where plants cannot be seen from the surface and in poorer clarity conditions, the SONAR image becomes the primary way to 'see' coverage. SONAR and visual estimates are then corroborated by weed-rake tosses. Rake tosses involve stopping the boat and throwing a 30ft line to tow through plant beds. Plants retrieved by the rake are estimated semi quantitatively as a percent cover:

- Sparse (1-19%, handful of plants)
- Moderate (20-59%, plants covering about half of the rake tines)
- Dense (60-100%, plants covering significantly more than half to all rake tines)

When possible, all three methods of estimating percent cover are used at each waypoint, and the resulting estimate is recorded on the datasheet. Raking in shallow water, however, yields limited results due to sandy and rocky substrates, so visual assessment was the primary density determination method for waters shallower than 3ft.

Coverage percentages are used to distinguish between Sparse, Moderate, and Dense plant beds for the purposes of GIS mapping. The numeric percent cover at each individual waypoint is only semi-quantitative. Though, across all waypoints together, the data can be used more quantitatively over time if users recognize the inherent limitations in percent cover estimates per species at individual waypoints.

The down-imaging SONAR device is also used to estimate plant height in the water column, as well as the water depth. Survey methods involve a number scale of 1 to 5 in estimating plant height (also known as “growth form”) in the water column.

1 = Plants low to the lake bottom, not more than a few inches tall.
2 = Plants reach about 1/3 of water depth tall.
3 = Plants reach about 2/3 of water depth tall, typically 1-2ft below the surface in Milfoil depth-ranges.
4 = Plants just beneath the surface, < 1ft from surface.
5 = Plants "topped out" and breaking the surface, likely flowering.

GIS Mapping

All waypoints and a continuous survey track were created using a Garmin GPSMAP 78. The GPS tracks and waypoints were uploaded as .gbd files and converted to .gpx files using GPSBabel, and then converted to ESRI 2D shapefiles (.shp), using DNRGarmin. Both are simple file formatting computer programs designed to transfer GPS data between various types of mapping programs. The shapefiles were loaded into ArcGIS Pro for mapping of invasive species. The project's coordinate system was set to *CT State Plane NAD83*.

Appendix 2: Raw Lake Survey Data

Raw waypoint data is included as a separate .csv document.

Consultation Record

FirstLight, Request for Nuisance Species Report Consultation, 12/6/2024

From: Land Management
To: maywood2@aol.com; "Aarrestad, Peter"; matthew.goclowski@ct.gov; chairman@lla-ct.org; bmcwilliams@lakezoarauthority.org; J. Neil Stalter; Tully, Emily; mark@candlewoodlakeauthority.org; bart@echobaymarina.com; josh@lolleez.com; Rebekah White
Cc: Michael Giapponi; Land Management
Subject: FirstLight Nuisance Species Monitoring Plan 2024 - 30 Day Consultation Request
Date: Friday, December 6, 2024 1:36:00 PM
Attachments: image001.png
2024 Firstlight Nuisance Plant Monitoring Report.pdf

Hello All,
FirstLight completed the attached report for the 2024 Nuisance Species Monitoring Plan as required under the Housatonic River Project License P-2576, Article 409 – Nuisance Species Monitoring Plan.

This consultation is required to commence on 11/30 each year and the written consultation if any can be provided back within 30 days from today on January 6th, 2025. We will also have a chance to discuss this report and its findings in the spring of 2025 when we have our annual Stakeholder Meeting.

This report is provided to Stakeholders and the Agencies so they can prepare their plans for managing invasive species which were monitored in the previous year in the following year.

Any written comments can be provided back as a reply to this email for considerations of any changes requested or proposed to the text in the report attached hereto.

Thanks,

Land Management Department
Brian Wood
brian.wood@firstlight.energy (Note New Email)
Senior Land Manager CT PA MA
www.firstlight.energy
FirstLight

Connecticut Shoreline Management and Permits
https://firstlightportal.myadept.com/ShorelineManagement.html
Visitor access and meetings are by appointment only and will be limited at this time. Contact Us

Candlewood Lake Authority, Written Comment, 12/30/2024

From: J. Neil Stalter
To: Land Management; maywood2@aol.com; Aamestad, Peter; matthew.goclowski@ct.gov; chairman; Barb McWilliams; Tully, Emily; mark; bart@echobaymarina.com; josh@lolleez.com; Rebekah White
Cc: Michael Giapponi; Hogan, Kenneth J
Subject: Re: FirstLight Nuisance Species Monitoring Plan 2024 - 30 Day Consultation Request
Date: Monday, December 30, 2024 4:15:32 PM
Attachments: image001.png
Outlook-n0s15100.png

Good Afternoon Everyone,

Brian, thank you very much for sending this along.
As always, we look forward to the annual stakeholder meeting where we can discuss the results with everyone and check in!
The report is very informative.
We only have one request that we wanted to put on the record:

1. While Candlewood Lake still has very little plant material as of this writing, we'd still like to request that the full survey of Candlewood begin again as normal in the 2025 season. As nearby waterbodies are invaded by Hydrilla, we'd like every opportunity to catch it early and engage a rapid response procedure that we are in the process of developing in preparation.

Please don't hesitate to let me know if you have any questions, otherwise we will talk to you all at the stakeholder meeting!

All the best,
Neil

J. Neil Stalter
Director of Ecology
Certified Lake Manager
Candlewood Lake Authority
(475) 273-1374

CANDLEWOOD LAKE AUTHORITY
Preserving and Protecting Candlewood Lake Since 1972

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FirstLight, Consultation Table

Comment Received	FirstLight Response
Candlewood Lake Authority, Written Comment, 12/30/2024	
CLA1: While Candlewood Lake Authority still has very little plant materials as of this writing, we'd still like to request that the full survey of Candlewood begin again as normal in the 2025 season. As nearby waterbodies are invaded by Hydrilla, we'd like every opportunity to catch it early and engage a rapid response procedure that we are in the process of developing in preparation.	**CLA1**: FirstLight has reviewed this request with the Northeast Aquatic Research team and believes that given the relative abundance of triploid grass carp within the impoundment, the monitoring of public boat launches, including state and municipal ramps, and areas with historically dense milfoil populations sufficiently address the CLA's concerns with regards to early detection of hydrilla. If prolific revegetation within the lake is found by CLA, CT DEEP, or NEAR, FirstLight will resume surveying the entire littoral zone.

ATTACHMENT B

FirstLight, Nuisance Aquatic Species Monitoring Plan Meeting Invitation, 2/24/2025

From: Land Management
To: Aarrestad, Peter; Tully, Emily; Greg Bollard Maywood; Goclowski, Matthew R; LLA Chairman; Barb McWilliams Lake Zoar Authority - Chairperson; Kenneth Hogan US FWS - Hydro Coordinator Northeast; J. Neil Stalter; Mark Howarth - CLA Exec Director. (mark@candlewoodlakeauthority.org); rebekah.white@yahoo.com; George Knoecklein; Kurtz, Lauren; Cassone, Joe; Zappulla, Shalyn; zach@thepondandlake.com; linda.brunza@ct.gov
Cc: Land Management
Subject: FirstLight Nuisance Species Monitoring Plan Meeting
Date: Monday, February 24, 2025 3:30:00 PM
Attachments: 2024 Firstlight Nuisance Plant Monitoring Report.pdf
image002.png

Hello all,

FirstLight has scheduled the Annual Nuisance Species Monitoring Plan meeting to discuss the 2024 Monitoring Report.

This meeting will be held on Tuesday, March 18, 2025 from 9:00 AM to 10:30 AM at FirstLight's Offices, 143 West St. Suite E, New Milford CT 06776 as well as via Microsoft Teams.

This meeting provides an opportunity for the Stakeholders, including the United States Fish and Wildlife Services, the Lake Zoar, Lake Lillinonah and Candlewood Lake Authorities, Friends of the Lake, and CT Department of Energy and Environmental Protection, to discuss their respective aquatic weed management strategies and any requests to be considered by FirstLight for modified monitoring under the Plan in the 2025 season.

A copy of the 2024 monitoring report, which is attached for your reference, was initially sent out for stakeholder consultation on 12/6/2024 and consultation closed in early January of 2025.

Please confirm your ability to attend this meeting by accepting the meeting invite that will follow this email. A link to the digital meeting will be included in this meeting invite.

FirstLight
Land Management Department
Contact Us

Shoreline Management and Permits
Visitor access and meetings are by appointment only.

firstlight.energy

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FirstLight, Nuisance Aquatic Species Monitoring Plan Meeting Agenda, 3/18/2025

Nuisance Aquatic Species Monitoring Plan Meeting Agenda
9:00-10:30 am on March 18, 2025

Via Teams & In Person: FirstLight Office 143 West St. Suite E, New Milford CT

9:00 - Introduction of member's present

USFWS – CTDEEP – CLA – LZA – LLA – FOTL -NEAR – FirstLight

9:05 – 2024 - Report Sent out for Consult 12/06/24
Consultation ran through 1/06/25
Report will be submitted before
3/31/25

9:15 - Discuss FirstLight Monitoring Changes for 2025

1- Candlewood – 2025
- One day of Monitoring focus on boat ramps till weeds re-establish

2- Zoar – 2025

– One whole lake sweep for Hydrilla and Water chestnut, once Hydrilla detected, monitor to support Agencies management decisions.

3- Lillinonah – 2025

– Two monitoring cycles late June/early July and late Sept/early Oct, monitor to support Agencies management decisions.

9:45 - Updating Nuisance Aquatic Species Monitoring Plan

1- Update plan to include Hydrilla & Water Chestnut monitoring.

2- 30-day consultation to begin today 3/18/25 through 4/16/25.

10:30 – Adjourn Meeting

FirstLight, 2025 Nuisance Species Monitoring Plan Meeting Minutes, 3/18/2025

Prepared by Nora Judkins

Attendees: Brian Wood – FirstLight (FL), Dana Andrews – FL, Len Greene– FL, Mike Giapponi – FL, Lauren Richardson – FL; Nora Judkins – FL: Andy Brydges – FL; Neil Stalter - Candlewood Lake Authority (CLA); Mark Howarth – CLA; Joe Cassone – Connecticut Department of Energy and Environmental Protection (CTDEEP); Matt Goclowski – CTDEEP; Emily Tully – CTDEEP; Linda Brunza – CTDEEP; Zach Davis – Pond and Lake Connection (PLC); Michael Lennon – PLC; Barb McWilliams – Lake Zoar Authority (LZA); Tony Fischetti – LZA; Rebekah White – Friends of the Lake (FOTL); Greg Bollard – FOTL; Shannon Young – Lake Lillinonah Authority (LLA); Lauren McManus – Northeast Aquatic Research (NEAR); Kendra Kilson – NEAR/FOTL; George Knoecklein – NEAR; Hannah Moore – NEAR;

Invited, not in Attendance: Pete Aarrestad - CTDEEP; Shallyn Zappulla – CT DEEP; Lauren Kurtz - University of Connecticut (UConn); Kenneth Hogan– USFWS

Brian Wood called the meeting to order at 9:00 a.m.

