

Tables and Figures.

Table 1: Relative abundance ratings assigned to retrieved rakes at survey points as described in previous survey reporting by Solitude Lake Management (2019).

Rating	Description
None (0)	No plants on rake
Trace (T)	Few plants on rake
Sparse (S)	Rake up to half full of plants
Medium (M)	Rake more than half full of plants
Dense (D)	Rake at maximum capacity; difficult to retrieve



Figure 1: Retrieving and sorting SAV by species (Top) while concurrently recording sonar/SAV biovolume data throughout the littoral zone of Chautauqua Lake (Bottom).

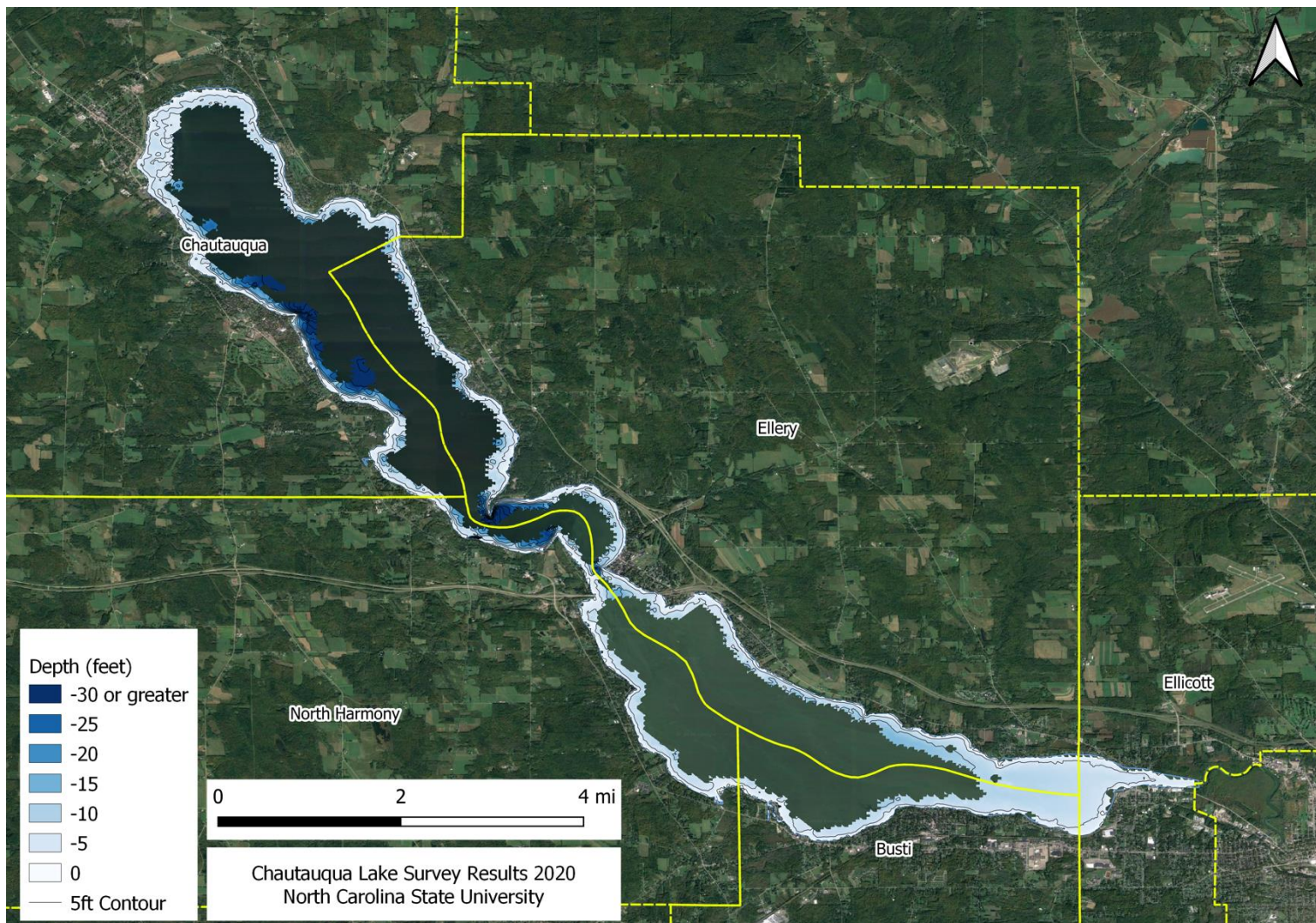


Figure 2. Lakewide bathymetry estimates of surveyed littoral zone constructed from echosounding data. Lighter color areas represent shallower depth regions. A 5-foot contour line is placed to help visualize the littoral shelf (0-20 ft).

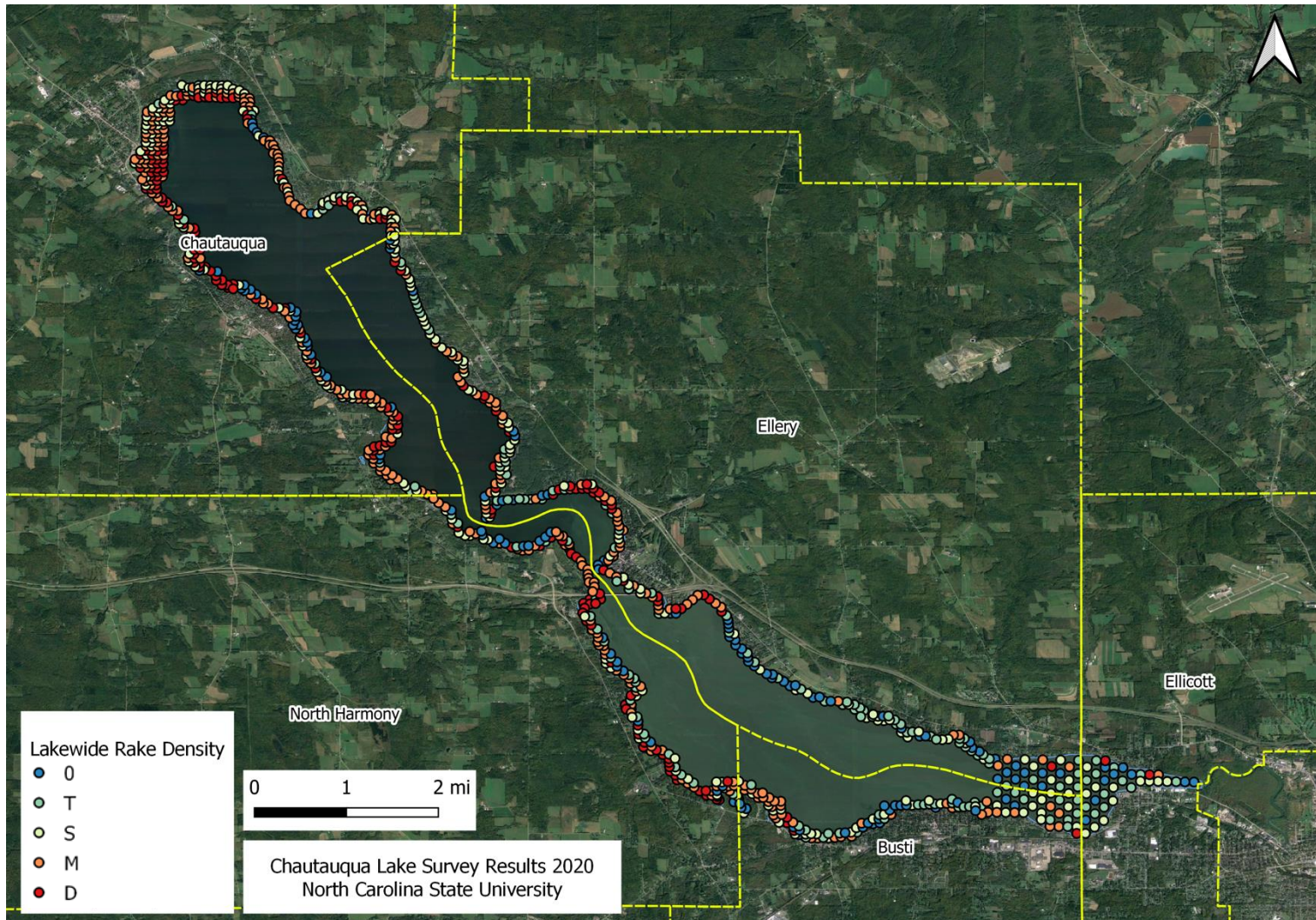


Figure 3. Lakewide presence and rake density data collected from point-intercept SAV rake toss survey.

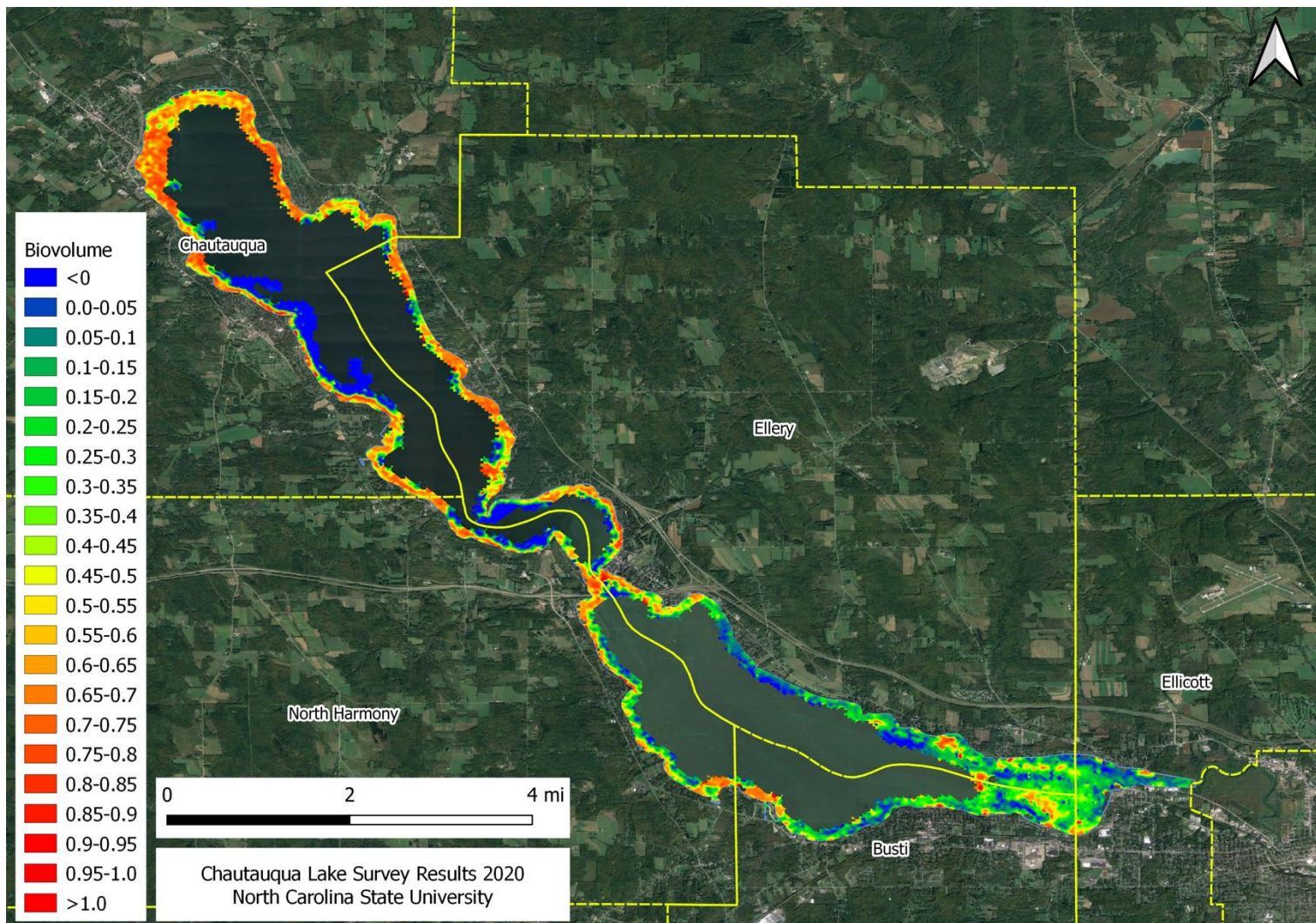


Figure 4. Lakewide SAV biovolume estimates constructed from echosounding data. Warmer color areas represent greater water column occupancy (0-100% occupied).

