Noxon Rapids Reservoir and Cabinet Gorge Reservoir Herbicide Pretreatment Survey Report

2025 Season

Prepared for: The Sanders County Aquatic Invasive Plants Task Force

July 17, 2025

THE **OUTSIDE** IS IN US ALL.

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Contents

Acknowledgments:

Thanks to Scott Freeman, Brian Hagan, and Jayden Duckworth for their efforts in performing all the field sampling for FWP in 2025.

Overview

Montana Fish, Wildlife, & Parks (FWP) partnered with The Sanders County Aquatic Invasive Plants Task Force since 2018 to survey public access areas for potential treatment of aquatic invasive plants within Noxon Rapids Reservoir and Cabinet Gorge Reservoir. This annual effort guides treatment plans for Eurasian watermilfoil (EWM) within the reservoirs while also serving to monitor other invasive plants (curlyleaf pondweed and flowering rush) as well as native species. Three control plots for each reservoir established in 2020 help track changes in reservoir-level EWM abundance due to environmental variations like water temperature and clarity. FWP staff surveyed 25 EWM plots (19 potential treatment plots/6 untreated, control plots) from June 23-26, 2025. Low river flows allowed staff to sample in June, which is a few weeks earlier compared to recent years. Those locations, noted in Figure 1, cover the length of both reservoirs and represent primary public access areas (i.e. public boat launch sites) as well as shoreline areas with high density of private docks, which generate high traffic. Direction for monitoring these specific locations is provided in the Task Force's Aquatic Invasive Plant Management Plan.

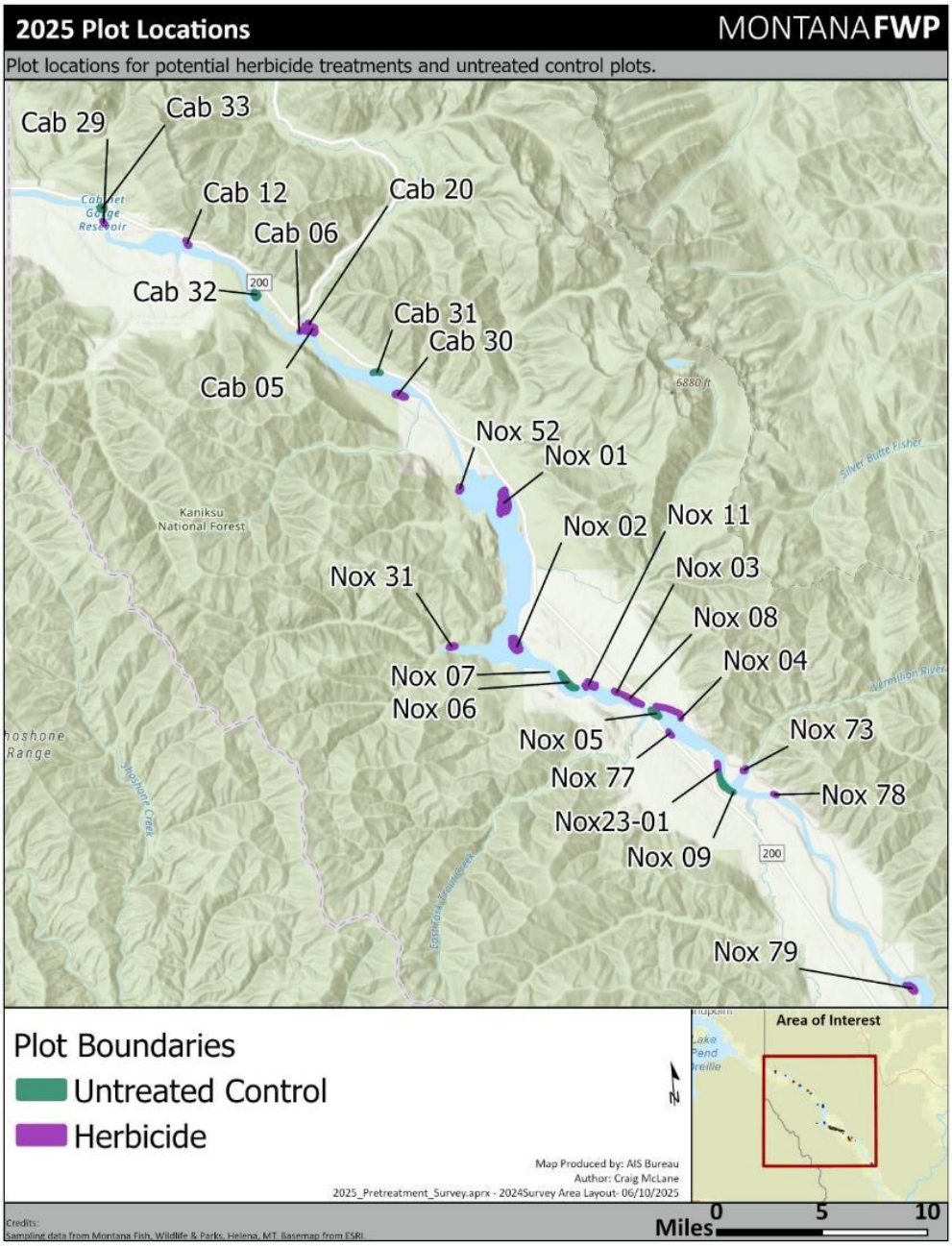


Figure 1. Locations of Survey Plots on Noxon Rapids and Cabinet Gorge Reservoirs, 2025.

Sampling Methods:

In each plot, FWP selected a set number of random points. Table 1 shows the details of each plot, its size, and the number of points surveyed in 2025. Plot sizes and locations were determined based on past surveys, and changes were made if more points were needed. The number of points in each plot depends on its size, with bigger areas needing more points. If the shape was complicated, more points were used.

Determining a suitable method to estimate the abundance of plants in each plot can be challenging. Density considers the number of plants in a defined area (e.g., 2 plants/m^2), but would be too arduous since it would require intensive sampling methods involving scuba divers. By contrast, visual estimations of abundance at a plot level are simpler to attain but can be inaccurate (e.g. plants in plots are patchy with dense and sparse areas, reduced water clarity, etc.). Canopy cover is often used in terrestrial settings to quantitatively estimate plant abundances, so FWP adapted its use in an aquatic setting.

Canopy cover is the amount (as a percentage) of area a plant species covers if looking at it from above or below (2-dimensional). A plant with a canopy cover value of 80% suggests that 80% of that area is covered by this plant species. Because plants can reside under other plants, each species is treated independent of others, so it is possible to have 100% coverage for more than one species. To achieve canopy cover estimates, the goal is to sample the same amount of area at each point to make the points comparable across the entire plot. A 1m^2 quadrat is often used to estimate canopy cover but seeing to the bottom of the lake to determine this area to survey is hard or impossible for technicians due to turbidity, depth, plant growth on the surface, or wave/surface glare. Therefore, FWP utilized thatch rakes attached to long poles to collect plant samples from the lake bottom.

Table 1. List of plots surveyed and their approximate surveyed areas and number of sample points.

Plot	Potentially Treat/ Control	Approx. Plot Size (ac)	#Sample Points
C05	Potential Treat	16.6	45
C06	Potential Treat	7.9	24
C12	Potential Treat	3.1	29
C20	Potential Treat	3.2	14
C29	Potential Treat	1.3	17
C30	Potential Treat	22.0	58
C31	Control	4.4	17
C32	Control	9.9	29
C33	Control	8.3	23
N01	Potential Treat	110.6	101
N02	Potential Treat	53.5	60
N03	Potential Treat	2.5	19
N04	Potential Treat	8.7	32
N05	Control	16.8	12
N06	Control	18.2	19
N08	Potential Treat	13.3	41
N09	Control	16.8	20
N11	Potential Treat	20.2	41
N23-01	Potential Treat	1.5	13
N31	Potential Treat	7.0	30
N52	Potential Treat	5.4	52
N73	Potential Treat	1.3	20
N77	Potential Treat	1.6	21
N78	Potential Treat	0.65	15
N79	Potential Treat	15.3	40

Table 2. Cover class and range used during coverage sampling efforts for all years after 2019.

Cover Class	Range of Coverage	Midpoint of Range
0	0%	0.0%
1	1% to 2%	1.5%
2	3% to 5%	3.6%
3	6% to 15%	10.1%
4	16% to 25%	20.1%
5	26% to 40%	32.6%
6	41% to 60%	50.1%
7	61% to 75%	67.6%
8	76% to 85%	80.1%
9	86% to 95%	90.1%
10	96%-100%	97.6%

1. Coulloudon, B. et al. 1999. Sampling Vegetation Attributes, Technical Reference 1734-4. Bureau of Land Management. Denver, CO.

At each point in a plot, technicians collected a sample on each side of the boat using the thatch rakes. This provides a consistent sample area at each point. After a 720-degree spin of the rake on the lakebed, technicians estimated the percentage of rake fullness for each species that was present when the rake was retrieved. This rake fullness was used to assign each species a percent canopy cover at each point by averaging both technicians' results. Canopy cover for each point within the plot was then averaged to produce a plot-level canopy cover for each species. Like the Daubenmire Method of estimating canopy cover, FWP used predetermined canopy cover classes and the associated midpoints for the coverage calculations (shown in Table 2) (Coulloudon et al, 1999). Recommended treatment areas were then identified based on Eurasian watermilfoil plot-level canopy cover. Maps of surveyed plots illustrate the plot boundaries and canopy cover of key survey points. Results were also compared across different years to try to identify any trends.

Results:

The following subsections with this results section are as follows:

Coulloudon, B. et al. 1999. Sampling Vegetation Attributes, Technical Reference 1734-4. Bureau of Land Management. Denver, CO.

Table 3. Survey results showing acreage of Eurasian watermilfoil and canopy cover abundances within the potential treatment areas and untreated control plots since 2019.

Eurasian watermilfoil (*Myriophyllum spicatum*)																
Plot	Years Treated	2025		2024		2023		2022		2021		2020		2019		Plot Location
		Acres	*Canopy Cover (%)*	Acres	*Canopy Cover (%)*	Acres	*Canopy Cover (%)*	Acres	*Canopy Cover (%)*	Acres	*Canopy Cover (%)*	Acres	*Canopy Cover (%)*	Acres	*Canopy Cover (%)*	
Cab-05	*'23; '19*	0.2	<1	0	0	4.4	*7*	<0.1	*2*	4.0	*11*	1.8	*0.1*	12.1	*7*	SE of Bull River Bridge on Hwy 200
Cab-06	*'23; '20; '19*	2.8	7	<0.1	<1	5.7	*12*	<0.1	*2*	<0.1	*3*	3.7	*1*	4.2	*3*	SW of Bull River Bridge on Hwy 200
Cab-12	*'24; '20; '19, '18*	0.3	<1	1.6	4	0.3	*1*	<0.1	*2*	<0.1	*1*	0.3	*1*	1.7	*5*	Big Eddy Campground
Cab-20	*'18*	0.4	1	0.1	<1	0.12	*2*	<0.1	*<1*	<0.1	*2*	0.0	*0*	0.	*0*	Bull River Campground
Cab-29	*'24; '19, '18*	0.2	1	0.7	2	1.1	*12*	<0.1	*2*	<0.1	*0.2*	1.2	*1*	0.5	*1*	Heron Boat Ramp
Cab-30	*'23; '20; '19, '18*	5.9	8	1.8	1	6.3	*7*	2.3	*2*	<0.1	*0.1*	2.1	*1*	2.3	*2*	Noxon Community Park
Cab-31 (Untreated Control)		1.8	11	1.4	5	2.7	*10*	0.7	*1*	1.9	*10*	1.9	*4*	-	-	Northwest of Noxon Bridge
Cab-32 (Untreated Control)		3.2	4	1.75	3	0.5	*7*	0	*0*	4.0	*6*	2.9	*19*	-	-	Powerline downstream of Bull River
Cab-33 (Untreated Control)		.2	<1	0.3	<1	0	*0*	0	*0*	0	*0*	0	*0*	-	-	North of Heron Boat Ramp
Nox-01	*'23; '22; '21; '19*	86	25	1.0	<1	60.7	*14*	41.2	*9*	35.2	*10*	0	*0*	34.0	*33*	Near Rock Island - Mid Lake
Nox-02	*'23; '21; '19*	37.6	17	0	0	37.5	*7*	0	*0*	32.2	*20*	25.6	*1*	21.3	*26*	Mid Lake entrance to Marten Creek Bay
Nox-03	*'23; '22; '21; '20; '19, '18*	2.5	27	0.1	<1	4.0	*7*	1.7	*2*	1.3	*15*	1.2	*3*	1.4	*1*	North Shore Campground
Nox-04	*'24; '23; '22; '21; '20; '19, '18*	3.1	7	6.0	10	6.0	*7*	5.9	*18*	1.3	*3*	5.9	*5*	7.7	*5*	North Shore Shoreline E of Hwy 200 Bridge
Nox-05 (Untreated Control)		16.1	34	8.0	22	9.2	*41*	12.4	*37*	3.6	*15*	1.2	*5*	-	-	South Shoreline E of Hwy 200 Bridge
Nox-06 (Untreated Control)		14.5	23	13.3	37	12.9	*27*	13.6	*42*	10.4	*25*	1	*27*	-	-	North Shoreline West of Train Bridge
Nox-08	*'23; '22; '21; '19, '18*	9.3	24	3.0	0	13.3	*24*	0.9	*<1*	8.5	*22*	0.3	*<1*	8.2	*2*	North Shore Shoreline W of Hwy 200 Bridge
Nox-09 (Untreated Control)		10.0	8	3.5	3	0	*0*	<0.1	*0.1*	-	-	0	*0*	-	-	South Shoreline across from Vermillion Bay
Nox-11	*'22; '19*	20.2	29	21.1	34	2.8	*3*	15.9	*44*	13.5	*19*	0.1	*0*	9.6	*26*	West of Train Bridge on N side
Nox-23-01 (Untreated Control)		0.3	3	0.5	6	<0.1	*1*	-	-	-	-	-	-	-	-	Private docks W side downstream of Vermillion Bay
Nox-31	*'24; '23; '22; '20; '19, '18*	1.1	2	3.1	2	3.6	*8*	2.5	*10*	<0.1	*2*	2.1	*2*	3.7	*4*	Marten Creek Campground
Nox-52	*'24; '22; '19, '18*	<0.1	<1	2.9	2	<0.1	*1*	2.8	*10*	<0.1	*2*	0	*0*	0.8	*1*	South Shore Campground
Nox-73	*'23, '21, '19*	1.6	21	0.1	<1	1.4	*9*	0	*<1*	0.5	*7*	<0.1	*<1*	0.6	*26*	Vermillion Bay Boat Ramp
Nox-77	*'22, '19, '18*	0.3	2	0.1	<1	0.2	*2*	0.4	*19*	<0.1	*3*	0.2	*3*	0.4	*3*	Trout Creek Boat Ramp
Nox-78	*'19, '18*	0.3	5	0.1	1	0.1	*3*	<0.1	*0.2*	0	-	0.0	*0*	0.1	*6*	Kirby Gulch Boat Ramp
Nox-79	*21, '19, '18*	7.8	9	0.2	1	<0.1	*1*	0	*0*	-	-	<0.1	*0.1*	0.7	*0.3*	Finley Flats Campground

Table 4. Survey results showing acreage of curlyleaf pondweed and canopy cover abundances within the potential Eurasian watermilfoil treatment areas and untreated control plots since 2020. No curlyleaf pondweed has been targeted with herbicide treatments.

Curlyleaf pondweed (*Potamogeton crispus*)														
Plot	Years Treated	2025		2024		2023		2022		2021		2020		Plot Location
		Acres	*Canopy Cover (%)*	Acres	*Canopy Cover (%)*	Acres	*Canopy Cover (%)*	Acres	*Canopy Cover (%)*	Acres	*Canopy Cover (%)*	Acres	*Canopy Cover (%)*	
Cab-05	‘23; ‘19	5.8	28	2.3	7	6.3	*16*	8.9	*12*	9.0	*12*	8.1	*15*	SE of Bull River Bridge on Hwy 200
Cab-06	‘23; ‘20; ‘19	1.5	8	0.3	1	0	*0*	0	*0*	0.0	*0*	3.7	*1*	SW of Bull River Bridge on Hwy 200
Cab-12	‘24; ‘20; ’19, ‘18	0.3	1	0	0	0	*0*	0	*<1*	0.0	*3*	1.1	*1*	Big Eddy Campground
Cab-20	‘18	1.1	5	0	0	0	*4*	0	*0*	0.0	*0*	0.4	*11*	Bull River Campground
Cab-29	‘24; ’19, ‘18	0	0	0	0	0	*0*	0	*0*	0.0	*0*	0	*0*	Heron Boat Ramp
Cab-30	‘23; ‘20; ’19, ‘18	2.2	3	0.2	<1	0	*0*	0	*0*	0.0	*<1*	0.4	*0*	Noxon Community Park
Cab-31 (Untreated Control)		0.1	1	0	0	0	*0*	0.9	*4*	0.0	*0*	0.6	*1*	Northwest of Noxon Bridge
Cab-32 (Untreated Control)		5.0	28	0	0	4.2	*8*	5.1	*20*	0.8	*0*	0.0	*0*	Powerline downstream of Bull River
Cab-33 (Untreated Control)		0	0	0	0	0	*0*	0.1	*1*	0.0	*0*	0.0	*0*	North of Heron Boat Ramp
Nox-01	‘23; ‘22; ‘21; ‘19	8.9	4	1.6	<1	10.8	*1*	0	*1*	11.5	*1*	17.8	*1*	Near Rock Island - Mid Lake
Nox-02	‘23; ‘21; ‘19	7.1	2	0	0	0.5	*0*	9.6	*1*	9.0	*<1*	17.4	*2*	Mid Lake entrance to Marten Creek Bay
Nox-03	‘23; ‘22; ‘21; ‘20; ’19, ‘18	0.8	21	0	0	0.6	*3*	1.7	*4*	0.2	*3*	1.2	*4*	North Shore Campground
Nox-04	‘24; ‘23; ‘22; ‘21; ‘20; ’19, ‘18	3.9	16	0.8	3	3.6	*10*	3.3	*3*	4.9	*6*	5.9	*6*	North Shore Shoreline E of Hwy 200 Bridge
Nox-05 (Untreated Control)		3.1	21	0	0	2.0	*6*	0.5	*4*	0.5	*1*	0	*0*	South Shoreline E of Hwy 200 Bridge
Nox-06 (Untreated Control)		15.5	55	0	0	14.6	*9*	7.4	*18*	4.9	*10*	1.4	*1*	North Shoreline West of Train Bridge
Nox-08	‘23; ‘22; ‘21; ’19, ‘18	4.0	14	1.1	10	5.4	*7*	5.4	*16*	7.9	*17*	7.9	*11*	North Shore Shoreline W of Hwy 200 Bridge
Nox-09 (Untreated Control)		0.1	2	0	0	0	*0*	0	*3*	-	-	0	*0*	South Shoreline across from Vermillion Bay
Nox-11	‘22; ‘19	0.9	3	0.7	<1	9.4	*4*	0	*3*	6.1	*19*	5.8	*9*	West of Train Bridge on N side
Nox-23-01 (Untreated Control)		0.3	12	0	0	0.2	*1*	-	-	-	-	-	-	Private docks W side downstream of Vermillion Bay
Nox-31	‘24; ‘23; ‘22; ‘20; ’19, ‘18	4.0	31	0.5	7	4.3	*6*	3.6	*13*	3.9	*27*	4.4	*21*	Marten Creek Campground
Nox-52	‘24; ‘22; ’19, ‘18	0.5	1	0	0	0	*1*	0	*<1*	0.0	*1*	0.1	*1*	South Shore Campground
Nox-73	’23, ’21, ‘19	0.3	14	<0.1	2	0.4	*8*	0.6	*17*	0.6	*4*	0.6	*4*	Vermillion Bay Boat Ramp
Nox-77	’22, ’19, ‘18	0.1	0	0	0	0	*1*	0	*0.3*	0.0	*0*	0.1	*0.2*	Trout Creek Boat Ramp
Nox-78	’19, ‘18	0	0	0	0	0	*0*	0	*0*	-	-	0.0	*0*	Kirby Gulch Boat Ramp
Nox-79	;21, ’19, ‘18	0.3	3	0	0	0	*1*	0	*2*	-	-	0.1	*0.1*	Finley Flats Campground

Species level differences among plots since 2019

The following seven figures show the percent canopy cover for each plot since 2019. The grouped bars represent the cumulative total cover including native species and invasive species (Eurasian watermilfoil, curlyleaf pondweed, and flowering rush) within each plot. These graphs allow comparison among plots for each year. Plots where herbicide treatments occurred that year are outlined in light blue boxes.