B. Wood: So, welcome everybody. This is FirstLight's Nuisance Aquatic Species Monitoring Plan meeting for 2025, which covers the report that we did in consultation in 2024. We'll do in room introductions first, and then online introductions. But we still have folks signing in. I'm Brian Wood, Senior Land Manager for FirstLight Power.

N. Judkins: Nora, the Land & Shoreline Management Specialist at FirstLight.

A. Brydges: Hi, I'm Andy Brydges. I'm the Director of Community Relations at FirstLight.

D. Andrews: I'm Dana Andrews. I'm the Operations Manager here in Connecticut.

Z. Davis: I'm Zach Davis from Pond and Lake Connection.

M. Lennon: Michael Lennon. I'm also with the Pond and Lake Connection.

J. Cassone: Joe Cassone with Connecticut DEEP Fisheries.

N. Stalter: Neil Salter, Candlewood Lake Authority.

M. Howarth: Mark Howarth with Candlewood Lake Authority.

G. Bollard: Greg Bollard with Friends of the Lake.

M. Giapponi: Mike Giapponi, Land & Shoreline Specialist at FirstLight.

L. Richardson: Lauren Richardson, Senior Land and Compliance Specialist at FirstLight.

B. Wood: Then if we go online. It's hard for me to figure out who's there. George, you want to introduce yourself and then your team who's online.

G. Knocklein: Yeah, George Knoecklein with Northeast Aquatic Research. We're principally an aquatic plant surveying company. And limnological survey too. We have Kendra and Hannah and I believe Lauren, as well.

B. McWilliams: Hi, Barb McWilliams, Lake Zoar Authority. With me is Tony Fischetti. He is now the lead person for our weed treatment going forward.

B. Wood: Nice. I see Len Greene was able to join us from FirstLight.

S. Young: Shannon Young, Chairman of the Lake Lillinonah Authority.

B. Wood: Oh, excuse me. Thank you, Shannon. Emily, and Matt, you want to introduce yourself?

E. Tully: Good morning. My name is Emily Tully. I am with the Office of Innovative Partnerships and Planning.

M. Goclowski: Hi, good morning, everyone. Matt Goclowski here. I'm with the Fisheries Division.

L. Brunza: Linda Brunza here in the Office of Environmental Review. Thank you.

B. Wood: Thanks Linda. We're trying to chase stocks and make sure we got everybody. Rebekah White is here from Friends of the Lake, as well. I think we got everybody. If you didn't get a chance to introduce yourself, feel free to raise your hand. Thanks everybody for coming. I think we've got some challenges that we know of in the lake system from our Monitoring Plan perspective. We want to make sure everybody has had a chance to take a look at the report. We did receive some written comments back. We're on a time crunch with a bunch of our federal filings, all to begin by the end of this month. This is one of them. We wanted to make sure we had an opportunity to sit with you guys and review our monitoring plans for 2025. We have hydrilla in the ponds. We've have water chestnut in the ponds. We don't know if hydrilla is present in Lake Zoar yet, but we know that there's water chestnut there and we know that it's established in Lillinonah as well. Candlewood's got its own suite of challenges with management. So, what's unique about these meetings is there's three of the largest lakes in the state of Connecticut and everybody chooses to do something different. What we're able to support is from the monitoring side, bringing in Northeast Aquatic Research and their skills, and then having these meetings to adjust on what do you guys want to do for management and how can we integrate or time our monitoring in concert with Northeast Aquatic Research to make sure we get the most effective solution for everybody, as far as what's going on with the aquatic species in these reservoirs. So, we sent out the consultation request. That was six days late. I apologize. It's supposed to be out by 11/30. We're planning on submitting it to the FERC before the end of this month. I think the challenges that we're trying to understand and open up the floor to discussion on are multi-faceted. On Candlewood, in talking with NEAR, they said there's not an abundance of weeds on Candlewood, let's instead try to focus our early detection and monitoring on Lillinonah, where there's some dynamic changes, namely hydrilla establishment. So, I think at this point we're proposing that we do essentially one or two days monitor in the boat ramps on Candlewood, until we get the re-establishment of weeds. I know in talking with NEAR, essentially if hydrilla does make it into Candlewood impoundments, it's the candy of grass carp. So having grass carp in there is a management technique. I'm just going run through our proposal for the lakes, then I'll open the floor. Zoar, we're looking at a full lake sweep, looking for hydrilla and water chestnut on early detection. Zoar's management techniques have changed over the years, and there's been some years when it was difficult to get permitting. Lillinonah, when we looked at successes last year and what makes sense this year, I know it was some confusion over, when do we start looking for hydrilla? When do we act? And in consultation with NEAR, they said, really, June into early July is when you are going to get the maximum extent of what your resident population is. And then there might be a treatment after that, herbicide or mechanical or whatever, going into September and October, before the plant starts to go into senescence. Hydrilla in particular is standing well into November. I've seen it on other reservoirs prolific late in the year, whereas milfoil tends to decline a little bit more over the year. And then what we are trying to do is update our monitoring plan. We are halfway through our license, which was issued in 2004 and ends in 2044. A lot of our license plans that are out there, whether the recreation plan or shoreline plan, have been modified over the years. The nuisance species monitoring plan was changed a couple of times to alter monitoring protocols. We tried to simplify it down and we're starting a consultation today to get your feedback on how we can make this plan reflect what we're doing mid license through end of license. So, there's a draft of that that came out early this morning that literally we finished up last night. So, that kind of throws it to the floor. Candlewood is first on the agenda. What are your guys' thoughts on how things are going? What are your management techniques? You know, how can we cycle in NEAR to make sure it's effective for early detection or what are your thoughts so we can capture them for our 2025 planning?

N. Stalter: Yeah, I mean, the current status as of today is that, there's still basically a lack of most of the plants in the lake. Now we do see each year an increase in the plant material in the fall, in the late fall, and that's still continuing. There are planned removals of more of the grass carp in the next couple of weeks. So, efforts are still to push towards a balanced level of letting the plant community recover, but not going back to the state we were in years ago

with too much plant material. Now, I will say that a major priority for us this year and in the coming years is to prevent hydrilla. It is a happy coincidence that there's the grass carp in the in the reservoir and they love hydrilla, but if we can prevent them from having their favorite food, that's fine by me. So, we're increasing our monitoring. We've had conversations with fisheries about basically getting on the books to have a rapid response plan. If hydrilla gets in the lake, having permits and funding basically ready to go. And so we're in the process of getting that started. So, we have that all ready to go for the season and increase our monitoring. With all that said, I don't love the idea of just a one day monitoring in the largest and busiest lake in the state. Especially in light of the fact that Lillinonah just discovered their own hydrilla problems. So, I appreciate that they're in a time of transition, and so is Candlewood, but they have hydrilla in the reservoir and we don't. So, to a certain point, I would argue that the priority should be in preventing the invasive species from entering a new reservoir rather than monitor the reservoir that has found it already. Now I understand that they need to monitor to understand how well management techniques are working, but I would just say that one day isn't sufficient to me. You know, I'd prefer an earlier return to full monitoring, with an eye to finding new invasive species in Candlewood. Because we're at a point where maybe it is a little easier for hydrilla to invade successfully, when we don't have a whole lot of plant material. And, the zebra mussels have told us that sometimes we find the first invasive species in a weird spot that we don't expect, so, if we're just focusing on the boat launches, obviously, I agree that's the location where we'd expect to find it, but we found zebra mussels on the tip of Vaughn's Neck, which seems like totally random. You know, that's not exactly where you expect to find that. So if we could have a full survey with respect to looking for hydrilla, I think that would be wise.

B. Wood: Yeah, I would ask George and NEAR, what are your thoughts on what Neil said? Is it two days? Three days? How do we sweep the moonscape and try to look for hydrilla? What do you think will be affected?

G. Knocklein: I mean, as long as we have carp in there, the carp are going to eat the hydrilla. That's just plain and simple what is going to happen. I mean we can go out there and look, but what do you expect us to find? Growing plants? I mean, there's no growing plants now, so are you expecting us to find growing hydrilla?

M. Howarth: The only thing I'll say is that with DEEP removing more carp this year, we don't know when those plants are going to start to return in a meaningful way, and it could be this year with more removals. We don't really know exactly what that tipping point is. Certainly, we didn't realize that they were going to disappear in one year, so they could return quite, quite suddenly too. And we don't want to miss that opportunity as well.

J. Cassone: And I can just give a little update on the removals. So, we've done, out of Candlewood around 460 carp coming out, which ends up being around 6 tons of carp. When we started removals in 2023, we were looking at a population estimate of 1500 to 3800, depending on which mortality rate would be used. When you factor in our removals plus natural mortality for the rest of the fish now, we're at a little bit lower of a population and I looked at like Mahopac over in Westchester County, which is smaller than but similar to Candlewood in that there was a milfoil lake with grass Carp. They put carp in in '93. They lost all their plants within three years and there were no removals there and you didn't see client recovery until 2012. You started to see just a little detectable appreciable amount come back and within three years of that first detection they were back to pre-carp levels. So, things are kind of dynamic. If we look at the densities in Mahopac and our population estimates for Candlewood, we could reach those densities when they started to recover within a couple hundred more carp, whether that's 200 or 600, we don't know. I'm assuming it's going to be on the higher end just to prepare people to be like, oh, you took the 100, where's our plants?

G. Knocklein: Wait, weren't there like 7,000 fish that were stocked initially?

J. Cassone: Yes, but they're not immortal. I mean, some number will die every year. You look at adult grass carp, which have largely outgrown predation, and literature will say you're looking at a 10 to 15% annual mortality rate. And then for smaller fish, it can actually be higher. With the size of the fish now, obviously there is going to be less mortality, but you lose some fish every year. We've certainly ramped things up. We found that our removals are most effective in the spring when the water's cold and the fish are somewhat aggregated, like the back of Brookfield Bay, which has a little four acre zone. We got 133 out of that zone in one event, so we're really ramping up to maximize the spring window and try and do it because we're hoping to get a couple 100 out this spring so we could be at a point of recovery soon. Whether it's this year or early next, that's possible with these proposed changes, and

the situation could change quickly. One of the big concerns is once they sort of release vegetation, we'll see Hydrilla, right?

