

Lake Gaston

Technical Advisory Group Recommendations 2025



Jessica R. Baumann and Dr. Rob J. Richardson
Aquatic Plant Management Program
North Carolina State University

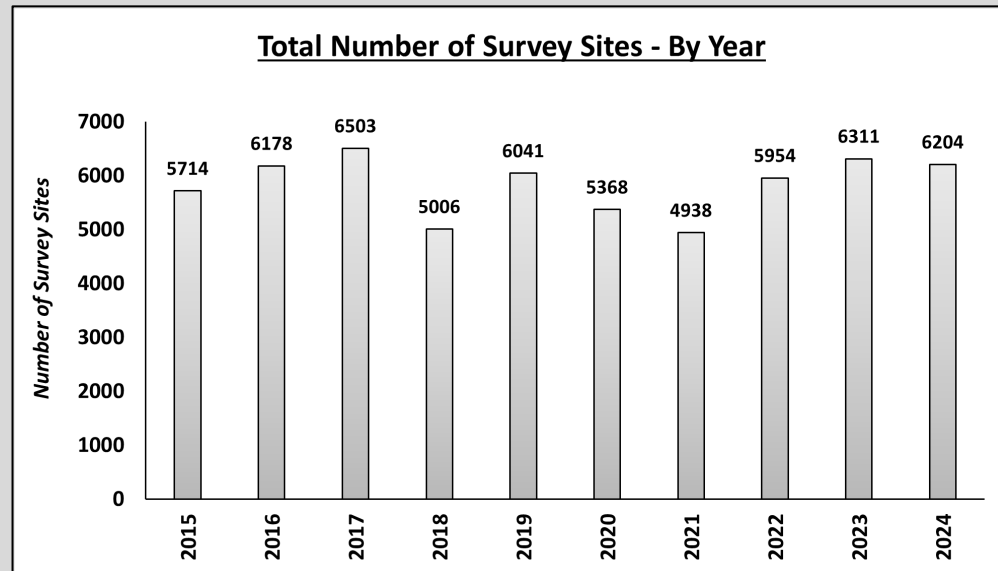
Outline

1. **Overall Monitoring Efforts**
 - **Vegetation Survey**



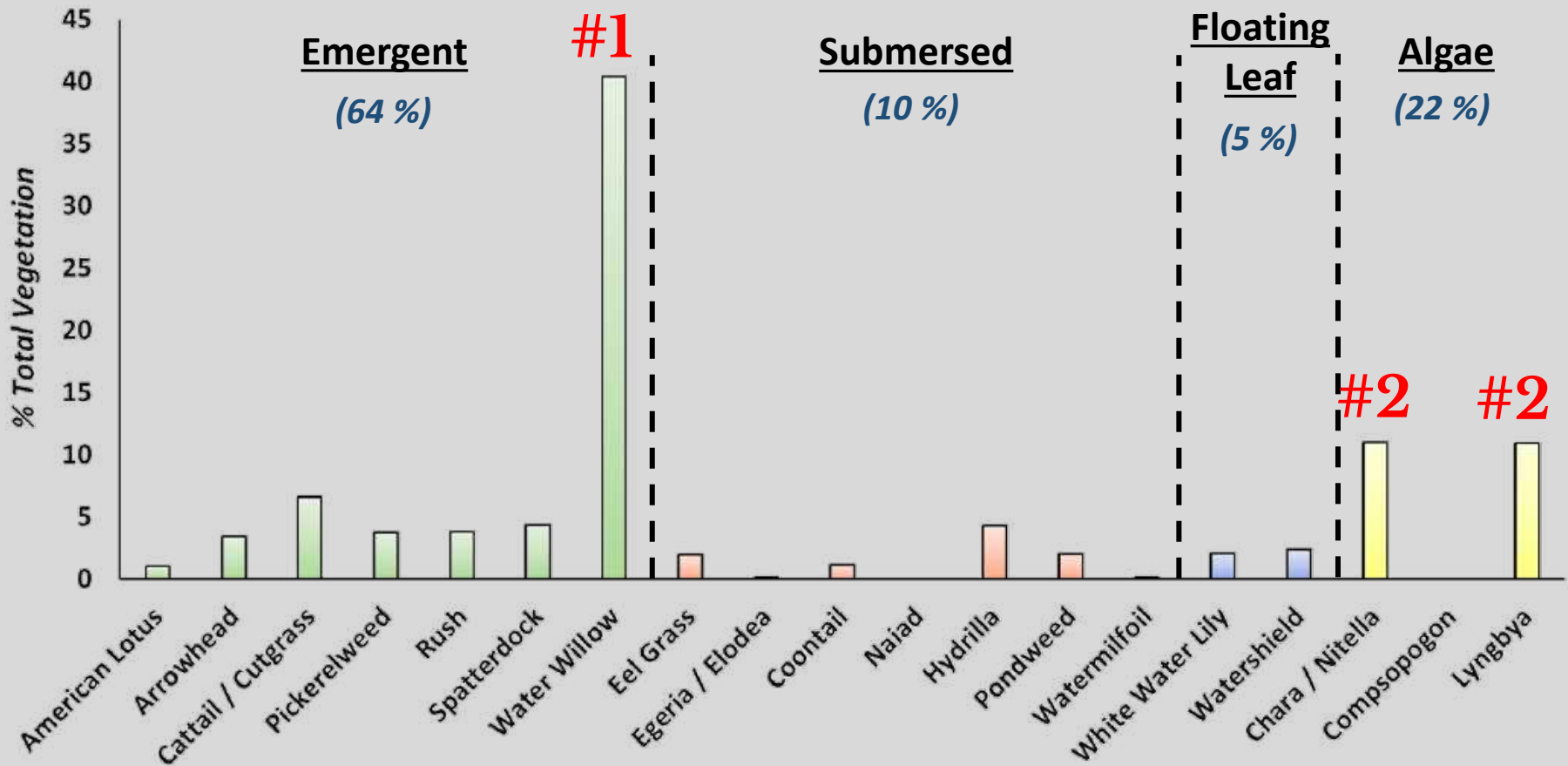
Fall Volunteer Survey

- 100+ Individual Volunteers
 - 530 Active Survey Volunteer Hours
- Conducted from August 16th to October 29th
- 6,204 Points Collected
 - Goal Every 200 ft
- 81% of sites contained vegetation