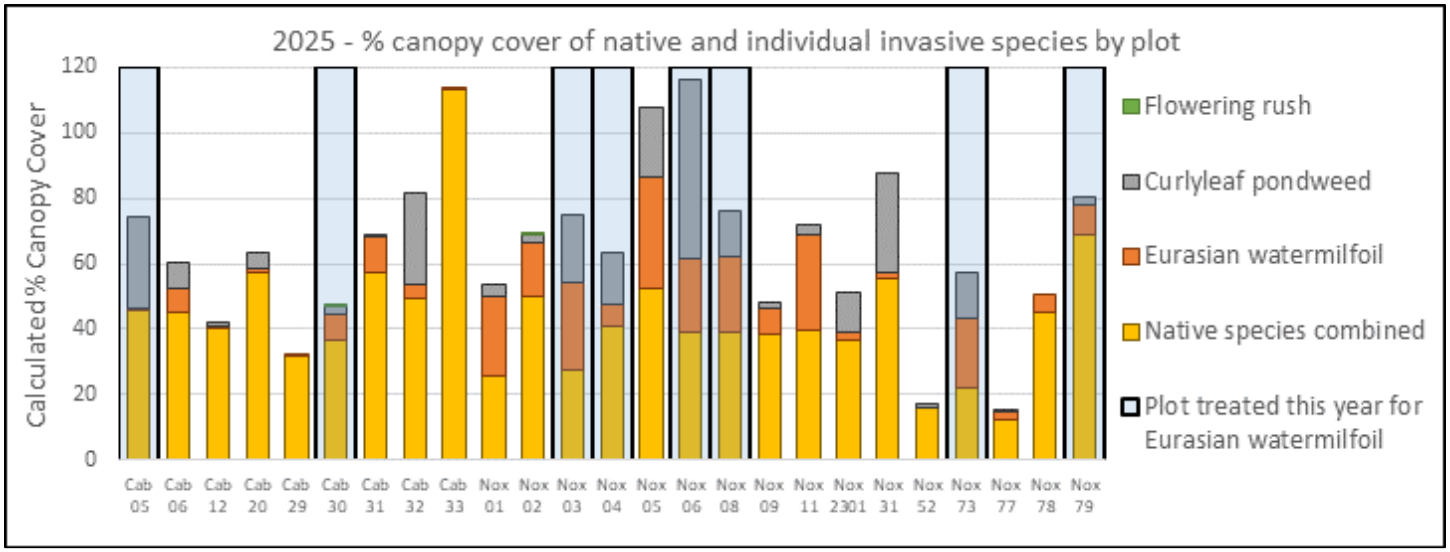


Figure 2. Percent Canopy Cover – 2025

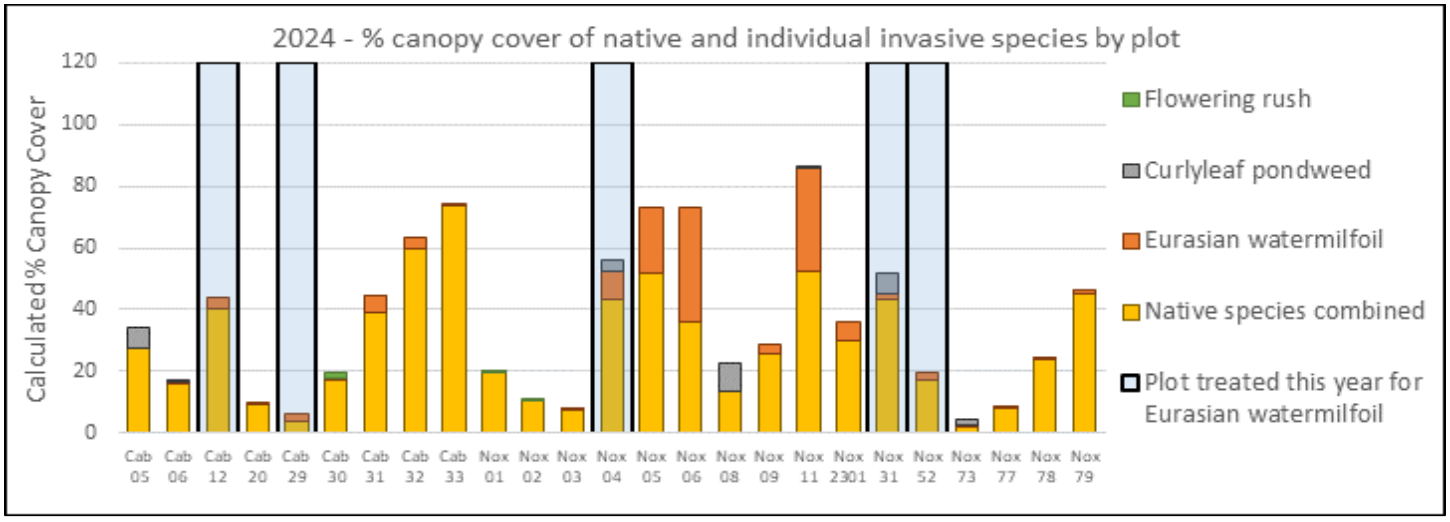


Figure 3. Percent Canopy Cover – 2024

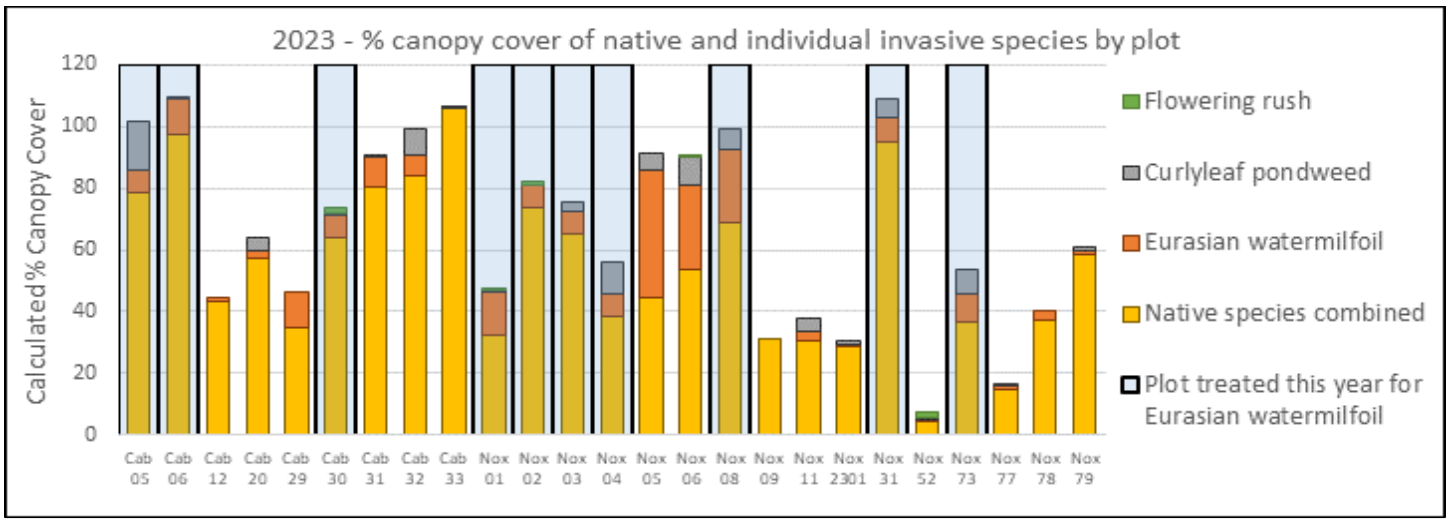


Figure 4. Percent Canopy Cover – 2023

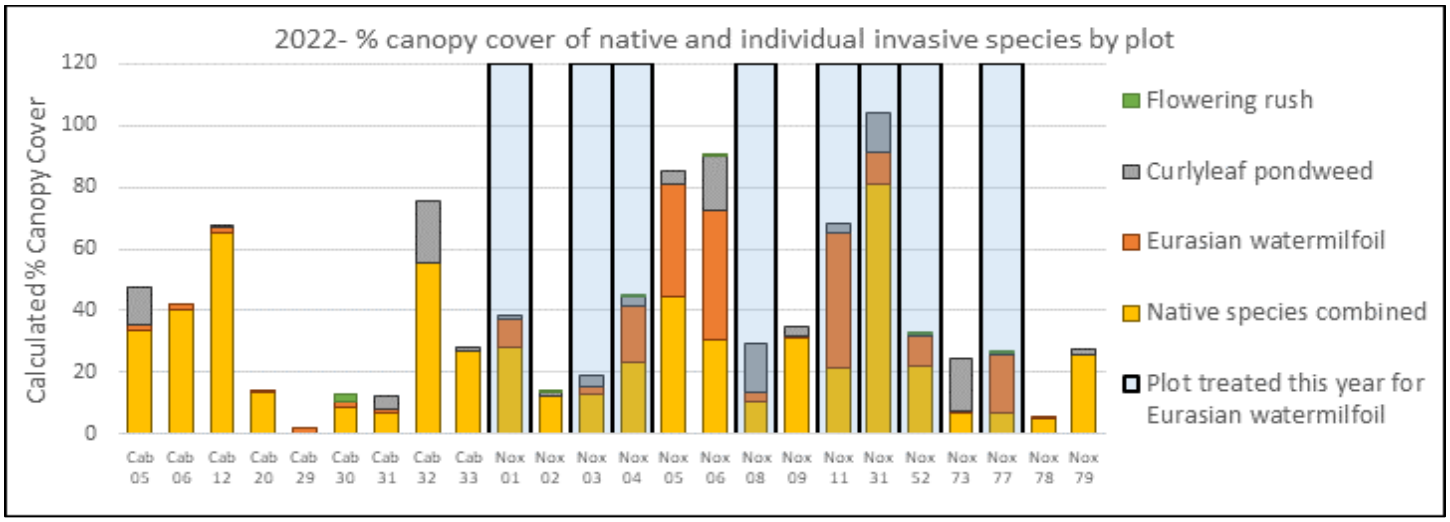


Figure 5. Percent Canopy Cover - 2022.

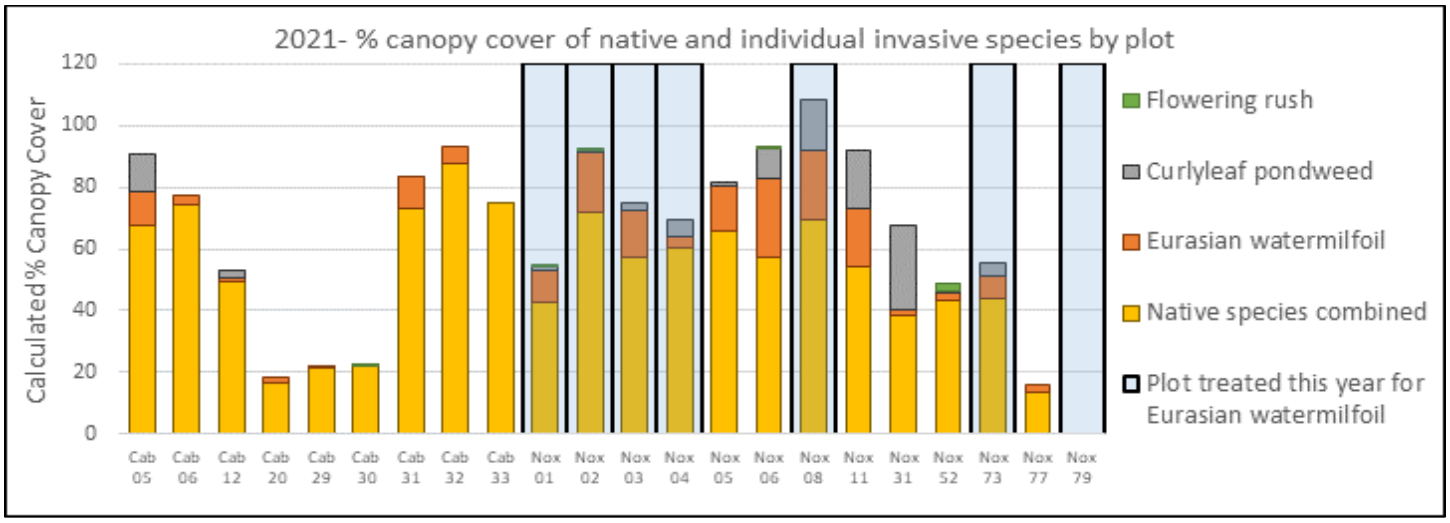


Figure 6. Percent Canopy Cover - 2021.

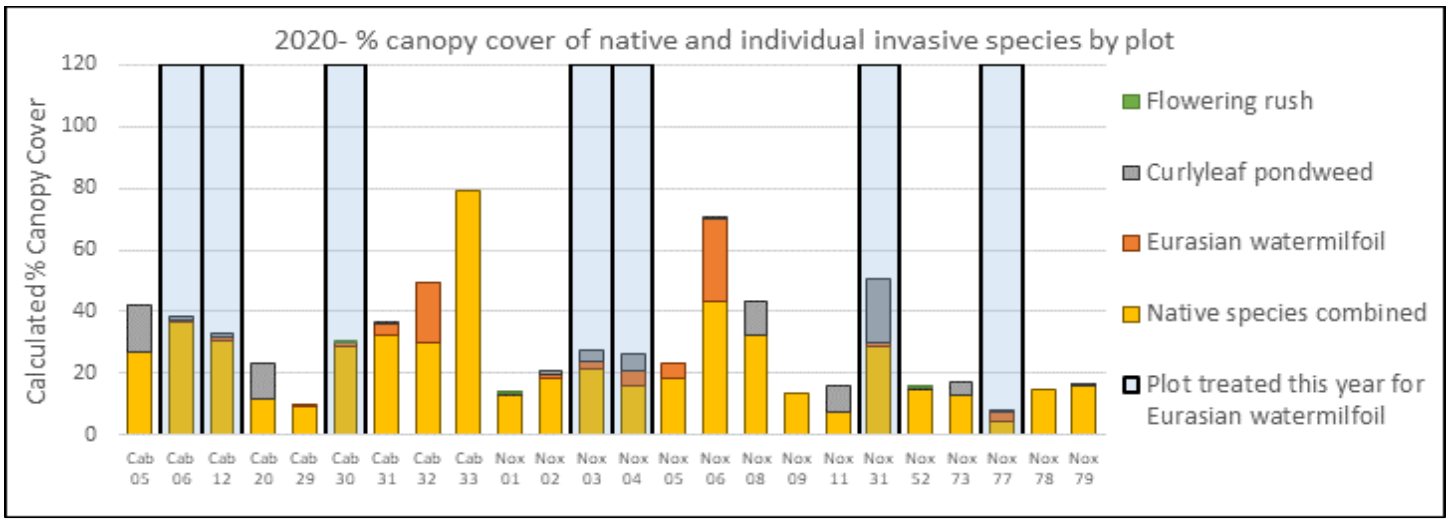


Figure 7. Percent Canopy Cover - 2020.

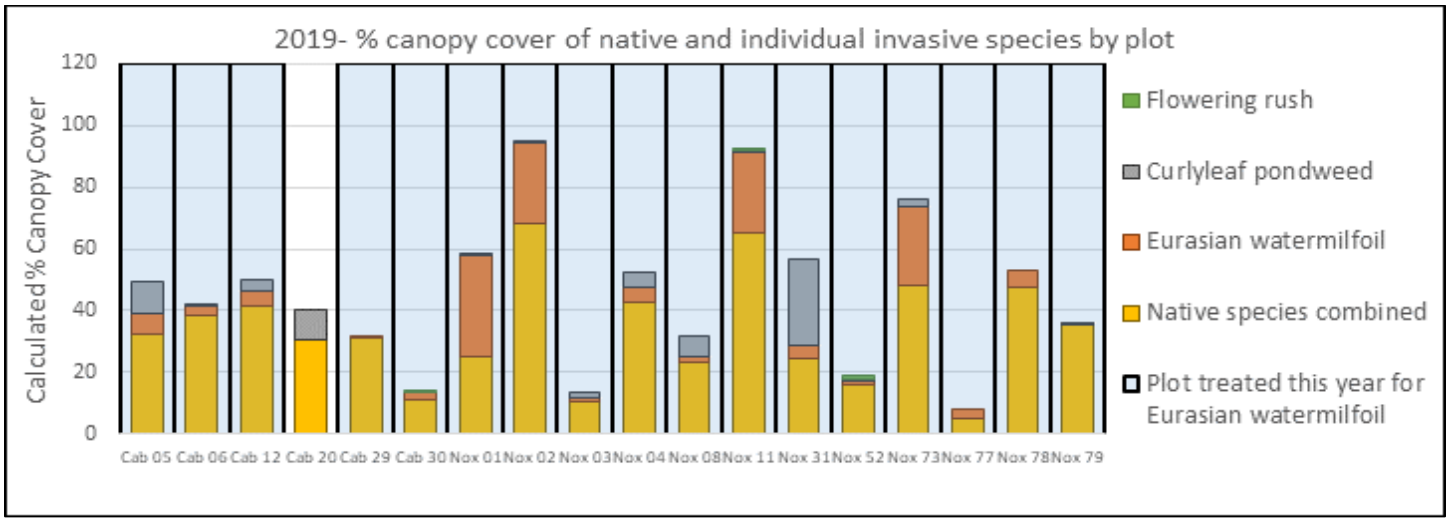


Figure 8. Percent Canopy Cover - 2019.

Percent change of canopy cover in last year (2024-2025) and since 2019

Results of the percent change of canopy cover for each species among years are in the following tables. Table 5 shows the percent change from 2024 to 2025 and Table 6 shows the percent change from 2019 to 2025. The cells are colored with a gradient of yellow (large decrease in canopy cover) to blue (large increase in canopy cover) depending on the percent change values. Appendix 2 shows tables with the % canopy cover for each species and corresponding 1-year and 6-year percent changes for each plot.

Table 5. Canopy cover percent change over last year (2024-2025).

	Canopy cover % change from 2024 to 2025											
	Plot ID	Eurasian Watermilfoil	Curlyleaf Pondweed	Flowering Rush	Coontail	Muskgrass species	Waterweed species	Northern watermilfoil	Water stargrass	White-stemmed pondweed	Richardson's pondweed	Other Native Pondweed species	White water-buttercup
Cabinet Gorge Plots	C05	Up 0.5	308	0	-39	0	1490	0	0	0	Up 0.1	0	78
	C06	1463	1430	0	91	Up 0.1	567	-100	0	0	0	0	-76
	C12	-87	Up 0.9	0	-9	Up 0.1	10	-80	0	0	0	0	Up 0.7
	C20	1232	Up 4.7	0	-68	-45	3565	-100	0	0	0	0	-15
	C29	-64	0	0	0	Up 0.2	734	-100	0	0	0	0	0
	C30	1111	1380	-84	292	644	145	0	0	0	102	56	-10
	C31[c]	110	Up 0.6	0	36	0	56	0	0	0	0	0	0
	C32[c]	19	Up 28.0	0	-13	0	12	-100	Up 0.1	0	0	0	-3
	C33[c]	178	0	0	4	0	166	-100	0	0	0	0	0
Noxon Rapids Plots	N01	11246	3319	-100	0	1221	643	-95	0	0	67	46	712
	N02	Up 16.7	Up 2.2	-61	481	2213	2712	-100	0	-20	-91	117	Up 0.1
	N03	19486	Up 20.8	0	505	224	305	0	Up 0.5	-100	-100	-100	1086
	N04	-31	395	0	-19	-100	4	-100	0	-100	1270	97	16
	N05[c]	59	Up 21.1	0	-46	Up 0.4	-33	0	0	0	-100	1310	2518
	N06[c]	-39	Up 54.5	0	-14	0	55	0	0	215	-100	0	138
	N08	Up 23.6	47	0	468	6808	2359	0	Up 0.8	71	799	-45	Up 2.0
	N09[c]	184	Up 1.7	0	88	Up 0.6	-21	-100	0	0	0	48	3661
	N11	-14	2429	0	-34	7	-48	0	0	-100	-100	-22	6219
	N2301	-57	Up 12.3	0	1098	0	-55	0	0	0	2061	-100	129
	N31	-22	370	0	-54	10	458	-100	0	399	-65	0	725
	N52	-97	Up 1.2	0	10	-40	64	-100	0	187	0	12	Up 0.1
	N73	8756	552	0	6142	0	631	-100	0	0	1	-100	1480
	N77	1306	Up 0.5	0	142	701	48	Up 0.2	0	0	-100	-100	241
	N78	583	0	0	41	0	87	0	0	0	0	0	Up 0.1
	N79	934	Up 2.6	0	17	71	135	-100	0	0	0	5005	271
	Plot ID	Eurasian Watermilfoil	Curlyleaf Pondweed	Flowering Rush	Coontail	Muskgrass species	Waterweed species	Northern watermilfoil	Naiad species	White-stemmed pondweed	Richardson's pondweed	Other Native Pondweed species	White water-buttercup

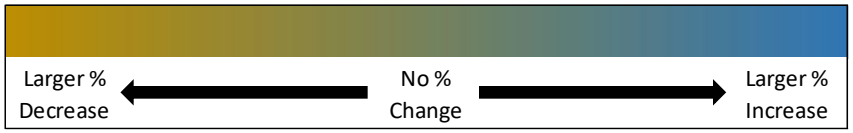
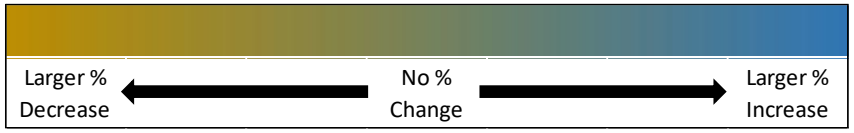


Table 6. Canopy cover percent change over time (2019-2025).

	Canopy cover % change from 2019 to 2025											
	Plot ID	Eurasian Watermilfoil	Curlyleaf Pondweed	Flowering Rush	Coontail	Muskgrass species	Waterweed species	Northern watermilfoil	Water stargrass	Other Native Pondweed species	White-stemmed pondweed	Richardson's pondweed	White water-buttercup
Cabinet Gorge Plots	C05	-94	176	0	-45	-100	176	0	0	-100	0	Increase to 0.1	200
	C06	108	7933	0	-82	Increase to 0.1	117	0	0	-100	0	0	-58
	C12	-91	-78	0	13	-45	-18	Increase to 0.2	0	0	0	0	696
	C20	Increase to 1.3	-51	0	-29	Increase to 1.4	76	0	0	0	0	-100	Increase to 2.8
	C29	-7	0	0	0	Increase to 0.2	3	0	0	0	0	0	0
	C30	323	Increase to 2.9	213	282	351	183	0	0	364	0	-4	Increase to 0.7
	C31[c]	165	-17	0	-4	0	562	0	0	0	0	0	0
	C32[c]	-78	Increase to 28.0	0	219	0	-77	0	Increase to 0.1	0	0	0	78
	C33[c]	Increase to 0.2	0	0	-27	0	695	0	0	0	0	0	0
Noxon Rapids Plots	N01	-25	11425	0	-64	10215	62	Increase to 0.5	0	15	0	542	-58
	N02	-36	1641	Increase to 0.2	-74	10735	-51	0	0	423	1505	0	35
	N03	4940	1255	0	85	Increase to 0.2	1504	0	Increase to 0.5	-100	0	0	Increase to 4.9
	N04	40	232	0	-48	-100	-7	0	0	2563	0	0	2250
	N05[c]	659	Increase to 21.1	0	36	Increase to 0.4	464	-100	0	145	-100	0	Increase to 18.8
	N06[c]	-14	6238	0	-13	0	-43	0	0	-100	254	0	Increase to 3.4
	N08	1158	115	0	-69	7453	136	0	Increase to 0.8	471	2530	169	325
	N09[c]	Increase to 8.0	Increase to 1.7	0	25	Up0.6	1417	0	0	732	0	0	Increase to 2.8
	N11	13	251	-100	-57	282	-22	-100	0	-25	0	-100	1187
	N2301	173	978	0	117	0	-34	0	0	-100	0	Increase to 2.3	461
	N31	-57	9	0	18	Increase to 1.1	179	0	0	-100	0	Increase to 0.7	Increase to 1.8
	N52	-92	22	-100	-80	97	1040	0	0	253	0	-100	Increase to 0.1
	N73	-19	602	0	-45	0	-74	0	0	0	0	Increase to 0.7	213
	N77	-33	Increase to 0.5	0	539	Increase to 1.3	-71	Increase to 0.2	0	0	0	-100	-52
	N78	-6	0	0	208	0	0	0	0	8	0	0	-95
	N79	2823	1993	0	100	183	220	0	0	-26	0	-100	1315
	Plot ID	Eurasian Watermilfoil	Curlyleaf Pondweed	Flowering Rush	Coontail	Muskgrass species	Waterweed species	Northern watermilfoil	Naiad species	Other Native Pondweed species	White-stemmed pondweed	Richardson's pondweed	White water-buttercup



Percent canopy cover since 2019

The following graph collection includes the canopy cover of different species types (i.e. Eurasian watermilfoil and curlyleaf pondweed (invasive species) and all native species combined) since 2019 for each reservoir divided into untreated control plots and treated control plots. Within each plot's graph, years with some level of herbicide treatment are outlined with black boxes. Trendlines and the respective R^2 values are included for each species-type group within each graph. The R^2 values closer to a value of one suggest a strong correlation with time. Overall, the low R^2 values show no or weak correlations with time. This suggests that in many plots there is no clear increase or decrease in abundances that can be explained by time. Plots generally appear to have higher levels of plant growth in 2025 compared to 2024 but are rather consistent with other years. However, except for 2024, 2025 sampling occurred several weeks earlier than prior years so higher levels of plant growth in 2025 may have resulted under similar sampling timeframes. Appendix 1 includes canopy cover graphs for each plot, as well as maps showing individual sample points with their respective canopy cover of Eurasian watermilfoil in 2025.

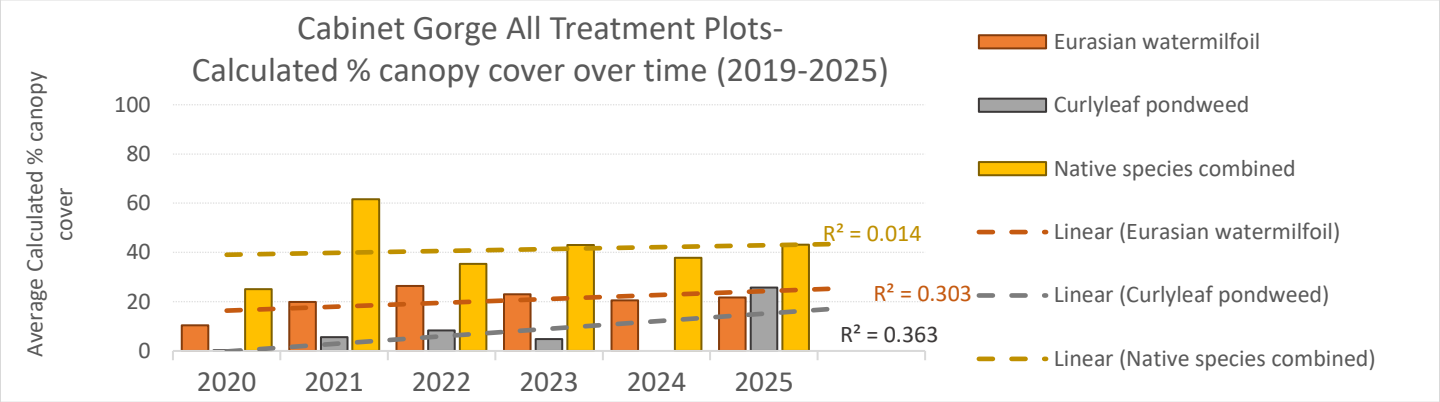


Figure 9. Percent canopy cover among years (2019-2024) for all treatment plots on Cabinet Gorge Reservoir.

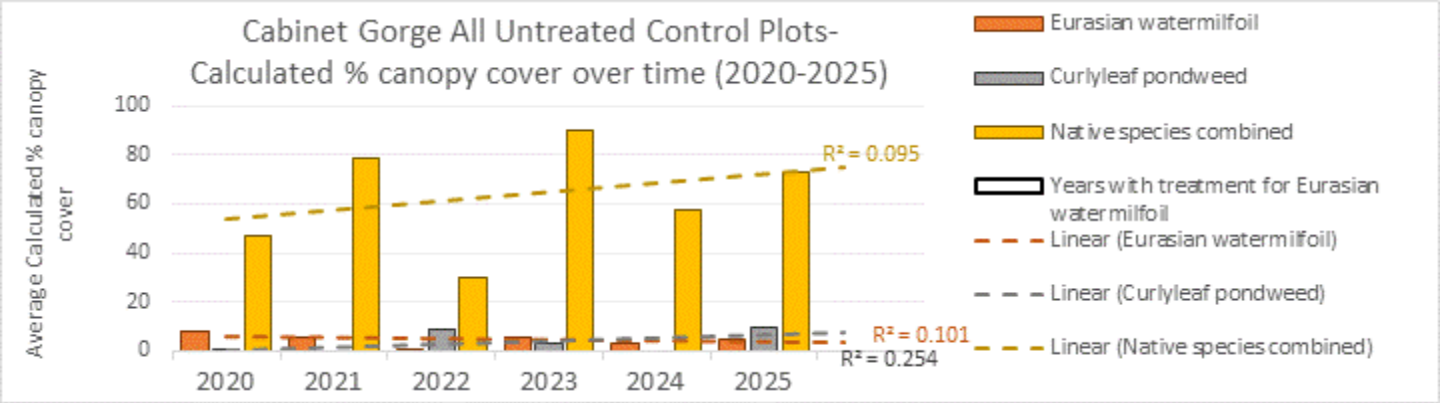


Figure 10. Percent canopy cover among years (2019-2025) for all untreated control plots on Cabinet Gorge Reservoir. Graph only shows since control plots were established in 2020.

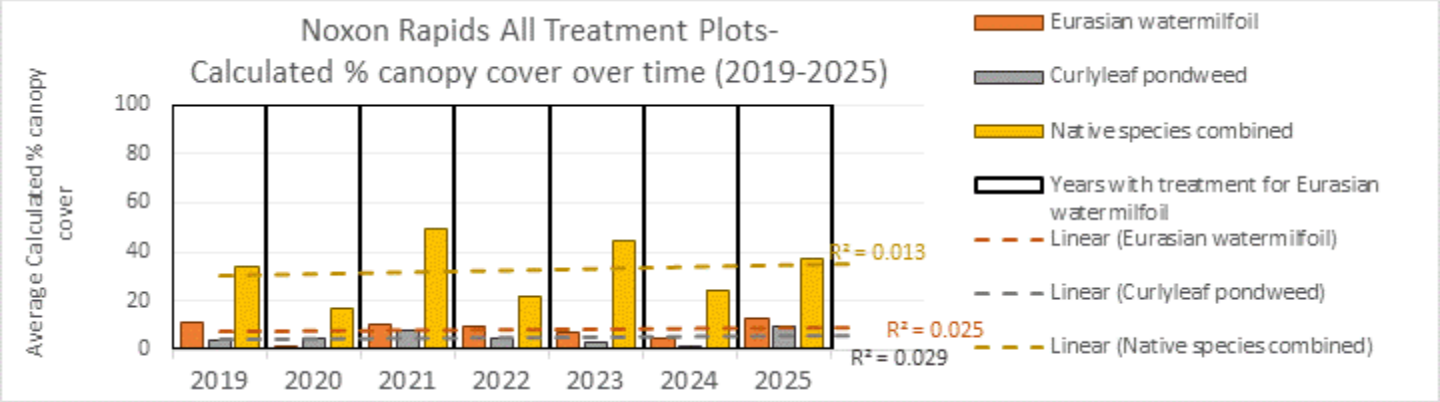


Figure 11. Percent canopy cover among years (2019-2025) for all treatment plots on Noxon Rapids Reservoir.