B. Wood: That's part of where we said Joe, annual littoral zone monitoring will be reinstated after prolific vegetation is found by the agencies. So we were looking back at our meeting minutes and we're like when you start to see the plants, it's a matter of what management technique are you guys going use. Are you going to use herbicide for hydrilla? Are you going to use carp stocking? Those are all the pieces where we look for you guys to say 'How do you wanna do it?' We want to make sure that we are focusing the efforts on where the plant is today that's the most invasive. Our goal is to get the early detection monitoring that really nobody else in the state does, other than us. So that's what we have proposed in 2025, is to focus on the key areas and we're more than willing to have a conversation with you guys and NEAR. Like we just said, boat ramps are obvious, you know, people are pulling in a boat from New York State or wherever. Let's look at the state public ramp launches within a couple 1000 feet, see if a piece broke off, and then work with you guys on whatever monitoring you're doing. If we find it, then obviously we'll redirect the effort. In talking with NEAR, if we find hydrilla, it's gone the minute the carp goes by it. So, we have to figure out the balance, and we're flexible. I mean, if you guys come out there June and say, 'Oh my God, we have hydrilla', well, then, we'll respond and sink in with your emergency response plan. Let's get out there.

N. Stalter: I guess, as written, the only the part that's concerning to me is that this implies we're missing year one of the return, right? Because as written, this is basically saying OK once plants return, like prolific plant growth returns, that's year one. Then we'll go back and go to Candlewood, right? So say in this case, as written, plants come back this year. OK, at this meeting next year, we say, 'Oh, plants are back.' Now we'll go back to the full Candlewood monitoring, but we've missed that first year, the one with plants returning, right? So that's the primary concern for me.

B. Wood: Yeah, we basically said focus on boat ramps and areas with historically dense milfoil. But we're going to work with you. That's why we wanted to get this out in advance of this meeting and give a 30-day window so that we can all have an informed discussion, and then figure out what actually makes sense, right?

J. Cassone: Yeah. Looking at it, I would say, as written, it says the two state boat ramps and that those are major ones for sure, right, but that's a minority of the ramps on the lake, right?

N. Stalter: Five municipal ones, yeah. And then all the private ones obviously. But yeah.

J. Cassone: And then logically, I agree boat ramps are a good place to focus efforts, but, I will say that Hydrilla has been found in several drinking water reservoirs that don't have boating access, right? So, there is that bird based transport that would be detected.

G. Knocklein: But it probably would be one day, maybe two, at the most. I wouldn't be cruising the entire shoreline looking for new infestations of hydrilla, but if that's something that you're seriously concerned about, a survey in September would be when I would do that cruising the shoreline, looking for new hydrilla.

N. Stalter: Yeah. I mean, it's certainly something I'm concerned about. I mean, no doubt. So yeah, I mean, in addition to what you're doing, that's something that we would be interested in certainly. And we can combine efforts. I mean, we'll be out there looking as well, all season. But the more eyes the better.

M. Howarth: As far as I'm concerned, I think we don't want to look back and regret that we didn't make that extra effort. And then, people are saying, "What were you guys doing about it?' You know, we didn't do what we needed to do.

B. Wood: Even yesterday when I talked with George, I said, what's the efficiency factor? We said we'll work with you to get you a rental boat that does 25 miles an hour. So, you go from point to point to point, looking at the historic littoral zone footprint. The stakeholders will reach out and May, and I'll tell them George and the team knows what they're looking at. You know, the whole team is looking at in another pond and seeing it established. You don't want to go treat in May and miss the 500 feet that isn't detectable yet 300 feet to the right. Some of its new plant, new knowledge, and we're learning about the growth rates in Connecticut. So maybe it makes sense to do an early detection early in the year and then a sweep in September?

G. Knocklein: I think one of the things you were talking about is how early in the season can we find hydrilla? Is that what you were saying? So, from my experience at Twin Lakes, where we've had two years of watching hydrilla there, we can't find it in May. It's not up yet. What we usually find is small shoots coming up mid-June. Small shoots that are maybe 6 to 8 inches long, and then it just starts from there on out. It just keeps growing. More and more shoots coming up out of the ground, and the shoots that are up out of the ground just keep getting bigger. So, we don't expect to find hydrilla before June 15th, and even then it's going to be small plants. So, we kind of use September as the real survey for looking for hydrilla because that's getting to about the maximum growth in September.

B. Wood: And what is the optimum time to treat it, George, with its life cycle? Say we found it in August. Would you have an opportunity to it chemically or by any other means effectively in that first year? Or should we map it in September and aggressively treat in the spring of the following year or summer of the following year.

G. Knocklein: Unfortunately, my experience has shown that the only herbicide that really gives you long lasting effects is Fluridone. We're just not getting real good effects using anything else, and we've abandoned ProcellaCOR. I mean, Diquat is still an option but you're not really killing it. You're not really killing the plant, you're just killing whatever's there. So, it's looking like it's Fluridone, and you need to have 60 to 90 days of contact time.

J. Cassone: Of the lakes in Connecticut, the scale of Candlewood and the amount of flushing, it would be challenging to use Flouridone to maintain that constant concentration. It's just not feasible with the volumes and flushing at Candlewood because it's a lake that flushes, so, I think, being able to find and quickly nuke a patch is better than letting it get established.

Z. Davis: Fluridone products, they've got five or six different formulations. They do have some delayed release pellets that do seem to work. I mean, what you're sort of referring to is getting these large scale treatments and what the price is? It's pretty serious. The more you have to do, the harder it is to keep that concentration. I know with like twin lakes and a lot of the northern lakes, we do have a species of plant to be mindful of. I know Lake Lillinonah for instance, within the treatment area, there's no rare species, so we're not limited to the parts per billion that we can treat at, which is a good thing. Hydrilla, you can get effective sort of treatment ranges or treatment of hydrilla at 5 parts per billion, which a lot of other plants you kind of have to bump up concentration amounts. But trying to at least keep in that range with the flushing rates can be can be difficult, so that means more treatments, more product.

J. Cassone. So, there's an incentive to find and intercept early. I'm supportive of that. I think whether or not it's the traditional survey or not, I'm not super dug in on, but I think even the traditional survey methods would go a lot faster without as many plants to go through. You're going to cover a lot of ground a lot quicker either way.

B. Wood: I know it's kind of the scale. I asked NEAR, if we spend one day out, like we did last year, we would find hydrilla if it was present, and that's why I put it in. I said OK, one day with a faster boat, that means you're covering more ground, and not looking in areas where obviously there won't or historically haven't been plants. You know, one of the changes we put in the plan was switching out whole lake survey for littoral zone survey. That's why a couple years ago we decided to add Pond and Lake to these meeting as a point of contact. They're local for hydrilla treatments. We added the applicator for the meetings for their input. So, I think we've got some good thoughts on Candlewood. Look forward to you guys getting us back your thoughts. Are we have enough advance time where I told NEAR, 'Scope and price what we have in here for now, but understand, things may change after the meeting, based upon what we learned'. So, we have held on issuing a PO until we get comments in. That's why we triggered this one for a 30 day consultation because we want to make sure we have an opportunity to get the right stuff out for monitoring in 2025 for Candlewood

M. Howarth: And George, just for this year, we'd like to talk to you and collaborate because we're going to be out there trying to obviously look ourselves. So, if we can work with you guys, now knowing, June 15th is the time that we might want to start looking, but we'd like to kind of coordinate efforts as well, I think.

N. Stralter: Yeah, no question.

B. Wood: And send us your logistics and data, like we've done with Lillinonah. If anybody goes out and does a treatment, let us know because we don't want NEAR to go map over where it was just treated. It's a waste of resources. So, if you guys, coalesce with NEAR on how you want to collect information and get it to them, then they can speed up their response and support at the same time.

G. Bollard: And we've been very successful with that on Lake Lillinonah.

B. Wood. Well, with that we'll turn over to you, Greg.

G. Bollard: All right, so I have a few comments. First off we unfortunately have hydrilla in Lake Lillinonah and Lake Lillinonah is much more dynamic than Candlewood. We're much more often a river and we had a couple of major flood event last year. So, we don't really have a handle on where hydrilla is. We have NEAR's report and we're focusing on that. We had a little bit of delays in funding for treatments. Lake Lillinonah Authority had to jump in, which we're very appreciative of. They covered the first application. And DEEP covered the following two. And we have two more on schedule for this year. And then of course, that falls under federal funding, which who knows what was committed and if we'll get it. So that's a major concern for us. So a big part of that management is the monitoring aspect. Finding it. And finding out a plan to treat it and then obviously with any invasive species such as hydrilla, the faster we can do this, the more we can pinpoint. We found an upstream source and worked with the land owner, and they promptly hired a vendor to deal with it. Interesting enough, that pond probably had hydrilla for several years. They had carp and the carp mortality had probably exhausted itself. This is my opinion, it is not scientific data. That seems to be where we have our hot spots. What happened after the flood event? We don't know, but we did see some response with the granular slow release product that Pond and Lake did. I'd like to ask their opinion about what they think. In the small patches we saw a really good knock down and in the large dense patches, we found stunted foliage with growth yellowing. Jury's still out - Does it need more time? Does it need more product? What's going on? So we feel we still have hydrilla. We feel that we have to be aggressive with our management techniques and we're hoping it doesn't take over the whole lake. So, I would ask Zach, what are you feeling about treatments that we have done thus far and what we have in line for this year as far as management?

Z. Davis: So, good news is, permit wise, we're ready to go. There should be no hold up treatment wise on state agencies authorizing it. In terms of last year, we don't think we found any new spots. A lot of the smaller patches at Poison Ivy Island. Some of those small patches we really hit pretty hard. We could identify sort of singular plants, or a group of smaller plants and sort of locally target those. The bigger areas, as you're alluding to, I mean it's very dense, especially near that Bridgewater boat ramp. I believe we started September 5th was the first treatment and it was funding related. I would much prefer to start earlier this year, only because Flouridone needs that long contact time, 60 to 90 days is sort of what we're really looking for. When you start in September, you get to that point where you don't know if the plants are naturally senescing or if the treatments are working. We did see bleaching and yellowing. But did it have enough time to really absorb it and sort of get that better kill that we're looking for? Sometimes, you can start in mid-June and you can get that sonar concentration in there and then as those plants grow up, we might not be able to identify them as easily because they're not above the surface, but we know it's down there. We can put that sonar on top of them and it should really start to affect a smaller plant as it's actively growing. It's going to absorb more into the plant itself. So, we can start a little earlier. Obviously we're not going to start it in May or April. It's way too early. You're wasting money at that point, but like the end of June. That'd be a good time to start. Get that concentration in there and then just keep it going for that 60 to 90 days. Ideally, as we keep going and we sort of played around with spot treatments around the island, we thought we have spot treatment. But with a bigger area it's good to kind of just do the whole area and treat it as one big unit, assuming that the whole thing is covered in in hydrilla. It's a lot harder to keep that concentration, dosing it out to a bigger area, but it's going to allow those plants to get more of that concentration. We sent an estimate to Matt, I believe. We sent him the contract for this year, I think we had extra treatment in there. If we wanted to do 4 because we had the money for it, awesome. Let's do it. If we only do two, it is what it is. Wherever the funding is, that shouldn't change really the price as much so.