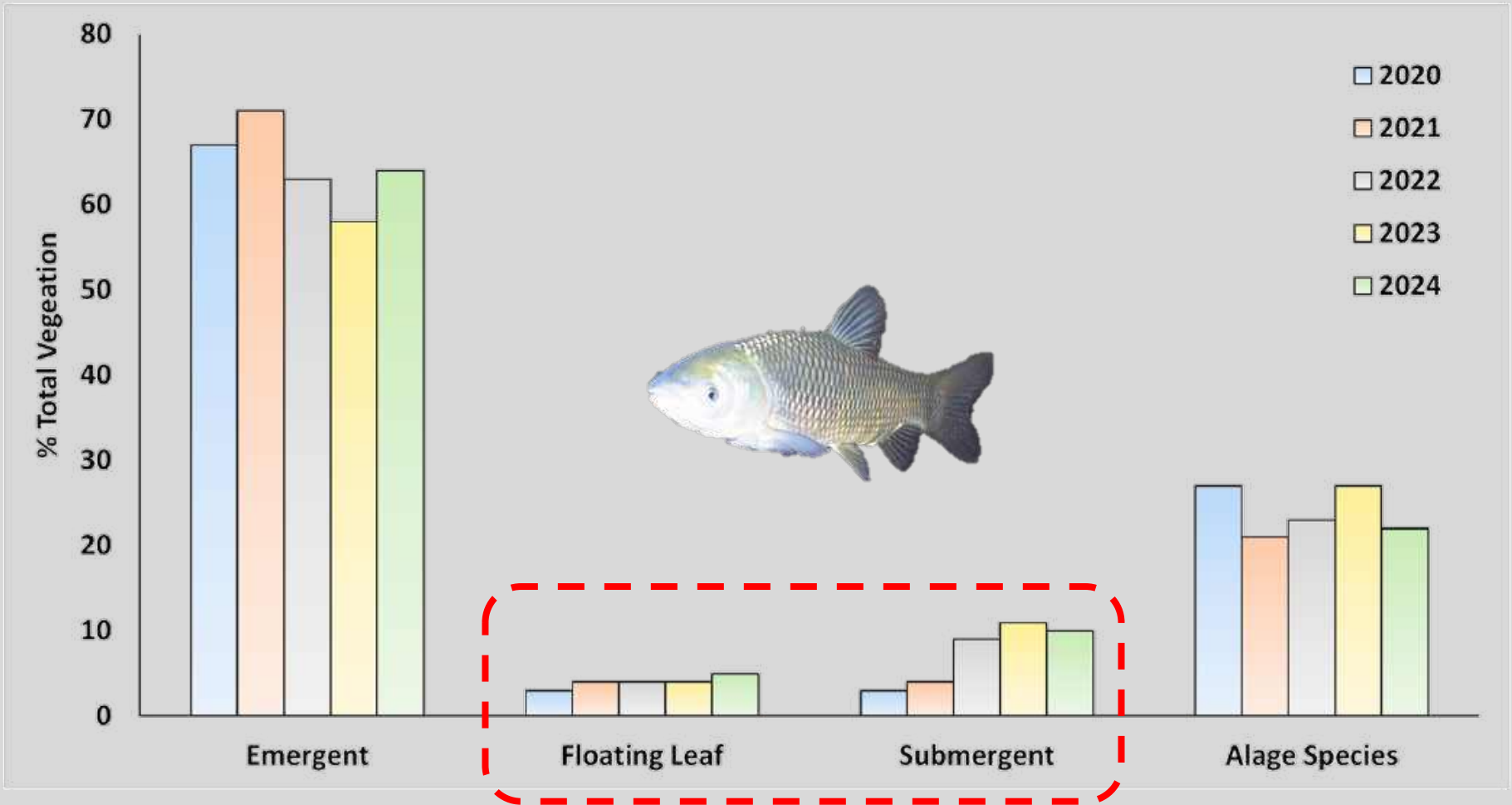


Aquatic Plant Community

Lake Gaston Aquatic Plant Community - 2024

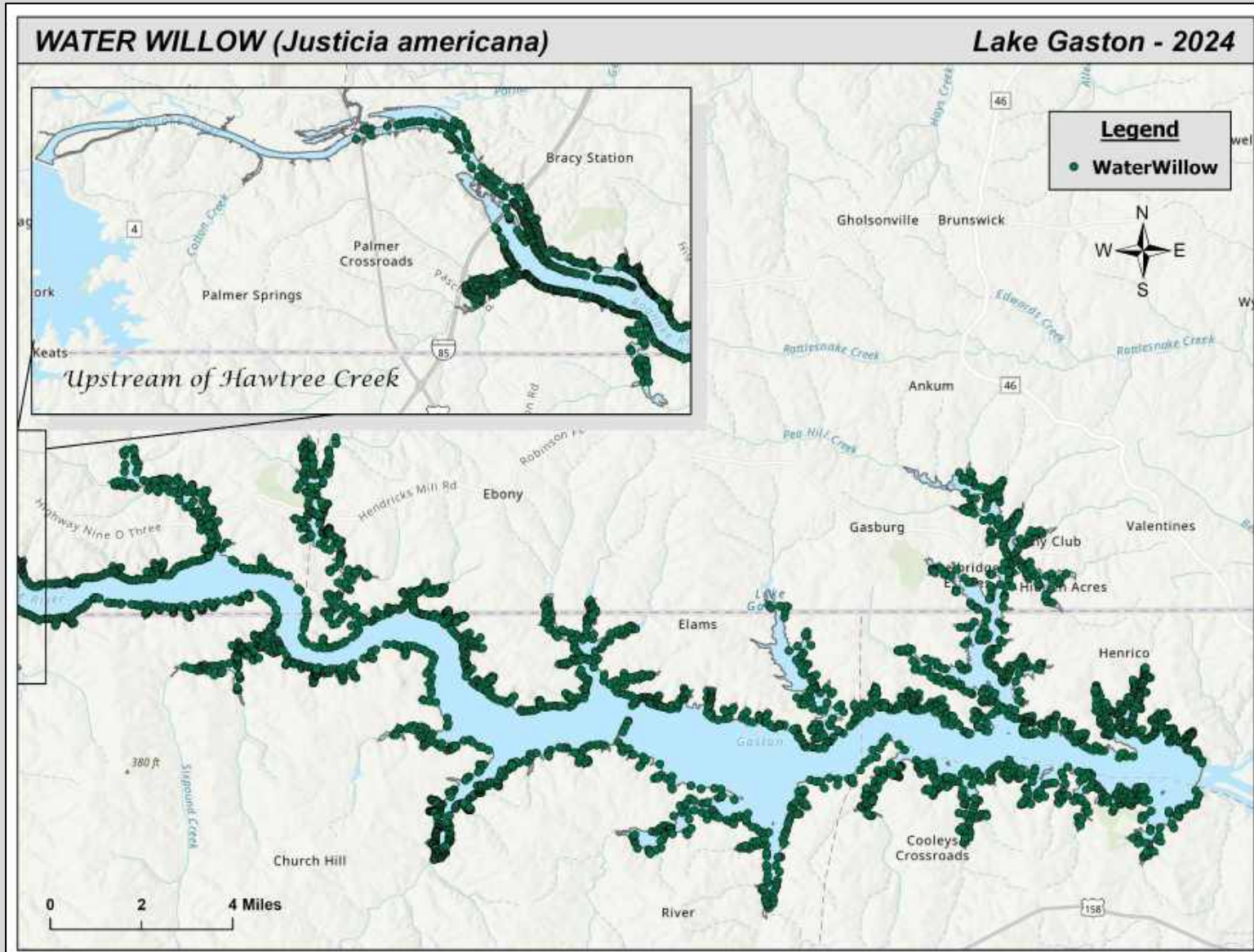


Aquatic Plant Community



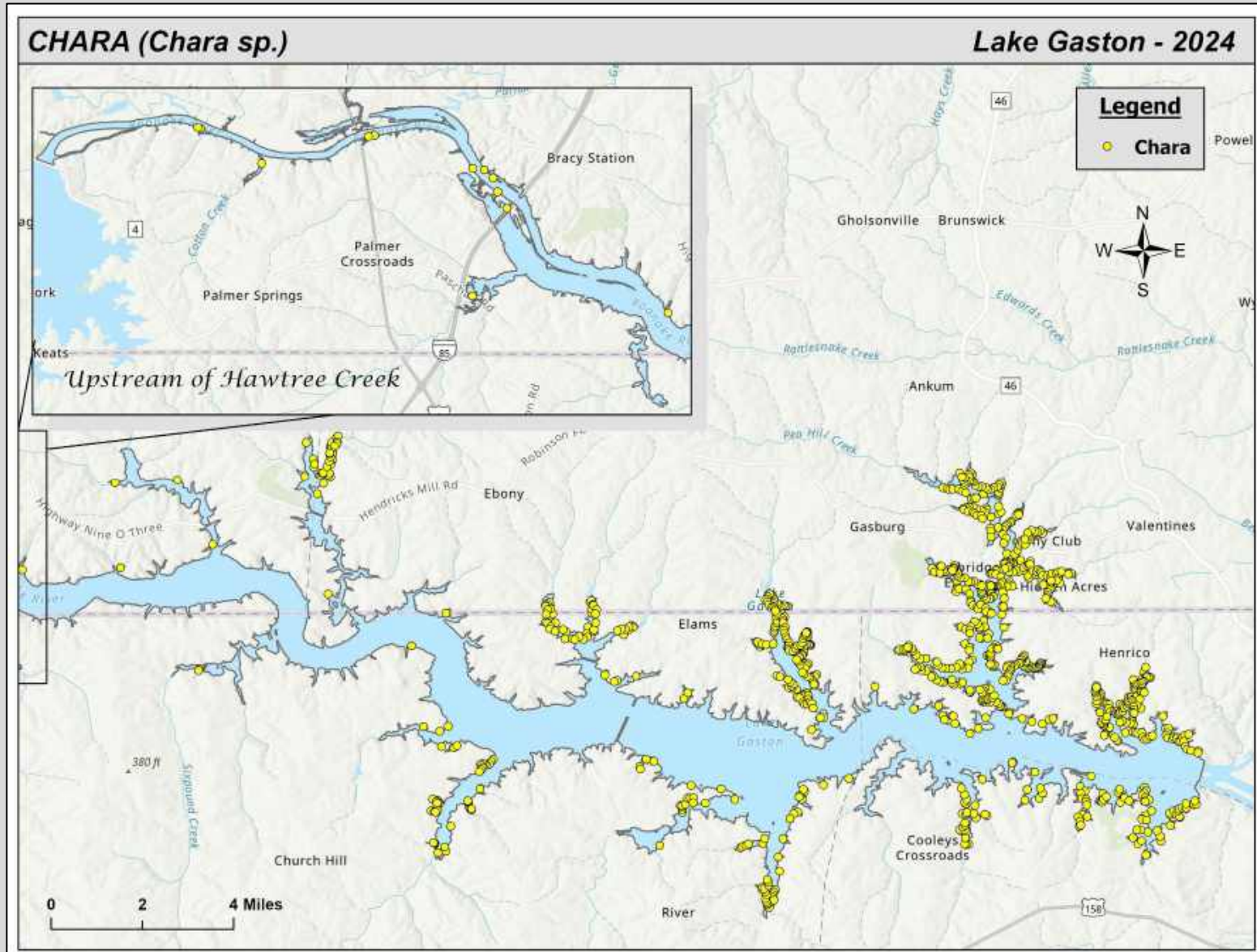