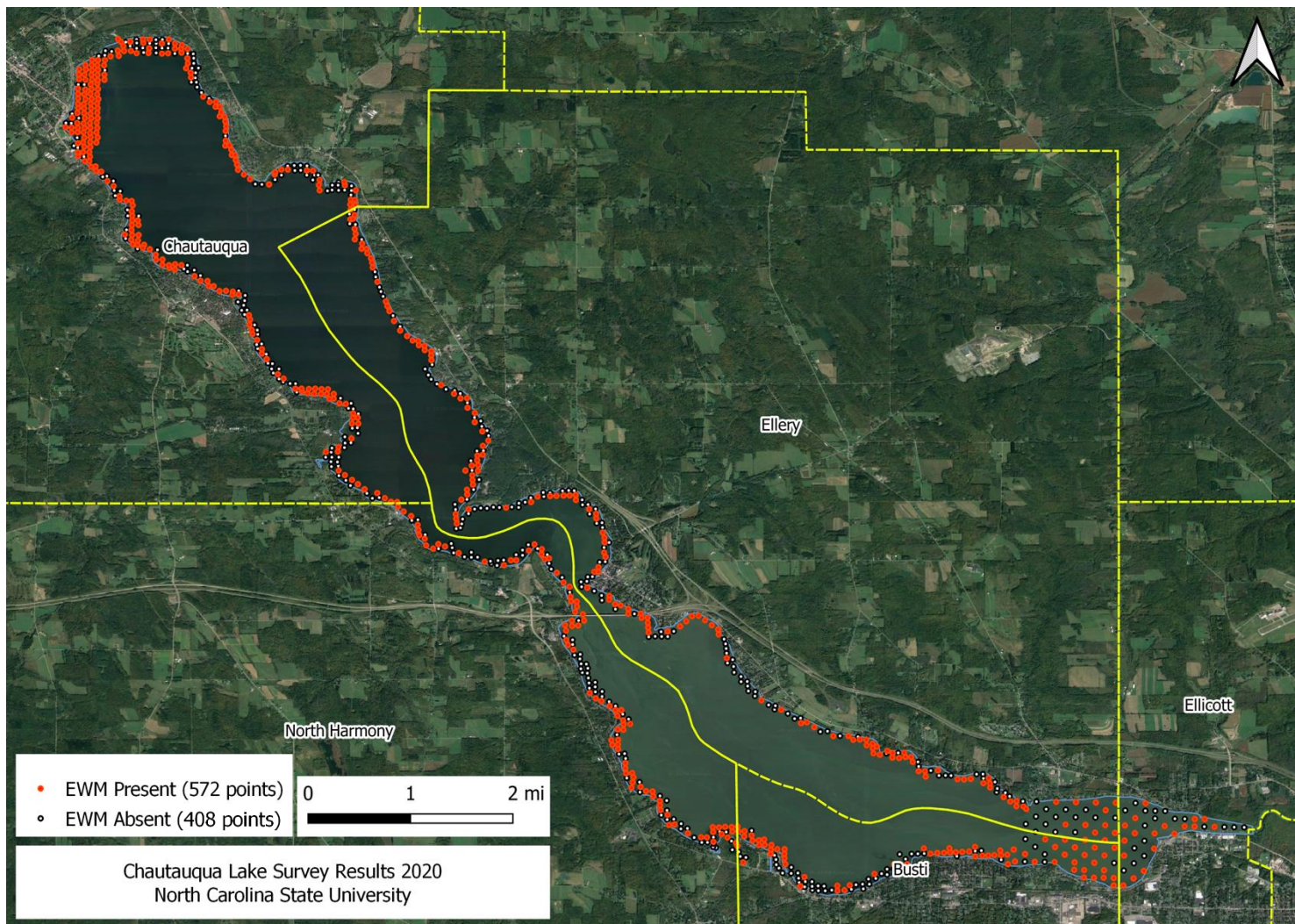


Figure 5: Identified Eurasian Watermilfoil locations found throughout the whole-lake.

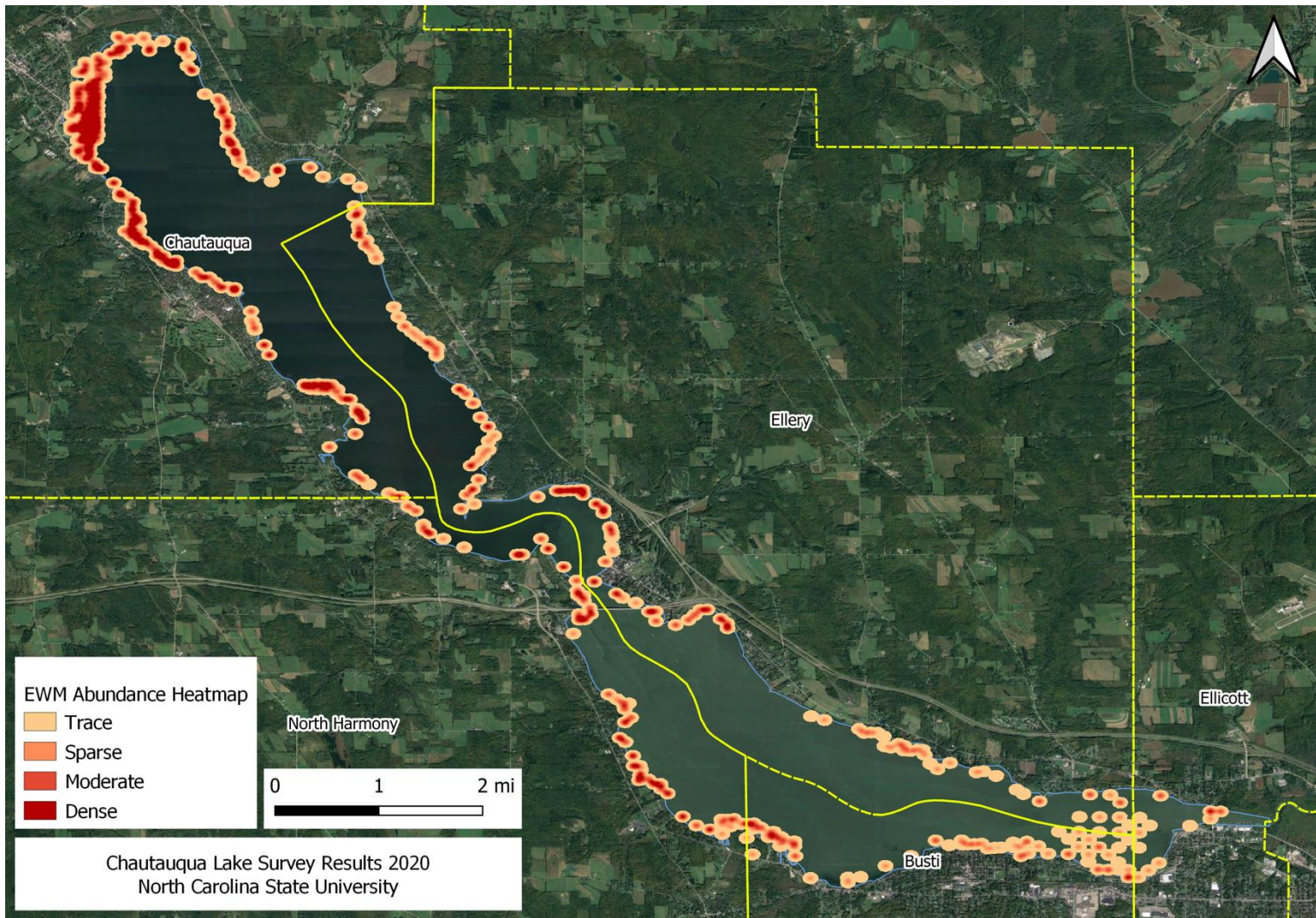


Figure 6. Lakewide point-intercept density estimates of Eurasian Watermilfoil locations.



Figure 7: Sprouted curly-leaf pondweed plant (Left) and a collection of unsprouted curly-leaf pondweed turions (Right) retrieved from rake tosses during the survey period.