M. Goclowski: Yeah. So, we have the federal Aquatic Nuisance Species Grant. We have $45,000 secured for that through the US Fish and Wildlife Service.

G. Bollard: I believe the quote we saw was for three treatments, right? And that sort of aligned. I hope that the funds are in the State Bank bank account rather than the federal one. So that being said, I think that's going to secure the

management for the known hydrilla that we have in Lake Lillinonah at this point, and Matt, I know you've got exhausted with my emails last year because he was getting like four a week, but I think open lines of communication, even if you don't know, is very helpful for us and I would just appreciate that we keep our open lines of communication with the funding.

M. Goclowski. Yeah, makes sense.

D. Andrews: I'd like to make one comment on that too, so I coordinate, with Zach our daily operations and flows to the best I can. And, obviously weather plays pretty much the biggest part in that, particularly as you get into September and some of these later treatments seem to have a lot more water especially last year with that bad storm. I think July and August last year, it probably barely rained. You know, we probably run a very limited schedule, better contact time and so it's something to think about as we move forward with the treatments. Yeah, it gets tough in September and we coordinate, we cancel, and it's a game time decision sometimes.

G. Bollard: We appreciate the effort and with this particular product, we don't expect you to pond for 90 straight days, but it is essential that we get the biggest bang for the buck as it is.

B. Wood: Do you guys see anything in technology as far as barriers or something to limit the river flow from the area where you're treating? I don't know if anything like that's been looked at?

G. Bollard: The channel flow isn't there except by Poison Ivy Island, right? We really don't have a handle on how long that group was. My guess is it's probably been there for three years anyways, and we just saw it last year at the end of '23. So yeah, but it's going to be on our radars for a long time. So, I do appreciate Candlewood having to share the resource of monitoring and I recognize your concerns as having an open seed bed, that's valid and I guess everyone's speculating on what the regrowth will be. I can only speculate that we have it. So that's that, and we're doing the best we can. I won't speak for the Lake Lillinonah Authority, but Shannon is on the line. Shannon, do you have anything else you want to add?

S. Young: Good morning. Yes, thank you very much. I do have just one thought. Going forward, my suggestion would be to maintain the annual inspection of Lillinonah. I can't speak for Zoar. I would guess that they would benefit from the annual inspection if they were to have an observation of hydrilla, which I surely hope that that never happens, but I think that it's important we're the only lake right now that has had this problem that we do know of, so I can't see the moment where we're not going to need annual monitoring. So, I would think that that would be the suggestion that we would have to maintain that. I also wanted to mention that I was unaware that Pond and Lake was treating those very small isolated populations up by Goodyear Island. Those are my main concern. We had an approach that we were going forward on the big population by the Bridgewater Park and I never knew that you guys were also grabbing those small ones, so I'm really happy to know that those are also being handled, but those are pretty much my main things.

B. Wood: I think it's a matter of keeping the lines of communication open. Between our OPS team and Pond and Lake and I called Greg, midsummer last year and said Listen, every single one of these emails I'm getting, I'm having to forward to NEAR. Is everybody OK if I just put NEAR on this e-mail that's communicating with everybody. And, a huge loop on it is the communication chain. I think we figured it out with hydrilla and, feel free to build up one hydrilla plan and e-mail that you can put NEAR on and you can put us on. We've got the local agencies, nonprofits, we've got everybody's coalescing around the solution and it's actually going to move forward. We need more funding in order to support all this. So to your point Shannon for Zoar, for Lillinonah, we just need to have a little bit of planning time so that we can adjust our budgets accordingly to make sure that we're doing what you guys actually need and that we're getting pricing that actually matches what we're gonna do in the year. The challenge is we budget in June of last year. So that's why I'm trying to move the plan forward a little bit because that way I can have more planning or say to my management team, hey, we've got phenomenal success, we have eradication on Lillinonah. We can't let our guard down on the monitoring. NEAR believes that if we monitor at this interval we'll have the best chance of success. That's what we're going to put in the budget, but if we find out there's 60 acres of hydrilla on Candlewood that nobody notices. Then I'm going to make that call to my management team and say in order to continue with to support the team that we've built together in the state, this is what we need to do. Then get the solution. So that's the kind of stuff that having a quick reaction plan and communication and having everybody tied together is the way you get a rapid response and get a good solution. So, we're all learning and I'm

just trying to document some of it so that we know what we're doing and how we're doing it. NEAR, do you have anything that you want to add in before we move on or go ahead?

G. Bollard: Sorry, I got one other thing and that is water chestnut in Lake Lillinonah. So Rebekah has headed up the volunteer team, and her focus is mostly water chestnut. She's got a lot of control in Lake Lillinonah, in the Lover's Leap area and such. She's now going inside the boundaries up the Still River and mostly removing sources. Rebekah, if you're listening, you can tap in, but she's targeting as early as possible before nuts are developed. They're easier to pull. She got a team of volunteers in last year. Because there's really no herbicides that works very well on water chestnut, the biggest challenge for Lake Lillinonah is the sources that are feeding us.

B.Wood. Right, George? Anything you can think of on Lily. Did we get it right in conversation or anybody on the near team? Is there anything you should change for Lilinonah before we? Put the agenda over to bar to Lake Zoar?

G. Knocklein: I'm not. I'm not sure that at this point we need to really change anything. I think we're anxious to know what the outcome of last year's treatments are, and obviously we're also anxious to know how much more it's spread, but otherwise I think we'll keep going where we're going. I would encourage a pretty aggressive water chestnut harvesting program. That plant can get really bad, if it gets ahead of you.

S. Young: We have been very successful with our manual harvesting. I think that Matt has really honed the equipment. The whole procedure for how to best use the resources and get the most bang for our buck. We've steadily increased the amount of total harvest, or the volume on every year. I mean, I of course I'd like to see that going the other way, where he was doing the same amount of work, but seeing it decline. I think every year is a little different as to what we're going to get washed into us and what we're going to see and what grew from last year and so on and so forth. But we have a really robust system of communication from our neighbors. Rebekah and her team really were able to get the information as to where it's happening. This is where you guys have to look. Obviously we take the information that you find, if you find something that's way outside of where we normally find a lot of water chestnut upstream. So, I think we're pretty responsive with that. And I think it works pretty well, but we're definitely open to any suggestion to make that even better.

J. Cassone: Then something we can talk more about after is last year DEEP rolled out a floating work crew they would help parks and fisheries on projects. It was basically just a team of folks that they got just to be general workers and help with anything. And so we actually got them connected with another lake to do water chestnut pulling there. So, once harvesting gets set up, that's a work crew that we could get you in contact with.

B. Wood: Let me know if you need help. And the data collection from those groups goes back into NEAR, so they have a map that shows historical changes. We can see the delta over change, so I think that's been working pretty well. With that, let’s go to Barb with Lake Zoar. Barb, how are things going down on Lake Zoar?

B. McWilliams: We're good. Actually we have a new chairperson, Tony Fichetti, who has agreed to head up our weed treatment projects and efforts. So, with that, I'm going to just hand it over to Tony.

T. Fischetti: Yeah. How are you doing everyone? Good to meet you. My name is Tony Fischetti and I've kind of studied this problem now for the last year being on the Commission and talked to a lot of our residents here on Lake Zoar. We haven't had a weed treatment in two years based on a variety of issues with not being able to the schedule with weather and not being able to stop the lake for the period of time that's required to put the agent down. To that end, I've spoken with Zach at Pond and Lake. We seem to have a preliminary plan which will require FirstLight to work with us to get a date set for the first treatment, which we would like to do before May 15th because that's the date that our board has decided is right. In addition to that, I learned this is a little bit too early for the milfoil, so we need to speak with our board and talk about if a second treatment would be required depending on the survey. But I think with Lake Zoar, because it's been 2 years since we've treated, we do have a serious weed problem on parts of the lake. I think we need to do a little bit more surveying, but I also think we need to do a sweep this year of hydrilla to really look at the situation. We also have water chestnut at the mouth of the Pomperaug coming in, which we're going to need to take care of. I think it is one of the major things that we're dealing with and we have some very irate residents on the on the lake that have been coming to our meetings and that are starting their own side coalitions to go look at this problem. You know, I think we need to find the scheduling window and kind of stick to it this year.

So, Zach has told me that he's going to work with FirstLight to go get that and get that window established. You know, certainly we understand its weather permitting and all that that goes along with it, but we really would like for this year to take care of that problem and hit this problem before we get into trouble with algae blooming and that comes from treating them. Between now and September, we're going to look at what else is happening. What other weed treatments are required so that Barbara and I can take it back to the Commission and get everybody educated on what we need to do and when. And again, working with FirstLight working with Pond and Lake getting this all established.. I think we'd like to continue to work with FirstLight and with Pond and Lake and also learn from Lillinonah and Candlewood with what they've gone through and how they're dealing with the problems. And we are watching the dam over at Lillinonah to make sure nothing's coming across, and starting to get in so we can hit it early if we see it. And we're making sure all of our inlets to the lake at all the associations who have association ramps are fully aware of the issue with the hydrilla in particular. So, to that, Barb, I don't know if you have anything you'd like to add, but, first and foremost, I'd like to thank everybody for the opportunity to attend here and talk. And I'd like to make sure that we can get the scheduling done and I'm happy to work with the team to do that. And to do the research if required on some of the other issues. I do have a background to be able to do that, so I'd like to lend my assistance.
B. Wood: And maybe George or NEAR, do you guys know what would be the optimal time given the fact that you guys have monitored Zoar in the past? Is it a similar time period for hydrilla to map the other existing species -- I think this year we budgeted one sweep just to get a baseline for Zoar. Is that like mid-June and similar to the other times we had surveys going? I'm just trying to answer Tony's one question, which is how to schedule it.