2024 Aquatic Plant Community

#1



2024 Aquatic Plant Community

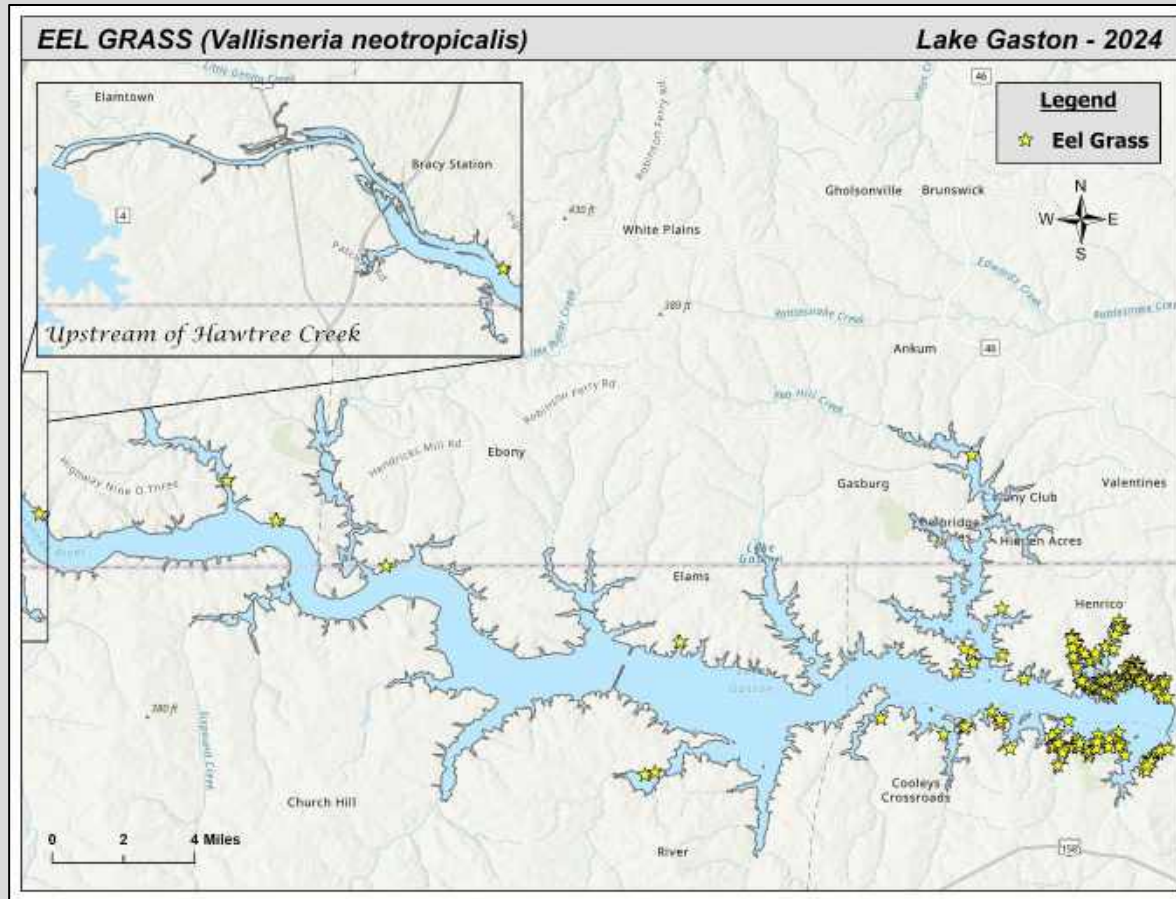
#2



2024 Aquatic Plant Community

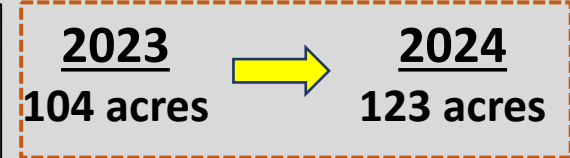
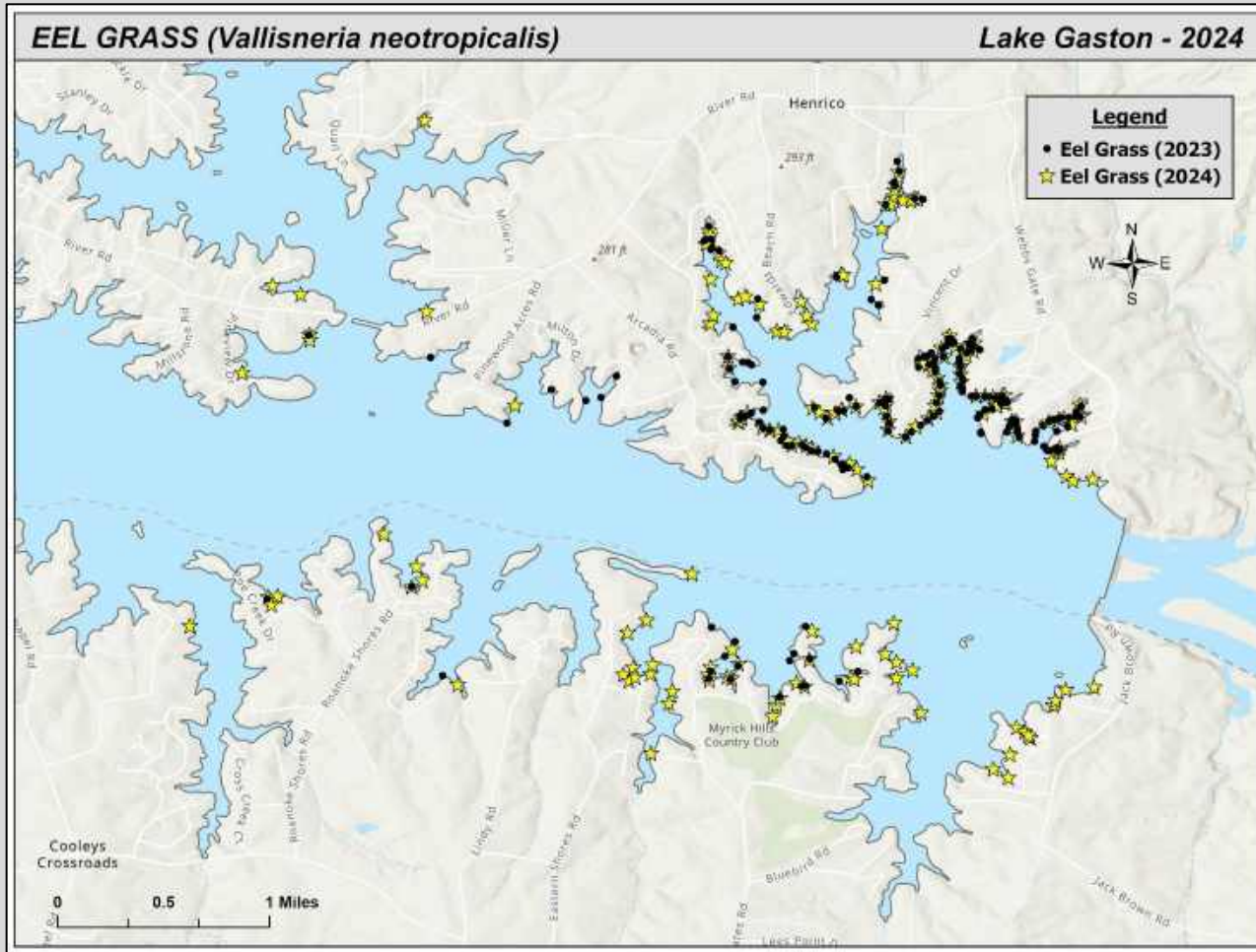
Eel Grass