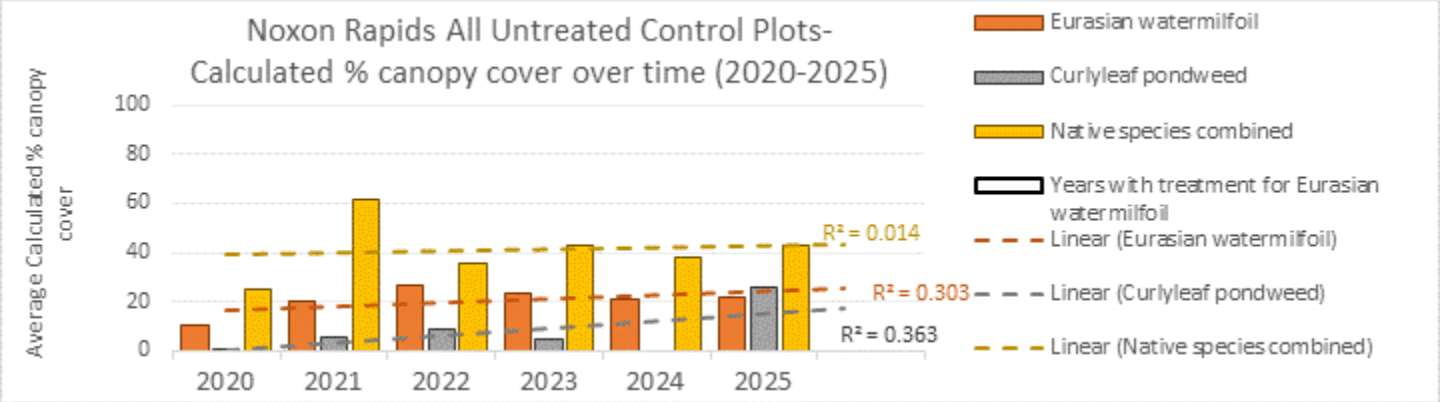


Figure 12. Percent canopy cover among years (2020-2025) for all untreated control plots on Noxon Rapids Reservoir. Graph only shows since control plots were established in 2020.

Conclusion

Using a rake-pole sampling method offers the best way to reduce sampling bias and ensure sampling consistency across years, but FWP assumes that it underestimates cover to some extent. Consistency in methods, however, allows comparison among years. Additionally, the sampling method and number of sample points established within each plot allows sampling technicians to complete sampling within a week, which is the level of commitment FWP can offer at current staffing levels.

Changes in Percent Canopy Cover for 2025

It is difficult to make much inference of percent canopy cover change due to herbicide treatments alone as multiple factors could contribute to said changes. Natural environmental variations such as water flows, temperatures, and hybridization strains could cause significant localized macrophyte community differences. Sampling events may skew results somewhat and show lower levels of percent canopy cover for most species in all plots. However, if earlier applications of herbicide show longer-term control or reductions of Eurasian watermilfoil within treatment areas, FWP would recommend continued utilization of the sampling methodology (and treatments) even given the challenges. Treatments conducted earlier within the year should provide more within-year, localized control and potentially provide more control in following years due to reduced biomass and vegetative propagules available during auto fragmentation later in the season or from boats entering the plant beds.

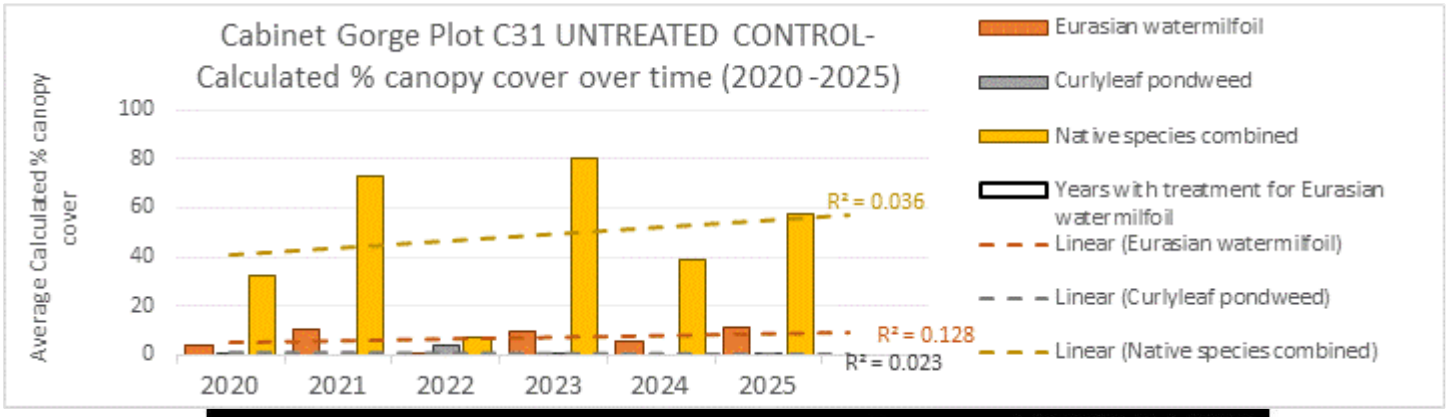
With the current management strategy there is no expectation that herbicide control with contact herbicides will have any long-term reductions of Eurasian watermilfoil with the plots, but the goal of the management strategy is to maintain clear access areas and help prevent the spread is aquatic invasive species by boats moving them to other waterbodies. There seems to be clear evidence that is there are no large upswings in Eurasian watermilfoil cover in any of the treatment plots over time. This suggests that treatments aimed at keeping these Eurasian watermilfoil infestations at bay may be meeting established goals.

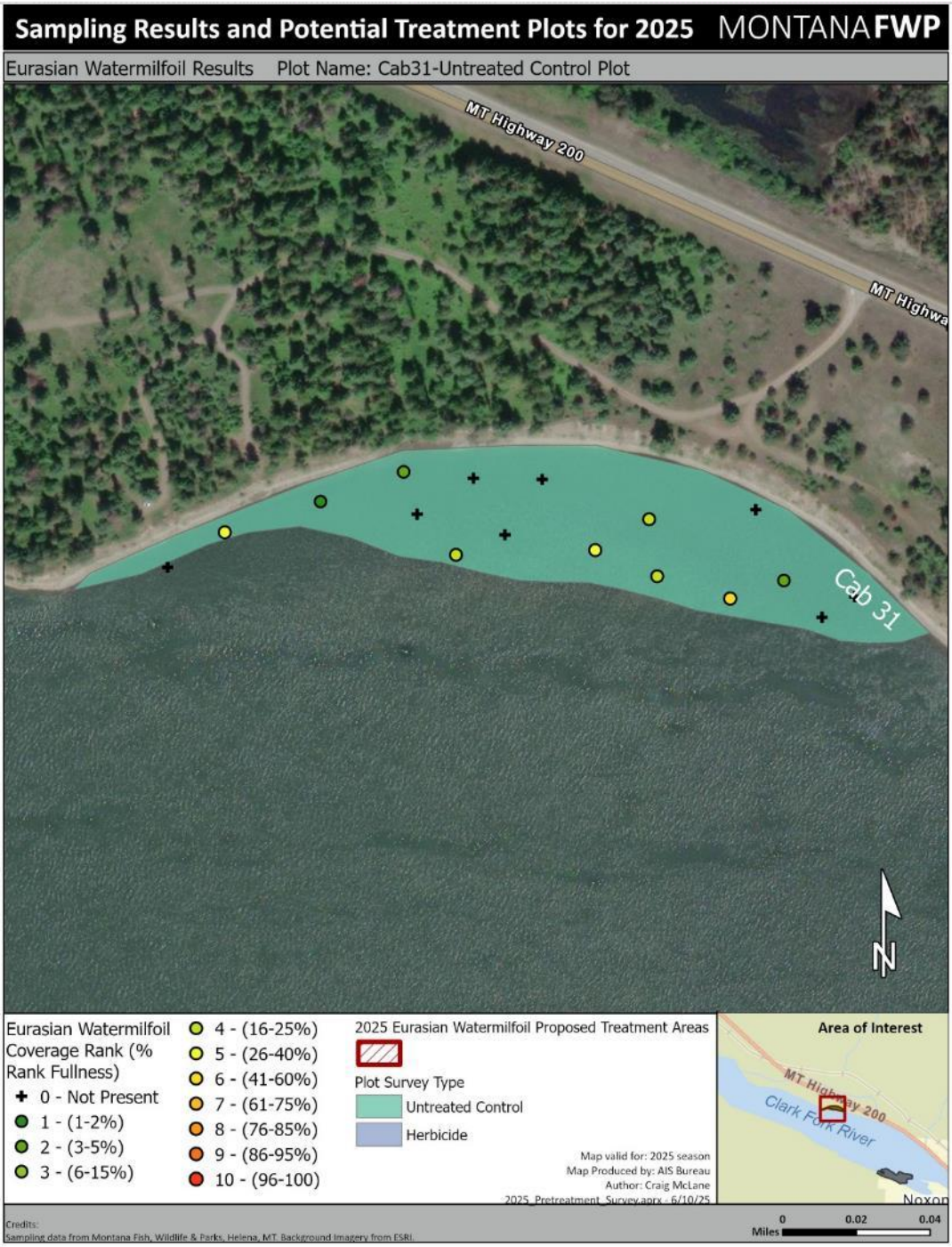
With many of the treatment plots there is evidence over multiple years that in the year following herbicide treatment, Eurasian watermilfoil abundances drop to much lower levels. This suggests that there are some residual effects of treatments into the year following treatments, though populations appear to rebound or likely rebound at some point during that next growing season. Implementation of systemic herbicides where possible and economically feasible could lead to more effective, longer-term control within treatment plots. This, in turn, could lead to lower overall annual expenses to control Eurasian watermilfoil in Noxon Rapids and Cabinet Gorge Reservoirs even if costs for systemic herbicides are more expensive per acre. A cost reduction could be gained if treatments within plots were not required annually.

Appendix 1 – Individual plot maps and graphs (percent canopy cover 2019 – 2025).

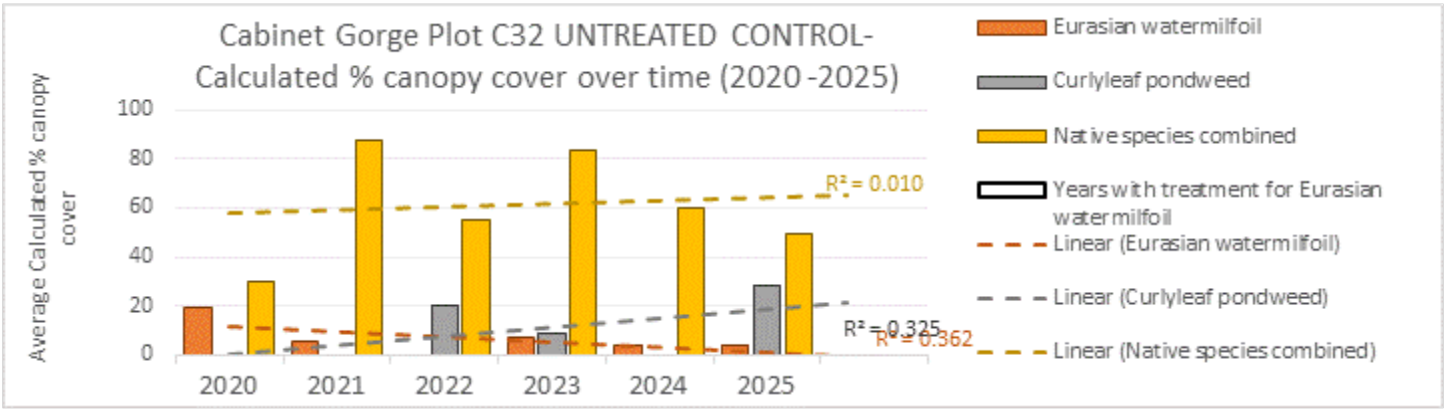
Appendix 1 includes individual plot maps and percent canopy cover over time. Red polygons with hatch marks on plot maps show the approximate area with higher percent canopy cover of Eurasian watermilfoil for treatment in 2025. Green polygons represent untreated control plots; purple polygons respresent plots being assessed for consideration of herbicide treatment. Additional details of canopy cover for individual species (native and invasive) within each plot seperated by year since 2019 can be found in Appendices 2 and 3.