G. Knocklein: Yeah, Tony, I'm not sure why you have to treat so early? Why do you feel you have to treat so early?

T. Fischetti: So that's a question that I have and I started that conversation with Pond and Lake yesterday, that this is an inherited time frame that I learned about from the Lake Zoar Commission. The concern that they've voiced to me and some of the residents here have voiced to me, and I'm looking into it myself, is they feel that if we don't treat the weeds when they're at a young age, that we'll stand the risk of a bloom and algae on the lake. And so the other, the other issue is that you've got a split group and people that live on the lake, they feel that the lack of treatment over the last two years has limited the algae bloom. In the August, September timeframe, that is noticeable. But I don't think that there's any scientific evidence that says that it's because we didn't treat the weeds or that the weeds weren't treated early enough. I think it may have to be more in line with weather and temperature and all. And look, if there's a better optimal time frame to treat the two different species that we do need to take care of here, which is milfoil and curly pond leaf, let us know.

G. Knocklein: Well, you can go check your archives, because I've been working for Lake Zoar Authority for many years, doing treatments on the lake, and we prepared a report every year. It basically tells you in there what we treated, when we treated in the areas that we treated, and how successful each of the treatments were. And what we ended up having come back in the place of milfoil, was a bunch of native plants that got kind of bad. So, we ended up having two treatments a year. The first one would be probably around mid-June to control Eurasian milfoil. And then we come back sometime in August because a couple of the natives get so dense. So, we would, we would control them. Now as far as your algae, the cyanobacteria is really not coming from the plants or the death of the plants or the growth of the plants. It's coming from the river and the river systems. And I've charted that for many years as well. So there's no real interaction between killing aquatic plants and generating cyanobacteria blooms in Lake Zoar. If you can't find those reports, we'll be happy to make them available.

B. Wood: Similar to what I said earlier. You know, if you tie out an e-mail, feel free to send it to me. I have the e-mail thread to the other folks. You know, if we have a plan, I can add Zach and his team. We can get one communication chain going for Lake Zoar. And that's usually the easiest way to do it. That way we're tracking it real time. The only question I have for NEAR, and George you can reply to that and attach any reports that you guys have for historical record, is we didn't really set what the timing of the survey would be to support Zoar's efforts. Do you think it's that mid June, early June survey? Just want to make sure the group can come back with what NEAR thinks is the best interval or time to sample and support their treatment. I don't what NEAR's schedule is like.

G. Knocklein: Well, it starts to get a little tricky when you start looking at the timing of when some of these plants are going to be available. Certainly, if we're looking for milfoil, doing a June survey would be a good time, especially if you're planning on treating. If you're looking for hydrilla, it's kind of early for that. And if you're

actually trying to manage curly, it may be a little late. So, it's kind of a give or take. So, late June might be the best if you are planning on treating.

B. Wood: Yeah, I think that makes sense. I just wanted to know if they're going to treat on May 15th, we don't want to treat and then go out and map.

G. Knocklein: The only thing we'd be able to kill in May would be curly.

Z. Davis: The only thing that we are going to treat in May would be the curly. There's a whole other conversation to be had for treating milfoil in June or July.

T. Fischetti: For Zoar, I think that we need to think about and understand is for the curly leaf and the milfoil, is there an optimal time that we can treat and take care of both of them to limit the chemicals in the lake and also to limit the cost exposure for double treatment. Looking at those old surveys and then certainly we as a lake Commission, we're all looking ourselves, like I said, we have this issue at the Pomperaug outlet with water chestnuts and where else that would be on the lake in addition to that. But right now we need to get the weed problem under control for this season and come up with the schedule for the right time to treat it. And, as Zach said from Pond and Lake, late April or early May, trying to get that in, but if that's not going to take care of the total problem, I think we should talk about it.

G. Knocklein: What herbicide were you planning on using?

Z. Davis: I would love to use [inaudible], but that's more of a timing thing. If we're going to try to combine, obviously we have to go later than probably May 15th or do a double application.

B. Wood: We went to alternate Lillinonah and Zoar inspections, and the reason we've done that with stakeholder input is Lillinonah wasn't treating. They just kind of wanted an inventory of what was happening on the lake. They were using some mechanical methods, using some benthic barriers and promoting the alternative options, and then Zoar was hiring Solitude or Pond and Lake to do whatever they had. They were continuing to implement it, so we were doing every other year. You know this document is basically to do an annual survey and as you guys continue to do management, as the agencies will support changing that monitoring at this time.

T. Fischetti: I think getting an email train out is the right way to do it. There's a lot of differences of opinions on the lake.

B. Wood: Yeah, and we could do a Lake Zoar NEAR email, a Lake Lillinonah NEAR email. They're willing to pass along the knowledge. And then I thought, as I said a couple times during the meeting, kicking out the simpler plan. You know, that's our goal was give us some flexibility. Here's what's on it. Zebra mussels are done. We're changing it to 'Aquatic species', so that all the acronyms match a little bit better with some other acronyms.
Then essentially each year we'll only have to review, the three management techniques and how we're adjusting this and that way we can almost use this as our final report. Get some attached science to it. That's what I'm trying to do is streamline it. Make it simpler, because if you want to read the 2006 report and I was to comply with it, none of what happened at this meeting would occur.

B. McWilliams: Prior to the last two years, when we connected with Pond and Lake, we had solitude which we can split apples, but never did they treat when it was optimum time. I mean, there were years that they just treated the end of July and sometimes then the second treatment, the end of September, which some were led to believe that that was the reason why Lake Zoar goes green the end of August. So, you have people that don't want any algae blooms. We didn't understand the proper times to treat, but we do have some split opinions on treatment. There's some that want no treatment and other ones, they want treatment so.

B. Wood: No, I think you've had really good successes. You know, keep the lines of communication open with DEEP as well on the permitting side, because I know that's been a challenge over the years. I hope you don't get hydrilla on Zoar, but keep an eye out for it. Confederation of the Lake printed signs showing what hydrilla looks like, because the education part is important.

T. Fischetti: Then we can effectively police for Lake Zoar. You know, communicate this to the residents and the associations that are on the lake today and get the word out. I think that we can start to educate the community and get the right timing. The right treatments. Get people looking. I think we can do all that once we all agree where we are.

G. Knocleink: I would like to at least have you consider the fact that the treatments are not causing the cyanobacteria blooms in Lake Zoar. Lake Lily is an incredibly eutrophic lake, and it's discharging from the bottom into Lake Zoar. So, both those rivers are loaded with phosphorus and nitrogen. So that's, that's where the cyanobacteria is coming from, not from killing plants. Aside from the fact that we do a lot of weed surveys, we also do a lot of water quality analysis and we've monitored the water quality at Lake Lillinonah for like 10 years. We also monitored the water quality in Lake Zoar for a few years, so I'm not guessing about this.

B. Wood: We'll continue to pass along knowledge and support everybody in making decisions. We'll tie up an email to send to NEAR and add that to the FERC filing, that shows all the participants. Thanks everybody.

Brian Wood ended the meeting at 10:30 AM

ATTACHMENT C

Nuisance Aquatic Species Monitoring Plan

Lakes Candlewood Lillinonah, Zoar


Milfoil in Allen's Cove, 2008

Eurasian Milfoil

Zebra Mussel

Hydrilla

Housatonic River Project

FERC Project No. 2576

FERC License Article 409

Revision Year	Date Modified	Notes
2006	2/3/2006	Plan Approved By FERC
2010	7/28/2010	Filing Dates Adjusted
2011	9/23/2011	Zebra Mussels Added
2022	6/21/2023	Zebra Mussel Removed
2025	3/18/2025	Hydrilla Added Draft Plan for Consult

4/16/2025

DRAFT For Agency 30 day written consultation 3/18/25 through 4/16/25

Introduction and History:
FirstLight CT Housatonic LLC (Licensee/FirstLight) is Licensee of the Housatonic River Project, P-2576, (License) as approved by the Federal Energy Regulatory Commission (FERC) on June 23, 2004. As a condition of License Article 409, FirstLight was required to prepare a Nuisance Plant Monitoring Plan (Plan). FirstLight prepared that Plan in consultation with stakeholders and submitted it to the FERC; the plan was subsequently approved in 2006.[1]

The originally approved Plan included annual monitoring of Eurasian watermilfoil and other invasive plants in Candlewood Lake, Lake Lillinonah, and Lake Zoar. That Plan, as approved, provided for the establishment of a Technical Advisory Committee (TAC) to evaluate the results of the monitoring that would be composed of Stakeholders from the United States Fish and Wildlife Services (USFWS), the Connecticut Department of Energy and Environmental Protection (CTDEEP), the Candlewood Lake Authority (CLA), the Lake Lillinonah Authority (LLA), and the Lake Zoar Authority (LZA).

In compliance with the Plan, FirstLight has:

- Performed monitoring of Candlewood Lake, Lake Lillinonah, and Lake Zoar for Eurasian milfoil and other aquatic invasive plant and animal species;
- Scheduled annual stakeholder consultations and meetings;
- And filed the required reports with the FERC.

In the 19 years since the original Plan was approved, minor changes have been made in consultation with stakeholders, including switching from annual to alternate year monitoring of Lake Lillinonah and Lake Zoar and to include monitoring for animals, specifically the presence of zebra mussels, to the Plan. Zebra Mussel monitoring continued until populations reached self-sustaining reproducing levels in each impoundment, after which point monitoring was no longer conducted.[2] The Plan's field and vessel monitoring protocols for how each lake is monitored for Eurasian watermilfoil and other invasive plants has remained consistent.

LLA, LZA, and CLA (herein collectively referred to as the "Agencies") are each responsible for the control and abatement of algae and aquatic weeds within each respective lake, in cooperation with the CT DEEP.[3] Each agency has pursued different aquatic plant management practices over the years, as partially summarized below.

Candlewood Lake (Rocky River Reservoir): In 2015, the CLA secured permits from the CT DEEP to emigrate 3,868 grass carp (*Ctenopharyngodon idella*) into Candlewood Lake, followed by a second stocking of 5,035 fish in 2017, suggesting the lake contained 8,903 grass carp at the end of the year 2017. In 1983, the CLA and CT DEEP requested annual winter water level drawdowns as a method to control Eurasian watermilfoil; annual winter water drawdowns are now required by the License. In accordance with the License requirements under Article 403, FirstLight has drawn down the water level of Candlewood Lake each winter to perform maintenance and control Eurasian watermilfoil, alternating annually between shallow (4-6 feet below normal operating levels) and deep (8-10 feet below normal operating levels) water elevations.

Lake Zoar (Stevenson Dam Reservoir): The LZA secures permits from the CT DEEP to apply herbicides and annually targets beds of Eurasian watermilfoil, brittle naiad *(Najas minor*), and curly-leaf pondweed (*Potamogeton crispus*) with chemical herbicide applications. The Licensee's monitoring has noted a decline in the abundance of Eurasian watermilfoil by nearly 80 percent since 2018. LZA previously used a weed harvester vessel that proved to be ineffective at controlling Eurasian watermilfoil.