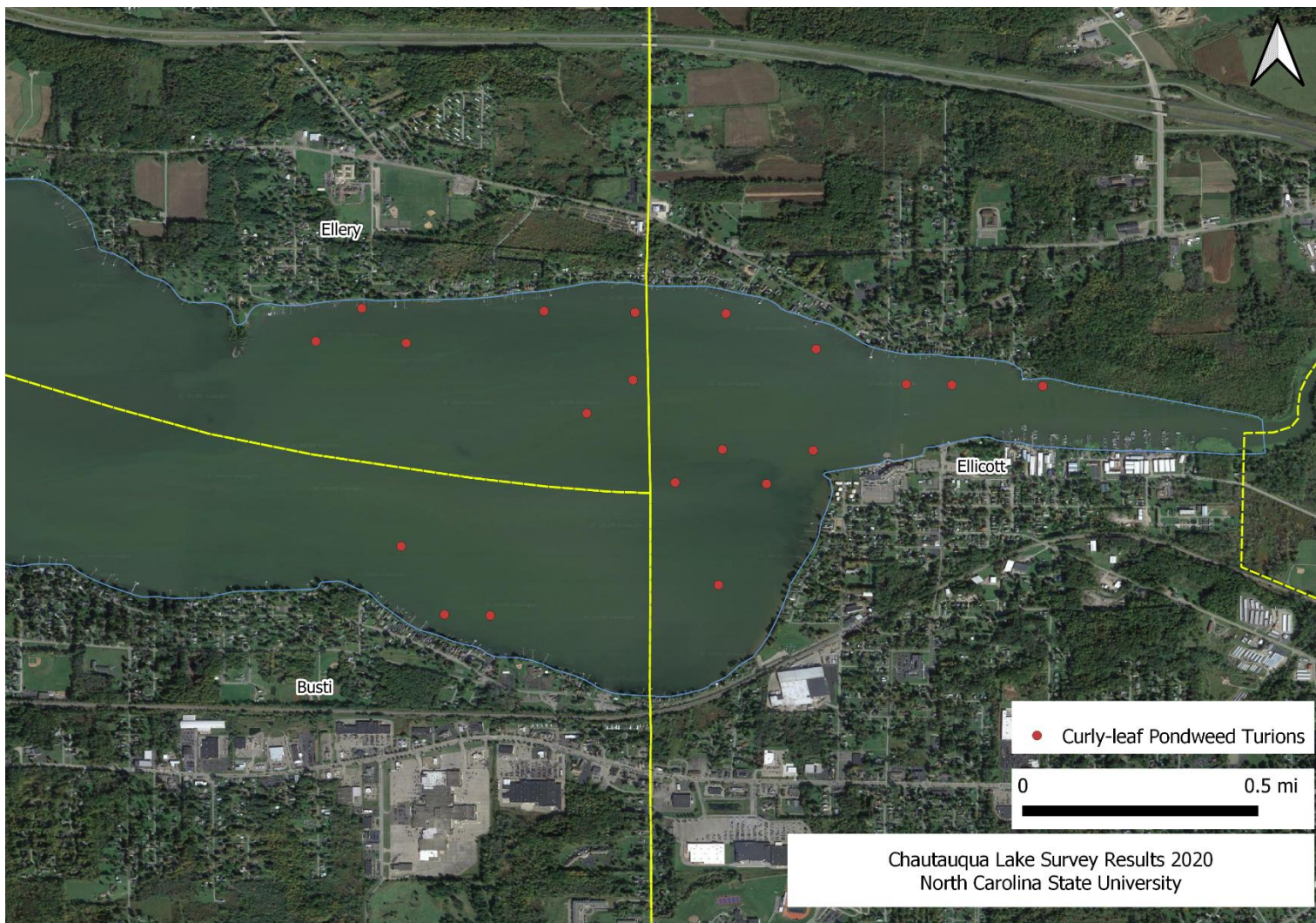


Figure 8: Locations of Curly-leaf Pondweed Turions. The greatest spatial density of turions was found among the outlet area.



Figure 9: Dense mussel populations observed growing on SAV leaves and stems.



Figure 10: Algal blooms of varying densities documented throughout the survey period.

Table 4: Basic water quality measurements recorded at Lake Chautauqua at time of survey. '*' indicates parameters that are significantly different ($p < 0.05$) between North and South basins according to a Student's t test.

Parameter	Lake Region		
	Whole Lake	North Basin	South Basin
<i>n</i> Sites	30	17	13
Site Depth (<i>m</i>)	2.03	2.32	1.65
Temperature (°C) *	21.93	22.38	21.26
pH*	7.73	7.32	8.34
Conductivity (<i>uS/cm</i>)*	0.21	0.21	0.20
Dissolved Oxygen (<i>mg/L</i>)*	7.09	7.19	6.94
Dissolved Oxygen (% Sat) *	80.94	82.72	78.28
Secchi Depth (<i>m</i>) *	1.08	1.61	0.40

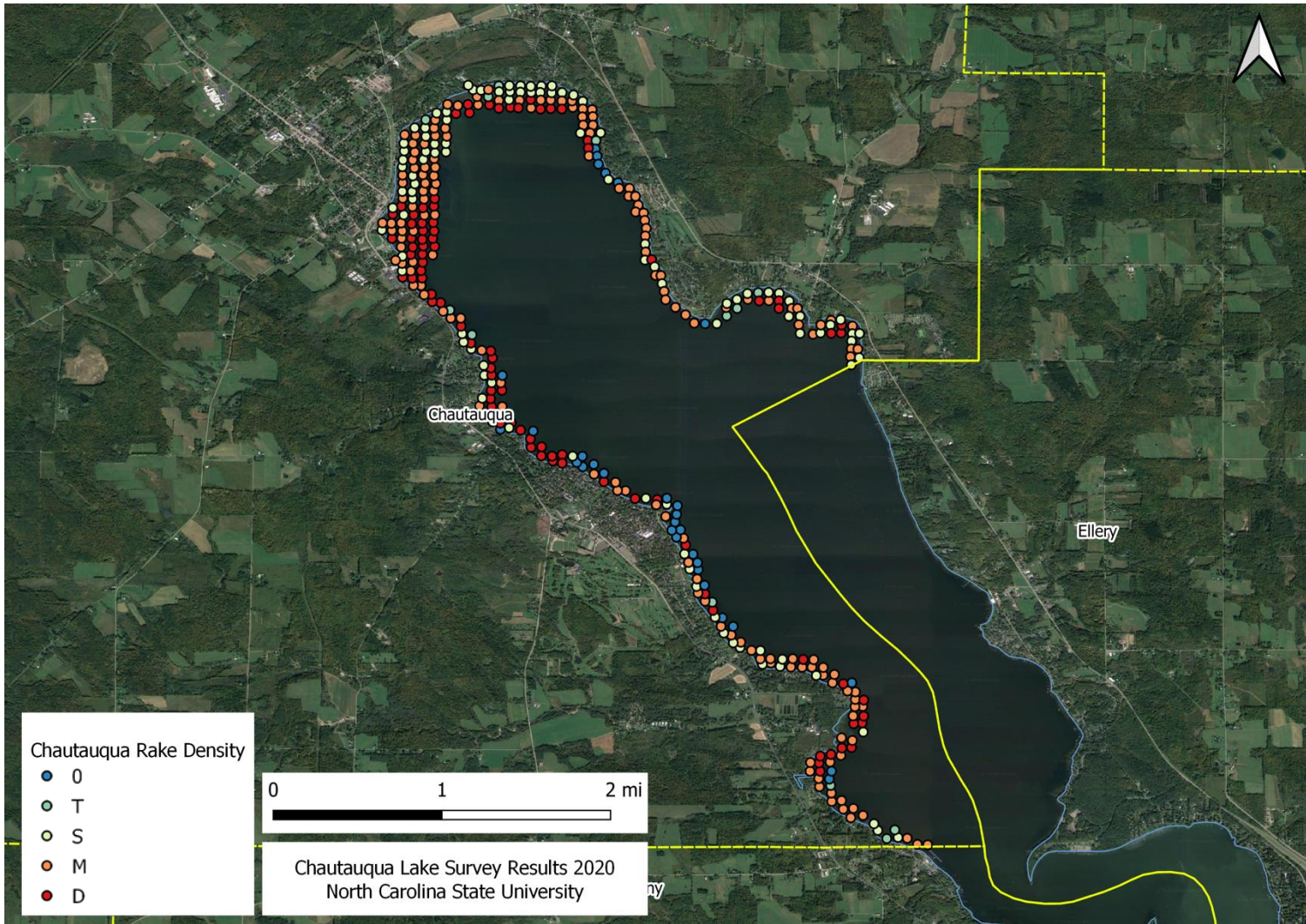


Figure 11: Presence and rake density data collected from point-intercept SAV rake toss survey for the Town of Chautauqua.

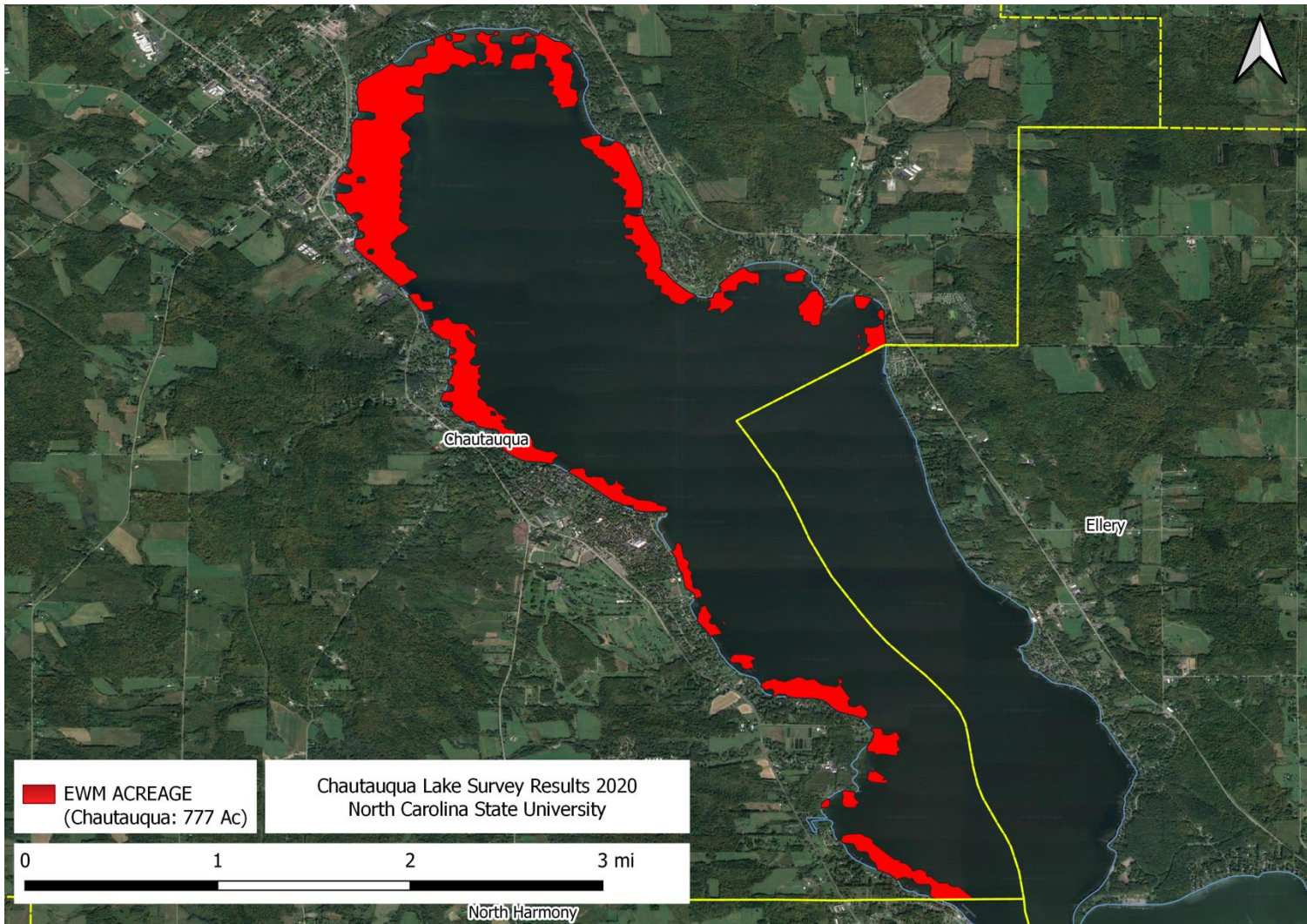


Figure 12: Interpolated estimates of Eurasian Watermilfoil plant bed extents found within the Town of Chautauqua.



Figure 13: Presence and rake density data collected from point-intercept SAV rake toss survey for the Village of Mayville.