- 2% Vegetation Community
- Protected by Dominion's Shoreline Management Plan
- Issues with invasive/hybrid species across southeast
- Genetic testing confirmed Gaston has *V. neotropicalis* (native)



2024 Aquatic Plant Community

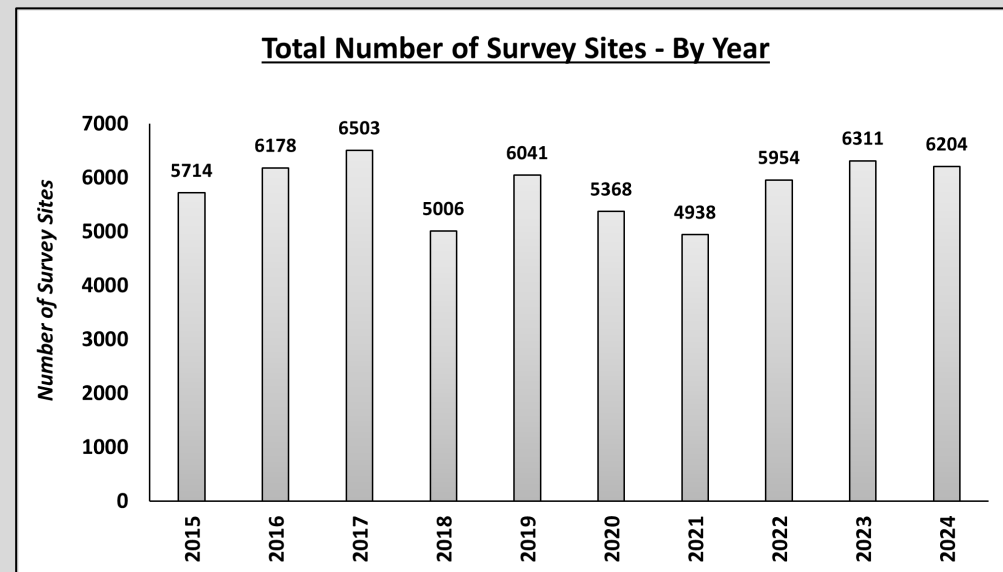
Eel Grass



Fall Volunteer Survey

2025 Recommendation

- Continue funding and supporting volunteer/ NCSU survey



Outline

2. *Monitoring & Treatment Efforts*

- Hydrilla
 - Survey and Treatments
- Lyngbya
 - Survey and Treatments

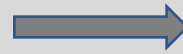


Hydrilla Management



Hydrilla Treatments

2023 Survey Results



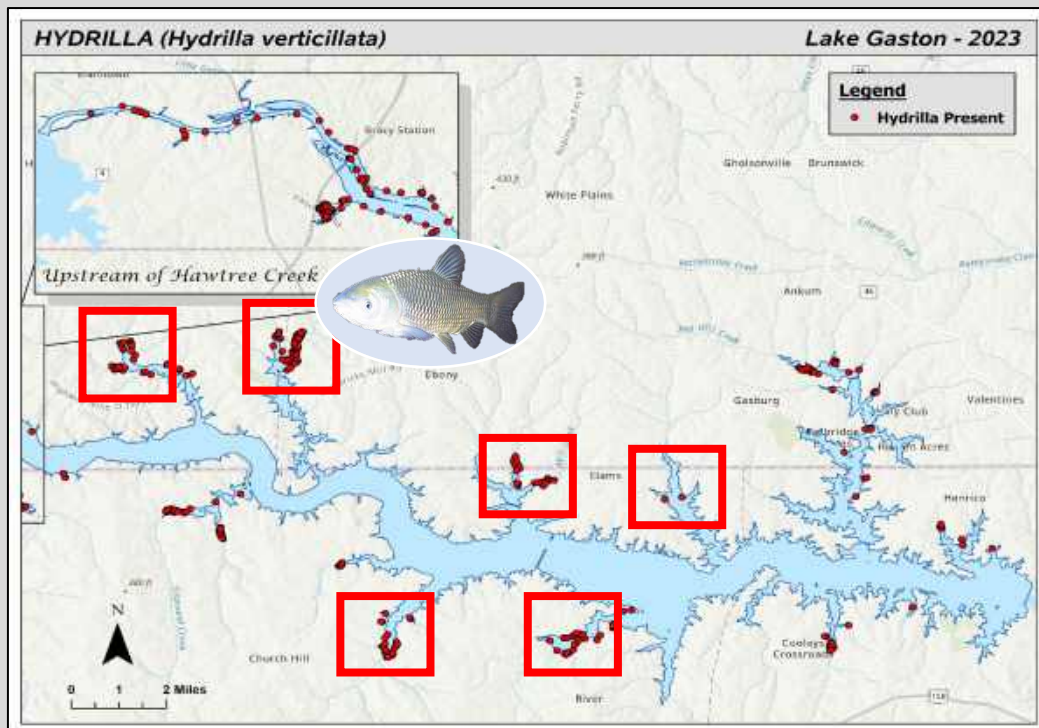
2024 Recommendations

Total Vegetation: 4 %

Maximum Treatment Acres: **198 acres**

Estimated Hydrilla Acreage: **329 acres**

Grass Carp to be Stocked: **1,385**



2024 Hydrilla Treatments

Total Treated Acres: **197 acres**

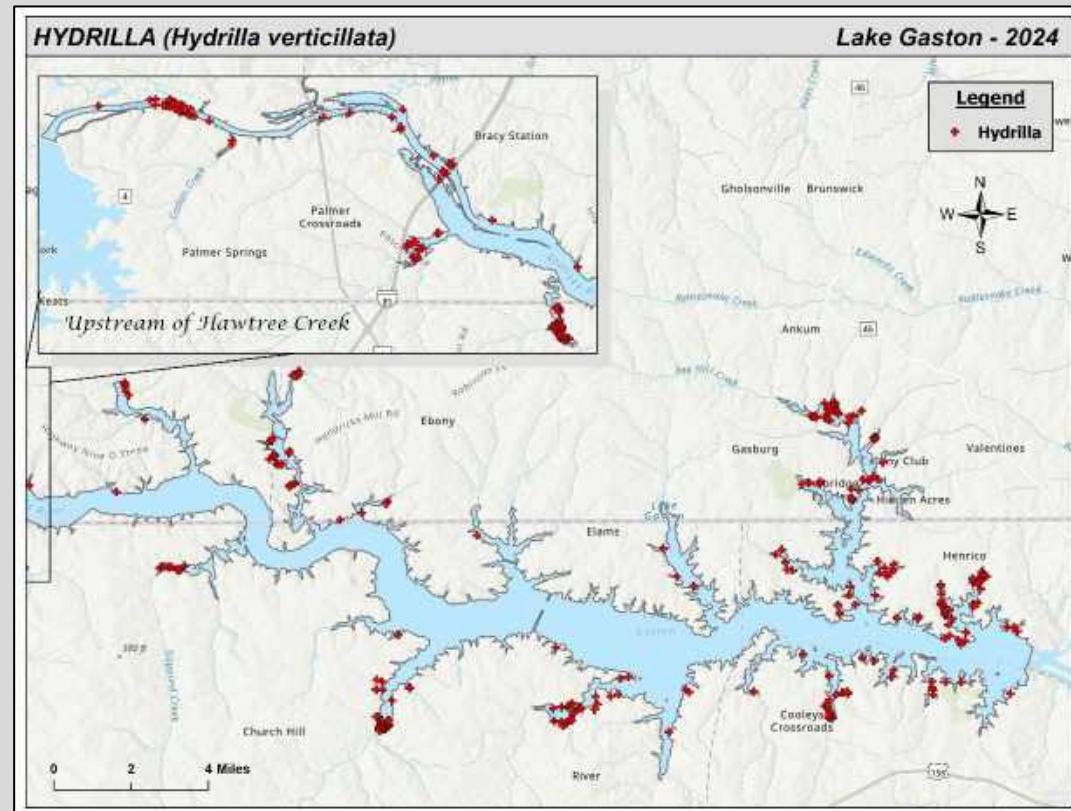
Grass Carp Stocked: **1,385**

Hydrilla Survey

2024 Survey Results

Total Vegetation: 8 %

Estimated Hydrilla Acreage: **289 acres**



Hydrilla Survey

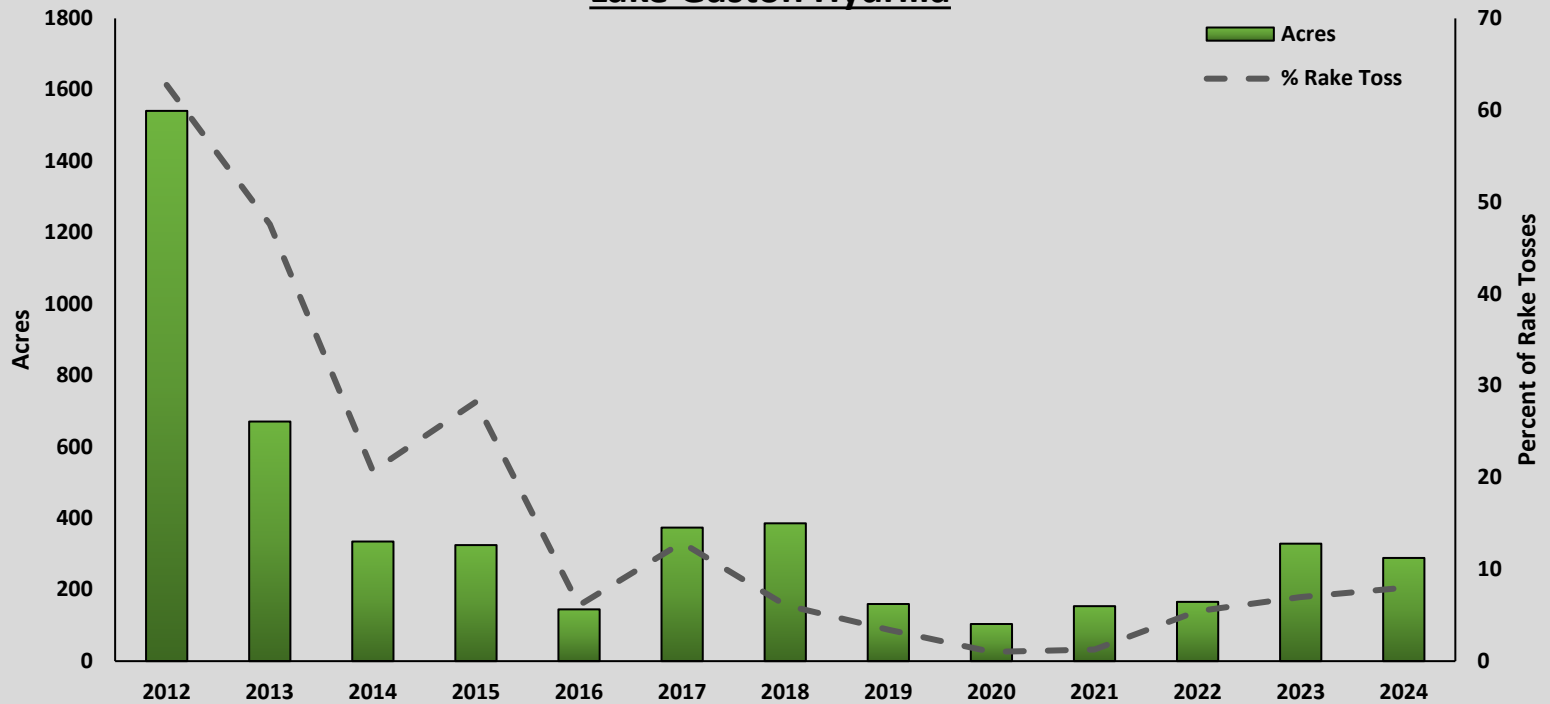
2024 Survey Results

Total Vegetation: 8 %

Estimated Hydrilla Acreage: **289 acres**