Lake Lillinonah (Shepaug Dam Reservoir): The LLA has recently been focusing efforts on hand pulling water chestnuts and ensuring that this new invasive plant does not spread to other parts of the lake. LLA in the past has recommended benthic barriers, weed harvesting and hand pulling. The LLA utilizes targeted herbicide applications to control certain emergent weed species, namely hydrilla (*Hydrilla verticillate*).

[1] 114 FERC ¶ 62, 101, 20060203-3011
[2] 136 FERC ¶ 62,257, 20110923-3007
[3] CT Gen Stat § 7-151a. (2022)

Rational for a Revised Plan:

Since 2022, FirstLight, together with the Agencies, have recorded two significant changes occurring in the lake's aquatic plant communities that warrant consideration for modifying the Plan's monitoring specifics.

1. Eurasian milfoil disappeared from Candlewood Lake (and Squantz Pond). As per the Plan, monitoring conducted at Candlewood Lake in 2022, 2023, and 2024, found virtually no Eurasian watermilfoil. No other invasive aquatic plant species have been found in Candlewood Lake to date.

2. The invasive aquatic plant hydrilla was confirmed to have invaded Lake Lillinonah during 2023 monitoring, and water chestnut continues to expand in Lillinonah and was discovered by FirstLight in the Pomperaug River tributary on Lake Zoar.

FirstLight will continue to annually monitor Lakes Lillinonah, Candlewood, and Zoar to provide early detection for invasive aquatic plants as long as management is being proposed by the Agencies, but we propose that the focus be shifted in the following ways:

- **Candlewood Lake:** An annual whole lake survey to determine the acreage of Eurasian watermilfoil is no longer warranted. No plant beds (only a few isolated shoots tucked under docks or inside of rocks) were found during each of the 2022, 2023, and 2024 surveys. Monitoring of Candlewood Lake will consist of one day of field time to check specific known hot spots for Eurasian milfoil and hydrilla. Each of the two State of CT boat ramps will be searched for recent introductions of hydrilla. Annual littoral zone monitoring will be reinstated after prolific revegetation is found by the Agencies.

- **Lake Lillinonah:** Hydrilla is likely to spread rapidly in the lake in the years to come. We propose conducting two littoral zone surveys of Lake Lillinonah every year. Each will be specifically designed to search for Hydrilla, although other invasive species will be documented, including Eurasian milfoil and water chestnut. This monitoring will be coordinated with management efforts to control hydrilla or water chestnut undertaken by the Agencies.

- **Lake Zoar:** Hydrilla and Water Chestnut are likely to spread in Lake Zoar in the years to come. The littoral zone of Lake Zoar will be monitored annually, with an emphasis on hydrilla and water chestnut detection, although other invasive species will be documented. If Hydrilla is found, monitoring will increase to twice a year. Monitoring will be coordinated with management efforts to control hydrilla or water chestnut undertaken by the Agencies.

Reporting – Consultation – Annual Filings

Annually by October 31st, the Licensee will provide a draft of the previous summer's annual Nuisance Aquatic Species Monitoring Plan Report (Report), including any Licensee proposed monitoring modifications, for 30 days written consultation to the consulting agencies and stakeholders.

Agencies and stakeholders will have 30 days to provide written consultation on the Report, and any of the Agencies planning a management program for aquatic invasive species will provide their management plans for the upcoming year as part of their 30-day consultation. Consultation will end by November 30th annually.

The Licensee will respond to the Agencies' comments and if the Licensee does not adopt a recommendation, the filing will include the Licensee's reasoning based on project-specific information. The Report will be submitted to the FERC by December 31st annually.

Consulting Stakeholder/Agencies will include:

- United States Fish and Wildlife Service
- CT Department of Energy and Environmental Protection – Fisheries & Environmental Permitting
- Candlewood Lake Authority
- Lake Lillinonah Authority
- Lake Zoar Authority
- Friends of the Lake

ATTACHMENT D

FirstLight, 2025 Technical Drawdown Committee Meeting Invitation, 2/24/2025

From: Land Management
To: Aarrestad, Peter; Tully, Emily; Goclowski, Matthew R; Kenneth Hogan US FWS - Hydro Coordinator Northeast; J. Neil Stalter; Mark Howarth - CLA Exec Director, (mark@candlewoodlakeauthority.org); Cassone, Joe; Zappulla, Shalyn; linda.brunza@ct.gov
Cc: Land Management
Subject: FirstLight Rocky River Technical Drawdown Committee
Date: Monday, February 24, 2025 3:31:00 PM
Attachments: image002.png

Hello all,

FirstLight has scheduled the Rocky River Technical Drawdown Committee Meeting for Tuesday, March 18, 2025 from 10:30AM - 11:00AM at FirstLight's Offices, 143 West St. Suite E, New Milford CT 06776, as well as via Microsoft Teams.

This meeting provides an opportunity for the stakeholders, including the United States Fish and Wildlife Service, Candlewood Lake Authority, and the CT Department of Energy and Environmental Protection to accept the plan and schedule for a shallow drawdown of the Rocky River Impoundment.

Please confirm your availability to attend this meeting by accepting the meeting invite that will follow this email. The meeting invite will also include a link to the virtual meeting.

FirstLight
Land Management Department
Contact Us

Shoreline Management and Permits
Visitor access and meetings are by appointment only.

firstlight.energy

FirstLight

FirstLight, 2025 Technical Drawdown Committee Meeting Agenda, 3/18/2025

License Article 403 – Candlewood Lake Operating Levels
Rocky River Drawdown Technical Committee
Meeting Agenda
10:30-11:00, March 18th, 2025

Via Teams and In person – 143 West St. Suite E, New Milford, CT

1. Introduction of members present
   USFWS – CTDEEP - Candlewood Lake Authority
   Brian Wood – FirstLight
   Michael Giapponi – FirstLight
   Dana Andrews – FirstLight
   Andy Brydges – FirstLight
   Lauren Richardson – FirstLight
   Nora Judkins - FirstLight

2. Discuss FirstLight drawdown sequence for 2025-2026
   Schedule: Begins after Nov 1, 2025 – Ends April 20, 2025
   Goal of having the boat ramps available on opening day of fishing season
   4' Shallow Depth: 422.1'NGVD = (424'CL&P)
   6' Operational Lower Limit 420.1'NGVD (422' CL&P)

   Candlewood Lake Operating Levels
   The Licensee shall operate Candlewood Lake levels between 425.1 and 427.6 feet National Geodetic Vertical Datum (NGVD) during the summer recreational season (Memorial Day through October 15) with a winter drawdown to an elevation no less than 416.1 feet NGVD for weed control in alternating years and to an elevation 422.1 feet NGVD in alternating years.

   The actual drawdown limits in any given winter will be determined by FirstLight, in consultation with the technical committee comprised of FirstLight, CTDEEP, USFWS and the CLA (All Values Below are in CL&P Datum)
   429.5 = Top of Pond
   427.0 = Min Pond
   424.0 = Shallow Drawdown
   422.0 = Lower Limit

FirstLight, 2025 Rocky River Technical Drawdown Meeting Minutes, 3/18/2025

Prepared by Nora Judkins

Attendees: Brian Wood – FirstLight (FL), Dana Andrews – FL, Len Greene– FL, Mike Giapponi – FL, Lauren Richardson – FL; Andy Brydges – FL; Neil Stalter - Candlewood Lake Authority (CLA); Mark Howarth – CLA; Joe Cassone – Connecticut Department of Energy and Environmental Protection (CTDEEP); Matt Goclowski – CTDEEP; Linda Brunza – CT DEEP; Barb McWilliams – Lake Zoar Authority (LZA); Rebekah White – Friends of the Lake (FOTL); Greg Bollard – FOTL; Shannon Young – Lake Lillinonah Authority (LLA); Kenneth Grader– USFWS

Invited but not attended: Pete Aarrestad – CTDEEP; Shallyn Zappulla – CT DEEP; Lauren Kurtz - University of Connecticut (UConn)

Brian Wood commenced the meeting at 10:30

B. Wood: This is a convening of the Rocky River Drawdown Technical Committee. The goal is to see what our plans are in the future consistent with a license. We're proposing that the 2025 to 2026 drawdown begin in November, this upcoming fall and end in early April, with the goal of having the boat ramps available for open day of fishing. We're on track right now coming out of a deep drawdown in 2025. So, with that, we still got a couple folks dialing in, with that we'll do a quick intros, Brian wood. I'm the Senior Land Manager for FirstLight and joining me at the table, please introduce yourselves.

N. Judkins: Nora, the Land and Shoreline Management Specialist at FirstLight.

A. Brydges: Andy Brydges's Director of Community Relations at FirstLight.

D. Andrews: I'm Dana Andrews. I'm the Operational Manager for the facilities in Connecticut for FirstLight.

L. Greene: Good morning, everyone. This is Len Greene. I'm Vice President of External Affairs for FirstLight. Good to hear everybody.

J. Cassone: Connecticut DEEP fisheries.

N Stalter: Neil Stalter. Director of Ecology for the Candlewood Lake Authority.

M. Howarth: Mark Howarth. The Executive Director, Candlewood Lake authority.

M. Giapponi: Michael Giapponi. Land and Shoreline Management Specialist with FirstLight.

L. Richardson: Lauren Richardson. Senior Land and Compliance Specialist at FirstLight.

L. Brunza: Hi, Linda Brunza in the Office of Environmental Review at DEEP, thanks.

M. Goclowski: Hi, Matt Goclowski, Connecticut DEEP fisheries Division.

E. Tully: Good morning. I'm Emily Tully with the Office of Innovative Partnerships and Planning in the Office of the Commissioner at DEEP.

B. Wood: Thanks everybody. Remote and on site today. The real goal of today of this meeting under our license Article 403 which requires that we do alternating and shallow and deep drawdowns, for the, the upcoming season on Candlewood, we're coming up out of a deep drawdown now. I think I was talking with Dana in Operations, target is first, second week of April for refill. We hope that the river holds out and power prices remain reasonable to bring Candlewood back up from the 2024-2025 deep drawdown that occurred this past year.

D. Andrews: So just to reiterate and to emphasize that, that the goal is to achieve minimum operating level of 427 feet. So hopefully we'll achieve that by that..

B. Wood: Second Saturday in April, I think is the goal.
D. Andrews: Yeah, second Saturday in April. As long as everything goes according to plan, right? We don't loose a pump. We don't have other operational issues.