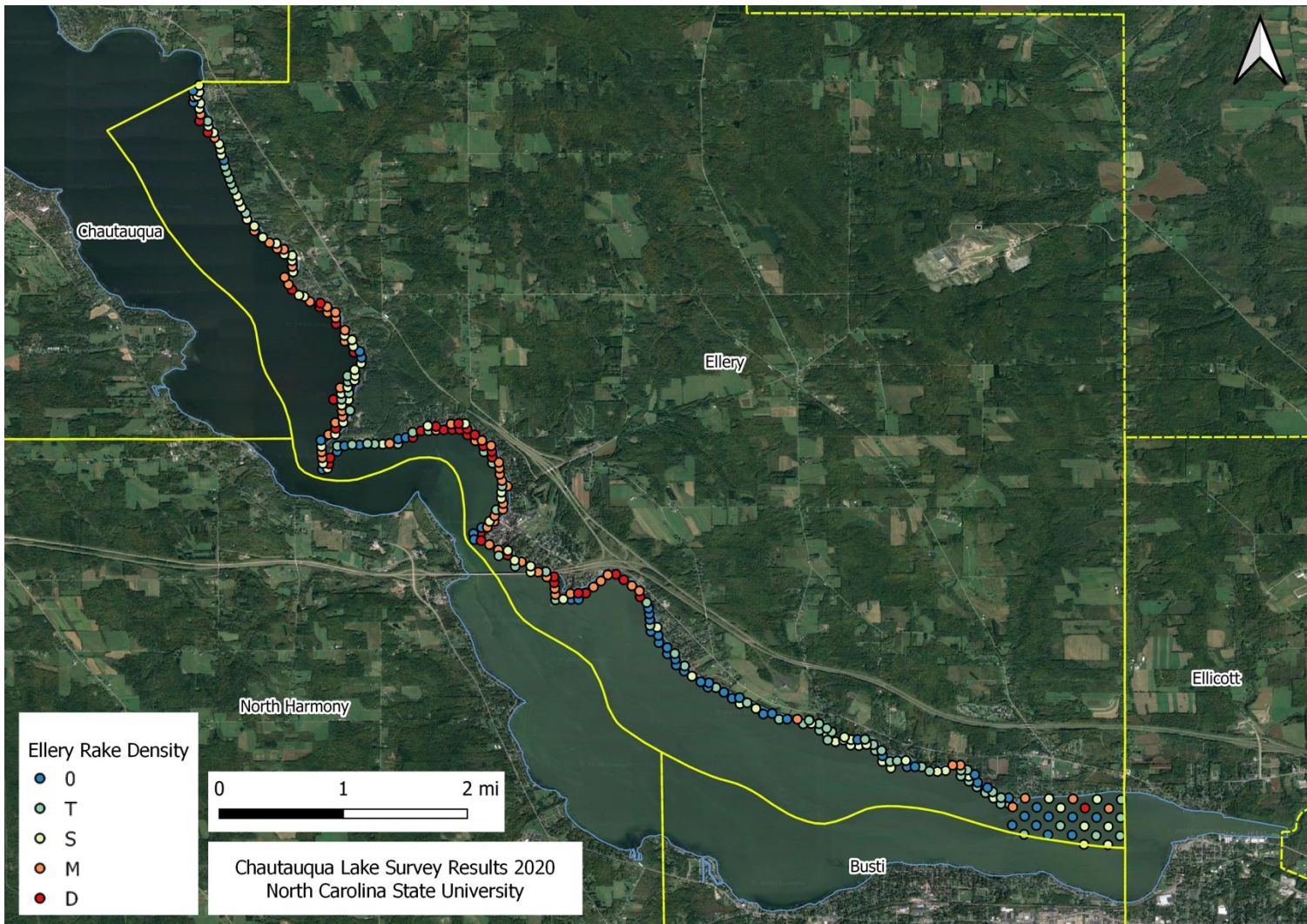


Figure 14: Presence and rake density data collected from point-intercept SAV rake toss survey for the Town of Ellery.

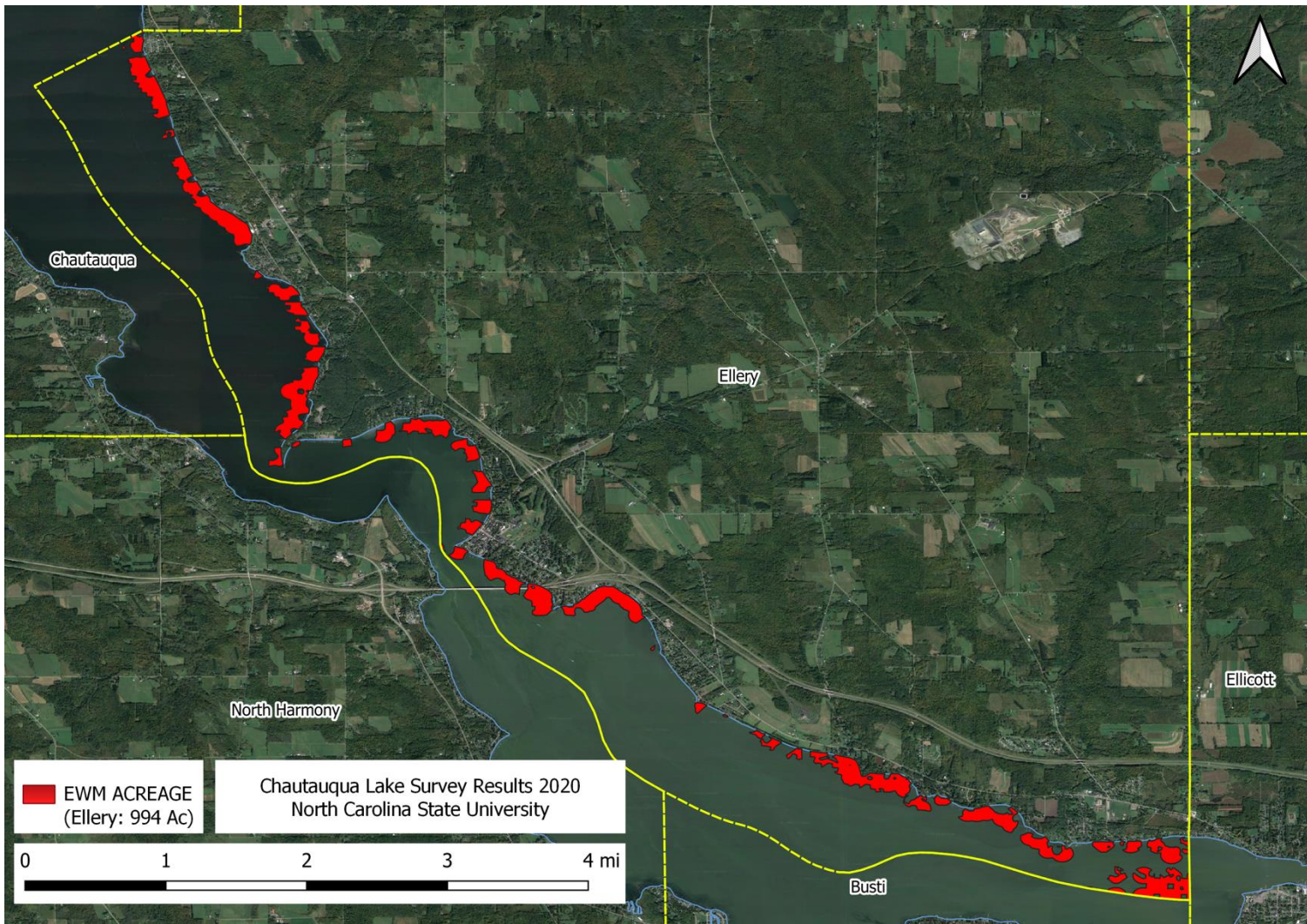


Figure 15: Interpolated estimates of Eurasian Watermilfoil plant bed extents found within the Town of Ellery.

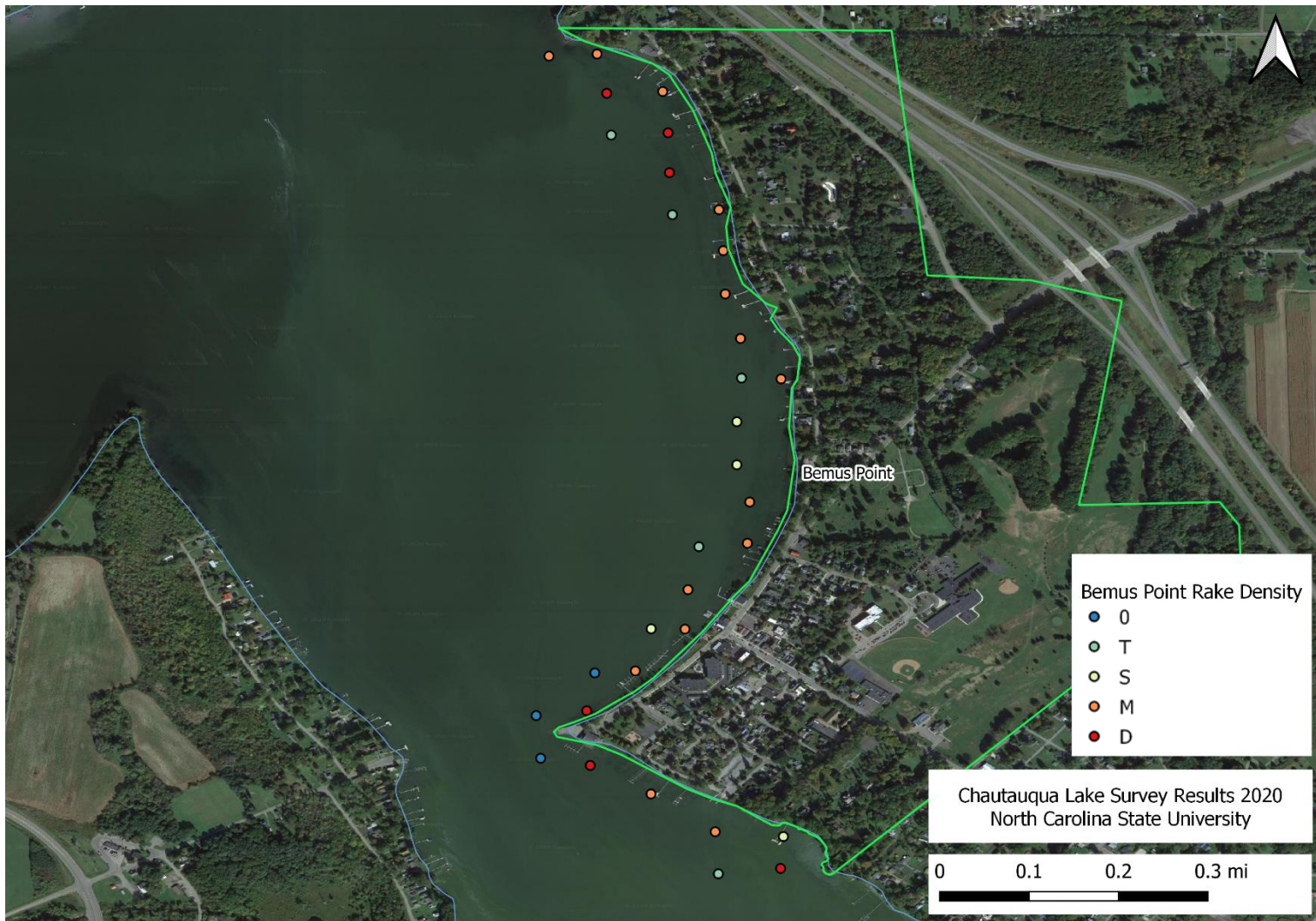


Figure 16: Presence and rake density data collected from point-intercept SAV rake toss survey for the Village of Bemus Point.