Lake Gaston Hydrilla



Hydrilla Management

Tuber Surveys



- Tuber Surveys
 - Future Hydrilla Situation

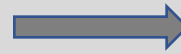
Tuber Survey



LAKE GASTON HYDRILLA TUBER BANK ESTIMATES								
	Years Since Last Tuber Detection	Starting Bank Density (2012)	2019	2020	2021	2022	2023	2024
East of Easton's Ferry Bridge								
<i>Jimmys Creek</i>	0	36.41	0	0	0	0.82	12.33	8.39
<i>Timberline Shores</i>	6	3.08	0	0	0	0	n/a	n/a
<i>Cold Springs Branch</i>	5	34.95	.82	0	0	0	n/a	1.64
<i>Lakeview</i>	10	124.37	0	0	0	0	n/a	n/a
<i>Lizard Creek</i>	0	N/A	18.91	0	24.39	53.72	15.90	7.40
<i>Big Stone House</i>	1	31.25	0	0	0	0	7.40	0
<i>Pretty Creek</i>	8	38.72	0	0	0	0	n/a	0
<i>Poe Creek</i>	5	125.4	0.82	0	0	0	n/a	0
<i>Woodland Hurst</i>	6	135.67	0	0	0	0	0	0
<i>Sledge Creek</i>	2	8.22	0	0.82	0	2.47	n/a	n/a
<i>Hamlin</i>	5	446.08	14.8	0	0	0	0	0
West of Easton's Ferry Bridge								
<i>Hubquarter</i>	4	292.73	1.64	1.64	0	0	0	0
<i>Lyons Creek</i>	5	293.96	7.4	0	0	0	0	n/a
<i>Poplar Creek</i>	1	89.63	0.82	8.22	0	0	31.52	0
<i>Hawtree</i>	0	38.03	37	6.58	4.93	22.61	84.28	24.67
<i>Smith Creek</i>	1	8.22	0	0	0	3.70	0.62	0
<i>Flats</i>	6	119.23	0	0	0	0	n/a	n/a
<i>Cottons Creek</i>	0	217.9	115.11	42.48	0	5.76	13.16	13.16