B. Wood: Sure, yeah.

D. Andrews: You know, get anymore drought between now and then and you can't pump or we loose a pump.

B. Wood: Yeah.

D. Andrews: There's a few variables, but we're looking good, for sure.

B. Wood: It'll come up faster if everybody prays for a lot of rain.

B. Wood: Like four and a half, five feet of rain. Perfect.

D. Andrews: OK. Good.

B. Wood: So just an update for the group. We try to post this and then have just a discussion about what makes the most sense in the next year. What do you guys see and tails off the last meeting where we were talking about algae and carp and weeds and everything else going on in the reservoir? With that, I'll open it to the floor. Does it make sense for you guys? Do you think it, coincides with what makes sense for what's going on in the lake to do a shallow drawdown in 2025-2026?

N. Stalter: I mean, a shallow is what is schedule right now, right?

B. Wood: Right.

N. Stalter: So, I mean in general I would say, yeah, I mean that makes sense to me. We even had an interest this past winter, potentially doing a shallow just in light of the plant situation. The lack of plants and like the only thing that would change my mind at this point would be we're in a situation where in June, the plants are coming back and we discover, hydrilla is a major problem all of a sudden, right?

B. Wood: Right.

N. Stalter: And then we may come back to you guys and say, whoa, we've got hydrilla beds in the range of the deep drawdown, not the shallow drawdown. Maybe we'd be interested in a pivot with DEEP and potentially trying to manage it, the hydrilla, that way.

B. Wood: Right.

N. Statler: Other than that, I don't see a world where we should be interested in in a deep again. It's good with me.

B. Wood: I think part of the challenge has been, changing species too, where essentially the deep drawdowns are now effectively managing zebra mussels reoccupation.

N. Stalter: I know.

B. Wood: Versus it was weed management in the past, so, we try to separate them out and figure out what makes sense, and we've discussed it as we have over the years that if there's an interest in amending the license, we're willing to work with you guys knowing that we have a shallow in 2025-2026, it's an opportunity to have that discussion over the next year and just kind of queue it up and say, hey, what do we want to do? Where do we see this going in the future? But as you stated, we've also got a new enemy in the watershed, Hydrilla.
N. Statler: Right?

B. Wood: And who knows? I know overall and I defer to George, who's not on this one. I don't think that drawdowns effective control for Milfoil, or for Hydrilla.

N. Statler: Hydrilla, right?

B. Wood: You know it's a moderate control on milfoil, the challenge with Hydrilla is its perennial and an annual.

N. Stalter: Yeah, so--

B. Wood: So the that's where you gotta be careful how only this plant works.

N. Stalter: The only thing I'm thinking and I mentioned this to Joe, is a world where potentially as a part of a rapid response plan, you have a drawdown that allows us to do some minor dredging of an area where we discover hydrilla, basically

B. Wood: Right. To remove the seeds and material.

N. Stalter: To remove the material. So that would be the only thing I would have an eye to for…but that's obviously, potentially a big lift and difficult to accomplish, But, That would be the only thought that I'm having potentially, but in the current situation, as we as we stand right now, I don't see any reason to do anything other than a shallow and like you mentioned, I mean the zebra mussels now is kind of the new thing we think about. When it comes to the drawdown, but there it's not gonna eliminate the zebra mussels. We know that. The zebra musssels will kind of follow their pattern of -- of peaking in the next couple of years. Everyone's gonna think, “Oh my God, this is the end of the world.” And then, the population will crash, in all likelihood. And then it'll begin to reach equilibrium, right? This is the pattern that we see and basically every lake where they live in and I don't think the drawdown's gonna change that. The only benefit is maybe once we get to a point where we have our plants back in the lake, we have, an existing population of carp that maybe are in a lake. And we have the zebra mussels. There may be an interest at that point to go to something a little more consistent drawdown, that way we're able to effectively achieve balance with the management. More easily than we have in the past. So it can be difficult in the past, we stock the lake with a bunch of grass carp. The drawdown is shallow. One year, it's a deep the next year, it's a semi effective whatever, right? So it can be more difficult when you're changing the management. Year to year, whereas eventually maybe once we're in a point where we have the plants, we have zebra muscles, we have the carp. Going to a place where it's more consistent and we can kind of try to split the uprights on the management more easily. Might be smart, but it's not there yet.

B. Wood: Yeah, and I think the same thing from the company's perspective and knowing that we're doing a shallow economically, we have to set our budgets for the year. We have to let FERC know early in the year. This is what we're doing on each of our FERC regulated impoundments, so it releases the, the only result out of this meeting is us filing a notice with FERC that says “Here’s what we plan to do, reservoir versus operations in 2025.” Then if we have to seal the, like in Candlewood’s case, if we had to seal the head gates and dewatered the penstock for maintenance, that's another thing that OPS has to know and file with the FERC. Infrastructure stuff, but it doesn't really affect you guys if something you know was to happen. With that we keep you in the loop. I mean, I don't think, Dana, we have anything major operationally, or refills or anything that's on the horizon this fall.

D. Andrews: No.

B. Wood: No, and we're looking at long term capital. You know, when do we have to rewind pumps? When do we have to major overalls on units? But that's kind of Company wide, if we knew that we had to do something like this, this is a form where we'd let you guys know, as a future example if it were to apply “Hey in 2027. You know, there's gonna be a change because we have to de water and we're gonna be taking the plant apart as we've done in the past.” So I think with that, I think you know like you said, it gives us a year, essentially to figure out is there something dynamically changing that we want to change, the way that we do the next scheduled deep drawdown in 2026 to 2027. You know, from the company standpoint, the more variability that we get in pumped storage and the largest pump storage in CT, is our goal and concern. But we're committed to shallow now. And once we get into the future, we'll see where the next deep drawdown falls.

N. Stalter: Dana, let me ask you, is there a date in the summer where you are basically, it's too late now, we can't pivot from a shallow to a deep or change from deep to a shallow?

D. Andrews: I'd have to talk to our commercial team on that. Yeah, to see when its an issue.

N. Stalter: Right.
D. Andrews: Cause it's not something we've historically done right. It's only right. So, I'd have to look into that a little bit more, to clearly answer a deadline.

N. Stalter: Right.

D. Andrews: You know, from a commercial impact and operational standpoint.

B. Wood: Yeah, I think we have to file by like end of June. We have to notice to FERC, so we tried to make sure. You know we're on track, we've had this meeting and then we do all of our other asset drawdown schedules with Lillinonah, Zoar, they're scheduled for fall drawdowns within the FERC, then we let FERC know.

M. Howarth: And if even if it's possible like it's not preferred because you have to make financial forecasts on the shallow versus deep drawdowns

D. Andrews: Right. Yeah. Our budget for this year in the shallow drawdown for next year is already in, right?

B. Wood: Correct.

D. Andrews: So, you know from a commercial standpoint, there's financial and operational variables obviously.

N. Stalter: Yeah, no doubt.

B. Wood: From a business world, from the financial side, essentially in June, we're proposing what is our next budget for the following year and then we work with management and our board to get approval for, that spending, or that revenue. So that's where I say if there's something that wants to change with the next deep, we wanna start having those conversations, before June of this year because we're forecasting, that almost six months to 8 months out in revenue and expense to refill.

N. Stalter: Yeah, for sure.

B. Wood: Because how much we're going to spend is based on how much we make.

N. Stalter; Yeah. Yeah, of course.

B. Wood: Unlike the Federal Government, we have that challenge. You know, where we have to actually make enough money, to spend enough money. But I think with that, I mean, any other thoughts, or concerns and what do you guys think about this year's deep? Were you able to get out there, quite a few people did and we completed two major dam repairs we had to get done.

N. Stalter: Yeah.

B. Wood: There's quite a few people cycled in for permits, because they had deep where it made sense for them to wanted to do significant sea wall repairs.

N. Stalter: Yeah, no. I mean, it's been an interesting year. I'm sure that Mark can add to this, but we had the good freeze. People were out there enjoying the ice, which was cool. It's been awhile since we've had that. But you know to, to our mind, the drawdown went well. The only thing, and this is the thing with the drawdown every year. And this is a messaging thing and you know we can work with Andy on this too, but as we get to the drawdown, you know. And I understand that the basically the FERC permitting has a drawdown to go from November to May effectively, right? But people read that and they're like, "OK. It's November 3rd. Why the hell is the lake like, still full? It's drawn out season" and then they look at the end date and they're like, "Wait, it's gonna be the drawdown until Memorial Day. Well, you know what? What the heck's going on?" So, I think, I understand you guys have to put out your information out compliant with your regulations, but I do think there needs to be more of a focus on practical drawdown messaging. So, when is realistically the drawdown going to occur? And I know that changes of course take time all this, but when are we actually talking about this drawdown being effectively some time"

B. Wood: Actually drawdown begins in November, It's pretty clear messaging.

D. Andrews: Last year's notification went out and it said, Likely to be January, yeah, it's because that's where it's kind of been in the past right. At least since I've been here. We've been drawing down. Yeah, usually in mid to late January, that kind of stuff.

A. Brydges: I mean, I think we could perhaps say something that broadly, outlines that it's weather dependent. It's temperature dependent and we don't expect to drawdown till its cold.

N. Stalter: Right.

A. Brydges: There are some dependencies, but also maybe we could look back. Ten years on what the date, for the last 10 years, it's averaged a date of start. It's averaged to this date, then back up by this date and provide more information to the public.

N. Stalter: Right. there's always the footnote, and we could inform the public better together

A. Brydges: There's built in flexibility to accommodate all sorts of different factors. But we could provide some historical perspective to inform the public, it wont drop on November 1st.

N. Stalter: And we're doing the video series. This may be a good, a good fit for like a, a one minute video with where we partner with you guys. Why it happens. Take your docks out of the lake, please. Take your docks out, by November 1st.

B. Wood: Well, that's part of it. DEEP boating I think years ago, did pick November 1st? It was because boating season ends on October 31st, that's why our FERC License is written that way.

N. Stalter: Sure.

B. Wood: So you know you have to put on your life vest after November 1st. You have to do all these seasonal things that you know change with that date. So we said, boating season ends, drawdown season begins. And part of it was get your boats out. Get your docks out. The longer the people reside on the lake in the end of November, the more likely there is to be ice damage

N. Stalter: Right.

B. Wood: By ice or high lake elevations, or those types of things. So when I look back in the old notes, how it got in the FERC license was, end the Boating season. Lakes closed, effectively and that that's one of the reasons Memorial Day, that's the beginning of boating season. So they, pinned it that way. And then we work with fisheries to say, "Hey, really it's second Saturday in April for opening day of fishing even though that doesn't exist anymore, but the recreational public wants to use our water bodies by that date."