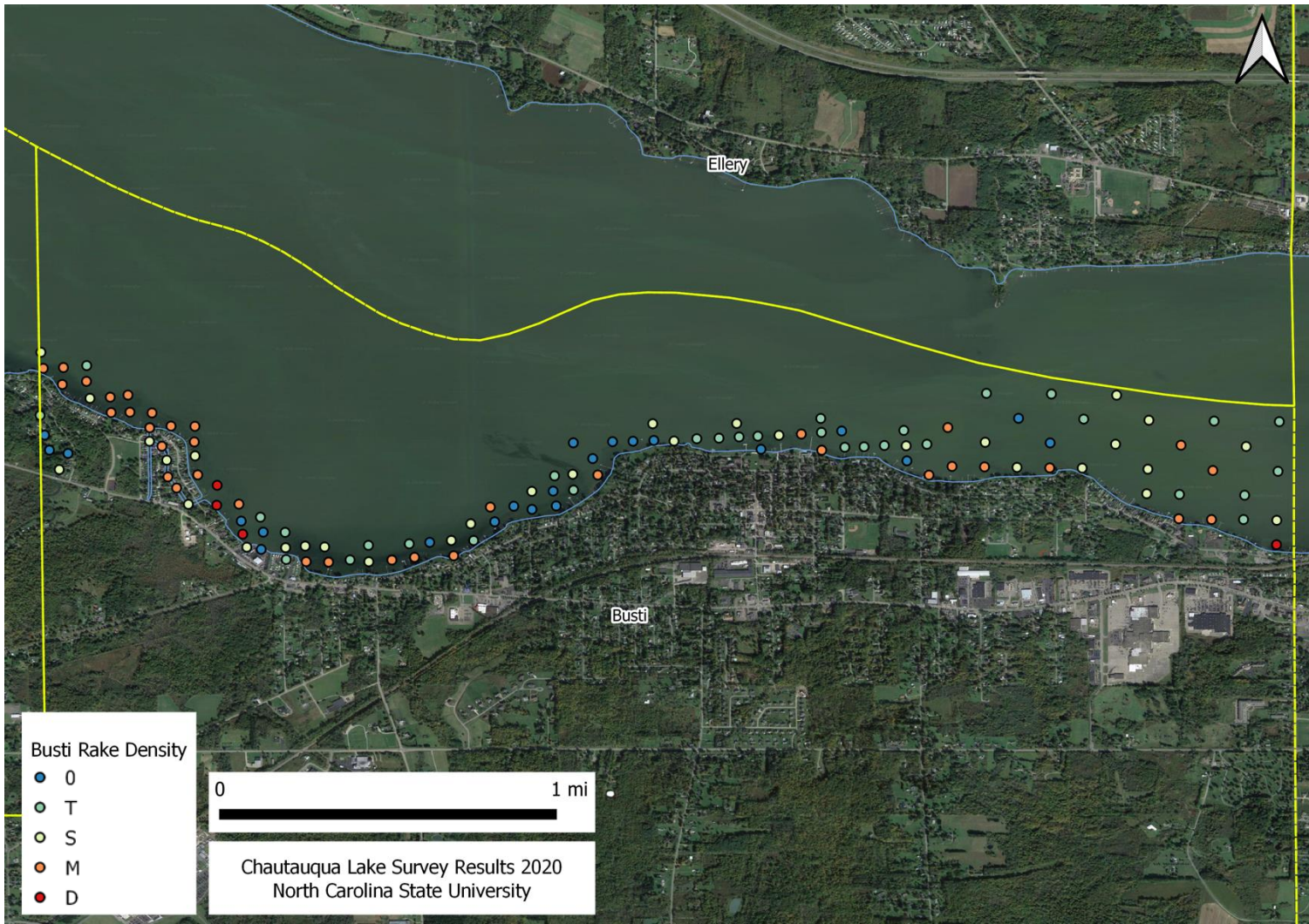


Figure 17: Presence and rake density data collected from point-intercept SAV rake toss survey for the Town of Busti.

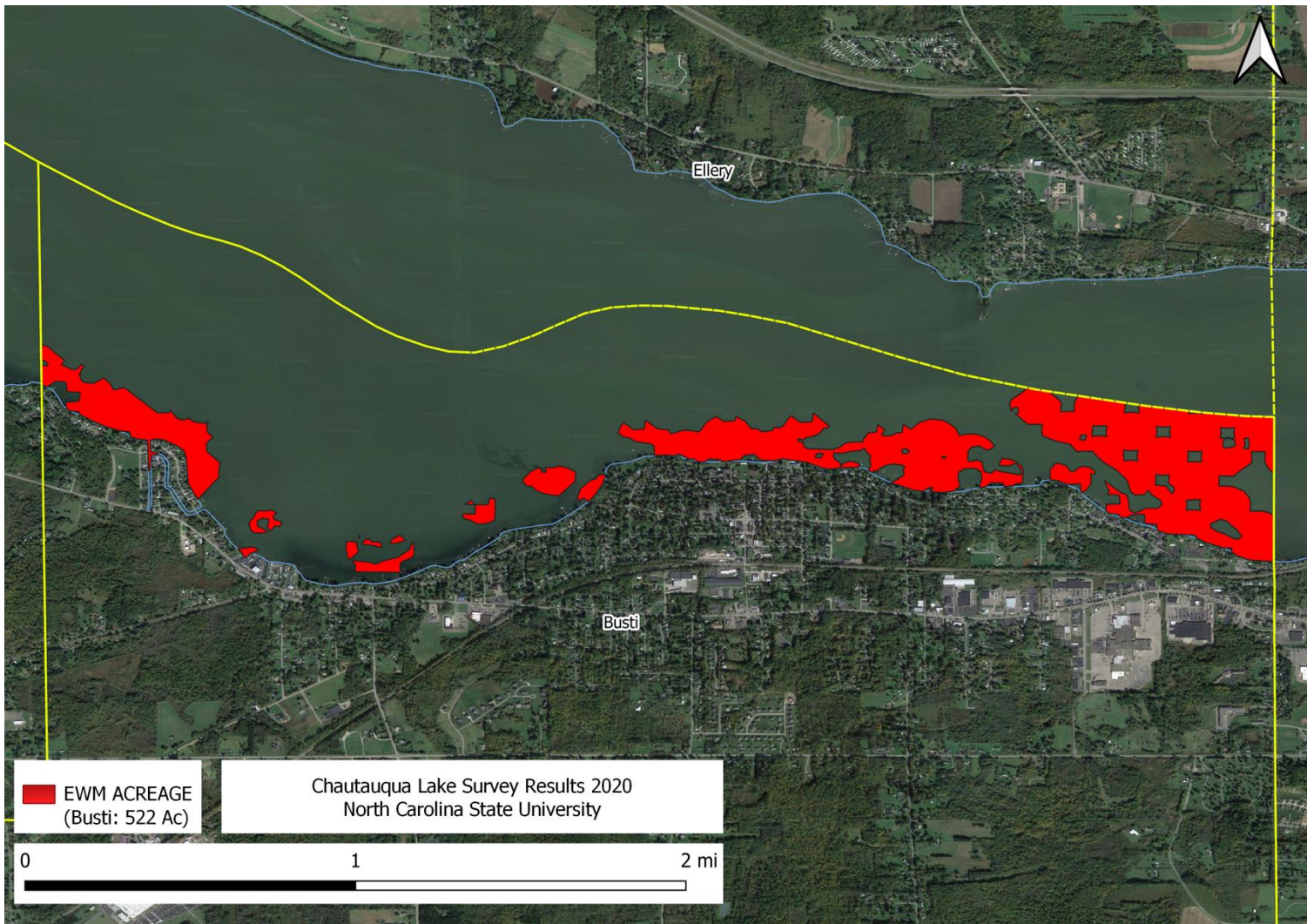


Figure 18: Interpolated estimates of Eurasian Watermilfoil plant bed extents found within the Town of Busti.

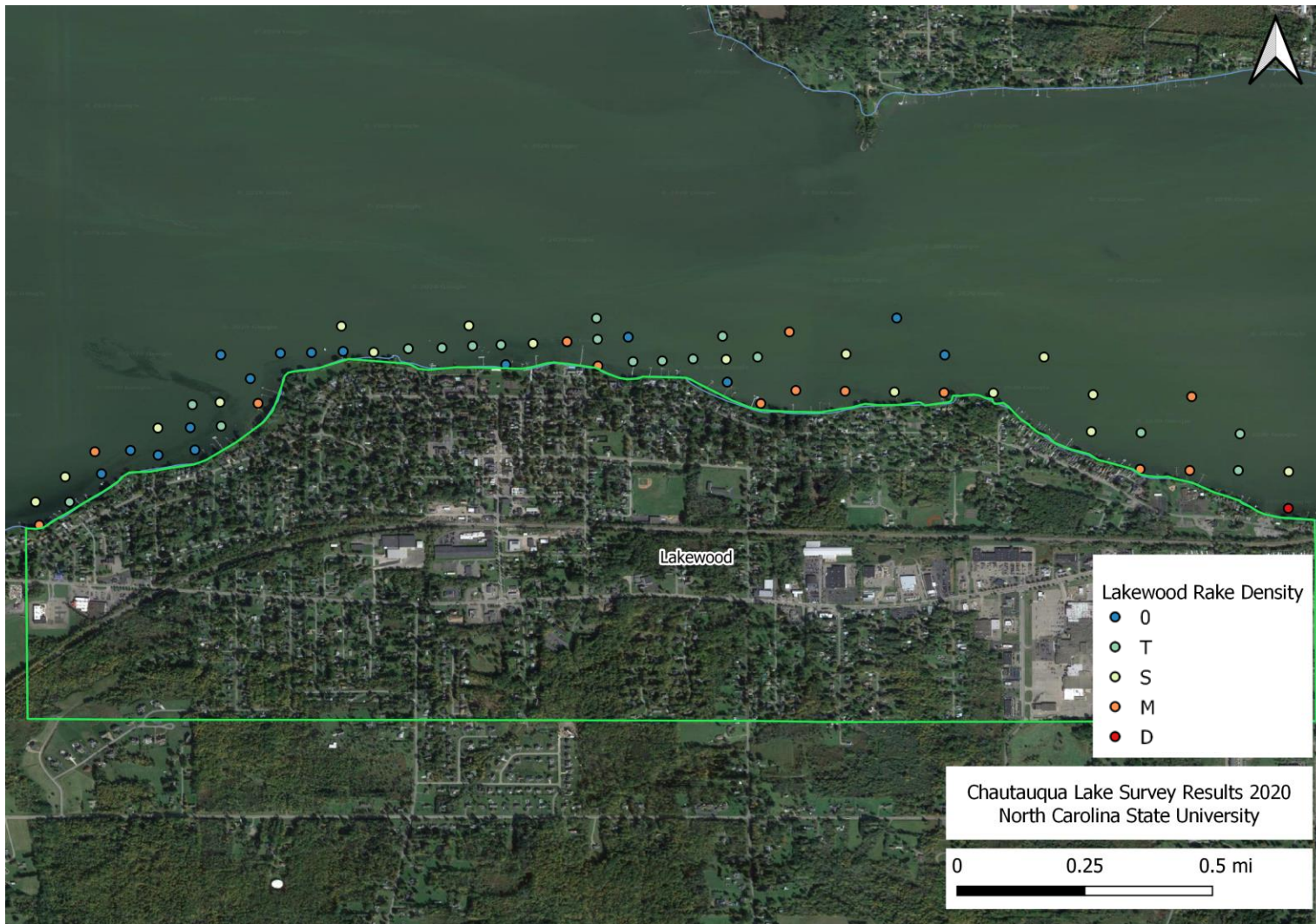


Figure 19: Presence and rake density data collected from point-intercept SAV rake toss survey for the Village of Lakewood.