Hydrilla Treatments

2024 Survey Results



2025 Recommendation

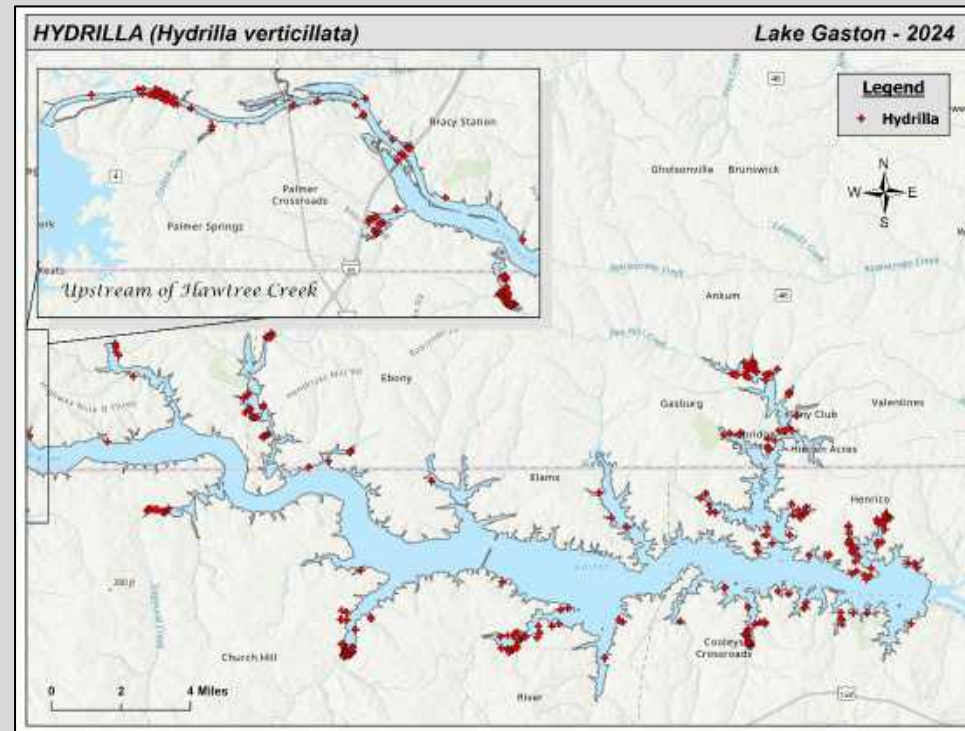
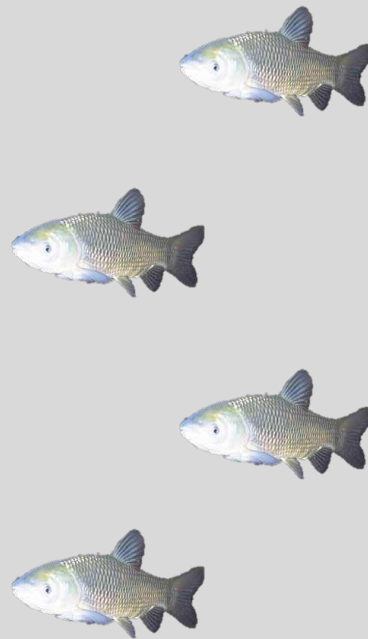
Total Vegetation: 8 %