N. Stalter: Yeah.

B. Wood: So, it's moved a little bit, but that's the general logic.

M. Howarth: There's some hard cores out there now, but your volume will pick up in April.

N. Stalter: Yeah, right.

A. Brydges: Yeah. I think Neil, without committing to a narrow range, we can provide some historical perspective about the drawdown dates and ranges for the public.

N. Stalter: Yeah, I think that's, it.

D. Andrews: I think that's why we get calls all the calls every year. I'm sure you guys do too.

A. Brydges There are people that are trying to schedule work too.

N. Stalter: Yeah.

A. Brydges: You know, you don't wanna tell your contractors. It's gonna be November 3rd and then it doesn't happen.

N. Stalter: Yeah, they have to change the plans or whatever.

B. Wood: To deal with that, we have the same challenge with the people getting permitted work done and we're like, it's not going to commence until, January 1st and then even then, it's not going to disappear 10 feet it's going to slowly lower over time and we may pump and generate depending on the market. So we field the exact same stuff from the public each year. So it makes sense for us to, communicate that a little more clearly.

N. Stalter: So that's the teams goal.

D. Andrews: I do see like we monitor-- well, not me personally, but like my staff, they'll monitor Candlewood Lake Authority Instagram, to see what the public's talking about.

N. Stalter: Right?

D. Andrews: Facebook, whatever you see all these fishing tournaments scheduled in April that we see and it's, are we gonna make it, are we not? But I don't know what the absolute minimum would be if we need to be up on Memorial Day, right?

N. Stalter: Right.

D. Andrews: But if we wanted to keep these events rolling even as we're still refilling, right?

N. Stalter: Yeah, for like Lattins Cove Boat Ramp access. You're kind of saying? 427 feet

D. Andrews: Yep, saying like, what is like, what's the minimum?

B. Wood: Well, we worked with CT DEEP who is in the process of redesigning and reinstalling a new ramp and Squantz Pond. So we've been working with all the engineers on it and solving the challenges there. You know one thing they're gonna excavate in. So our flowage and fee is gonna go up further. So that's a piece we're dealing with from Land Management, but also timing the construction and the awarding of contracts for a deep drawdown. So that the boating agencies and the public can gain access to Squantz Cove Launch on Candlewood earlier than they could in the past, until we were up at 428 feet plus, to get a boat in and out. And the agencies looked at dredging in the past and it's just not feasible and economic. So we said when you're at Squantz, let's make sure when you do construction. Build the ramp out the 418 feet so that when we're at 4:20, essentially a deep drawdown. And in theory you'll still be able to get out in Candlewood lake. So I know they're working on working with us on elevations, making sure they get that right. So they don't end up like, like Zoar where the State constructed a ramp that initially when DEP was done with it, at our low pond during the daily elevation swings you can't get a trailer off it. So I worked with them on the CTDEEP Route 133 Boat Ramp to make sure they put it down to and constructed it during our drawdown, so that a game warden, emergency, Police, fire department can all get in there during a draw down if somebody's hurt they can gain Emergency access with a boat. So that'll be one benefit when Squantz Candlewood Boat Ramp gets redone. You won't be dropping into a plunge hole of the boat.
You'll be able to get out there in a deep drawdown.

D. Andrews: Yeah, that's very beneficial, right. That's beneficial even as we're filling up. Like I said, last year, we made it by that date, we had a lot of rain this year. It's looking positive. I can't guarantee, but it looks, It looks pretty positive. We're gonna be at that 427, by that second weekend in April, and I know that's beneficial for you. But if we get into a situation, if by losing a pump or, something happened at the stationand it's a month or 90 days to get a part to wait for parts and fix it. OK. Then we can still probably get up by Memorial Day, but I know that's gonna be people knocking on the door of Rocky River Station and call me saying "What's going on?"

N. Stalter: Yeah.

D. Andrews: So residents or whoever, need to be informed.

B. Wood: So you can just put Candlewood Lake Authorities phone number right on the front door.

D. Andrews: Excellent. But it does give us heartburn in Operations too, like we're also at the mercy of upper management, commercial weather the mechanics of the plant. It's a tough job to fill CT's largest lake.

N. Stalter: Yeah. Yeah.

J. Cassone: One element. That makes it good to be up by that date is, bass spawning kicks off not to much after that, and they spawn in that near shore.

B. Wood: Right.

J. Cassone: You know, up in the three to five foot deep area of the lake. So like if that area is watered or not it can matter for spawn.

B. Wood: Right. No, that makes a lot of sense.

M. Howarth: Your drawdown rate several times that of the pump up rate? Correct? Or not?

D. Andrews: Yes, So when, when we're generating, say, with our just our one largest unit, which is the norm, we generate just one unit. We could drop that lake –

B. Wood: Six inches per day.

D. Andrews: Yeah, six tenths a day. Yeah, so when we generate a pump, that's $1/10^{th}$, so there's a big difference between, the gen and pump status.

M. Howarth: Sure.

D. Andrews: There is a big difference between 2 tenths to 1/10th a day too. If we have only one pump, so yeah, there is a there is a difference there.

B. Wood: Yeah. Have we, Andy, put anything out that says, the refill has commenced?

A. Brydges: I don't think we have put out anything. I don't know if we've done that historically or whether we've put out something saying the range of dates we expect to be full.

B. Wood: Deep drawdown in the resevior has commence, we used to release that.

D. Andrews: Historically I think in three years , since I've been here and nothing has gone out saying that the refill is in progress.

A. Brydges: I think, that we started the drawdown, has gone out.

N. Stalter: Yeah, I think we may have posted just something like, hey, they start to go up or whatever in the past, but if you guys wanna write up something, we'd be happy to share it.

L. Greene: Sorry to interrupt you. We have put out drawdown refill notifications in the past depending on the circumstances. I think a couple of years ago we did put one out, the drawdown has commenced because we were later than usual and people were concerned, but it was more of a circumstantial situation in that case.

N. Stalter: Yeah.

L. Greene: We can certainly adjust the communications around this. This is not something that is a problem, we want to inform the public.

N. Stalter: Right. Cool.

B. Wood: I always like to let Dana run the thing for a few days and see if both of the pumps are running well. It's not days that it stops, we are running 24/7 to refill Candlewood for weeks. It only stops for maintenance.

D Andrews: We had Maintenance the other week we stopped for some maintenance and then put it right back on a couple hours later, so I think that's the point for all of us in Ops where we are, we're on the same page.c Once we get going, it's a lot of meetings. A lot of talk with commercial too, I'm always pushing to make sure we're going to begin refill. This is it. We're going, right.

N. Stalter: That's all we got for you guys. Keep in touch.

B. Wood: Well, thank you guys for the meeting and as always, keep us in a loop as I said in the other meeting, do you guys want to tie out in the e-mail or , whatever on what's happening. We'll try to close the loop keep communication open.

B. Wood: Everybody that's online, Emily and, and Linda. Matt, anything you guys can think of or add? I always forget to turn around on the digital screen. Anything you guys want to add for input or thoughts?

M. Goclowski: No, I don't have anything to add right now. Thanks.

B. Wood: Thanks Matt.

L. Brunza: I guess I was wondering what the drawdowns are for. If they aren't to control invasive weeds. What you said doesn't really work for milfoil and hydrilla, which I've been trying to get the word out in our state drawdowns on that. So what is the point?

B. Wood: So Ultimately—

L. Brunza: Is it? And if you're not doing a repair, what's what are you doing it for every year?

B. Wood: Our Federal Hydro license we started drawn down I think in the early 80s and it was an in response to the Eurasian watermilfoil coming into the watershed. So we, we sat with the Federal Regulatory Commission, all the stakeholders. We were doing drawdowns, to control just weeds, actually. And the challenges is in order for us not to do an alternating deep or shallow, we have to go and amend our Federal Hydro license and change it from alternating to something else with an ammedment.

L. Brunza: Oh, okay.

B. Wood: Deep and shallow and we've had instances where with the stakeholder group, we've said, hey, listen, there's a huge polar vortex coming at us, so Len and I are in the days before Christmas and we're talking to all these stakeholders and we're like the New England grid needs Connecticut's largest pump storage generator in order to hold up the grid locally during this event. Can we get approval to move from a shallow to deep? Need to support the grid. So there's the economic piece of it Linda. There's also the, environmental piece of it where we're tied with having an existing regulation, all the ecosystem changed and we're trying to balance the economics of the plant with the, environmental benefits and attractions to drawndown. As well as five towns and 1500-2000 people, who are used to things being the same for 40+ years

L. Brunza: Yeah, well, that's what I come across. Yeah.

B. Wood: And you know all of a sudden we're gonna change, and they're all gonna have to remove their docks and add an incurred expense where they're gonna have to pick em up and put em on the shoreline because the ice is gonna crush on them. So there's, shoreline maintenance and neighbors as well. But we, as I said earlier, if we wanna change something from a shallow to a deep to a shallow whatever, we have a period of time now that allows for time to have those discussions and then prepare to amend the FERC License.

L. Brunza: Right, right. OK. Yeah, I-- I forgot that could be tied to license. That makes sense. I guess my only other question is does it reach your? Does it reach the entire length of Candlewood? Are you seeing they're pretty effective?

B. Wood: Yeah, we, we drawdown, typically down to our bottom elevation is 418 feet and thousands of acres are exposed, essentially below 418 feet is concrete to us. We can't use below that elevation, there's a conservation restriction on the entire bottom of Candlewood, so from 418 down is unusable. We operate from, during the summer, from 427 feet to 429.5 feet, effectively a 2 1/2 foot operating range. And then in the winter it changes to

shallow or deep cyclically for the, the agenda we set out just before the meeting where, 427 is our min pond and then we go three to four feet below that operating and pumping and generating throughout the winter. And then during the deep drawdown drops down to 420 and down to 418, so that we don't go below our 418 our conservation restriction that we agreed we wouldn't go below. Prior to the 1980s and the FERC license was established, we were regulated by, anyone. So they would and they did drawdown to whatever they wanted to produce energy for the market. But we we're stuck with those two solutions that our license article dictates for now.

L. Brunza: OK. All right. Thanks. I'll get in touch with you if I have any other questions that arise.

B. Wood: Yeah, if you have any questions, feel free to reach out. Emily, anything in your wheelhouse that you wanted to catch up on.

E. Tully: No, I think I'm all set at the moment. Thank you though.

B. Wood: Ok, well with that I’m going to tell everyone that they can go home and take the rest of the day off.

L. Brunza.: Will do. All right. Thank you.

B. Wood: Thanks. Have a good day.