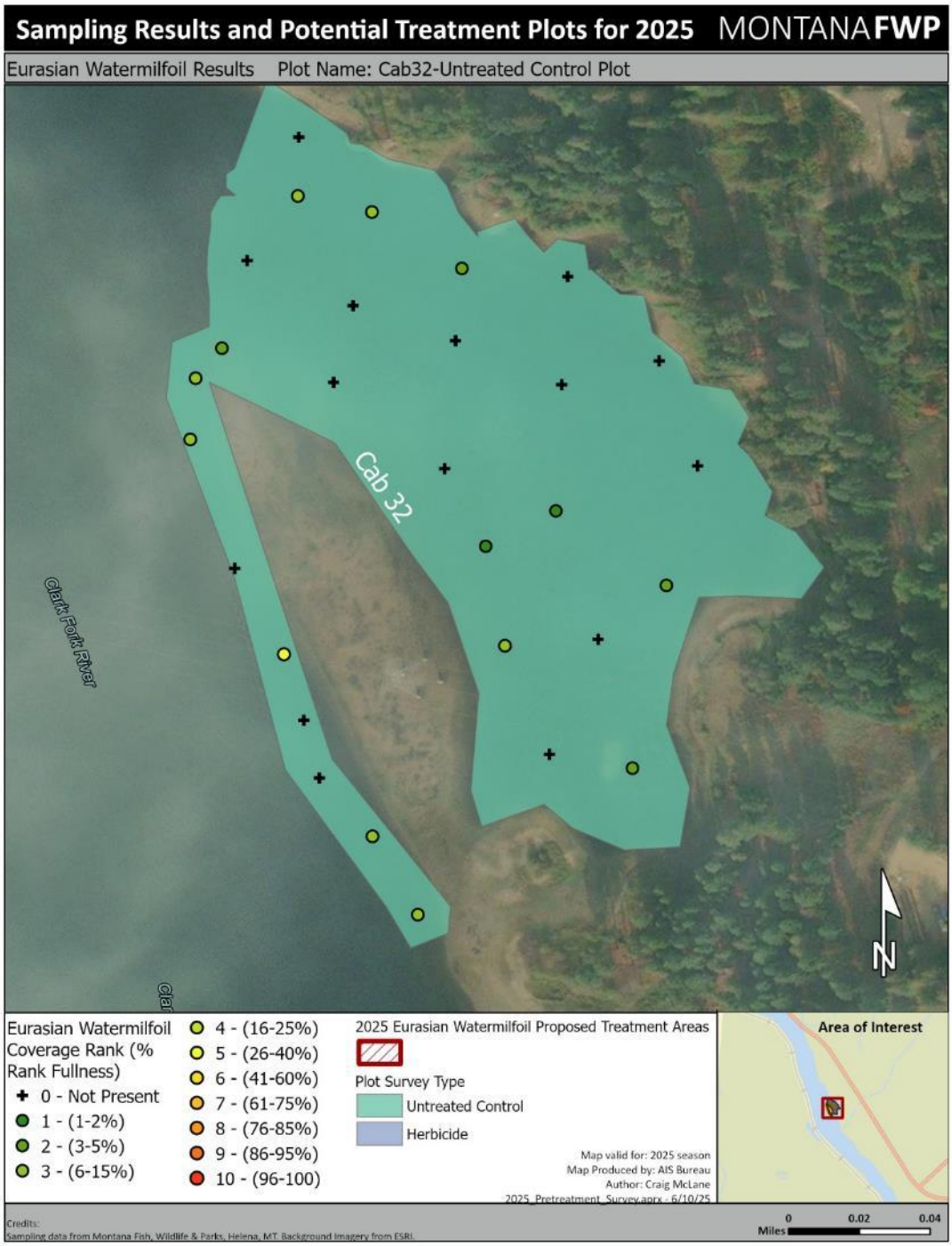
Cab-31 – Untreated Control Plot



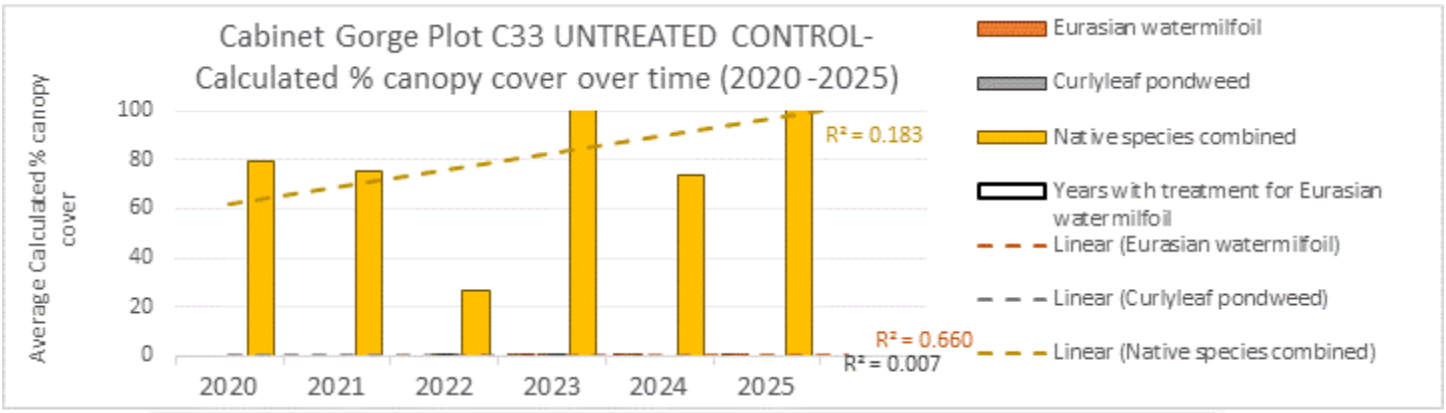


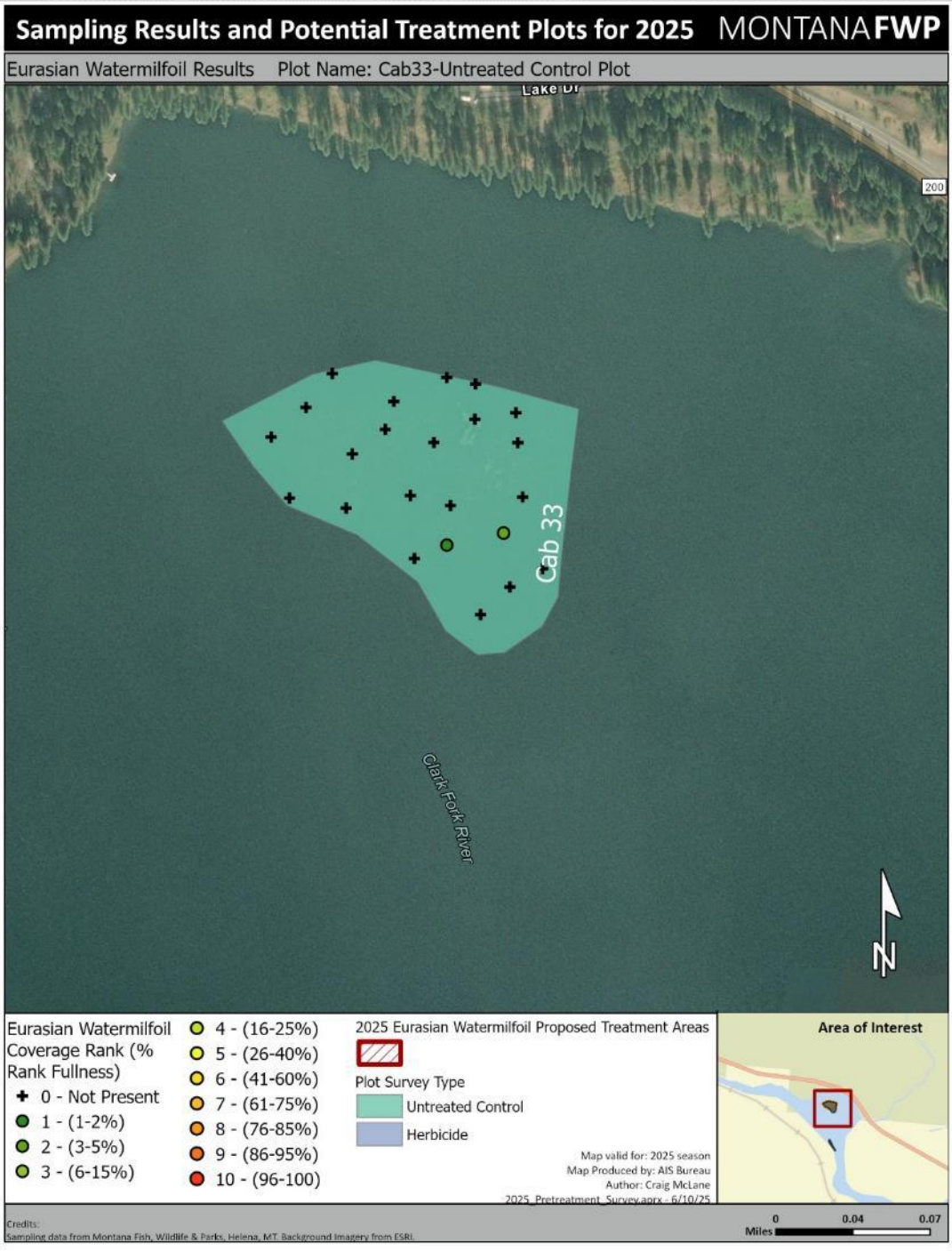
Cab-32 – Untreated Control Plot



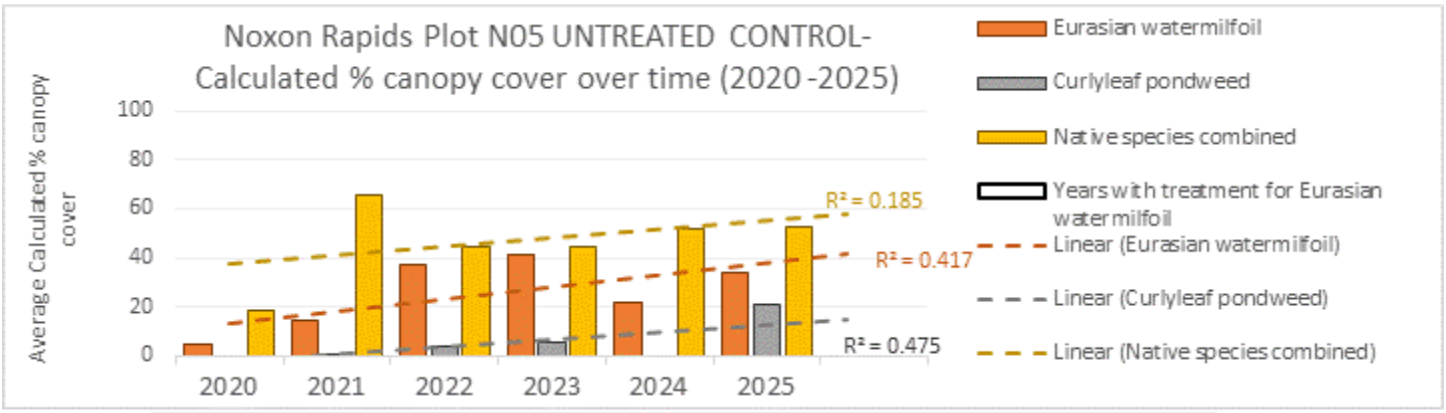


Cab-33 – Untreated Control Plot

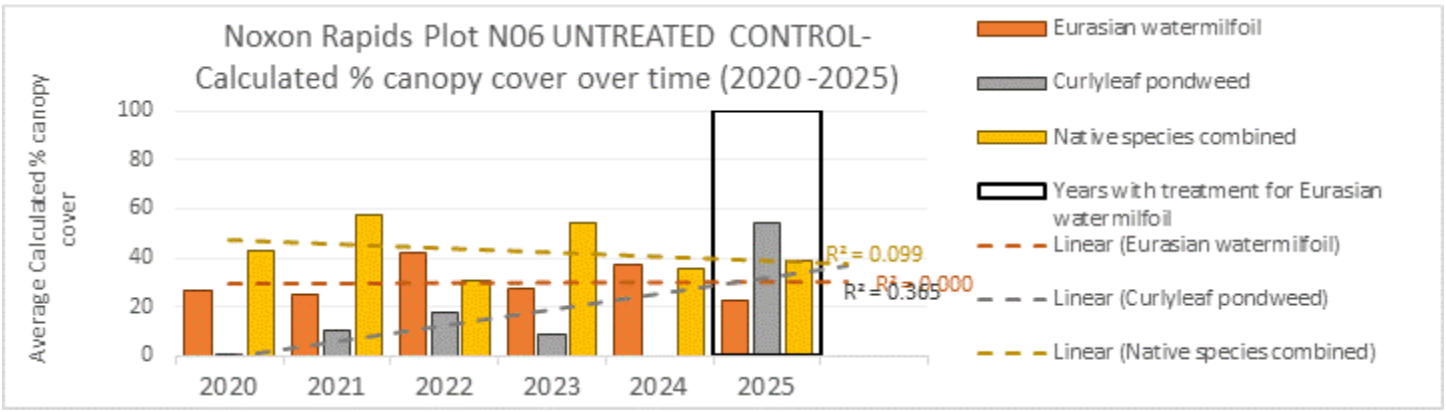


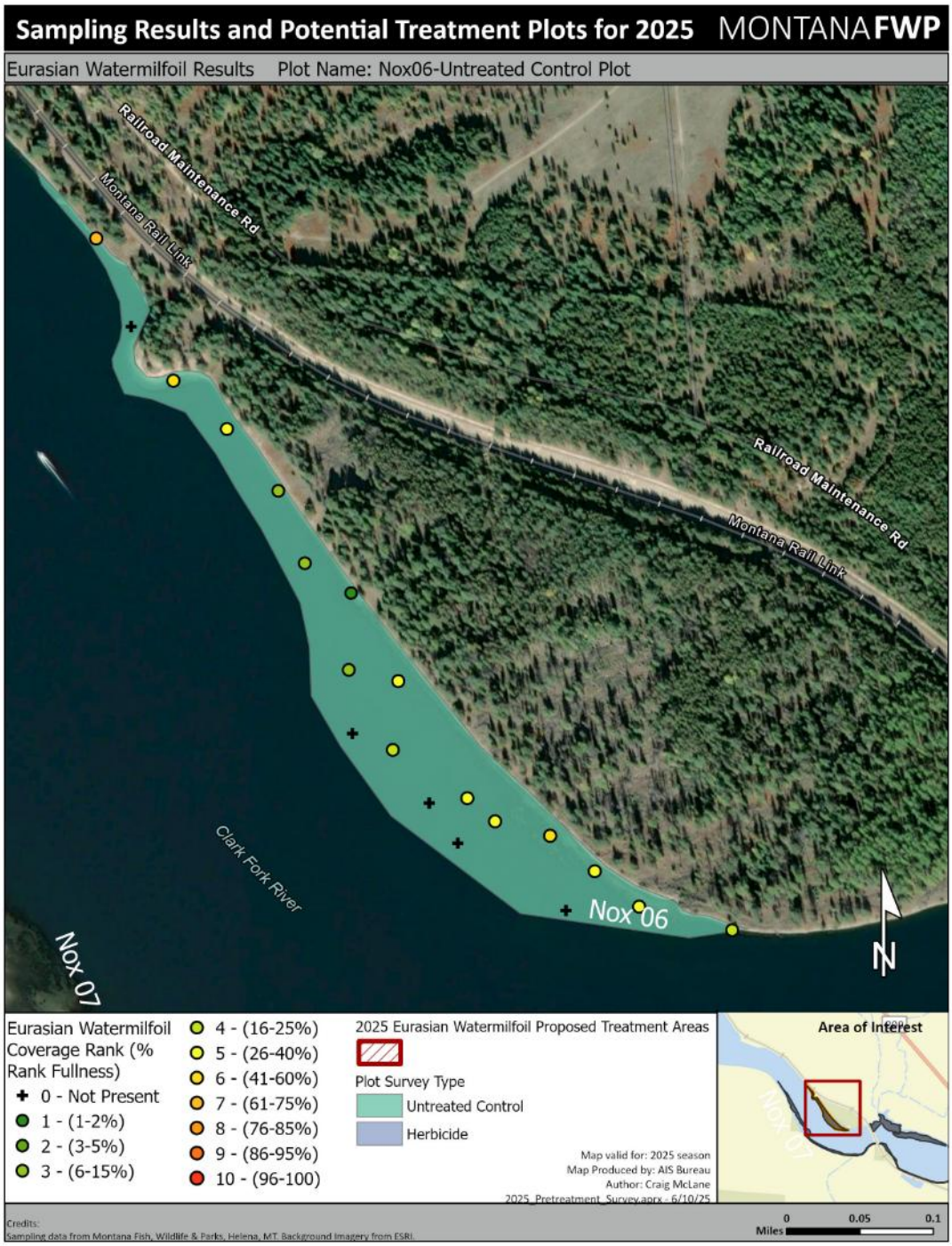


Nox-05 – Untreated Control Plot



Nox-06 – Untreated Control Plot





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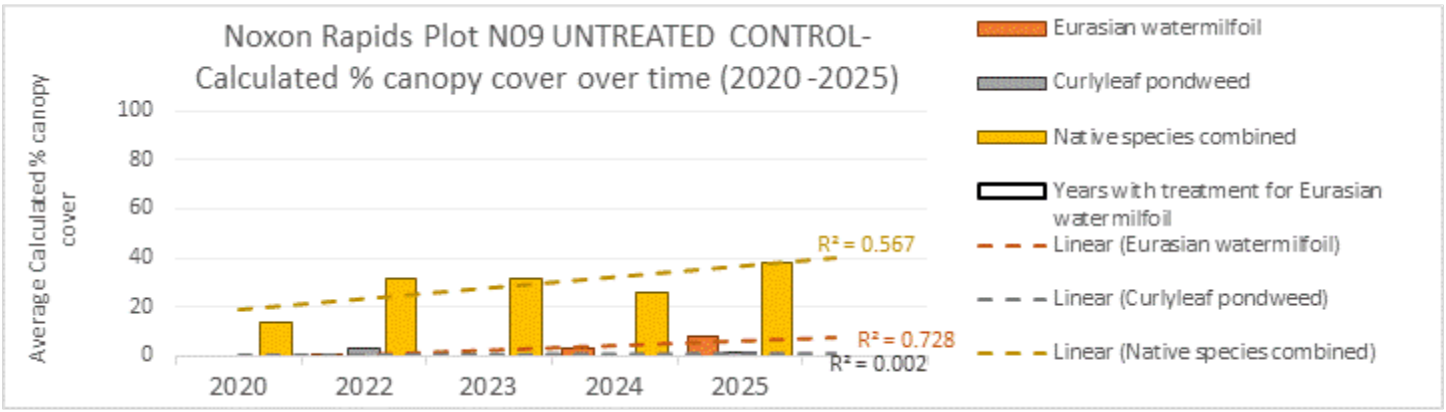
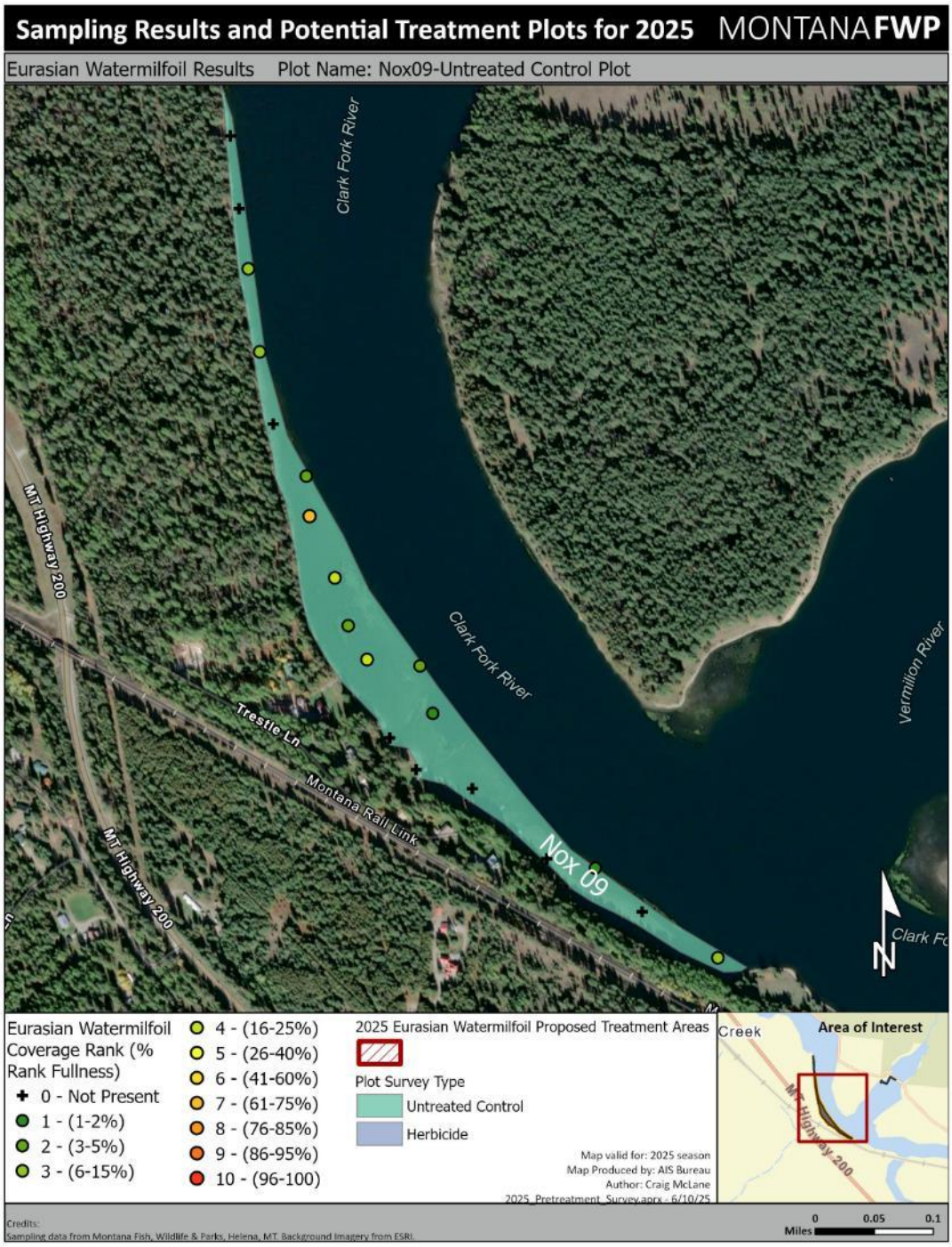
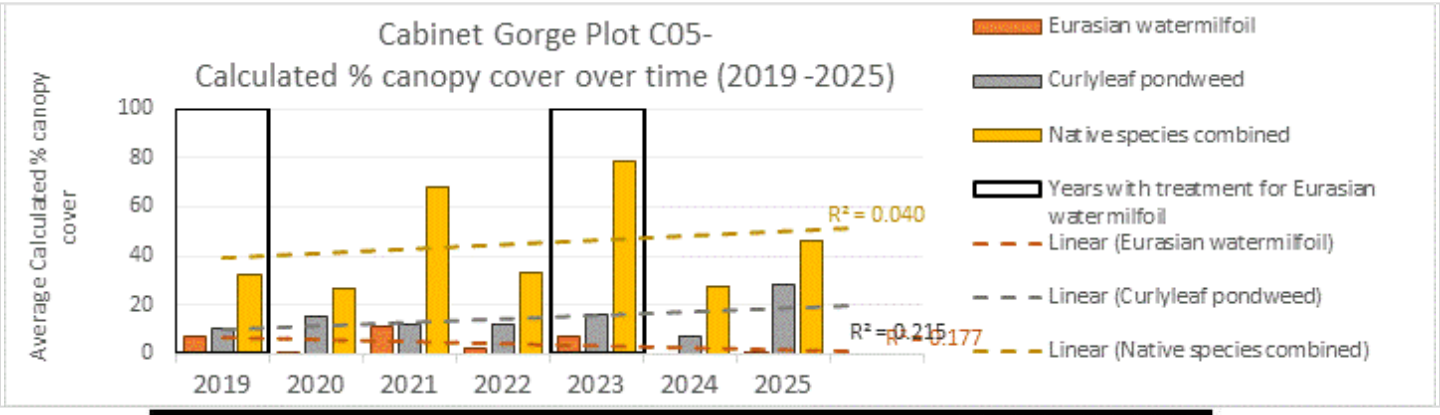
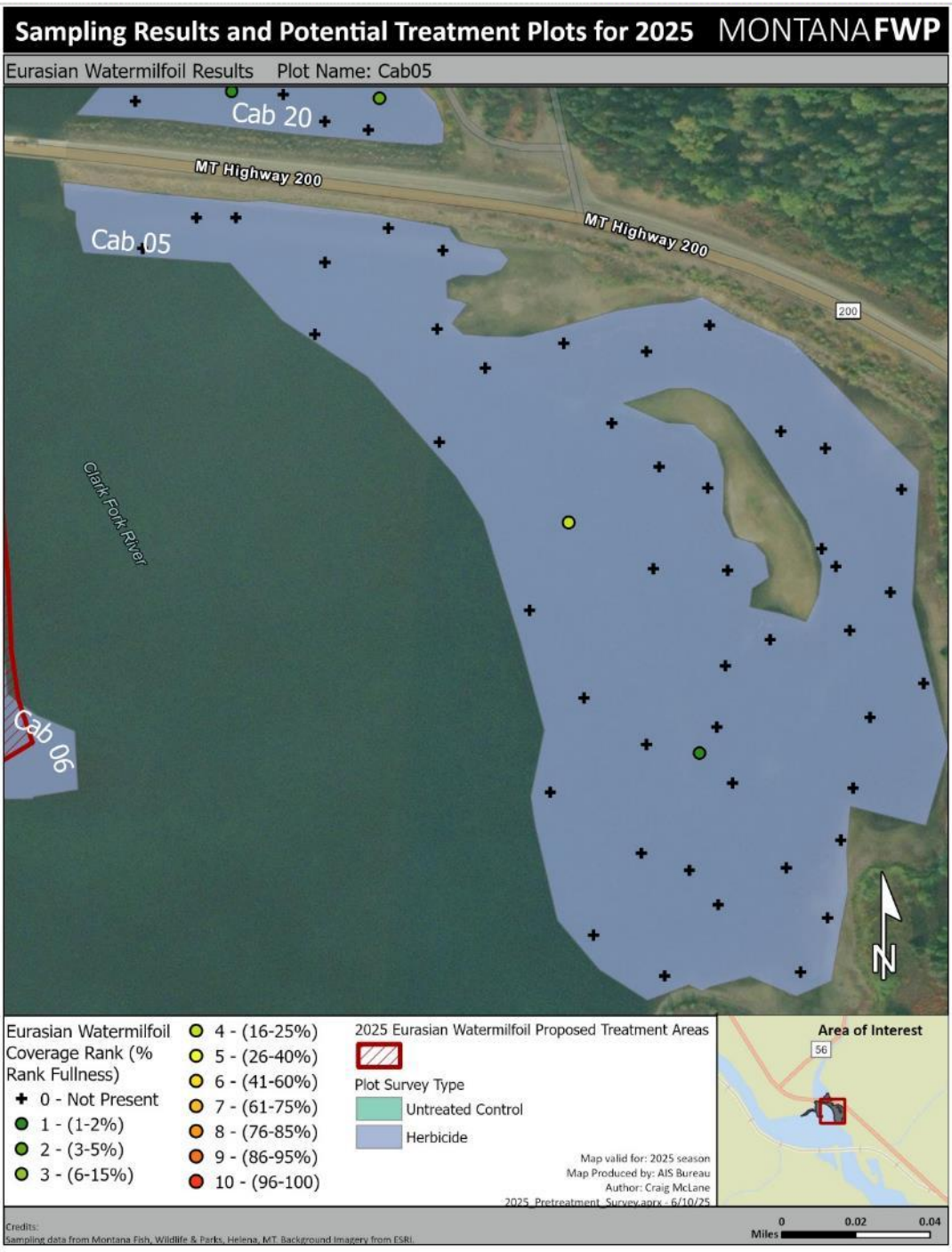