Maximum Treatment Acres: **200 acres**

Estimated Hydrilla Acreage: 289 acres

Grass Carp Stocking Number: **None**

Overall Low Tuber Density in 2024

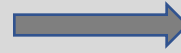


Lyngbya Management



Lyngbya Management

2023 Survey Results



2024 Recommendations

Total Vegetation: 13 %

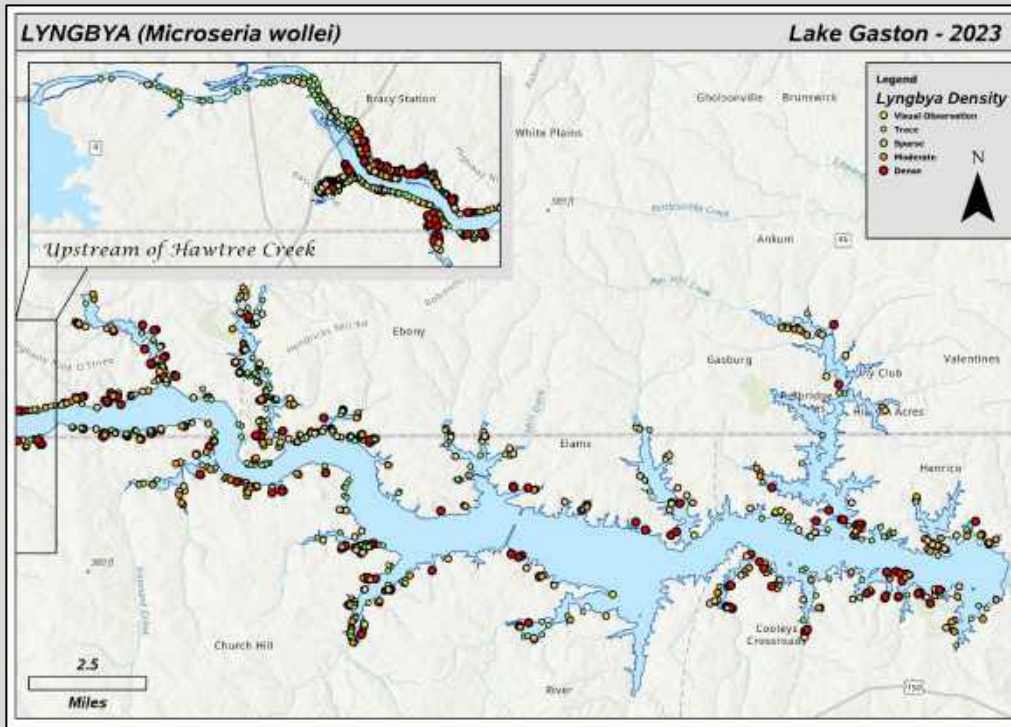
Maximum Treatment Acres: 500 acres

Estimated Lyngbya Acreage: **1,377 acres**



2024 Lyngbya Treatments

Total Treated Acres: **500 acres**

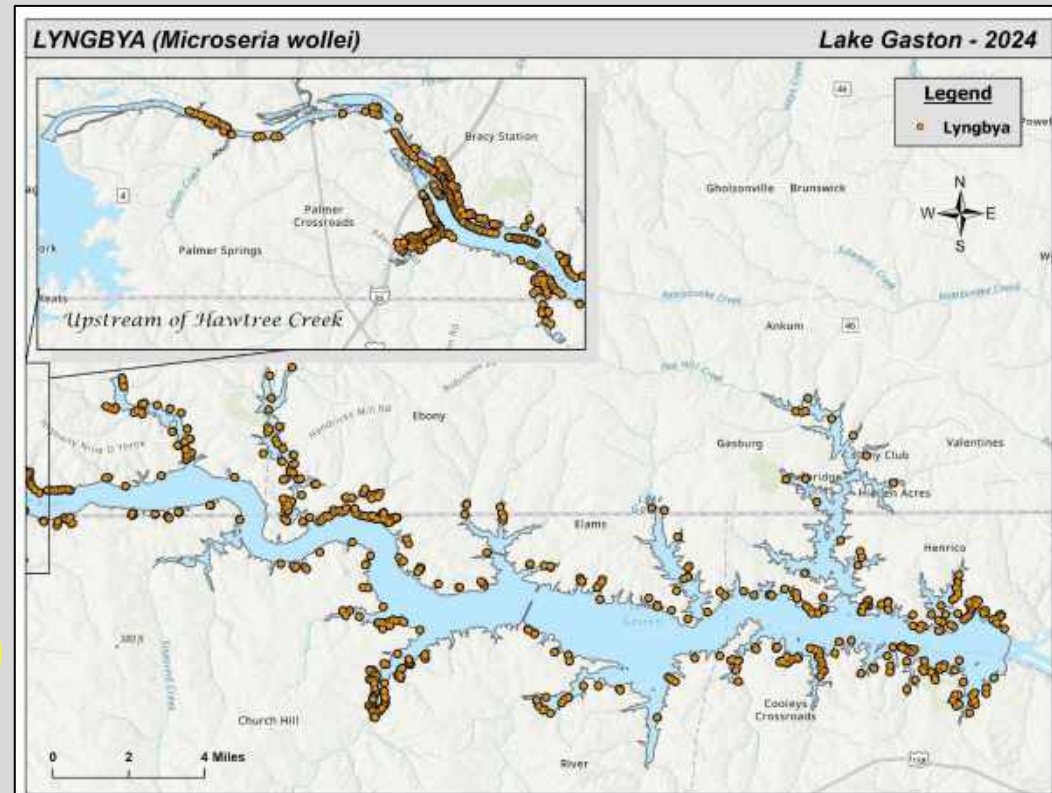


Lyngbya Survey

2024 Survey Results

Total Vegetation: 20%

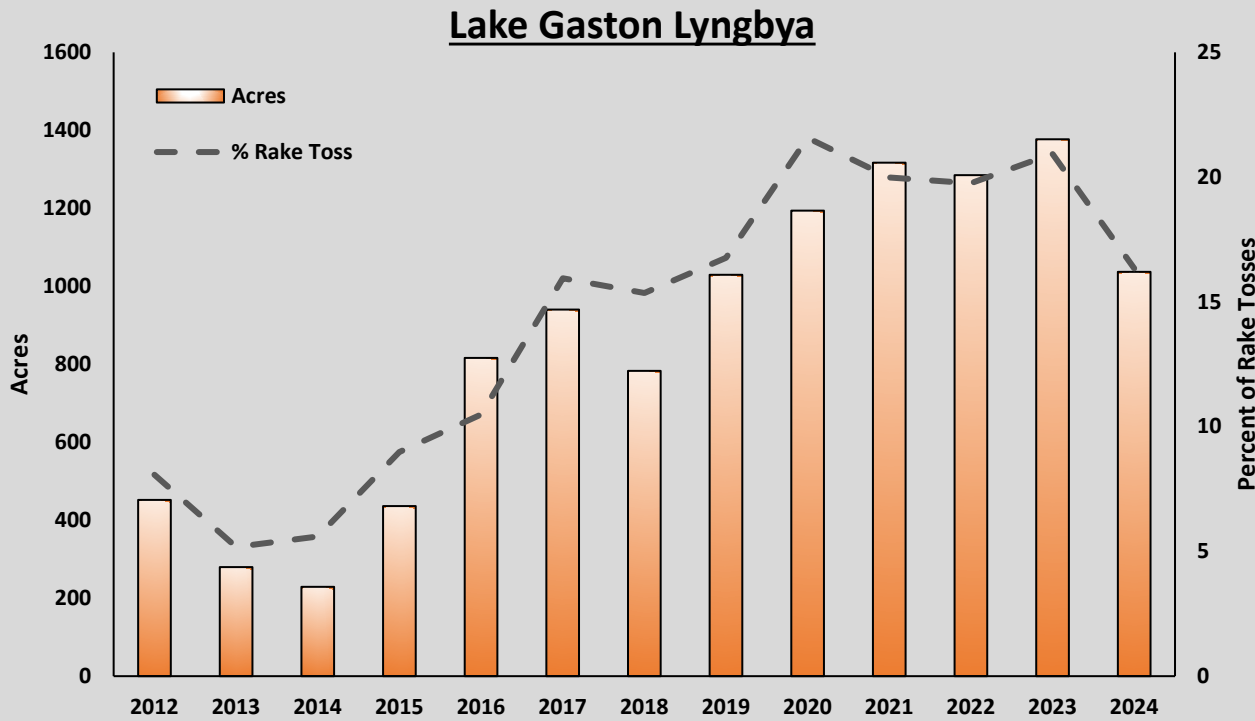
Estimated Lyngbya Acreage: **1,037 acres**



Lyngbya Survey

2024 Survey Results

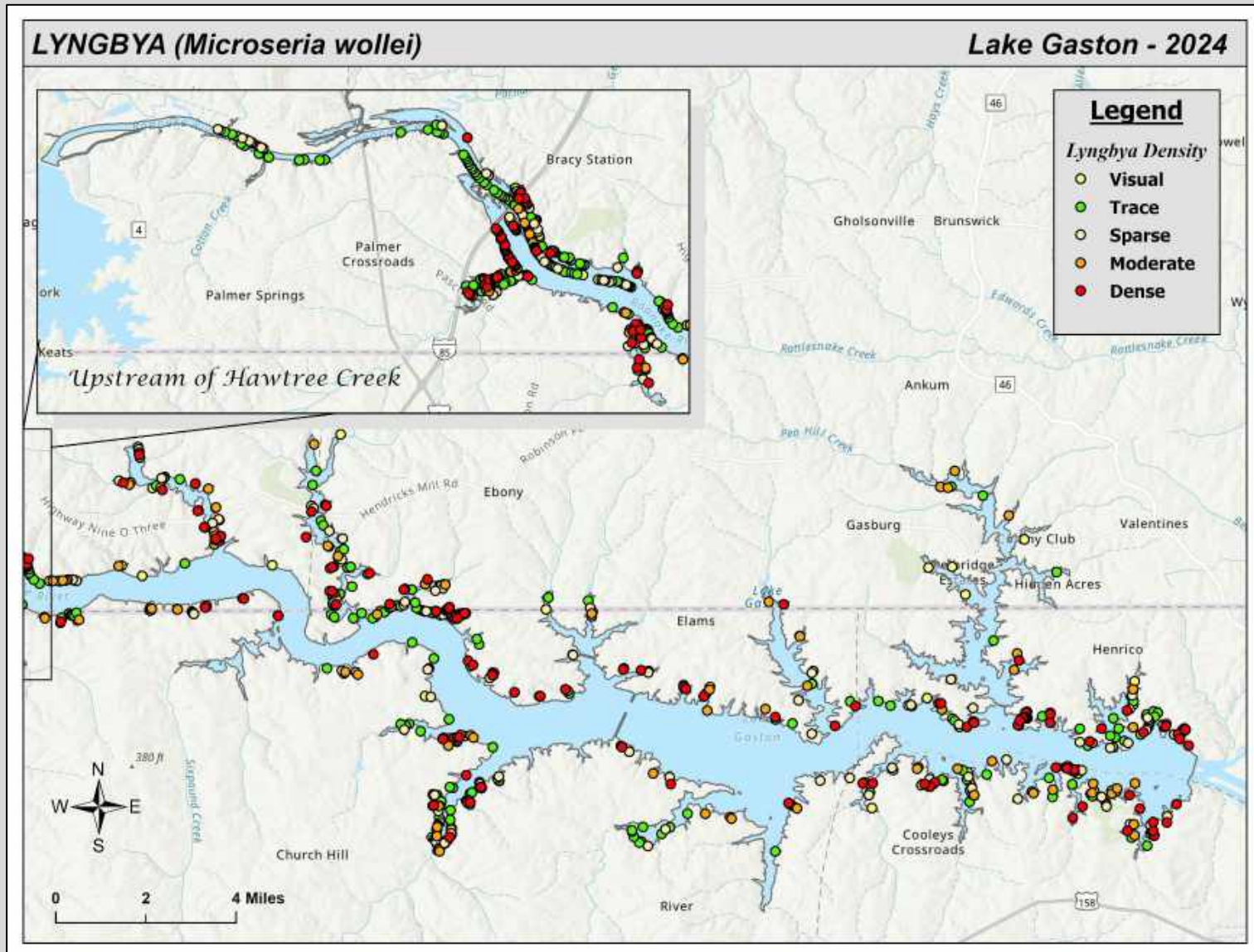
- Decrease in acreage (2023 – 2024): **340 acres**



Exciting Trend!