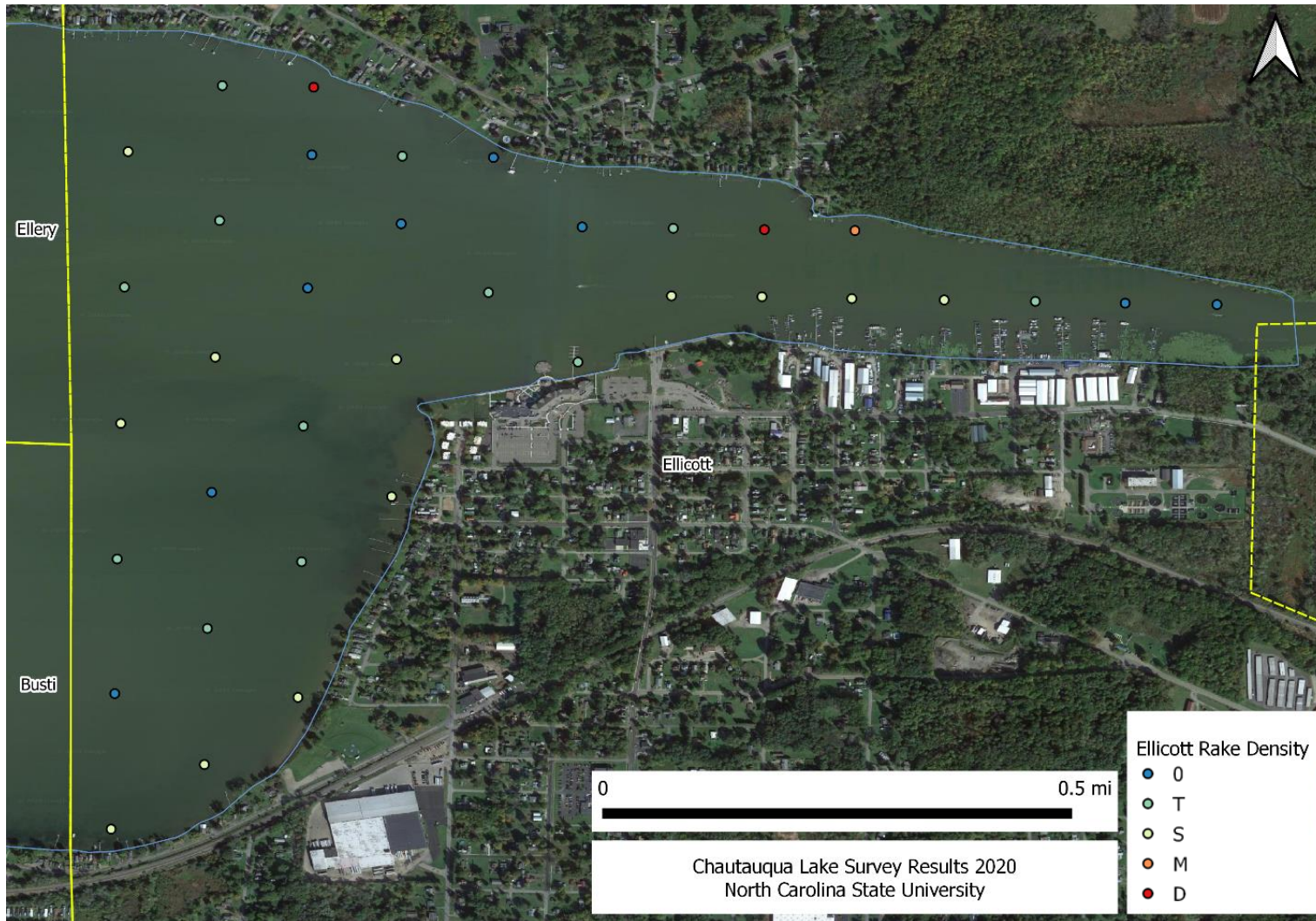


Figure 20: Presence and rake density data collected from point-intercept SAV rake toss survey for the Town of Ellicott.

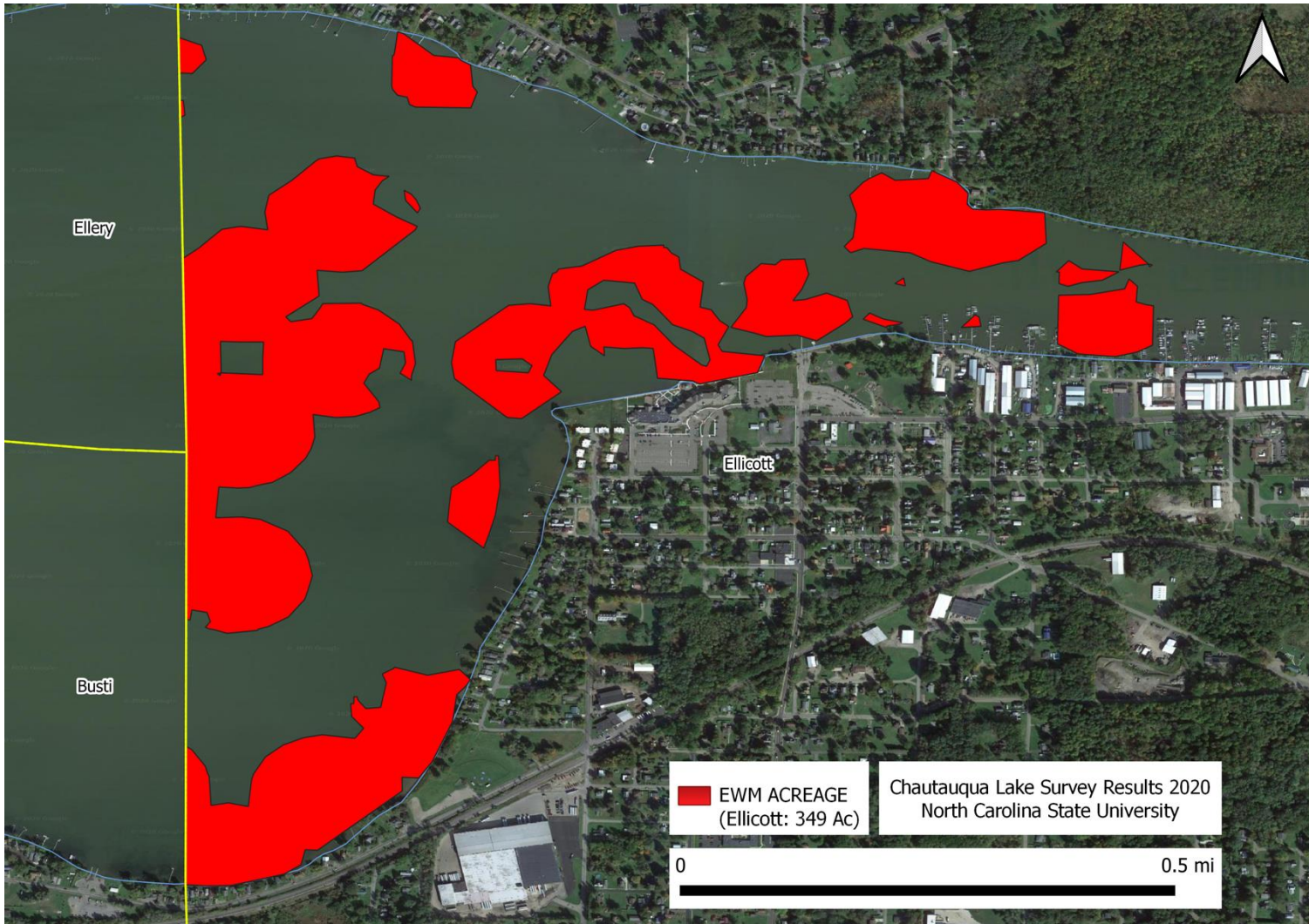


Figure 21: Interpolated estimates of Eurasian Watermilfoil plant bed extents found within the town of Ellicott.

Table 11: Results of Fall 2020 SAV Survey of Chautauqua Lake within the Town of Ellicott. Non-native species are marked in red.

TOWN OF ELLICOTT											
SPECIES PRESENT		TOTAL		TRACE		SPARSE		MODERATE		DENSE	
COMMON NAME	SCIENTIFIC NAME	#	%	#	%	#	%	#	%	#	%
TOTAL SURVEYED SITES		35									
TOTAL VEGETATED SITES		27	77%	12	44%	12	44%	1	4%	2	7%
EURASIAN WATER MILFOIL	MYRIOPHYLLUM SPICATUM	18	51%	14	78%	4	22%	0	0%	0	0%
WESTERN WATERWEED	ELODEA NUTALLI	14	40%	10	71%	3	21%	1	7%	0	0%
WATER STARGRASS	HETERANTHERA DUBIA	10	29%	9	90%	1	10%	0	0%	0	0%
BRITTLE NAIAD	NAJAS MAJOR	7	20%	7	100%	0	0%	0	0%	0	0%
COMMON WATERWEED	ELODEA CANADENSIS	6	17%	6	100%	0	0%	0	0%	0	0%
CURLY-LEAF PONDWEED	POTAMOGETON CRISPUS	5	14%	5	100%	0	0%	0	0%	0	0%
COONTAIL	CERATOPHYLLUM DEMERSUM	4	11%	3	75%	1	25%	0	0%	0	0%
SLENDER NAIAD	NAJAS FLEXILIS	4	11%	4	100%	0	0%	0	0%	0	0%
WILD CELERY	VALLISNERIA AMERICANA	3	9%	3	100%	0	0%	0	0%	0	0%
FLATSTEM PONDWEED	POTAMOGETON ZOSTERA	1	3%	1	100%	0	0%	0	0%	0	0%
SOUTHERN NAIAD	NAJAS GUADALUPENSIS	1	3%	1	100%	0	0%	0	0%	0	0%
WHITE WATER LILY	NYMPHAEA ODORATA	4	11%								
YELLOW WATER LILY	NUPHAR VARIEGATA	4	11%								