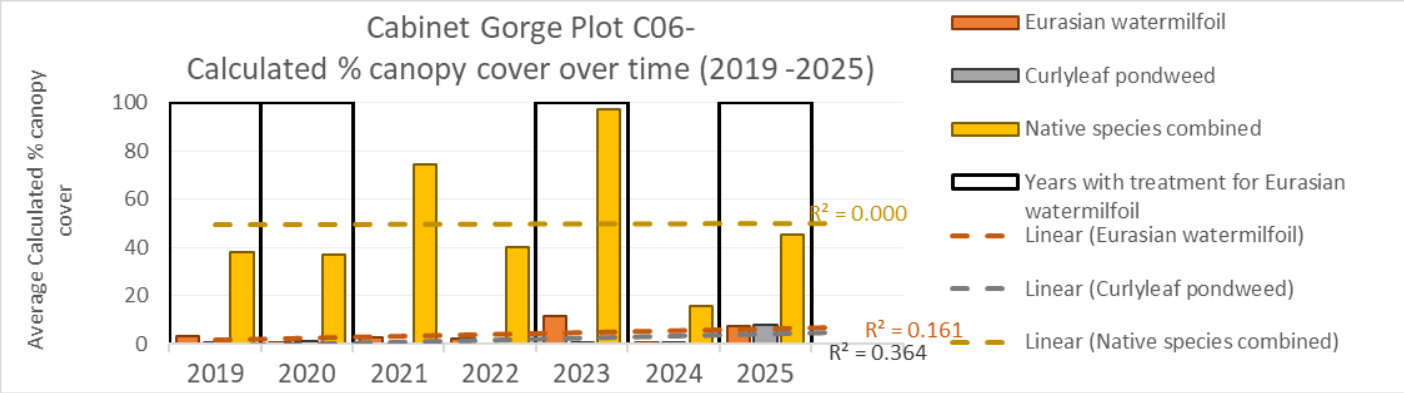


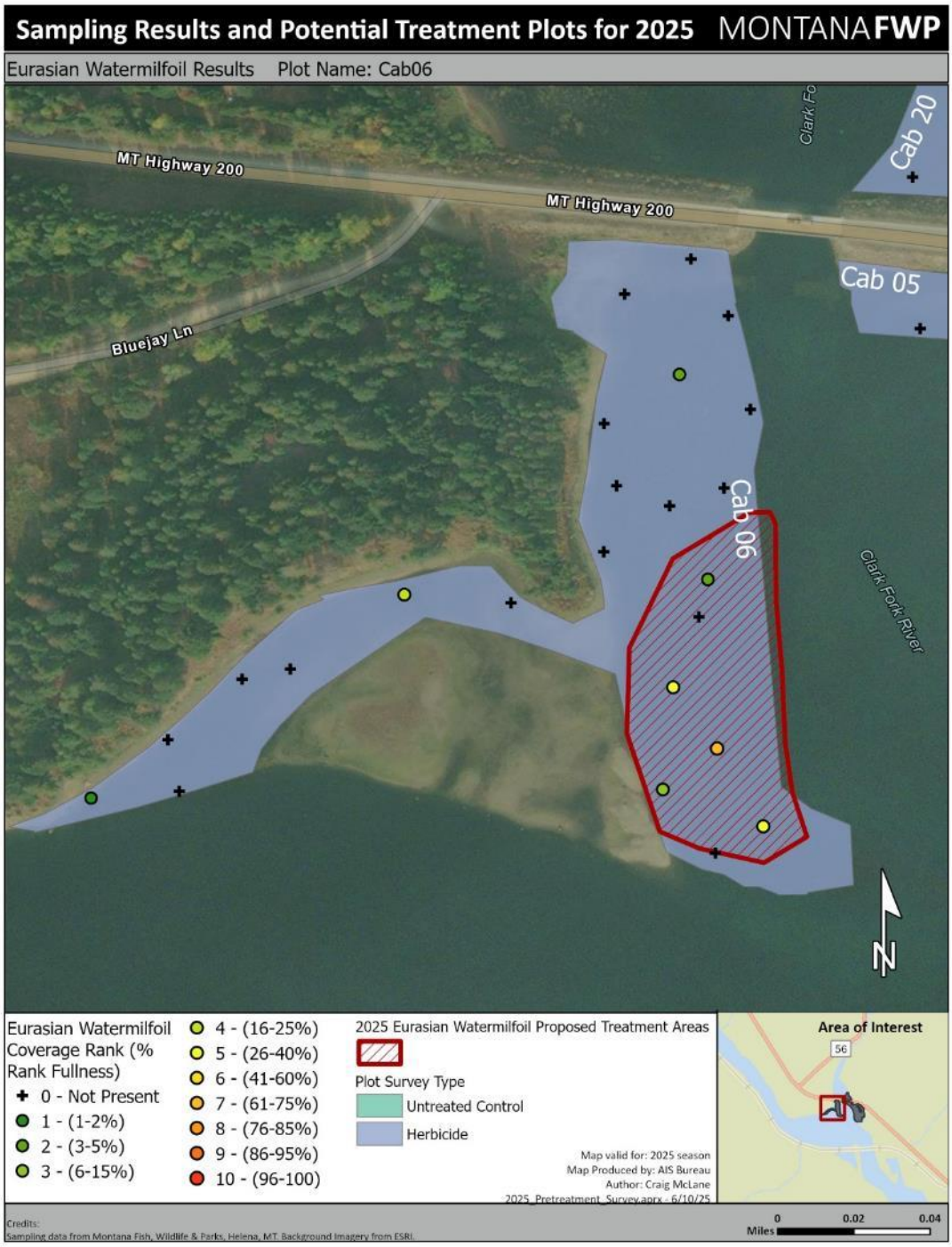
Cab-05 – Potential Treatment Plot



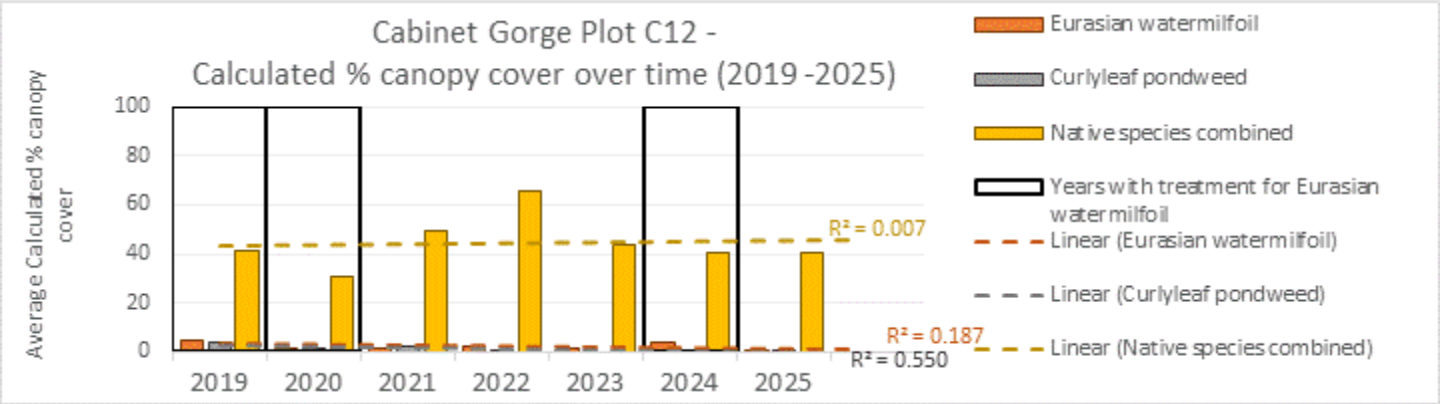


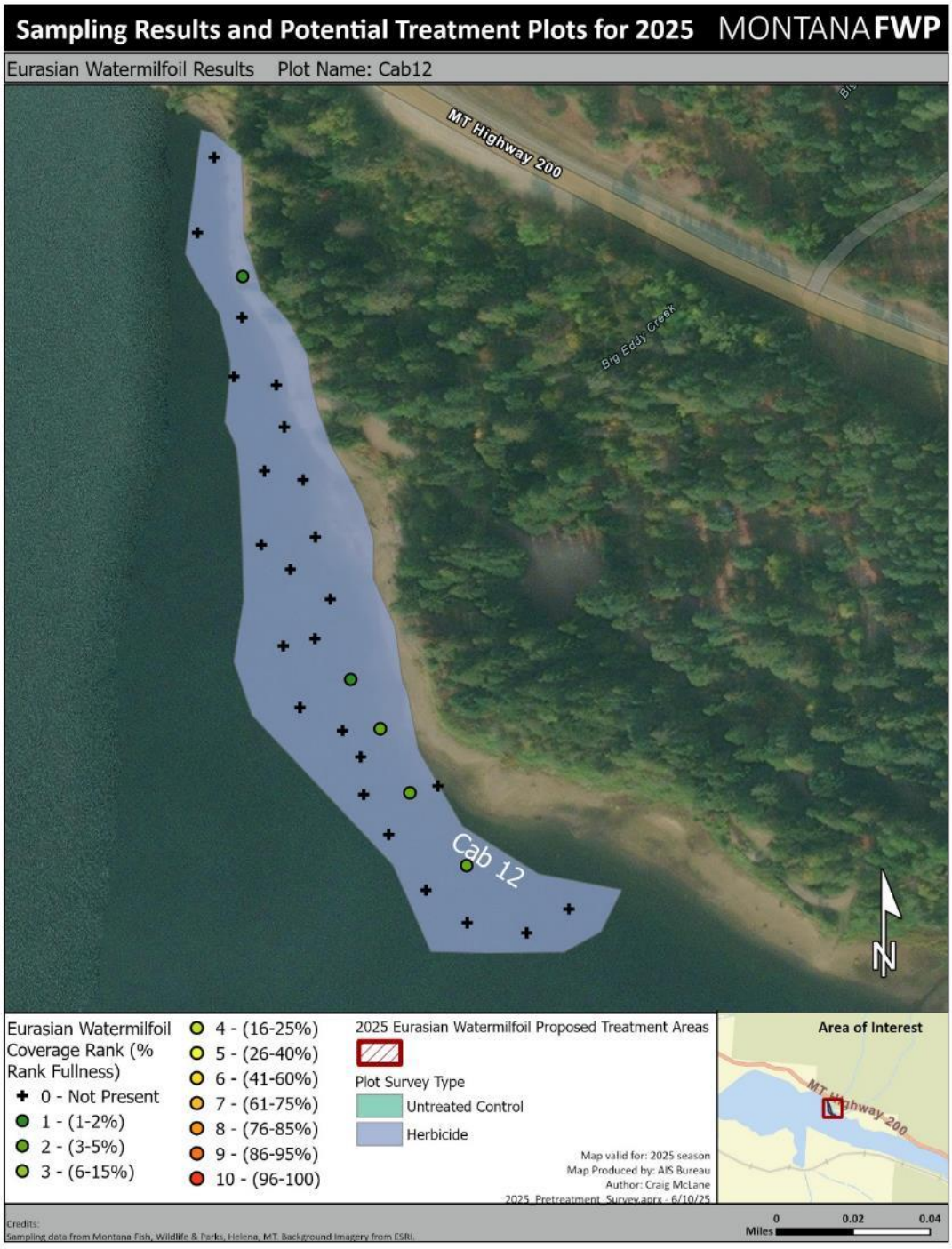
Cab-06 – Potential Treatment Plot



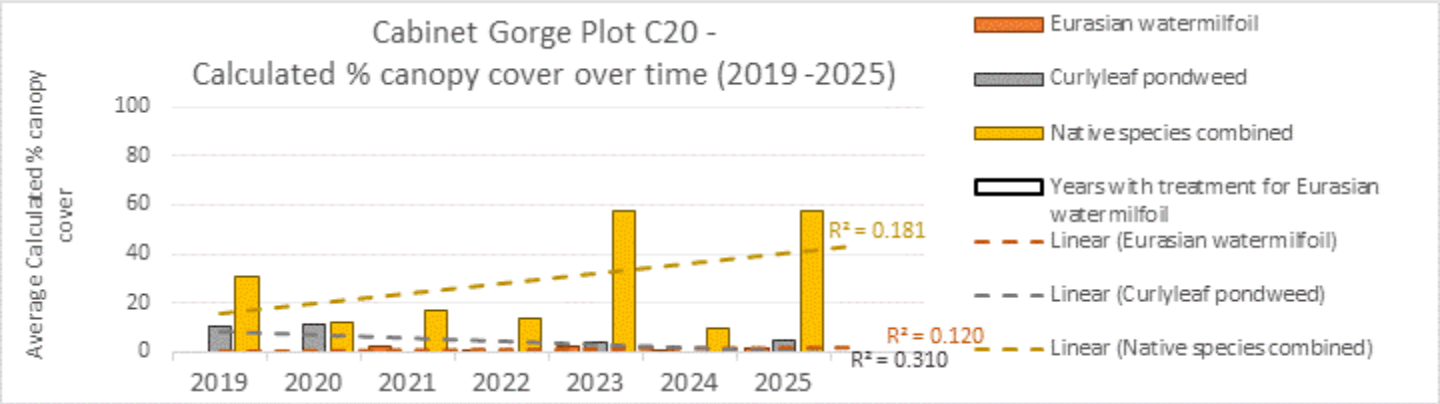


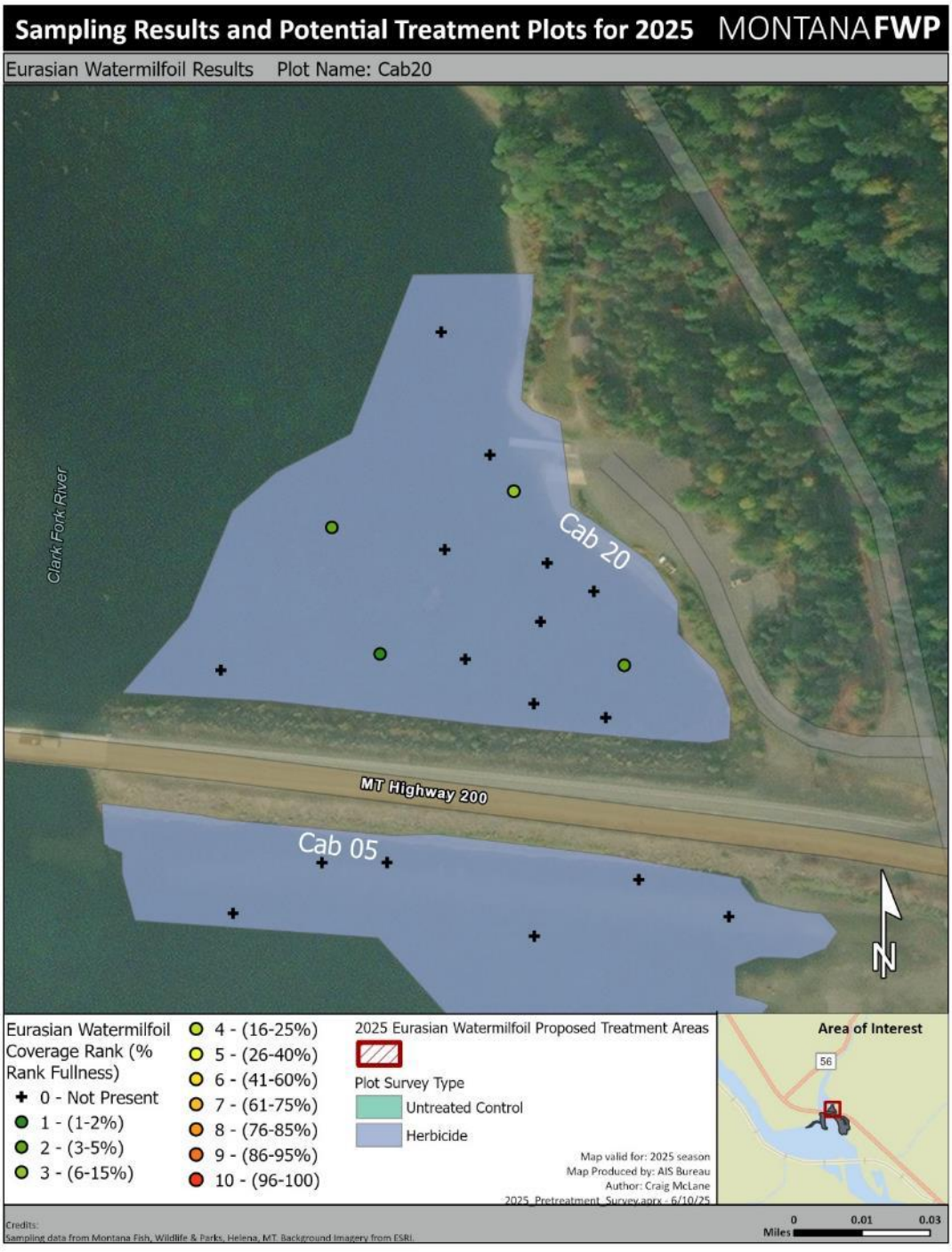
Cab-12 – Potential Treatment Plot



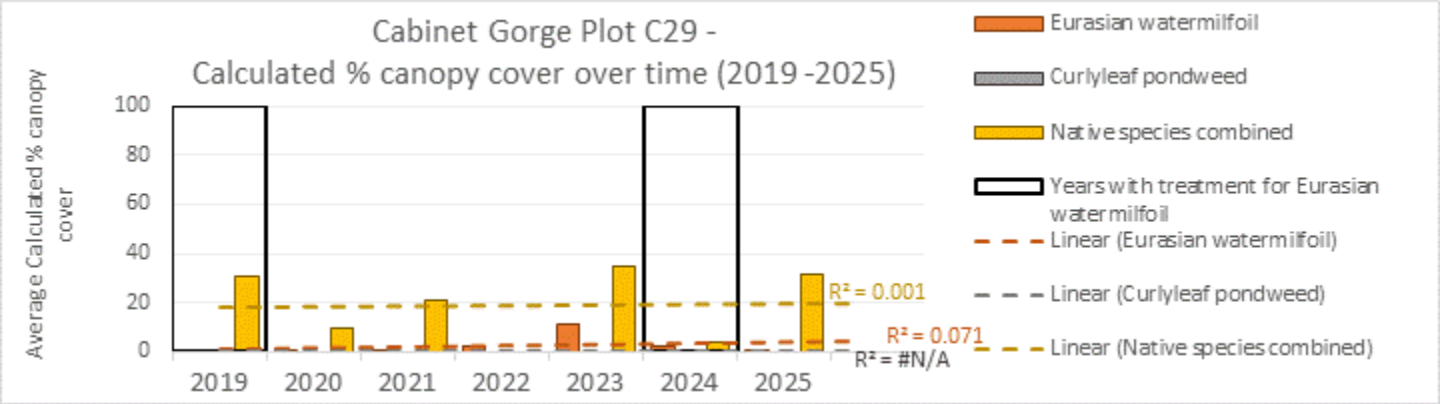


Cab-20 – Potential Treatment Plot

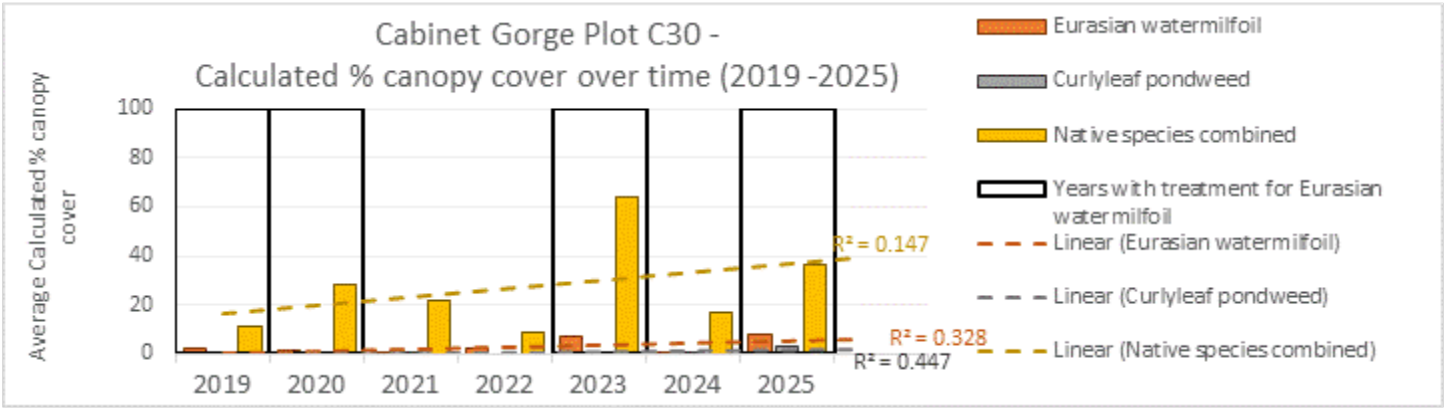


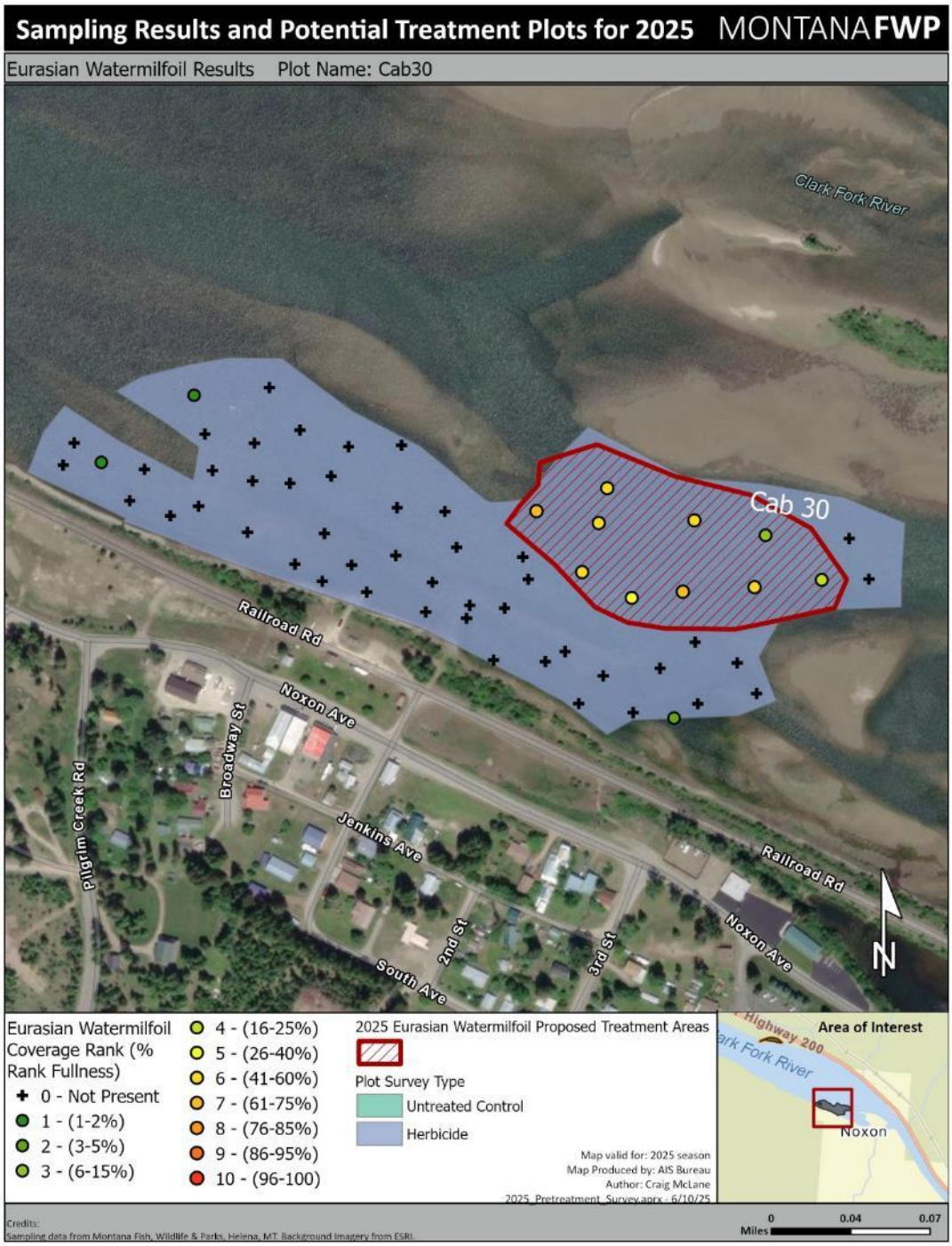


Cab-29 – Potential Treatment Plot

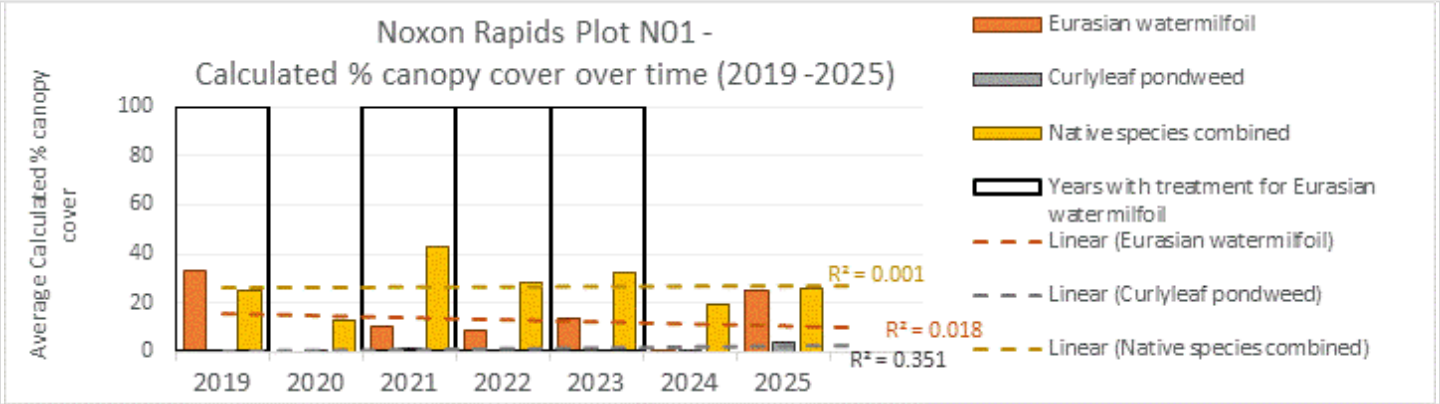


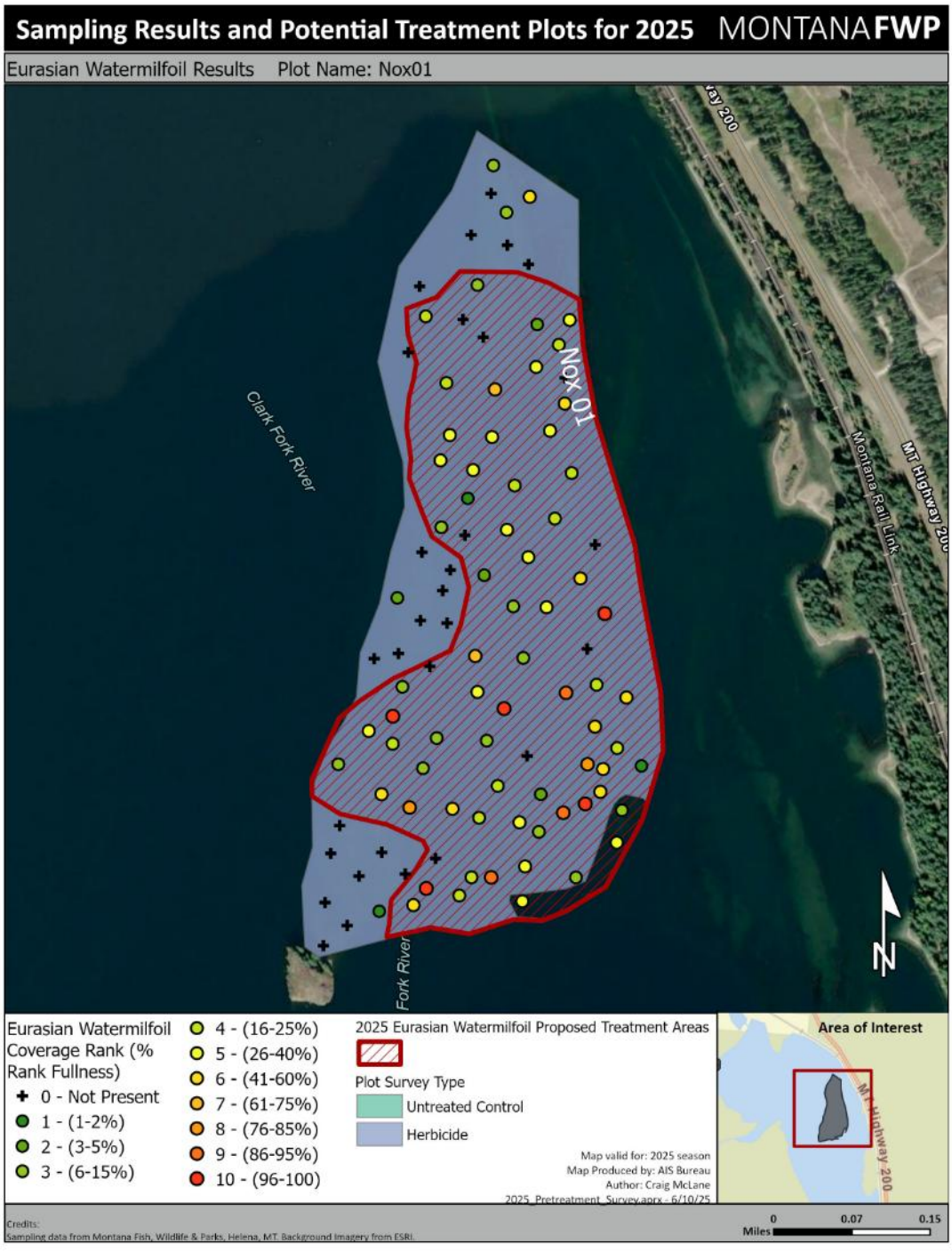
Cab-30 – Potential Treatment Plot



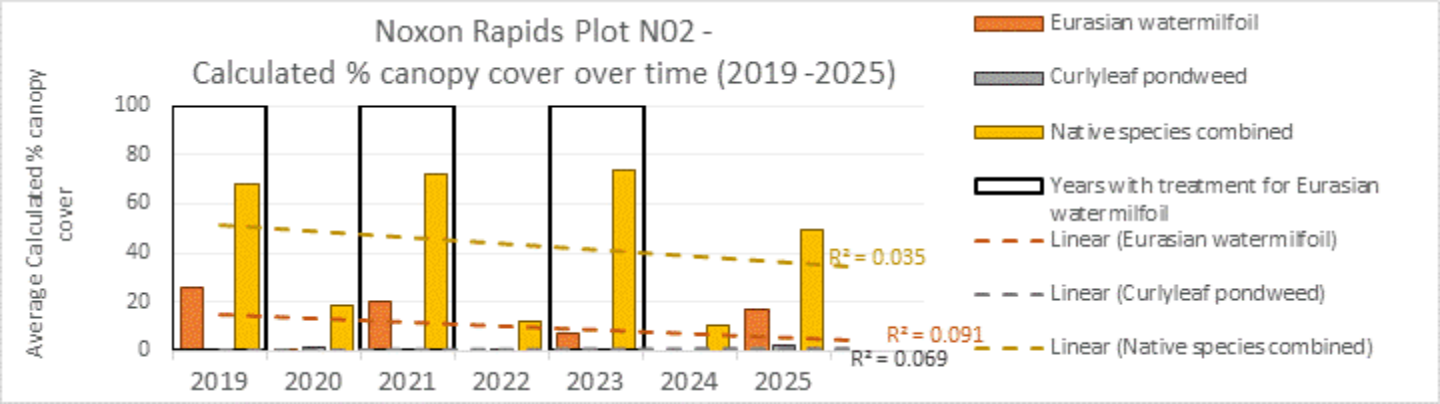


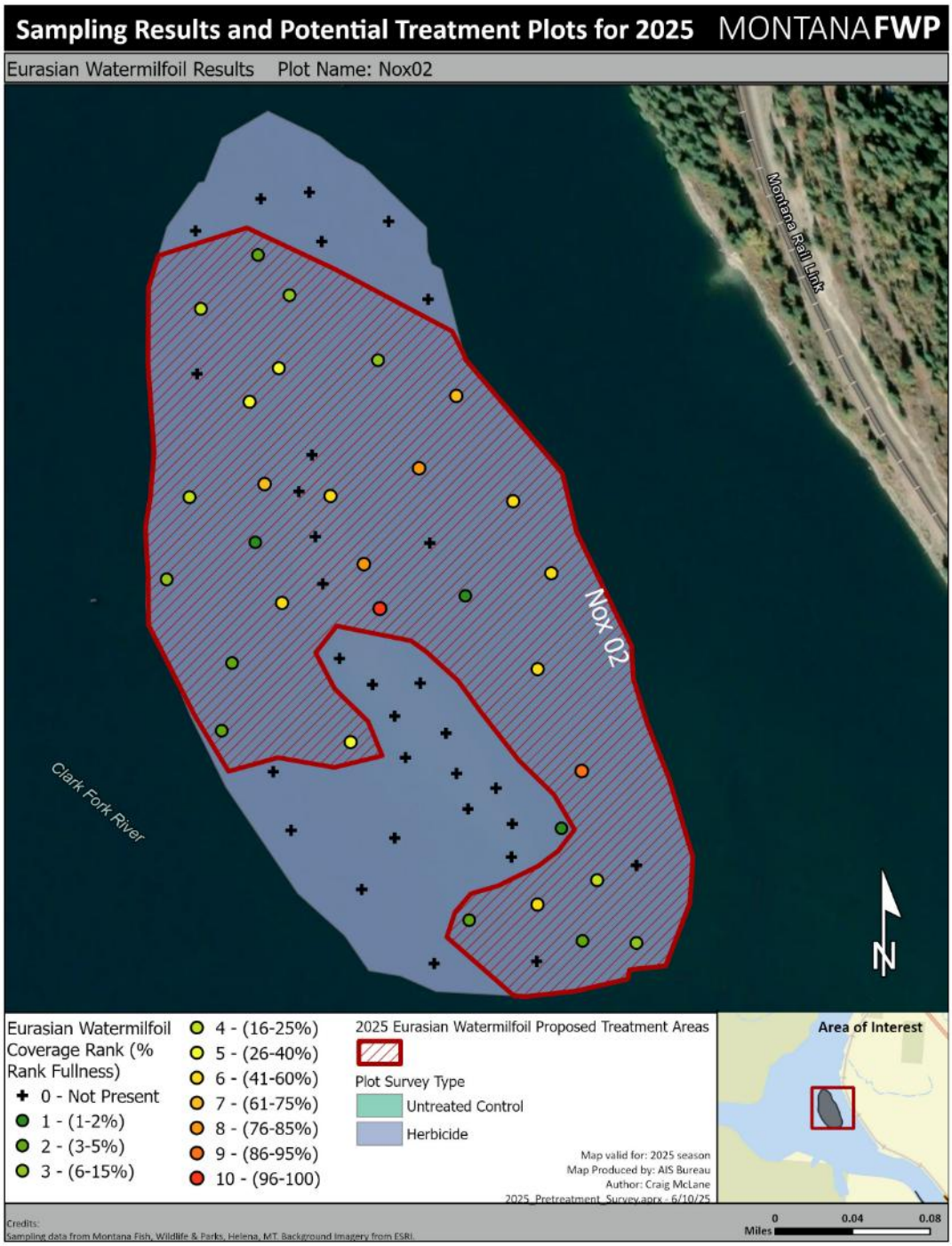
Nox-01 – Potential Treatment Plot



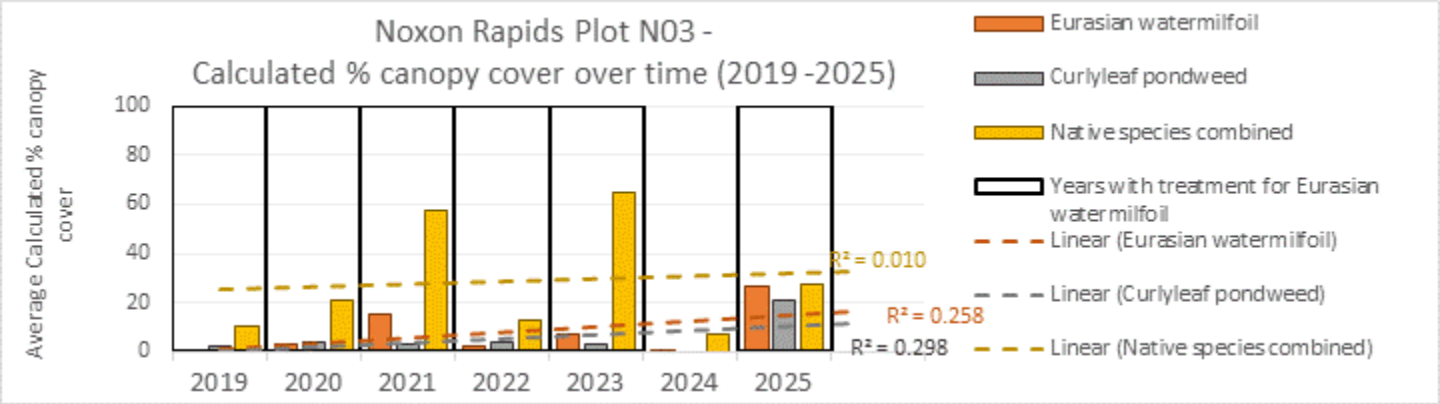


Nox-02 – Potential Treatment Plot

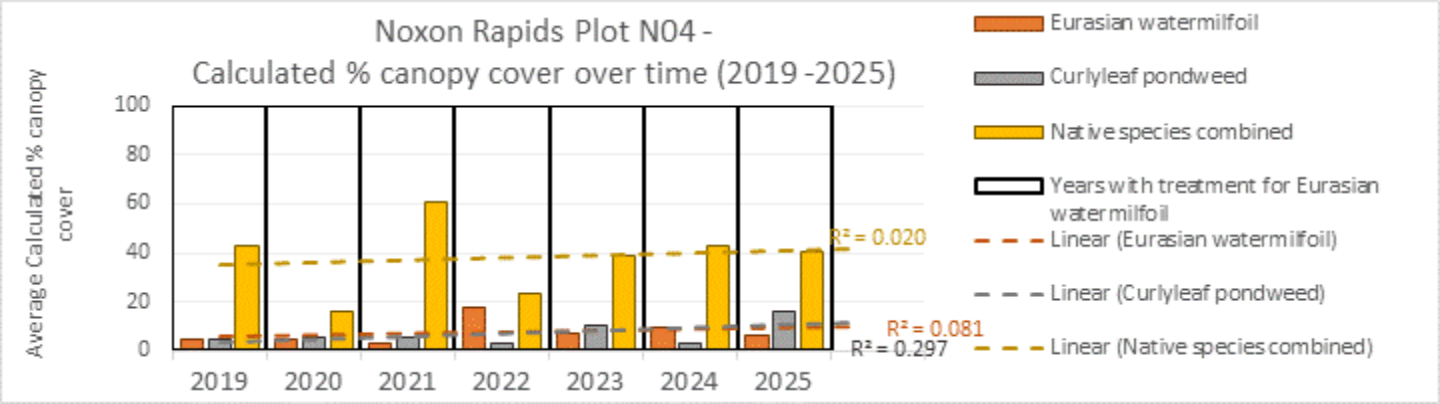


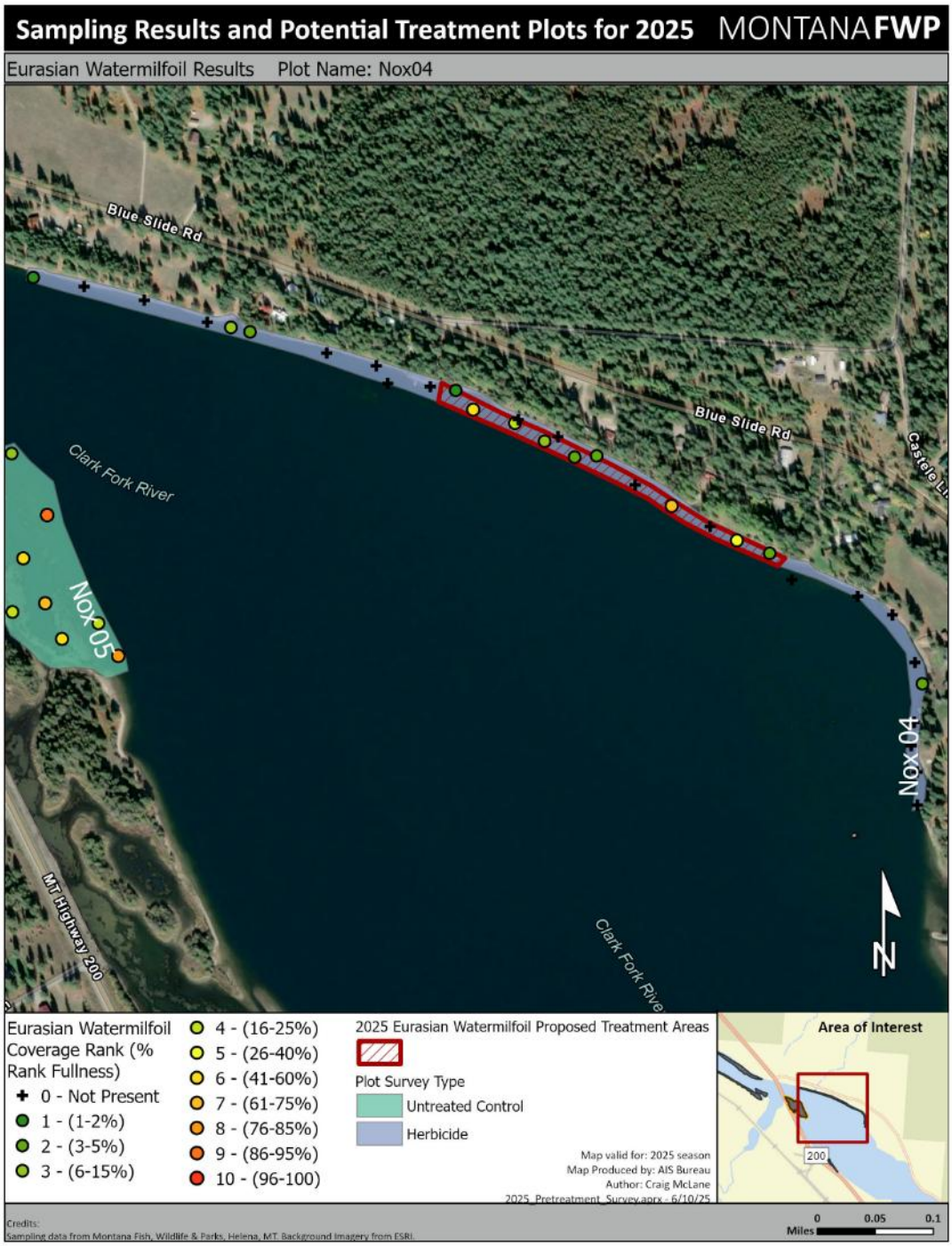


Nox-03 – Potential Treatment Plot

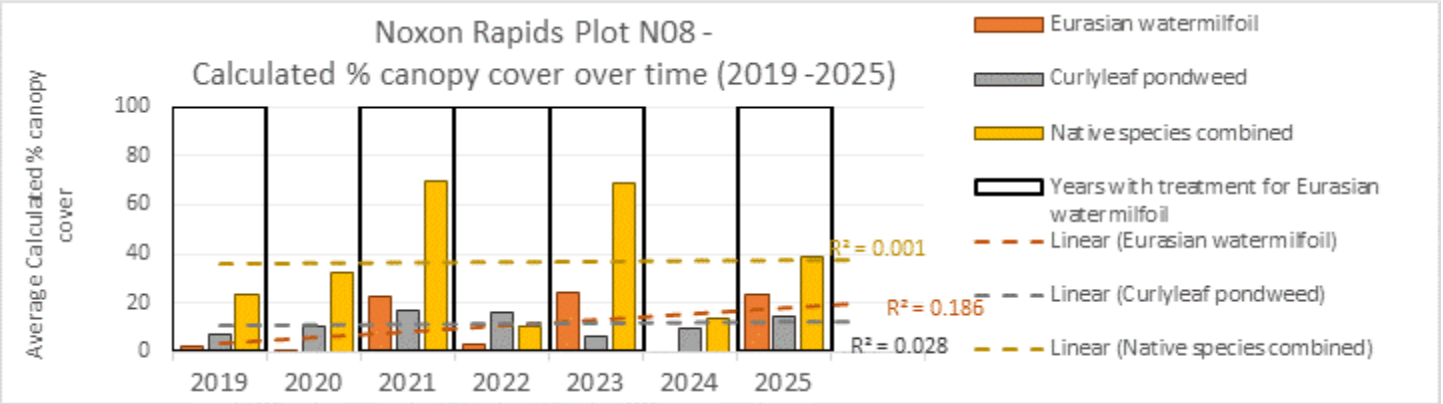


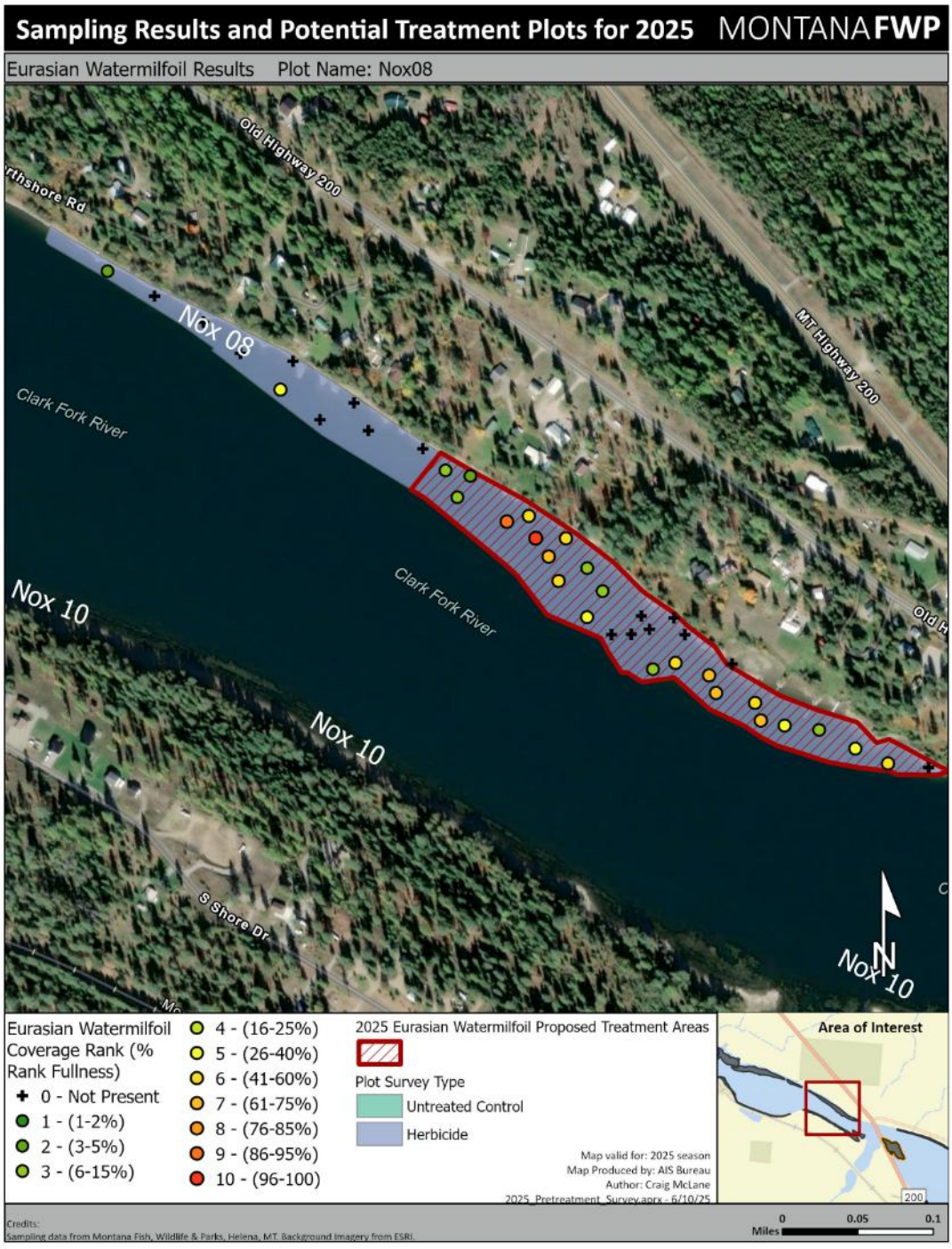
Nox-04 – Potential Treatment Plot



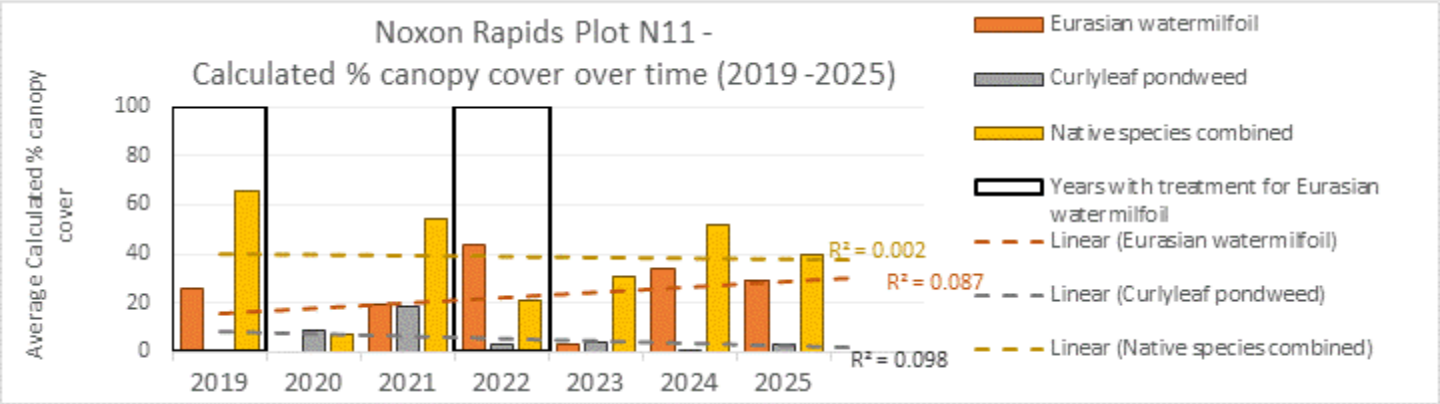


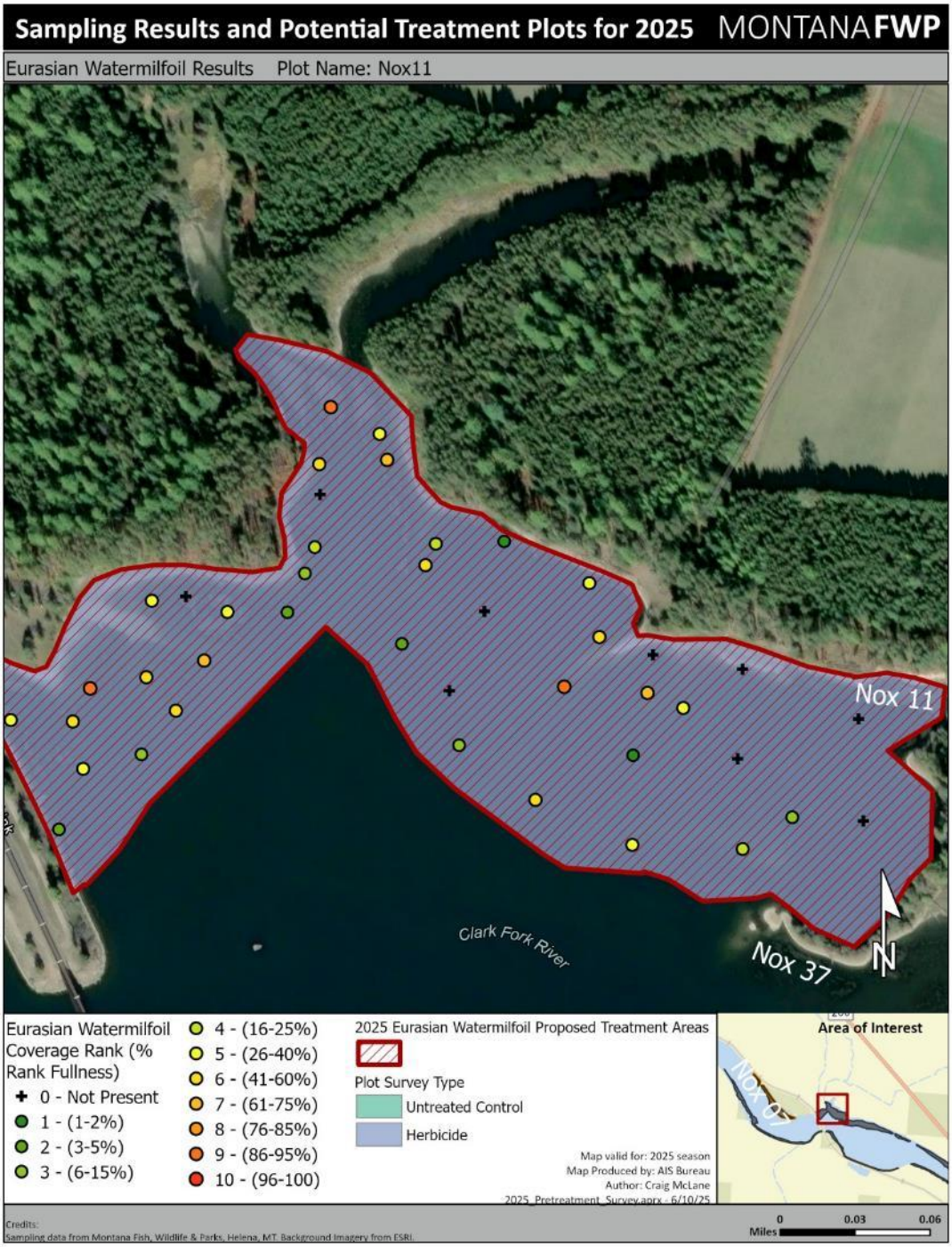
Nox-08 – Potential Treatment Plot



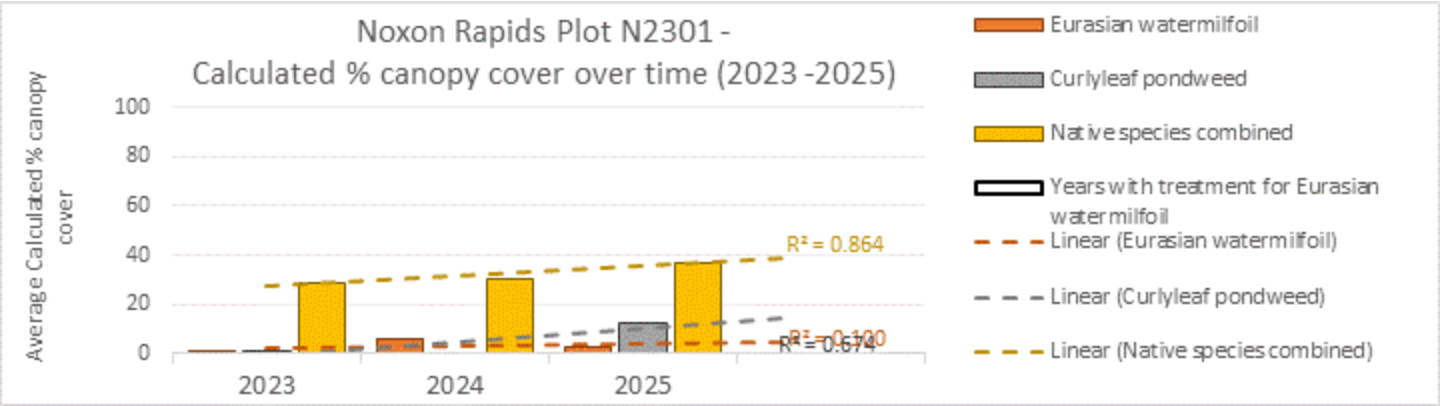


Nox-11 – Potential Treatment Plot

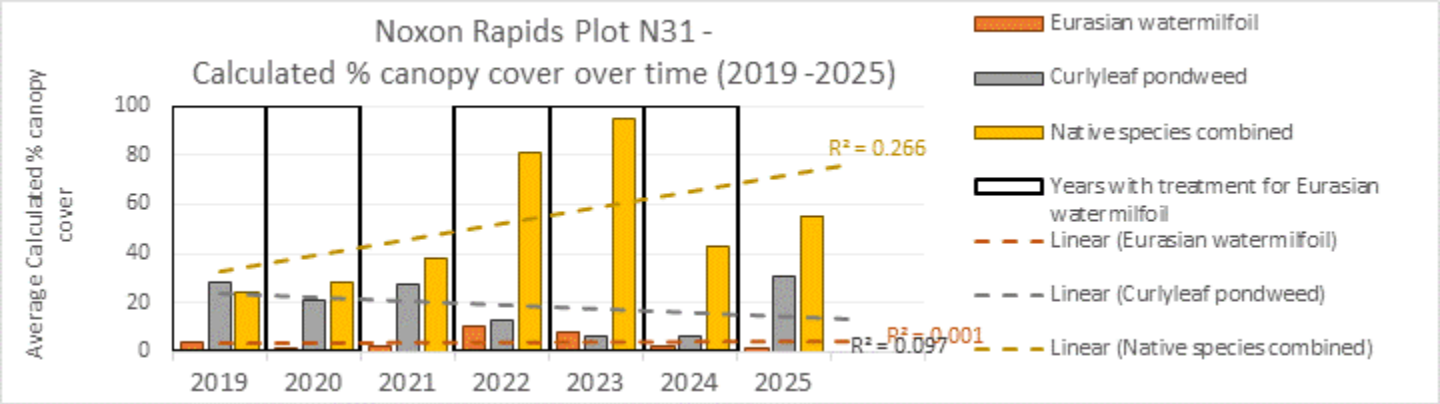


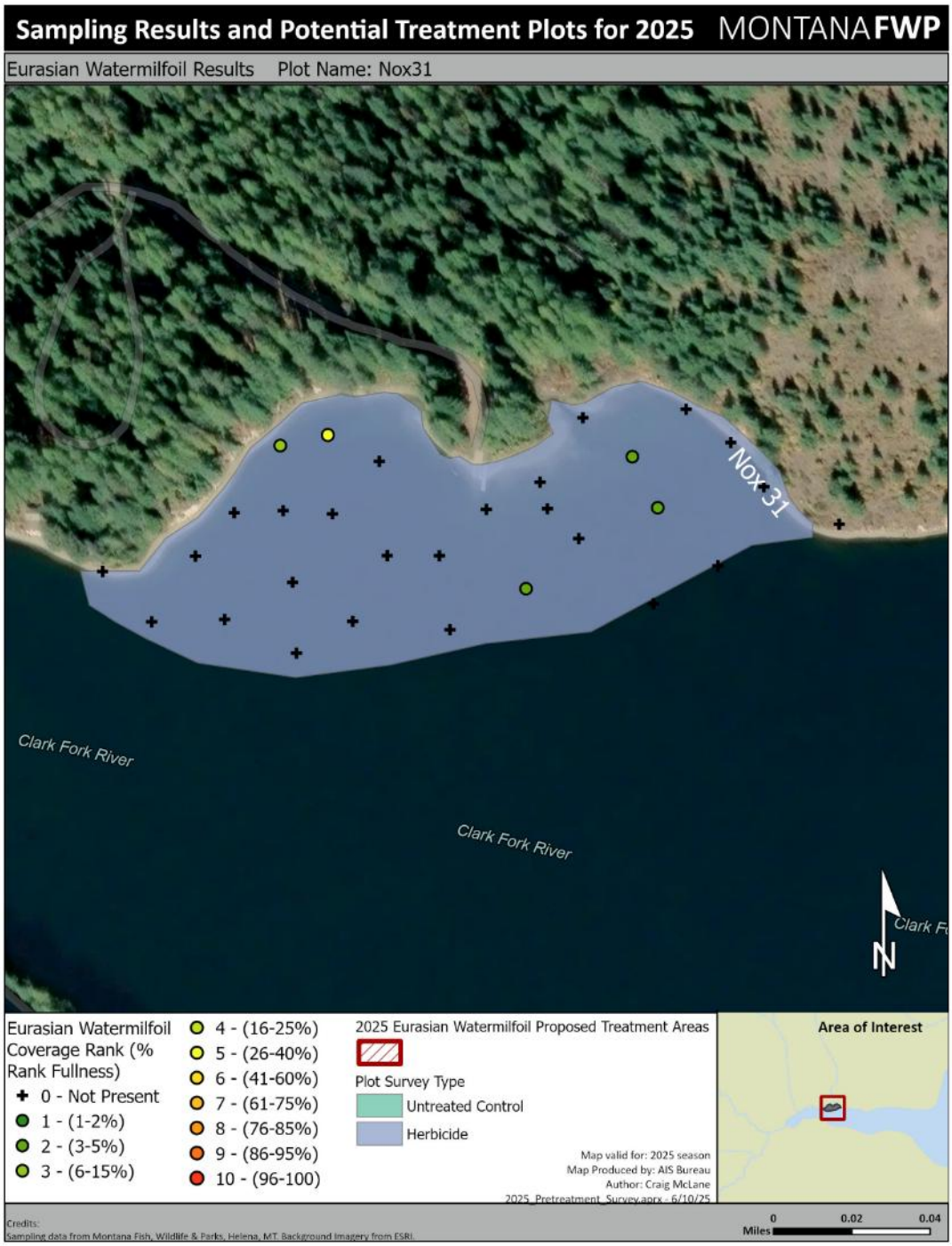


Nox-2301 – Potential Treatment Plot

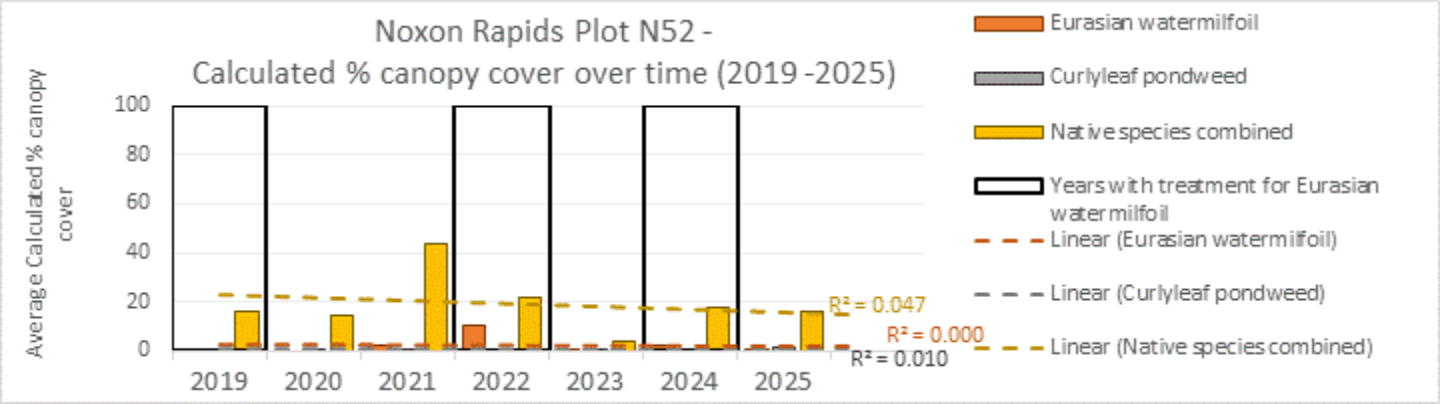


Nox-31 – Potential Treatment Plot

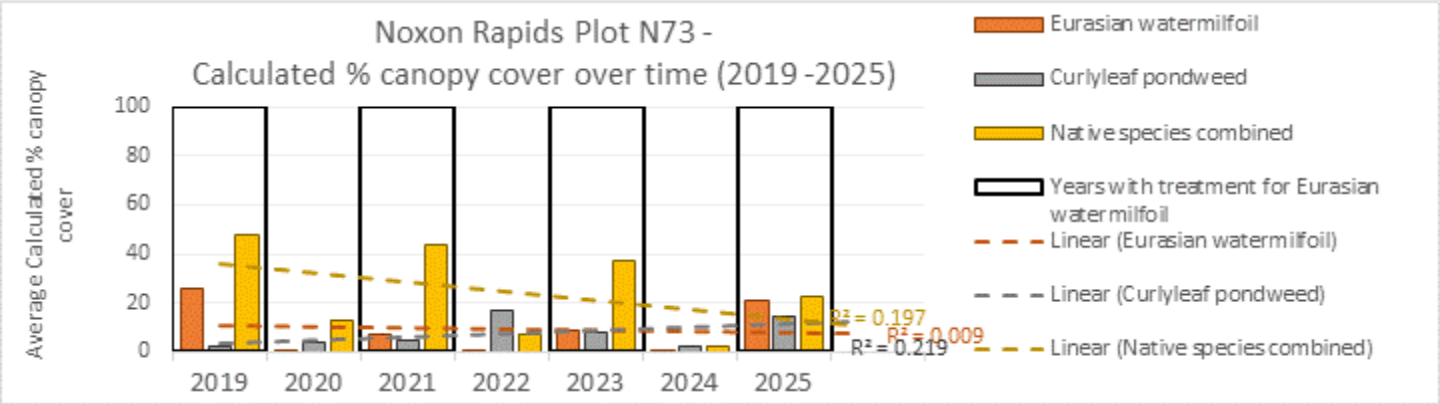




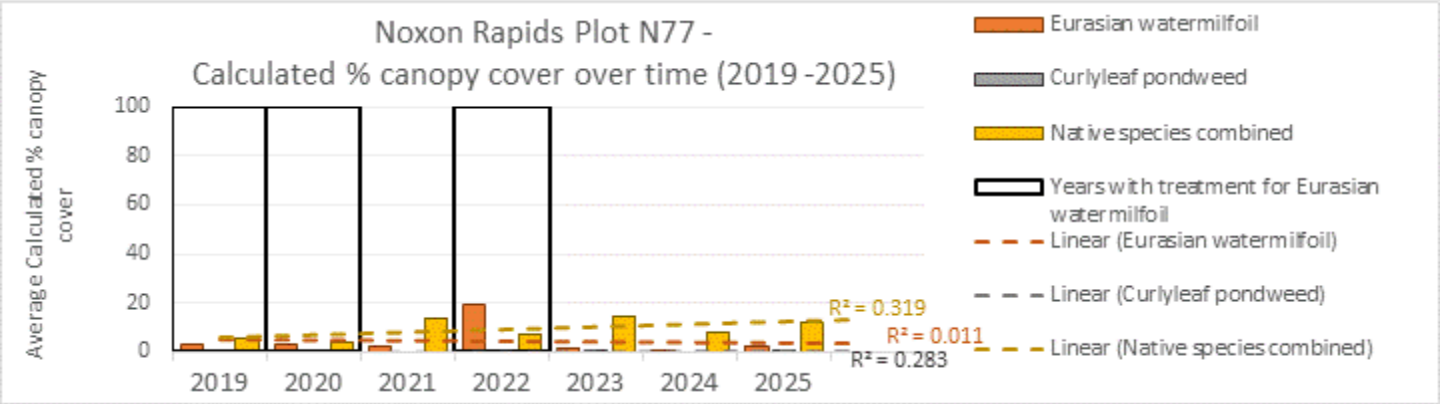
Nox-52 – Potential Treatment Plot



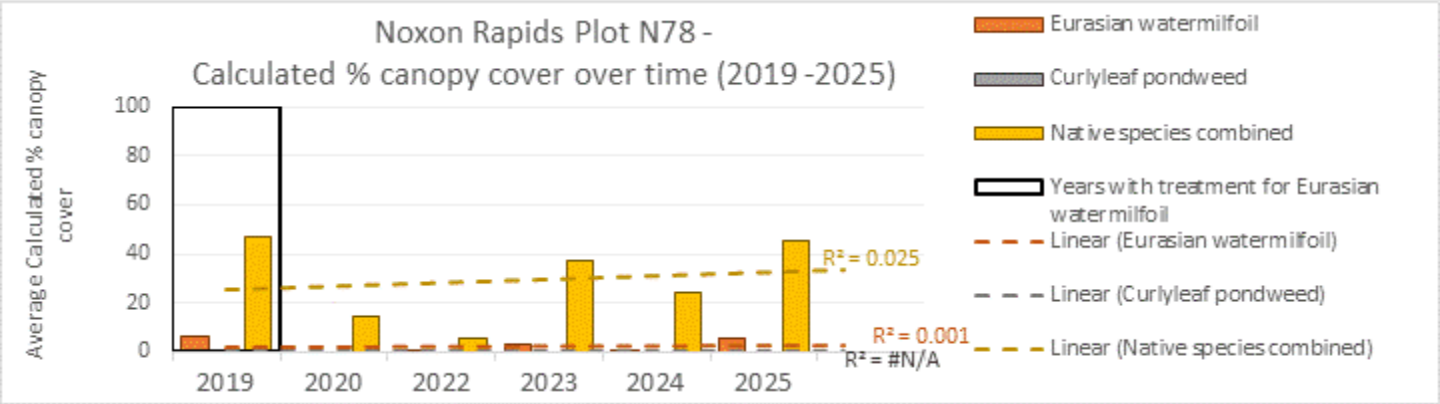
Nox-73 – Potential Treatment Plot



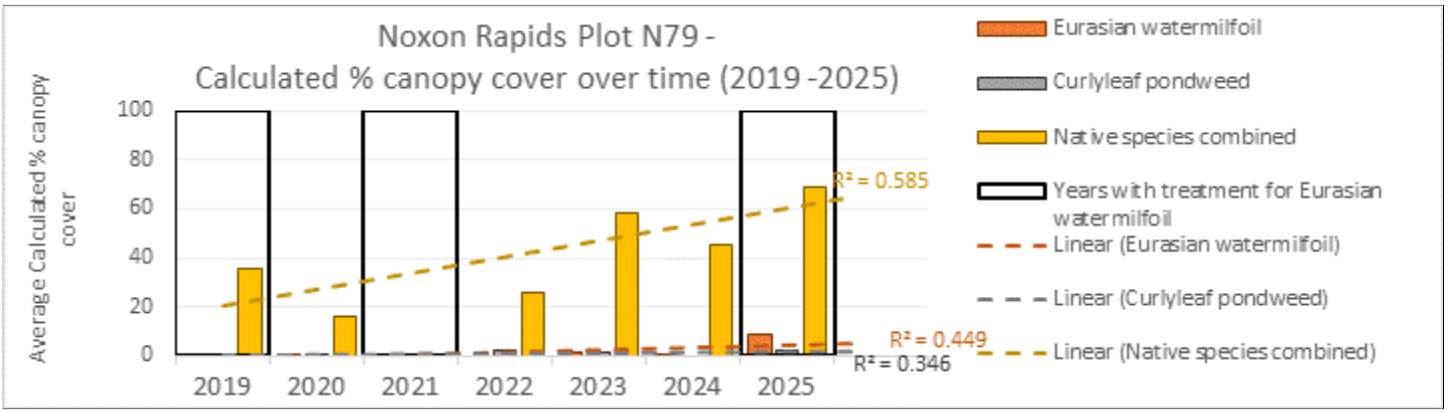
Nox-77 – Potential Treatment Plot

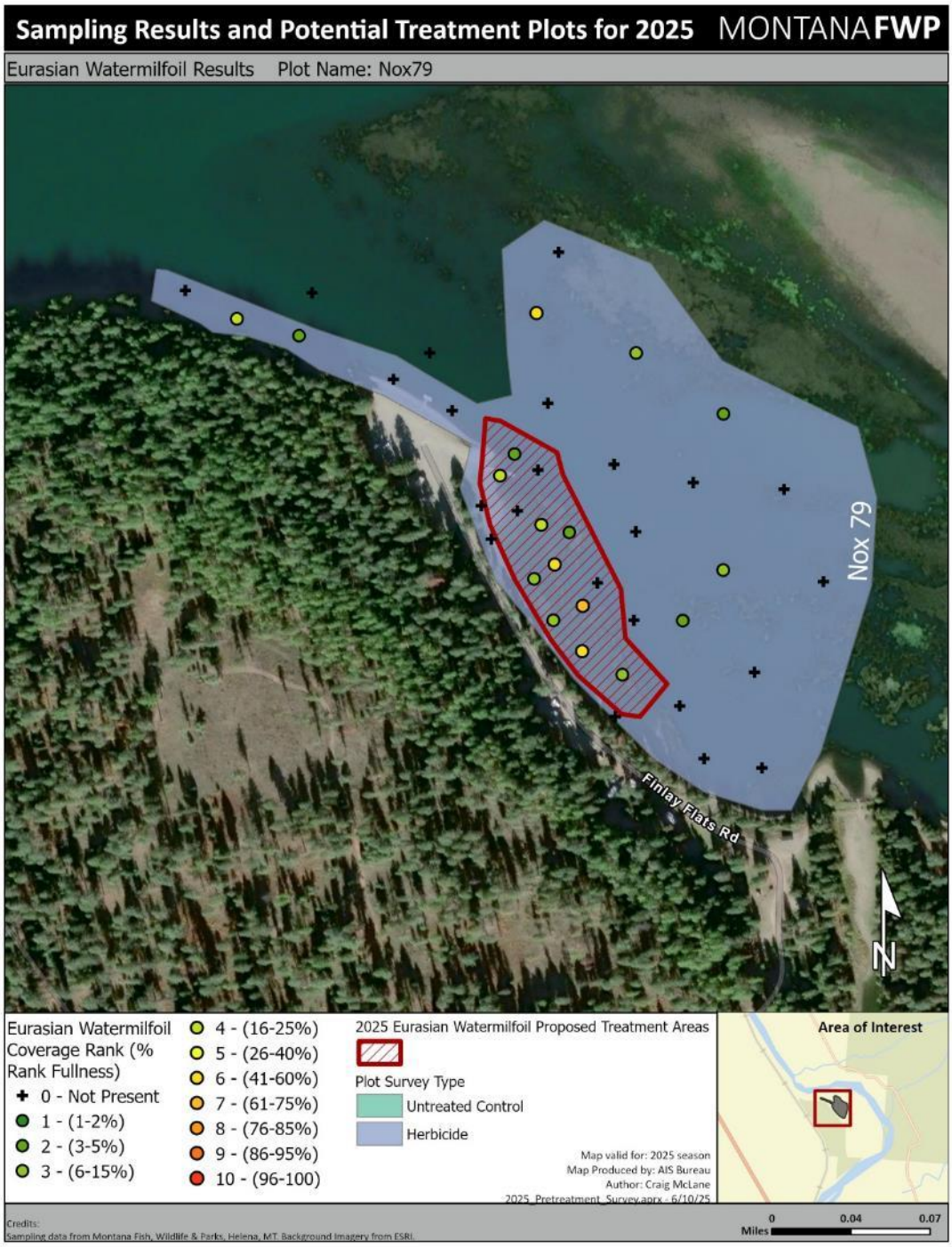


Nox-78 – Potential Treatment Plot



Nox-79 – Potential Treatment Plot





Appendix 2 –Percent canopy cover among years for each plot for different species. Percent changes represent those differences between 2024 and 2025 as well as between 2019 and 2025.

Table 12. Eurasian watermilfoil (*Myriophyllum spicatum*)

	C05	C06	C12	C20	C29	C30	C31[c]	C32[c]	C33[c]	N01	N02	N03	N04	N05[c]	N06[c]	N08	N09[c]	N11	N2301	N31	N52	N73	N77	N78	N79
2019	7.4	3.4	5.2	0.0	0.9	1.9	N/A	N/A	N/A	33.1	26.0	0.5	4.7	N/A	N/A	1.9	N/A	26.0	N/A	4.2	0.8	25.9	3.4	5.6	0.3
2020	0.1	0.6	1.2	0.0	0.7	1.1	4.1	19.1	0.0	0.0	0.8	2.8	4.9	4.5	26.7	0.1	0.0	0.04	N/A	1.5	0.0	0.1	3.0	0.0	0.1
2021	11.0	2.5	1.3	2.0	0.2	0.1	10.3	5.6	0.0	10.3	19.8	14.9	3.2	14.5	25.2	22.4	-	19.0	N/A	1.8	2.4	7.1	2.6	N/A	N/A
2022	2.0	2.2	2.0	0.3	1.5	1.9	1.1	0.0	0.0	9.0	0.0	2.5	17.7	36.9	41.7	2.7	0.0	43.8	N/A	10.1	9.6	0.0	19.2	0.0	0.0
2023	7.0	11.7	1.4	2.4	11.5	7.4	9.8	7.2	0.2	13.7	7.4	7.3	7.3	41.5	27.4	24.2	0.0	2.9	0.9	8.1	0.6	9.0	1.6	3.2	1.4
2024	0.0	0.5	3.5	0.1	2.2	0.6	5.1	3.5	0.1	0.2	0.0	0.1	9.6	21.6	37.4	0.0	2.8	34.0	6.0	2.3	2.3	0.2	0.2	0.8	0.8
2025	0.5	7.1	0.5	1.3	0.8	7.8	10.8	4.1	0.2	24.7	16.7	26.7	6.6	34.2	22.9	23.6	8.0	29.2	2.6	1.8	0.1	21.0	2.3	5.3	8.6
2024-2025 % Change	Increase to 0.5	1463	-87	1232	-64	1111	110	19	178	11246	Increase to 16.7	19486	-31	59	-39	Increase to 23.6	184	-14	-57	-22	-97	8756	1306	583	934
2019-2025 % Change*#	-94	108	-91	Increase to 1.3	-7	323	165	-78	Increase to 0.2	-25	-36	4940	40	659	-14	1158	Increase to 8.0	13	173	-57	-92	-19	-33	-6	2823