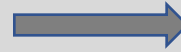
- ***BUT***, 2024 also displayed decreased growth potential lake wide.
- Possible reflection of decreased detection probability.
- Will need to wait to fully understand this downward trend.

Lyngbya Management



Lyngbya Management

2024 Survey Results

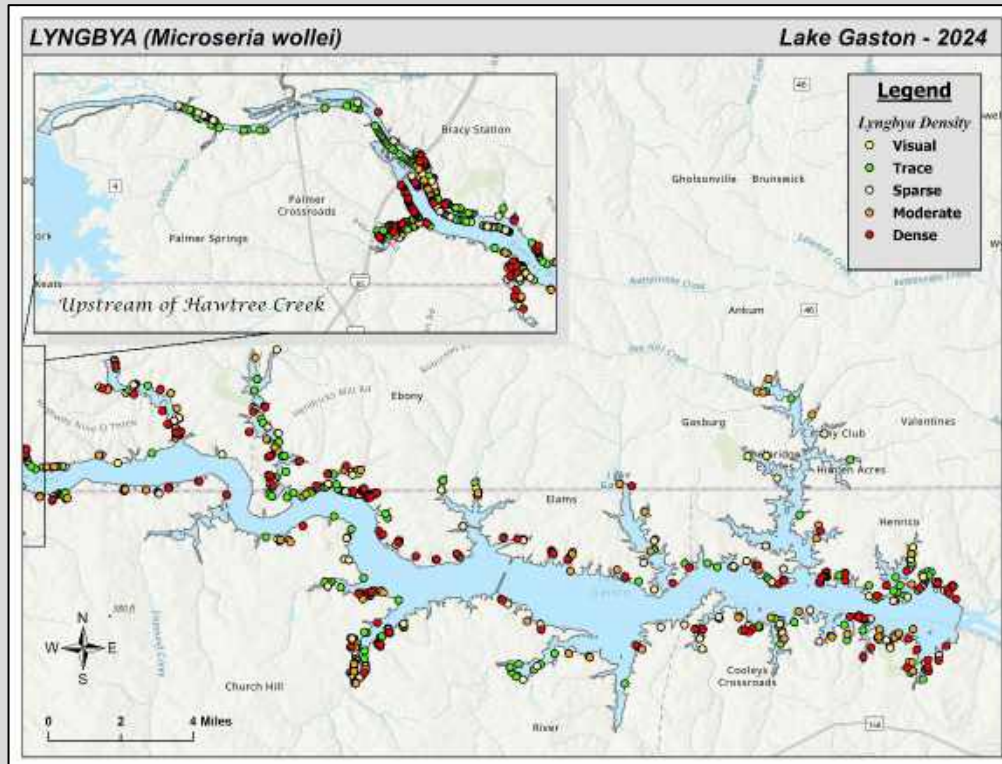


2025 Recommendations

Total Vegetation: 20%

Maximum Treatment Acres: 500 acres

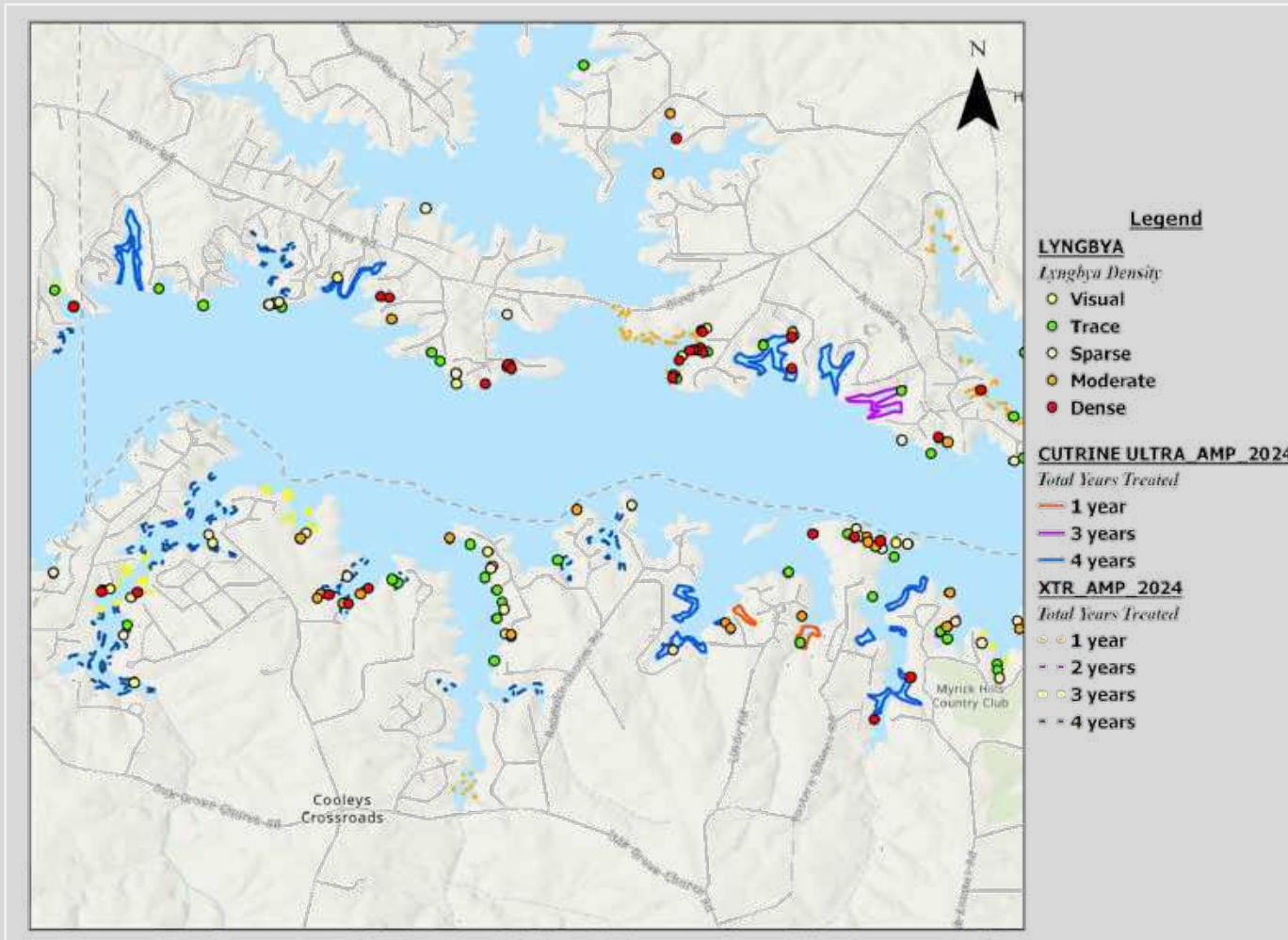
Estimated Lyngbya Acreage: **1,037 acres**



Lyngbya Management

2025 Recommendations

Continue to Monitor Efficacy of Treatment Sites



- Adjust treatment protocols based on lyngbya density
- Remove AMP from some site protocols
- Continue monitoring efficacy

Outline

3. *Revegetation Efforts*

- Native Vegetation Cages



2025 Recommendations

1. Overall Monitoring Efforts

- Continue funding and supporting volunteer survey

2. Monitoring & Treatment Efforts

- Hydrilla
 - Treat no more than 200 acres
- Lyngbya
 - Treat no more than 500 acres
 - Adjust individual treatment site protocols based on lyngbya density
 - Continue monitoring efficacy of treatment sites

3. Native Revegetation Efforts

- Continue to encourage partnerships and collaborations directed at habitat enhancement at Lake Gaston.