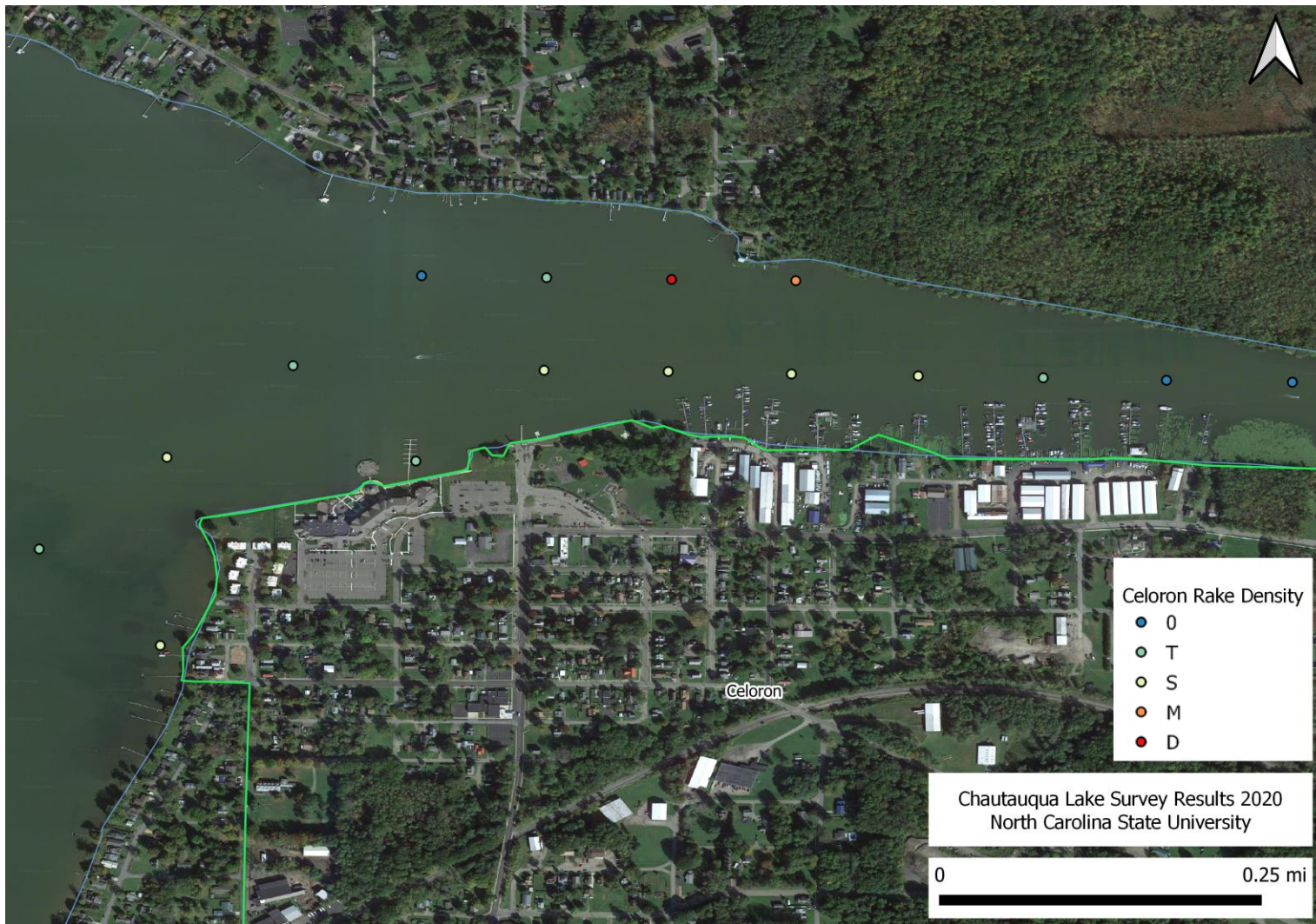


Figure 22: Presence and rake density data collected from point-intercept SAV rake toss survey for the Village of Celoron.

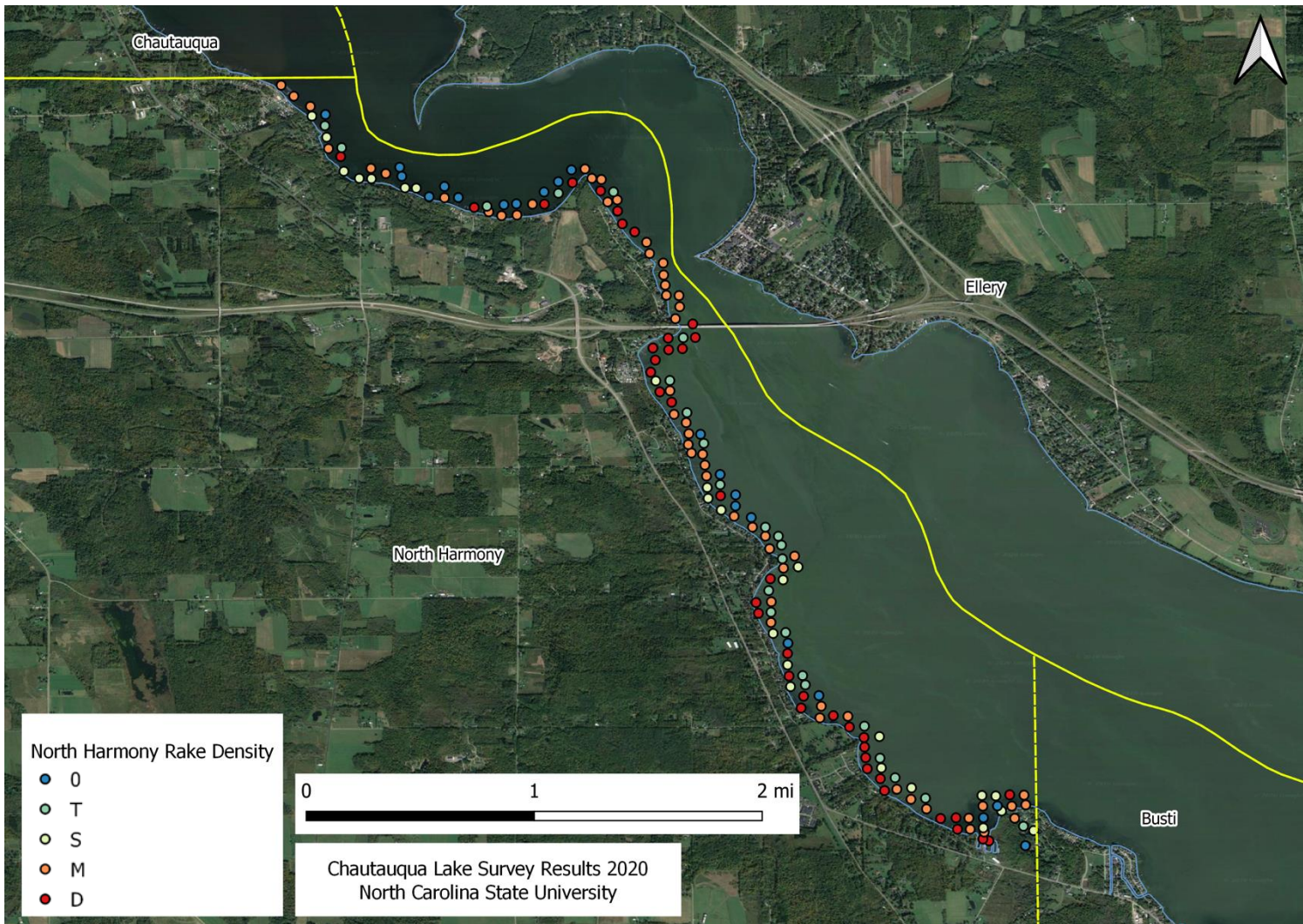


Figure 23: Presence and rake density data collected from point-intercept SAV rake toss survey for the Town of North Harmony.

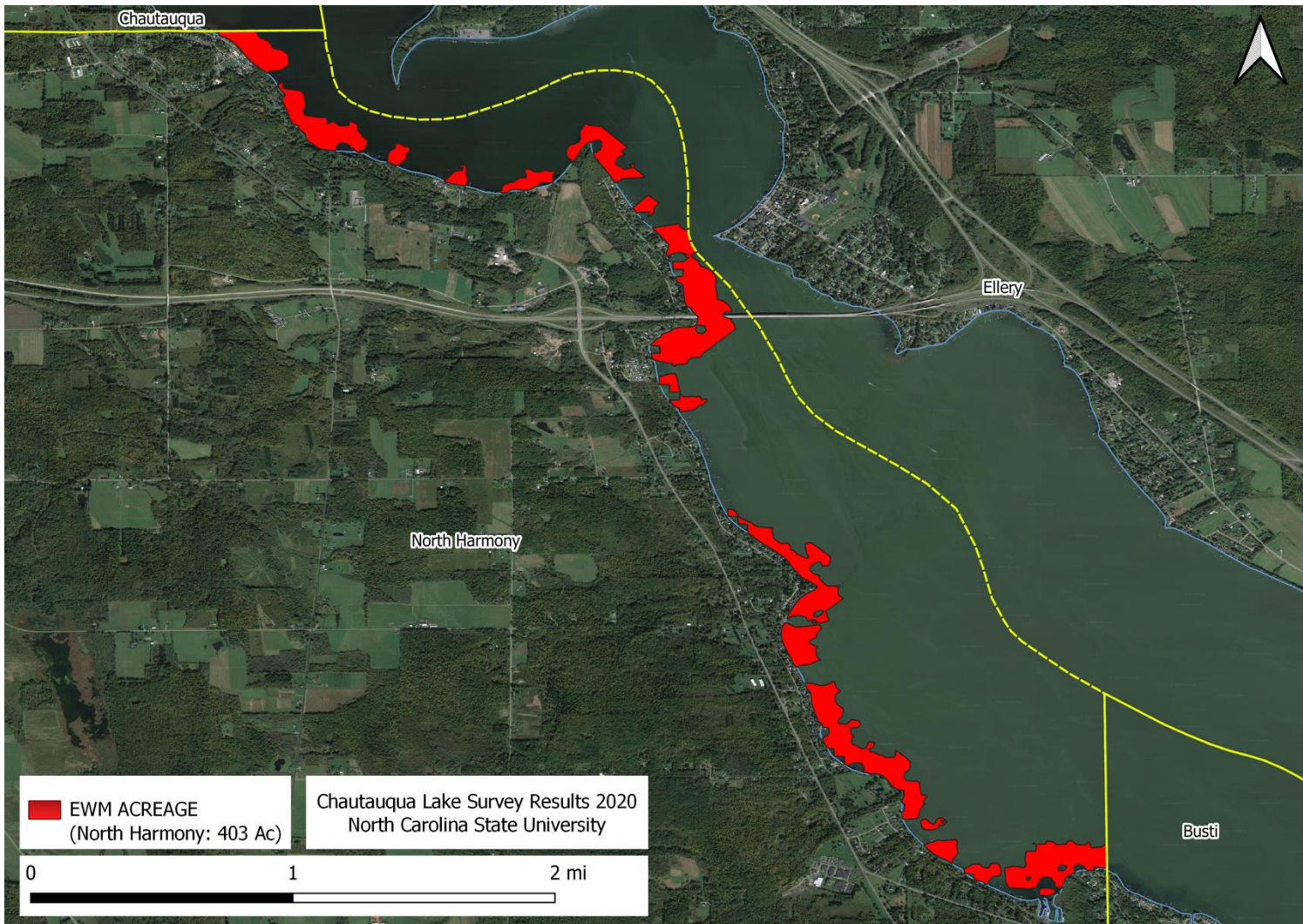


Figure 24: Interpolated estimates of Eurasian Watermilfoil plant bed extents found within the Town of North Harmony.

Table 13: Results of Fall 2020 SAV Survey of Chautauqua Lake within the Town of North Harmony. Non-native species are marked in red.