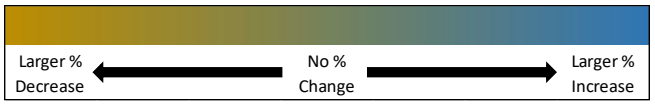
Table 14. Curlyleaf pondweed *(Potamogeton crispus)*

	C05	C06	C12	C20	C29	C30	C31[c]	C32[c]	C33[c]	N01	N02	N03	N04	N05[c]	N06[c]	N08	N09[c]	N11	N2301	N31	N52	N73	N77	N78	N79
2019	10.1	0.1	4.3	9.7	0.0	0.0	N/A	N/A	N/A	0.0	0.1	1.5	4.8	N/A	N/A	6.5	N/A	0.8	N/A	28.2	1.0	2.0	0.0	0.0	0.1
2020	15.2	1.0	1.2	11.2	0.0	0.0	0.7	0.0	0.0	0.6	1.5	3.8	5.5	0.0	0.9	10.6	0.0	8.7	N/A	20.9	0.6	4.0	0.2	0.0	0.1
2021	12.2	0.0	2.5	0.0	0.0	0.1	0.0	0.0		1.3	0.4	2.6	5.7	1.0	10.1	16.6	N/A	18.7	N/A	27.3	0.7	4.4	0.0	N/A	N/A
2022	11.8	0.0	0.5	0.0	0.0	0.0	4.4	20.1	1.0	0.7	0.7	3.5	3.0	4.3	17.6	15.6	2.7	2.8	N/A	13.4	0.3	16.8	0.3	0.0	2.1
2023	15.7	0.2	0.0	3.8	0.0	0.3	0.2	8.3	0.4	0.8	0.1	3.4	10.2	5.6	9.0	6.6	0.0	4.1	1.1	6.3	0.7	8.0	0.5	0.0	1.4
2024	6.8	0.5	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.0	3.2	0.0	0.0	9.6	0.0	0.1	0.0	6.5	0.0	2.2	0.0	0.0	0.0
2025	27.9	8.0	0.9	4.7	0.0	2.9	0.6	28.0	0.0	3.7	2.2	20.8	15.9	21.1	54.5	14.0	1.7	2.9	12.3	30.6	1.2	14.1	0.5	0.0	2.6
2024-2025 % Change	308	1430	Increase to 0.9	Increase to 4.7	0	1380	Increase to 0.6	Increase to 28.0	0	3319	Increase to 2.2	Increase to 20.8	395	Increase to 21.1	Increase to 54.5	47	Increase to 1.7	2429	Increase to 12.3	370	Increase to 1.2	552	Increase to 0.5	0	Increase to 2.6
2019-2025 % Change*#	176	7933	-78	-51	0	Increase to 2.9	-17	Increase to 28.0	0	11425	1641	1255	232	Increase to 21.1	6238	115	Increase to 1.7	251	978	9	22	602	Increase to 0.5	0	1993

Table 13. Flowering rush (*Butomus umbellatus*)

	C05	C06	C12	C20	C29	C30	C31[c]	C32[c]	C33[c]	N01	N02	N03	N04	N05[c]	N06[c]	N08	N09[c]	N11	N2301	N31	N52	N73	N77	N78	N79
2019	0.0	0.0	0.0	0.0	0.0	0.08	N/A	N/A	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	N/A	0.05	N/A	0.0	1.0	0.0	0.0	0.0	0.0
2020	0.0	0.0	0.0	0.0	0.0	0.06	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	N/A	0.0	0.2	0.0	0.0	0.0	0.0
2021	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.4	0.0	N/A	0.0	N/A	0.0	2.3	0.0	0.0	N/A	N/A
2022	0.0	0.0	0.0	0.0	0.0	2.1	0.0	0.0	0.0	0.0	0.8	0.0	0.2	0.0	0.3	0.0	0.0	0.0	N/A	0.0	0.7	0.0	0.1	0.0	0.0
2023	0.0	0.0	0.0	0.0	0.0	1.7	0.0	0.0	0.0	0.2	1.3	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	2.1	0.0	0.0	0.0	0.0
2024	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.1	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2025	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2024-2025 % Change	0	0	0	0	0	-84	0	0	0	-100	-61	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2019-2025 % Change*#	0	0	0	0	0	213	0	0	0	0	Increase to 0.2	0	0	0	0	0	0	-100	0	0	-100	0	0	0	0

C = Untreated control plot* = Control plots were established in 2020, so the percent change is 2020-2024 instead; # = N2301 was established in 2023 so the percent change is 2023-2025 instead.

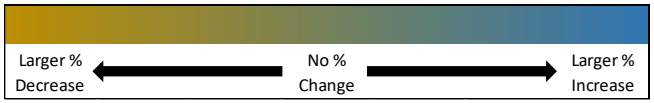


Coontail (*Ceratophyllum demersum*)																								
	C05	C06	C12	C20	C29	C30	C31[c]	C32[c]	C33[c]	N01	N02	N03	N04	N05[c]	N06[c]	N08	N09[c]	N11	N2301	N31	N52	N73	N77	N78	N79
2019	18.2	14.5	17.3	0.2	0.0	1.6	N/A	N/A	N/A	17.4	27.0	10.2	22.7	N/A	N/A	18.3	N/A	53.1	N/A	12.4	12.2	26.7	1.5	0.3	20.9
2020	12.9	13.8	11.8	0.0	0.0	2.3	27.4	9.1	71.8	6.2	13.3	6.5	7.7	14.5	28.4	9.5	11.3	4.1	N/A	12.4	11.3	11.6	3.3	0.0	12.1
2021	33.0	19.2	28.9	0.0	0.0	3.3	46.6	43.6	62.1	5.6	24.5	29.8	9.7	26.3	44.6	14.9	-	9.7	N/A	4.4	18.8	25.3	0.0	N/A	N/A
2022	17.0	9.9	21.6	0.3	0.0	3.4	3.6	32.8	18.0	17.9	4.8	9.8	4.4	22.3	21.3	2.0	4.2	14.2	N/A	37.0	13.9	6.0	1.9	0.1	16.8
2023	34.2	30.6	37.4	0.7	0.0	18.1	26.7	53.7	67.9	13.8	16.4	42.1	16.4	27.1	45.3	27.9	6.7	21.0	9.3	65.7	2.0	24.5	5.1	1.1	36.1
2024	16.3	1.4	21.5	0.3	0.0	1.6	19.3	33.4	50.6	6.2	1.2	3.1	14.6	36.7	28.6	1.0	7.5	34.5	1.7	32.0	2.2	0.2	4.0	0.5	35.7
2025	10.0	2.6	19.5	0.1	0.0	6.2	26.3	29.0	52.7	6.2	6.9	19.0	11.8	19.7	24.8	5.7	14.1	22.7	20.2	14.6	2.5	14.8	9.7	0.8	41.7
2024-2025 % Change	-39	91	-9	-68	0	292	36	-13	4	0	481	505	-19	-46	-14	468	88	-34	1098	-54	10	6142	142	41	17
2019-2025 % Change*#	-45	-82	13	-29	0	282	-4	219	-27	-64	-74	85	-48	36	-13	-69	25	-57	117	18	-80	-45	539	208	100

Muskgrass species (*Chara* species)																									
	C05	C06	C12	C20	C29	C30	C31[c]	C32[c]	C33[c]	N01	N02	N03	N04	N05[c]	N06[c]	N08	N09[c]	N11	N2301	N31	N52	N73	N77	N78	N79
2019	0.9	0.0	0.1	0.0	0.0	0.2	N/A	N/A	N/A	0.1	0.1	0.0	0.1	N/A	N/A	0.2	N/A	0.3	N/A	0.0	1.5	0.0	0.0	0.0	0.5
2020	0.2	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.2	0.3	0.0	0.2	0.0	0.0	0.1	0.0	0.0	N/A	0.1	2.7	0.0	0.1	0.0	0.6
2021	1.6	0.0	0.1	0.0	0.2	0.8	0.0	0.0	0.0	18.9	2.4	5.1	6.1	10.6	0.0	6.6	-	18.3	N/A	1.3	11.9	0.1	5.3	N/A	N/A
2022	0.3	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	5.5	0.2	0.3	0.2	0.0	0.0	1.0	0.4	0.8	N/A	0.0	3.8	0.1	0.4	0.1	0.2
2023	0.3	0.0	0.0	0.3	0.0	0.6	0.0	0.0	0.0	9.8	3.4	1.3	1.0	9.6	0.0	9.1	13.1	3.1	0.0	0.0	0.7	0.1	1.5	0.0	8.7
2024	0.0	0.0	0.0	2.6	0.0	0.1	0.0	0.0	0.0	0.6	0.6	0.1	1.7	0.0	0.0	0.2	0.0	1.2	0.0	1.0	4.8	0.0	0.2	0.0	0.9
2025	0.0	0.1	0.1	1.4	0.2	1.0	0.0	0.0	0.0	7.8	13.5	0.2	0.0	0.4	0.0	12.7	0.6	1.2	0.0	1.1	2.9	0.0	1.3	0.0	1.5
2024-2025 % Change	0	Increase to 0.1	Increase to 0.1	-45	Increase to 0.2	644	0	0	0	1221	2213	224	-100	Increase to 0.4	0	6808	Increase to 0.6	7	0	10	-40	0	701	0	71
2019-2025 % Change*#	-100	Increase to 0.1	-45	Increase to 1.4	Increase to 0.2	351	0	0	0	10215	10735	Increase to 0.2	-100	Increase to 0.4	0	7453	Up0.6	282	0	Increase to 1.1	97	0	Increase to 1.3	0	183

Waterweed species (*Elodea* species)																									
	C05	C06	C12	C20	C29	C30	C31[c]	C32[c]	C33[c]	N01	N02	N03	N04	N05[c]	N06[c]	N08	N09[c]	N11	N2301	N31	N52	N73	N77	N78	N79
2019	6.6	18.7	24.3	30.0	30.6	5.3	N/A	N/A	N/A	5.8	39.6	0.2	18.5	N/A	N/A	3.0	N/A	9.4	N/A	11.6	0.5	20.0	1.7	43.6	5.9
2020	3.6	7.8	18.1	11.9	9.4	23.8	4.7	11.0	7.6	1.1	3.6	12.4	5.8	1.6	12.5	13.2	0.5	0.5	N/A	13.3	0.0	0.1	0.6	5.3	1.8
2021	12.3	31.9	19.9	12.9	21.0	13.0	26.4	18.6	12.9	4.5	41.9	18.1	23.0	28.3	8.2	14.2	-	19.3	N/A	30.4	4.3	8.9	2.8	N/A	N/A
2022	0.8	13.7	43.2	10.2	0.5	3.4	2.6	2.3	9.0	2.1	0.5	2.5	8.5	21.6	7.1	1.7	20.3	4.1	N/A	43.0	1.9	0.9	2.7	4.5	0.6
2023	14.4	40.6	5.3	47.9	35.0	28.6	53.5	9.3	37.9	5.8	35.1	16.2	5.7	4.5	7.7	14.5	2.4	2.7	18.3	27.6	0.0	5.0	1.8	27.3	8.0
2024	1.2	6.1	18.1	1.4	3.8	6.1	19.8	2.3	22.8	1.3	0.7	0.7	16.6	13.7	4.6	0.3	8.9	14.3	27.0	5.8	3.5	0.7	0.3	23.4	8.1
2025	18.3	40.6	20.0	52.9	31.4	14.9	30.9	2.5	60.6	9.3	19.3	2.7	17.2	9.2	7.1	7.0	7.0	7.4	12.0	32.3	5.8	5.2	0.5	43.6	19.0
2024-2025 % Change	1490	567	10	3565	734	145	56	12	166	643	2712	305	4	-33	55	2359	-21	-48	-55	458	64	631	48	87	135
2019-2025 % Change*#	176	117	-18	76	3	183	562	-77	695	62	-51	1504	-7	464	-43	136	1417	-22	-34	179	1040	-74	-71	0	220

C = Untreated control plot; * = Control plots were established in 2020, so the percent change is 2020-2024 instead; # = N2301 was established in 2023 so the percent change is 2023-2025 instead.