TOWN OF NORTH HARMONY											
SPECIES PRESENT		TOTAL		TRACE		SPARSE		MODERATE		DENSE	
COMMON NAME	SCIENTIFIC NAME	#	%	#	%	#	%	#	%	#	%
TOTAL SURVEYED SITES		162									
TOTAL VEGETATED SITES		144	89%	24	17%	24	17%	56	39%	40	28%
COONTAIL	CERATOPHYLLUM DEMERSUM	102	63%	77	75%	18	18%	6	6%	1	1%
EURASIAN WATER MILFOIL	MYRIOPHYLLUM SPICATUM	87	54%	72	83%	14	16%	1	1%	0	0%
WATER STARGRASS	HETERANTHERA DUBIA	79	49%	36	46%	29	37%	11	14%	3	4%
WILD CELERY	VALLISNERIA AMERICANA	63	39%	50	79%	10	16%	3	5%	0	0%
COMMON WATERWEED	ELODEA CANADENSIS	55	34%	43	78%	8	15%	2	4%	2	4%
WESTERN WATERWEED	ELODEA NUTALLI	53	33%	37	70%	8	15%	4	8%	4	8%
IVY-LEAVED DUCKWEED	LEMNA TRISULCA	36	22%	36	100%	0	0%	0	0%	0	0%
SLENDER NAIAD	NAJAS FLEXILIS	30	19%	25	83%	3	10%	2	7%	0	0%
CURLY-LEAF PONDWEED	POTAMOGETON CRISPUS	17	10%	17	100%	0	0%	0	0%	0	0%
CLASPING-LEAF PONDWEED	POTAMOGETON RICHARDSONII	8	5%	8	100%	0	0%	0	0%	0	0%
SOUTHERN NAIAD	NAJAS GUADALUPENSIS	7	4%	7	100%	0	0%	0	0%	0	0%
STARRY STONEWORT	NITELLOPSIS OBTUSA	5	3%	4	80%	1	20%	0	0%	0	0%
SMALL DUCKWEED	LEMNA MINOR	5	3%	5	100%	0	0%	0	0%	0	0%
WHITESTEM PONDWEED	POTAMOGETON PRAELONGUS	4	2%	4	100%	0	0%	0	0%	0	0%
SMALL PONDWEED	POTAMOGETON PUSILLUS	1	1%	1	100%	0	0%	0	0%	0	0%
SAGO PONDWEED	STUCKENIA PECTINATA	1	1%	1	100%	0	0%	0	0%	0	0%
WHITE WATER LILY	NYMPHAEA ODORATA	29	18%								
JAPANESE KNOTWEED	POLYGONUM CUSPIDATUM	17	10%								
FILAMENTOUS ALGAE	VARIOUS SPECIES	10	6%								
YELLOW WATER LILY	NUPHAR VARIEGATA	10	6%								
BENTHIC FILAMENTOUS ALGAE	LYNGBYA SP.	4	2%								
BULRUSH	SCIRPUS SP.	2	1%								
WATER WILLOW	JUSTICIA AMERICANA	1	1%								
CATTAIL	TYPHA LATIFOLIA	1	1%								
COMMON REED	PHRAGMITES AUSTRALIS	1	1%								
PICKERELWEED	PONTEDERIA CORDATA	1	1%								

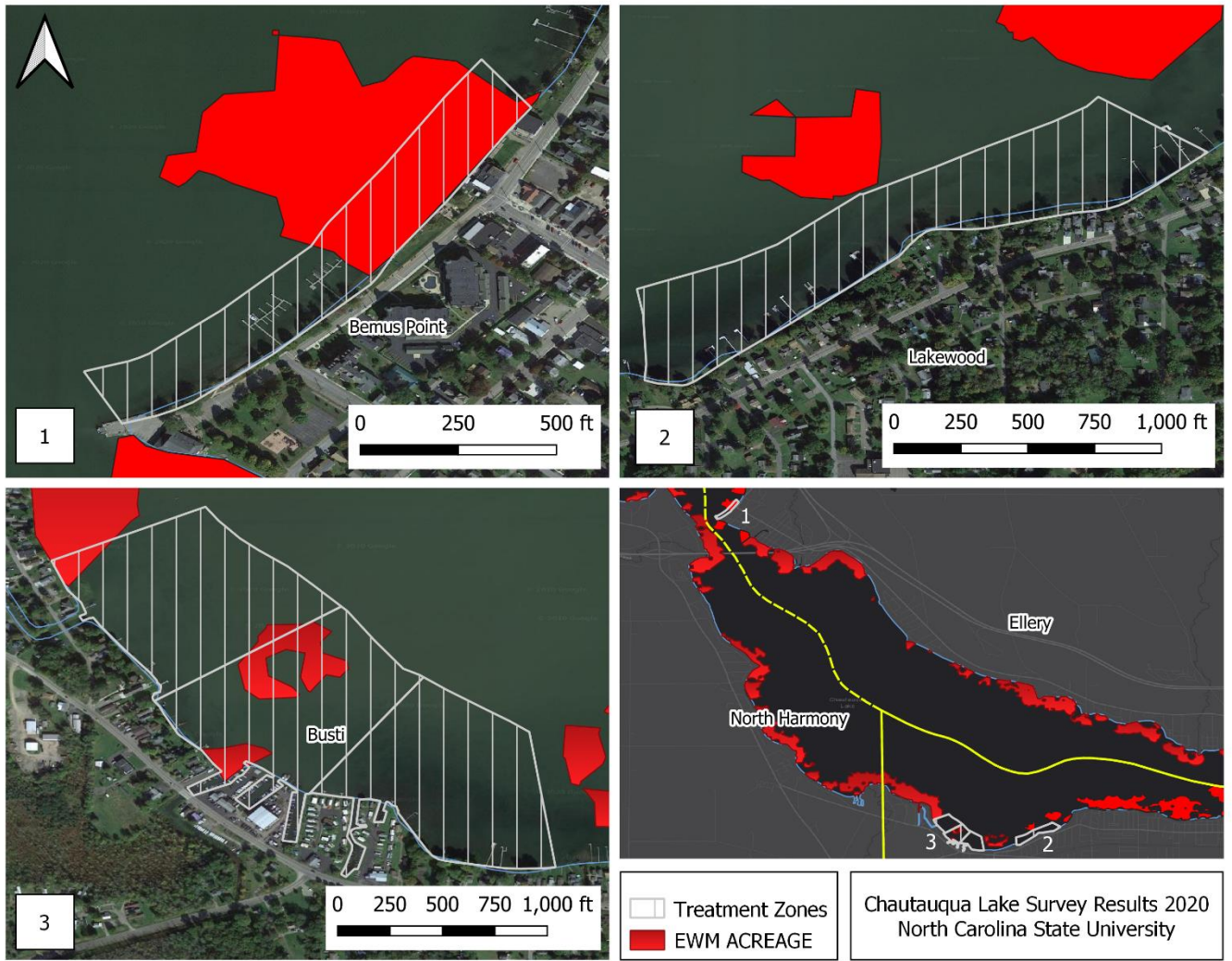


Figure 25: Interpolated estimates of Eurasian Watermilfoil plant bed extents found within the 2020 treatment zones (Total treated acreage; Bemus Point: 7.0 Ac, Lakewood: 20.2 Ac, Busti: 29.2 Ac).

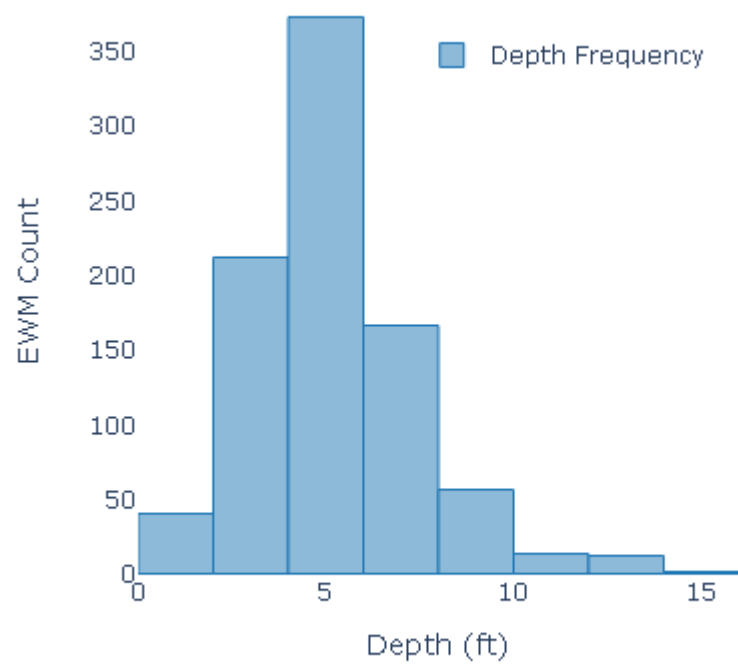


Figure 25: Histogram showing frequency of depth profiles where Eurasian Watermilfoil was identified.



Figure 26: Examples of rakes with 'dense' abundance ratings that are comprised of both native and non-native SAV.



Figure 27: Dense SAV growth is impacting recreational activities at Chautauqua Lake such as fishing (Left) and boating (Right).

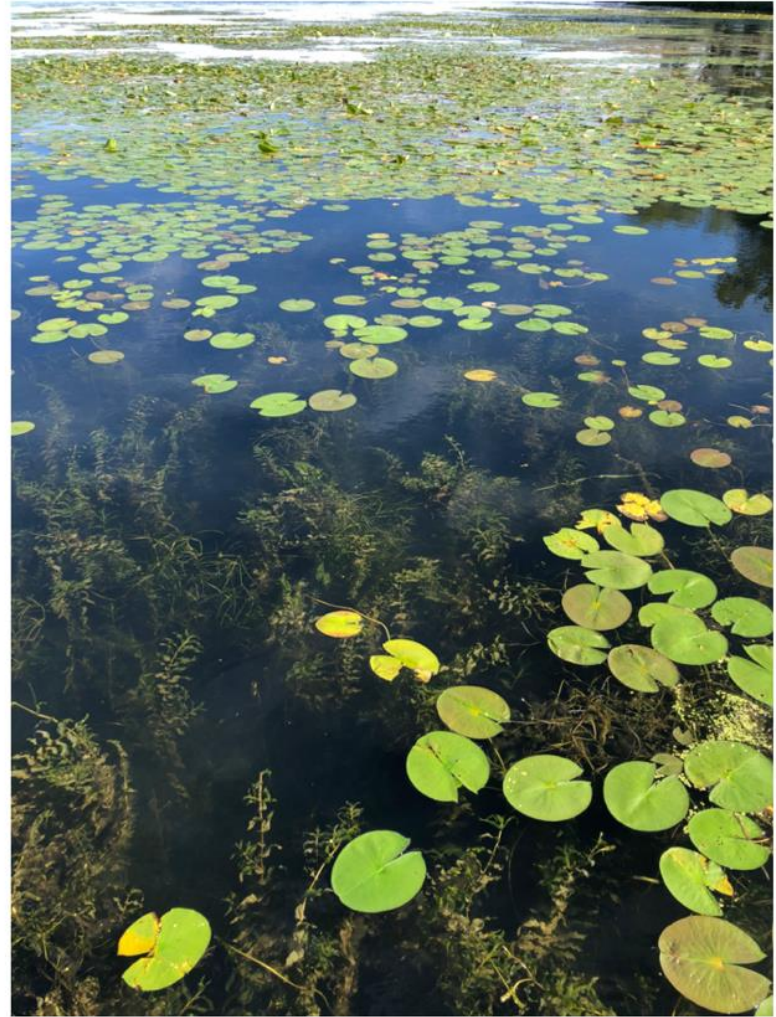


Figure 28: Examples of native SAV populations exhibiting high species richness in Chautauqua Lake's north basin.