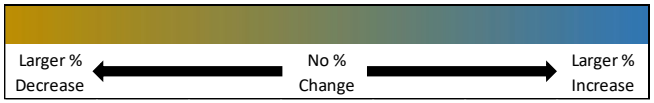


Northern watermilfoil (*Myriophyllum sibiricum*)																								
	C05	C06	C12	C20	C29	C30	C31[c]	C32[c]	C33[c]	N01	N02	N03	N04	N05[c]	N06[c]	N08	N09[c]	N11	N2301	N31	N52	N73	N77	N78	N79
2019	0.0	0.0	0.0	0.0	0.0	0.0	N/A	N/A	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	N/A	0.2	N/A	0.0	0.0	0.0	0.0	0.0	0.0
2020	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.6	0.0	0.0	0.0	0.0	N/A	0.0	0.0	0.1	0.0	0.0	0.0
2021	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.0	0.0	0.0	0.0	0.0	-	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A
2022	0.0	0.0	0.3	0.0	0.0	0.1	0.0	0.0	0.0	0.7	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.2	N/A	0.2	0.8	0.0	0.0	0.0	0.2
2023	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.03	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.4	3.1
2024	0.0	0.2	0.9	1.7	0.2	0.0	0.0	6.0	0.2	10.4	0.0	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.0	1.0	4.2	0.1	0.0	0.0	0.0
2025	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0
2024-2025 % Change	0	-100	-80	-100	-100	0	0	-100	-100	-95	-100	0	-100	0	0	0	-100	0	0	-100	-100	-100	Increase to 0.2	0	-100
2019-2025 % Change*#	0	0	Increase to 0.2	0	0	0	0	0	0	Increase to 0.5	0	0	0	-100	0	0	0	-100	0	0	0	0	Increase to 0.2	0	0

Waternymph species (*Najas* species)																									
	C05	C06	C12	C20	C29	C30	C31[c]	C32[c]	C33[c]	N01	N02	N03	N04	N05[c]	N06[c]	N08	N09[c]	N11	N2301	N31	N52	N73	N77	N78	N79
2019	0.0	0.0	0.0	0.0	0.0	0.1	N/A	N/A	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	N/A	0.0	N/A	0.0	0.0	0.0	0.0	0.0	0.0
2020	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	N/A	0.0	0.0	0.0	0.0	0.0	0.0
2021	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A
2022	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	N/A	0.0	0.0	0.0	0.0	0.0	0.0
2023	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.01	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2025	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2024-2025 % Change	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2019-2025 % Change*#	0	0	0	0	0	-100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Narrow leaved Potamogeton species (*Potamogeton/Stuckenia* species)																									
	C05	C06	C12	C20	C29	C30	C31[c]	C32[c]	C33[c]	N01	N02	N03	N04	N05[c]	N06[c]	N08	N09[c]	N11	N2301	N31	N52	N73	N77	N78	N79
2019	0.1	0.2	0.0	0.0	0.0	2.7	N/A	N/A	N/A	1.0	1.4	0.3	0.1	N/A	N/A	0.8	N/A	1.8	N/A	0.4	0.5	0.0	0.0	0.8	6.8
2020	0.0	0.0	0.0	0.0	0.0	1.7	0.0	0.0	0.0	0.9	1.4	0.1	0.0	1.7	1.2	4.6	1.6	2.8	N/A	0.3	0.5	0.0	0.2	9.4	1.2
2021	0.0	0.0	0.0	0.0	0.0	4.4	0.0	0.0	0.0	2.1	1.8	2.2	4.3	0.4	3.4	19.3	-	4.4	N/A	1.9	0.2	1.4	2.7	N/A	N/A
2022	0.0	0.0	0.0	0.0	0.0	2.5	0.0	0.0	0.0	1.3	4.5	0.4	1.4	0.3	1.7	2.0	5.8	1.4	N/A	0.0	0.4	0.0	0.3	0.9	6.6
2023	0.0	0.0	0.0	1.2	0.0	15.4	0.0	0.0	0.0	1.7	12.7	2.2	4.9	2.8	0.2	9.9	8.3	3.4	0.7	1.5	0.5	0.1	1.1	8.1	1.7
2024	0.0	0.0	0.0	0.0	0.0	8.0	0.0	0.0	0.0	0.8	3.4	1.9	0.7	0.3	0.0	8.4	9.3	1.8	0.3	0.0	1.6	0.3	0.9	0.0	0.1
2025	0.0	0.0	0.0	0.0	0.0	12.4	0.0	0.0	0.0	1.1	7.3	0.0	1.3	4.2	0.0	4.6	13.7	1.4	0.0	0.0	1.8	0.0	0.0	0.9	5.0
2024-2025 % Change	0	0	0	0	0	56	0	0	0	46	117	-100	97	1310	0	-45	48	-22	-100	0	12	-100	-100	Increase to 0.9	5005
2019-2025 % Change	-100	-100	0	0	0	364	0	0	0	15	423	-100	2563	145	-100	471	732	-25	-100	-100	253	0	0	8	-26

C = Untreated control plot; * = Control plots were established in 2020, so the percent change is 2020-2024 instead; # = N2301 was established in 2023 so the percent change is 2023-2025 instead.



White-stemmed pondweed (*Potamogeton praelongus*)

	C05	C06	C12	C20	C29	C30	C31[c]	C32[c]	C33[c]	N01	N02	N03	N04	N05[c]	N06[c]	N08	N09[c]	N11	N2301	N31	N52	N73	N77	N78	N79
2019	0.0	0.0	0.0	0.0	0.0	0.0	N/A	N/A	N/A	0.0	0.1	0.0	0.0	N/A	N/A	0.2	N/A	0.0	N/A	0.0	0.0	0.0	0.0	0.0	0.0
2020	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.2	1.0	0.8	0.0	0.0	N/A	1.5	0.2	0.0	0.0	0.0	0.0
2021	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	1.0	0.6	-	0.0	N/A	0.0	8.0	0.0	0.0	N/A	N/A
2022	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	2.5	0.0	0.0	N/A	0.0	0.0	0.0	0.0	0.0	0.0
2023	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.1	1.7	0.0	1.1	3.4	0.0	0.1	0.0	1.0	1.1	0.0	0.0	0.0	0.0
2025	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	0.0	0.0	0.0	3.6	5.8	0.0	0.0	0.0	4.9	3.0	0.0	0.0	0.0	0.0
2024-2025 % Change	0	0	0	0	0	0	0	0	0	0	-20	-100	-100	0	215	71	0	-100	0	399	187	0	0	0	0
2019-2025 % Change*#	0	0	0	0	0	0	0	0	0	0	1505	0	0	-100	254	2530	0	0	0	0	0	0	0	0	0

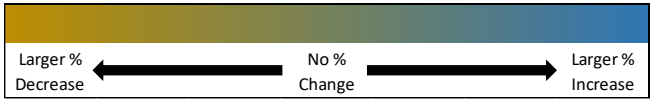
Richardson's pondweed (*Potamogeton richardsonii*)

	C05	C06	C12	C20	C29	C30	C31[c]	C32[c]	C33[c]	N01	N02	N03	N04	N05[c]	N06[c]	N08	N09[c]	N11	N2301	N31	N52	N73	N77	N78	N79
2019	0.0	0.0	0.0	0.2	0.0	1.2	N/A	N/A	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.1	N/A	0.1	N/A	0.0	1.0	0.0	0.2	0.0	0.1
2020	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	N/A	0.0	0.0	0.0	0.0	0.0	0.1
2021	0.0	0.0	0.0	3.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	1.3	0.0	0.0	0.0	N/A	0.0	N/A	0.3	0.0	2.2	2.5	N/A	N/A
2022	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.3	0.0	0.0	0.1	0.2	0.7	0.0	0.0	0.0	0.0	0.0	N/A	0.0	0.1	0.0	0.0	0.0	0.0
2023	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.3	0.7	1.5	0.4	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	5.0	4.8	0.0	0.0
2024	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.1	1.9	0.9	0.1	0.3	0.1	0.0	0.0	0.1	0.1	2.0	0.0	0.7	2.7	0.0	0.0
2025	0.1	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.2	0.2	0.0	1.8	0.0	0.0	0.2	0.0	0.0	2.3	0.7	0.0	0.7	0.0	0.0	0.0
2024-2025 % Change	Increase to 0.1	0	0	0	0	102	0	0	0	67	-91	-100	1270	-100	-100	799	0	-100	2061	-65	0	1	-100	0	0
2019-2025 % Change*#	Increase to 0.1	0	0	-100	0	-4	0	0	0	542	0	0	0	0	0	169	0	-100	Increase to 2.3	Increase to 0.7	-100	Increase to 0.7	-100	0	-100

White water buttercup (*Ranunculus aquatilis*)

	C05	C06	C12	C20	C29	C30	C31[c]	C32[c]	C33[c]	N01	N02	N03	N04	N05[c]	N06[c]	N08	N09[c]	N11	N2301	N31	N52	N73	N77	N78	N79
2019	5.9	4.7	0.1	0.0	0.0	0.0	N/A	N/A	N/A	0.9	0.1	0.0	0.4	N/A	N/A	0.5	N/A	0.6	N/A	0.0	0.0	0.5	1.2	1.9	0.1
2020	10.1	15.3	0.7	0.0	0.0	0.3	0.0	9.9	0.0	4.3	0.0	2.0	1.8	0.0	0.0	4.0	0.0	0.1	N/A	0.8	0.0	1.0	0.0	0.0	0.1
2021	20.8	23.4	0.4	0.4	0.0	0.4	0.0	25.5	0.0	11.6	0.1	0.5	16.1	0.4	0.2	13.7	N/A	2.6	N/A	0.0	0.2	6.2	0.0	N/A	N/A
2022	14.9	16.4	0.0	3.0	0.0	0.0	0.0	20.4	0.0	0.2	0.0	0.2	8.7	0.0	0.3	0.3	0.8	0.7	N/A	1.4	0.3	0.5	0.9	0.0	0.3
2023	30.0	26.0	0.6	7.4	0.0	0.0	0.0	20.8	0.0	0.1	0.1	1.7	8.6	0.3	0.6	1.4	0.6	0.4	0.3	0.0	0.0	0.9	0.2	0.1	0.6
2024	9.9	8.2	0.0	3.3	0.0	0.8	0.0	18.3	0.0	0.0	0.0	0.4	7.5	0.7	1.4	0.0	0.1	0.1	0.8	0.2	0.0	0.1	0.2	0.0	0.5
2025	17.6	2.0	0.7	2.8	0.0	0.7	0.0	17.7	0.0	0.4	0.1	4.9	8.7	18.8	3.4	2.0	2.8	7.1	1.9	1.8	0.1	1.6	0.6	0.1	1.8
2024-2025 % Change	78	-76	Increase to 0.7	-15	0	-10	0	-3	0	712	Increase to 0.1	1086	16	2518	138	Increase to 2.0	3661	6219	129	725	Increase to 0.1	1480	241	Increase to 0.1	271
2019-2025 % Change*#	200	-58	696	Increase to 2.8	0	Increase to 0.7	0	78	0	-58	35	Increase to 4.9	2250	Increase to 18.8	Increase to 3.4	325	Increase to 2.8	1187	461	Increase to 1.8	Increase to 0.1	213	-52	-95	1315

C = Untreated control plot; * = Control plots were established in 2020, so the percent change is 2020-2024 instead; # = N2301 was established in 2023 so the percent change is 2023-2025 instead.



Appendix 3 – Percent canopy cover for each year since 2019 in order from most recent years to oldest.

2025 Potential Treatment Plots	C05	C06$	C12	C20	C29	C30$	N01	N02	N03$	N04$	N08$	N11	N2301	N31	N52	N73$	N77	N78	N79$
Elodea spp.	18	41	20	53	31	15	9	19	3	17	7	7	12	32	6	5	0	44	19
Coontail	10	3	20	0	0	6	6	7	19	12	6	23	20	15	2	15	10	1	42
Eurasian watermilfoil	0.5	7.1	0.5	1.3	0.8	7.8	24.7	16.7	26.7	6.6	23.6	29.2	3	1.8	0.1	21.0	2.3	5.3	8.6
Curlyleaf pondweed	28	8	0.9	4.7	0.0	2.9	3.7	2.2	20.8	15.9	14.0	2.9	12.3	30.6	1.2	14.1	0.5	0.0	2.6
Native narrow-leaved pondweed spp.	0	0	0	0	0	12	1	7	0	1	5	1	0	0	2	0	0	1	5
White water buttercup	18	2	1	3	0	1	0	0	5	9	2	7	2	2	0	2	1	0	2
Chara/Nitella spp.	0	0	0	1	0	1	8	14	0	0	13	1	0	1	3	0	1	0	2
Richardson's pondweed	0	0	0	0	0	1	0	0	0	2	0	0	2	1	0	1	0	0	0
Flowering rush	0	0	0	0	0	0.2	0	0.2	0	0	0	0	0	0	0	0	0	0	0
White-stemmed pondweed	0	0	0	0	0	0	0	2	0	0	6	0	0	5	3	0	0	0	0
Northern watermilfoil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Water stargrass	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0
Slender Naiad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Illinois pondweed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

$ = Treated in 2025

2025 Untreated Control Plots	C31	C32	C33	N05	N06	N09
Elodea spp.	31	3	61	9	7	7
Coontail	26	29	53	20	25	14
Eurasian watermilfoil	11	4	0.2	34	23	8
Curlyleaf pondweed	1	28.0	0.0	21.1	54.5	1.7
Native narrow-leaved pondweed spp.	0	0	0	4	0	14
White water buttercup	0	18	0	19	3	3
Chara/Nitella spp.	0	0	0	0	0	1
Richardson's pondweed	0	0	0	0	0	0
Flowering rush	0	0	0	0	0	0
White-stemmed pondweed	0	0	0	0	4	0
Northern watermilfoil	0	0	0	0	0	0
Water stargrass	0	0	0	0	0	0
Slender Naiad	0	0	0	0	0	0
Illinois pondweed	0	0	0	0	0	0

2024 Potential Treatment Plots	C05	C06	C12[X]	C20	C29[X]	C30	N01	N02	N03	N04[X]	N08	N11	N2301	N31[X]	N52[X]	N73	N77	N78	N79
Elodea spp.	1	6	18	1	4	6	1	1	1	17	0	14	27	6	4	1	0	23	8
Coontail	16	1	22	0	0	2	6	1	3	15	1	35	2	32	2	0	4	1	36
Eurasian watermilfoil	0.0	0.5	3.5	0.1	2.2	0.6	0.2	0.0	0.1	9.6	0.0	34.0	6	2.3	2.3	0.2	0.2	0.8	0.8
Curlyleaf pondweed	7	1	0.0	0.0	0.0	0.2	0.1	0.0	0.0	3.2	9.6	0.1	0.0	6.5	0.0	2.2	0.0	0.0	0.0
Native narrow-leaved pondweed spp.	0	0	0	0	0	8	1	3	2	1	8	2	0	0	2	0	1	0	0
White water buttercup	10	8	0	3	0	1	0	0	0	7	0	0	1	0	0	0	0	0	0
Chara/Nitella spp.	0	0	0	3	0	0	1	1	0	2	0	1	0	1	5	0	0	0	1
Richardson's pondweed	0	0	0	0	0	1	0	2	1	0	0	0	0	2	0	1	3	0	0
Flowering rush	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
White-stemmed pondweed	0	0	0	0	0	0	0	3	0	2	3	0	0	1	1	0	0	0	0
Northern watermilfoil	0	0	1	2	0	0	10	0	0	0	0	0	0	1	4	0	0	0	0
Water stargrass	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Slender Naiad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Illinois pondweed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

X = Treated in 2024

2024 Untreated Control Plots	C31	C32	C33	N05	N06	N09
Elodea spp.	20	2	23	14	5	9
Coontail	19	33	51	37	29	8
Eurasian watermilfoil	5	3	0.1	22	37	3
Curlyleaf pondweed	0	0.0	0.0	0.0	0.0	0.0
Native narrow-leaved pondweed spp.	0	0	0	0	0	9
White water buttercup	0	18	0	1	1	0
Chara/Nitella spp.	0	0	0	0	0	0
Richardson's pondweed	0	0	0	0	0	0
Flowering rush	0	0	0	0	0	0
White-stemmed pondweed	0	0	0	0	1	0
Northern watermilfoil	0	6	0	0	0	0
Water stargrass	0	0	0	0	0	0
Slender Naiad	0	0	0	0	0	0
Illinois pondweed	0	0	0	0	0	0

2023 Potential Treatment Plots	C05‡	C06‡	C12	C20	C29	C30‡	N01‡	N02‡	N03‡	N04‡	N08‡	N11	N2301	N31‡	N52	N73‡	N77	N78	N79
Elodea spp.	14	41	5	48	35	29	6	35	16	6	15	3	18	28	0	5	2	27	8
Coontail	34	31	37	1	0	18	14	16	42	16	28	21	9	66	2	25	5	1	36
Eurasian watermilfoil	7	12	1	2	12	7	14	7	7	7	24	3	1	8	1	9	2	3	1
Curlyleaf pondweed	16	0	0	4	0	0	1	0	3	10	7	4	1	6	1	8	1	0	1
Native narrow-leaved pondweed spp.	0	0	0	1	0	15	2	13	2	5	10	3	1	1	0	0	1	8	2
White water buttercup	30	26	1	7	0	0	0	0	2	9	1	0	0	0	0	1	0	0	1
Chara/Nitella spp.	0	0	0	0	0	1	10	3	1	1	9	3	0	0	1	0	1	0	9
Richardson's pondweed	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	5	5	0	0
Flowering rush	0	0	0	0	0	2	0	1	0	0	0	0	0	0	2	0	0	0	0
White-stemmed pondweed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Northern watermilfoil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Water stargrass	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
Slender Naiad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Illinois pondweed	0	0	0	0	0	0	0	5	0	2	6	0	0	0	1	0	0	0	0

‡ = Treated in 2023

2023 Untreated Control Plots	C31	C32	C33	N05	N06	N09
Elodea spp.	54	9	38	4	8	2
Coontail	27	54	68	27	45	7
Eurasian watermilfoil	10	7	0	41	27	0
Curlyleaf pondweed	0	8	0	6	9	0
Native narrow-leaved pondweed spp.	0	0	0	3	0	8
White water buttercup	0	21	0	0	1	1
Chara/Nitella spp.	0	0	0	10	0	13
Richardson's pondweed	0	0	0	0	0	0
Flowering rush	0	0	0	0	1	0
White-stemmed pondweed	0	0	0	0	0	0
Northern watermilfoil	0	0	0	0	0	0
Water stargrass	0	0	0	0	0	0
Slender Naiad	0	0	0	0	0	0
Illinois pondweed	0	0	0	0	0	0

2022 Potential Treatment Plots	C05	C06	C12	C20	C29	C30	N01#	N02	N03#	N04#	N08#	N11#	N31#	N52#	N73	N77#	N78	N79
Elodea spp.	1	14	43	10	0	3	2	1	2	8	2	4	43	2	1	3	4	1
Coontail	17	10	22	0.3	0	3	18	5	10	4	2	14	37	14	6	2	0.1	17
Eurasian watermilfoil	2	2	2	0.3	2	2	9	0	2	18	3	44	10	10	0.1	19	0.2	0.0
Curlyleaf pondweed	12	0	0.5	0	0	0	1	1	4	3	16	3	13	0.3	17	0.3	0	2
Native narrow-leaved pondweed spp.	0	0	0	0	0	2	1	5	0.4	1	2	1	0	0.4	0	0.3	1	7
White water buttercup	15	16	0	3	0	0	0.2	0	0.2	9	0.3	1	1	0.3	0	1	0	0.3
Chara/Nitella spp.	0.3	0	0	0	0	0.2	6	0.2	0.3	0.2	1	1	0	4	0.1	0.4	0.1	0.2
Richardson's pondweed	0	0	0	0	0	0.4	0	0.1	0.2	1	0	0	0	0.1	0	0	0	0
Flowering rush	0	0	0	0	0	2	0	1	0	0.2	0	0	0	1	0	0.1	0	0
White-stemmed pondweed	0	0	0	0	0	0	0	1	0	0	3	0	0	0	0	0	0	0
Northern watermilfoil	0	0	0.3	0	0	0.1	1	0	0	0.2	0	0.2	0.2	1	0	0	0	0.2

#=Plots treated in 2022

	Untreated Control Plots						Potential Harvester Plots				
2022 Control Plots	C32	C31	C33	N05	N06	N09	N07	N10	N30	N37	N88
Elodea spp.	2	3	9	22	7	20	-	15	8	3	10
Coontail	33	4	18	22	21	4	-	16	12	5	20
Eurasian watermilfoil	0	1	0	37	42	0.1	-	30	20	5	10
Curlyleaf pondweed	20	4	1	4	18	3	-	26	30	9	41
Native narrow-leaved pondweed spp.	0	0	0	0.3	2	6	-	10	1	1	0.4
White water buttercup	20	0	0	0	0.3	1	-	1	7	6	2
Chara/Nitella spp.	0	0	0	0	0	0.4	-	0	0	1	0
Richardson's pondweed	0.3	0	0	0	0	0	-	0	0	0	0
Flowering rush	0	0	0	0	0.3	0	-	0	0.2	0	0
White-stemmed pondweed	0	0	0	0	0	0	-	0	0	0	4
Northern watermilfoil	0	0	0	0	0	0	-	0.1	1	0.1	1

2021 Potential Treatment Plots	C05	C06	C12	C20	C29	C30	N01^	N02^	N03^	N04^	N08^	N11	N31	N52	N73^	N77	N78	N79^
Elodea spp.	12.3	31.9	19.9	12.9	21.0	13.0	4.5	41.9	18.1	23.0	14.2	19.3	30.4	4.3	8.9	2.8	-	-
Coontail	33.0	19.2	28.9	0	0	3.3	5.6	24.5	29.8	9.7	14.9	9.7	4.4	18.8	25.3	0	-	-
Eurasian watermilfoil	11.0	2.5	1.3	2.0	0.2	0.1	10.3	19.8	14.9	3.2	22.4	19.0	1.8	2.4	7.1	2.6	-	-
Curlyleaf pondweed	12.2	0	2.5	0	0	0.1	1.3	0.4	2.6	5.7	16.6	18.7	27.3	0.7	4.4	0	-	-
Native narrow-leaved pondweed spp.	0	0	0	0	0	4.4	2.1	1.8	2.2	4.3	19.3	4.4	1.9	0.2	1.4	2.7	-	-
White water buttercup	20.8	23.4	0.4	0.4	0	0.4	11.6	0.1	0.5	16.1	13.7	2.6	0	0.2	6.2	0	-	-
Chara spp.	1.6	0	0.1	0	0.2	0.8	18.9	2.4	5.1	6.1	6.6	18.3	1.3	11.9	0.1	5.3	-	-
Richardson's pondweed	0	0	0	3.3	0	0	0	0	1.7	1.3	0	0	0.3	0.0	2.2	2.5	-	-
Flowering rush	0	0	0	0	0	0.1	0	0.6	0	0	0	0	0	2.3	0	0	-	-
White-stemmed pondweed	0	0	0	0	0	0	0	0.8	0	0	0.6	0	0	8.0	0	0	-	-
Northern watermilfoil	0	0	0	0	0	0	0.1	0.3	0	0	0	0	0	0	0	0	-	-

^=Plots treated in 2021; Unable to sample N78 and N79 due to boat troubles

2021 Untreated Control Plots	C31	C32	C33	N05	N06	N09
Elodea spp.	26.4	18.6	12.9	28.3	8.2	-
Coontail	46.6	43.6	62.1	26.3	44.6	-
Eurasian watermilfoil	10.3	5.6	0	14.5	25.2	-
Curlyleaf pondweed	0	0	0	1.0	10.1	-
Native narrow-leaved pondweed spp.	0	0	0	0.4	3.4	-
White water buttercup	0	25.5	0	0.4	0.2	-
Chara spp.	0	0	0.0	10.6	0	-
Richardson's pondweed	0	0	0	0	0	-
Flowering rush	0	0	0	0	0.4	-
White-stemmed pondweed	0	0	0	0	1.0	-
Northern watermilfoil	0	0	0	0	0	-

Unable to sample N09 due to boat troubles

Potential Treatment Plots 2020	C05	C06*	C12*	C20	C29	C30*	N01	N02	N03*	N04*	N08	N11	N31*	N52	N61	N73	N77	N78	N79
Elodea spp.	3.6	7.8	18.1	11.9	9.4	23.8	1.1	3.6	12.4	5.8	13.2	0.5	13.3	0	NA	0.1	0.6	5.3	1.8
Coontail	12.9	13.8	11.8	0	0	2.3	6.2	13.3	6.5	7.7	9.5	4.1	12.4	11.3	NA	11.6	3.3	0	12.1
Eurasian watermilfoil	0.1	0.6	1.2	0	0.7	1.1	0	0.8	2.8	4.9	0.1	0	1.5	0	NA	0.1	3.0	0	0.1
Curlyleaf pondweed	15.2	1.0	1.2	11.2	0	0	0.6	1.5	3.8	5.5	10.6	8.7	20.9	0.6	NA	4.0	0.2	0	0.1
Native narrow-leaved pondweed spp.	0	0	0	0	0	1.7	0.9	1.4	0.1	0	4.6	2.8	0.3	0.5	NA	0	0.2	9.4	1.2
White water buttercup	10.1	15.3	0.7	0	0	0.3	4.3	0	2.0	1.8	4.0	0.1	0.8	0	NA	1.0	0.0	0	0.1
Chara spp.	0.2	0	0	0	0	0.4	0.2	0.3	0	0.2	0.1	0	0.1	2.7	NA	0	0.1	0	0.6
Richardson's pondweed	0	0	0	0	0	0.1	0.1	0	0	0	0.1	0	0	0	NA	0	0.0	0	0.1
Flowering rush	0	0	0	0	0	0.1	0.1	0	0	0	0	0	0	0.2	NA	0	0.0	0	0
White-stemmed pondweed	0	0	0	0	0	0	0	0	0	0.6	0.8	0	1.5	0.2	NA	0	0.0	0	0
Northern watermilfoil	0	0	0	0	0	0	0.1	0	0.1	0	0	0	0	0	NA	0.1	0.0	0	0

* = plots treated in 2020

Untreated Control Plots 2020	C31	C32	C33	N05	N06	N09
Elodea spp.	4.7	11.0	7.6	1.6	12.5	0.5
Coontail	27.4	9.1	71.8	14.5	28.4	11.3
Eurasian watermilfoil	4.1	19.1	0	4.5	26.7	0
Curlyleaf pondweed	0.7	0	0	0	0.9	0
Native narrow-leaved pondweed spp.	0	0	0	1.7	1.2	1.6
White water buttercup	0	9.9	0	0	0	0
Chara spp.	0	0	0	0	0	0
Richardson's pondweed	0	0	0	0	0	0
Flowering rush	0	0	0	0	0	0
White-stemmed pondweed	0	0	0	0.2	1.0	0
Northern watermilfoil	0	0	0	0.6	0	0

Untreated Controls - First Surveyed in 2020

2019 Potential Treatment Plots	C05†	C06†	C12†	C20	C29†	C30†	N01	N02†	N03†	N04†	N08†	N11†	N31†	N52†	N61	N73†	N77†	N78†	N79†
Elodea spp.	7	19	24	30	31	5	6	40	0.2	19	3	9	12	1	NA	20	2	44	6
Coontail	18	14	17	0.2	0	2	17	27	10	23	18	53	12	12	NA	27	2	0.25	21
Eurasian watermilfoil	7	3	5	0	1	2	33	26	1	5	2	26	4	1	NA	26	3	6	0.3
Curlyleaf pondweed	10	0.1	4	10	0	0	0.03	0.1	2	5	7	1	28	1	NA	2	0	0	0.1
Native narrow-leaved pondweed spp.	0.1	0.2	0	0	0	3	1	1	0.3	0.1	1	2	0.4	1	NA	0	0	1	7
White water buttercup	6	5	0.1	0	0	0	1	0.1	0	0.4	0.5	0.6	0	0	NA	1	1	2	0.1
Chara spp.	1	0	0.1	0	0	0.2	0.1	0.1	0	0.1	0.2	0.3	0	1	NA	0	0	0	1
Richardson's pondweed	0	0	0	0.2	0	1	0.03	0	0	0	0.1	0.1	0	1	NA	0	0.2	0	0.1
Flowering rush	0	0	0	0	0	0.1	0	0	0	0	0	0.05	0	1	NA	0	0	0	0
White-stemmed pondweed	0	0	0	0	0	0	0	0.1	0	0	0.2	0	0	0	NA	0	0	0	0
Northern watermilfoil	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0	NA	0	0	0	0
Grass leaved pondweed	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	NA	0	0	0	0
Waternymph spp.	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	NA	0	0	0	0

† = plots treated in 2019