Noxon Rapids Reservoir and Cabinet Gorge Reservoir Herbicide Treatment Survey Report

2022 Season

Prepared for: The Sanders County Aquatic Invasive Plants Task Force

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THE **OUTSIDE** IS IN US ALL.

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Overview

Montana Fish, Wildlife, & Parks (FWP) partnered with The Sanders County Aquatic Invasive Plants Task Force to survey multiple plots within Noxon Rapids Reservoir and Cabinet Gorge Reservoir in 2022. This effort guides annual treatment of Eurasian watermilfoil (EWM) within the reservoirs. FWP surveyed eighteen known EWM plots under consideration for treatment, 4 plots on Noxon Reservoir that would potentially have harvester control work performed, and six untreated, control plots during the week of July 11th, 2022. Those locations, noted in Figure 1, cover the length of both reservoirs.

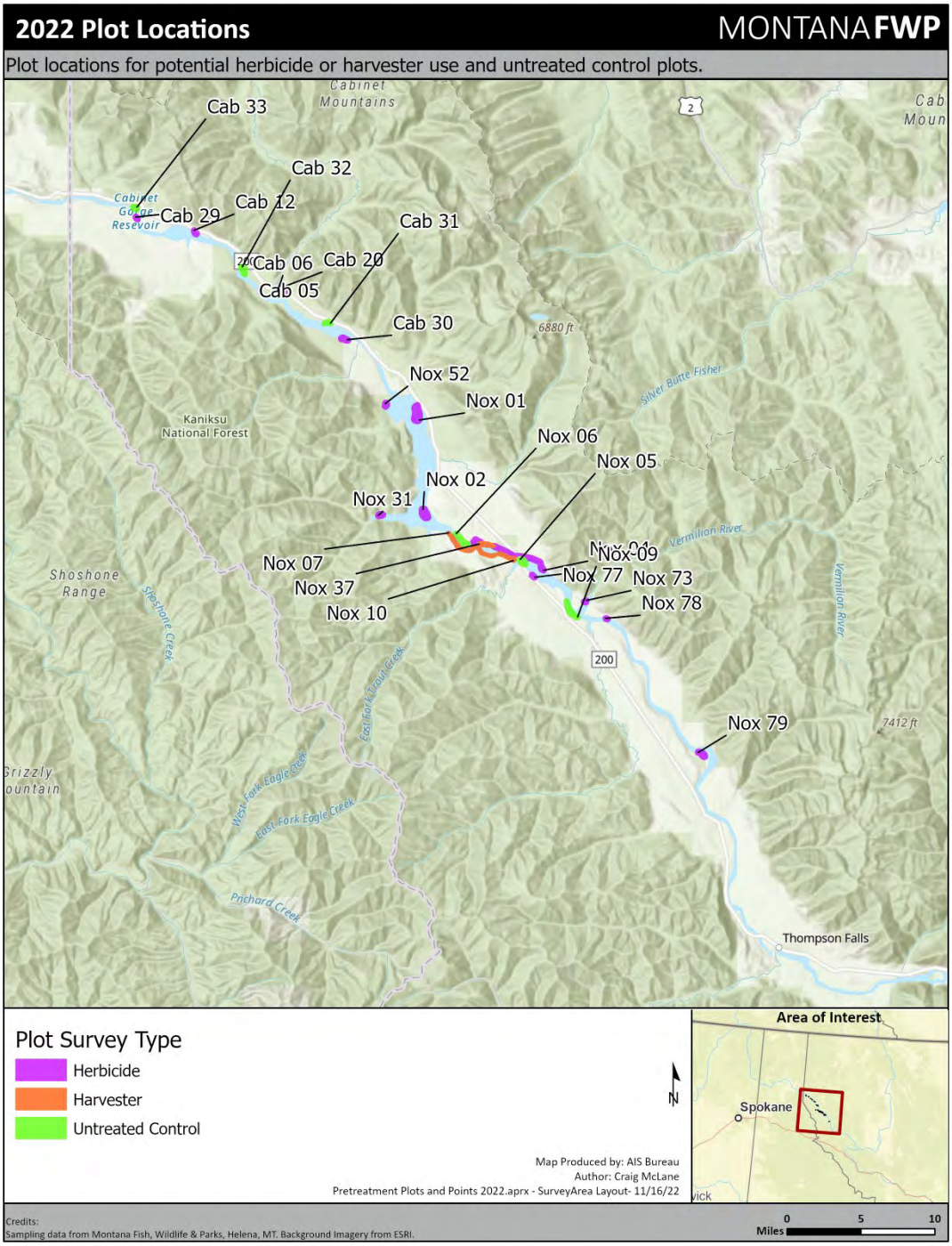


Figure 1. Locations of Survey Plots on Noxon Rapids and Cabinet Gorge Reservoirs, 2022.

Sampling Methods:

Within each plot FWP assigned and sampled a predetermined number of random points. Table 1 shows each plot, acreage, and number of points FWP sampled in 2022. FWP based plots sizes on previous survey efforts and adjusted them if it was determined that more points were needed. FWP based the number of points within each plot upon the acreage of the plot with larger plots having more points. Additionally, more complex plot shapes needed more points.

At each point, FWP technicians sampled with rakes attached to telescoping poles dropped to the bottom. Technicians collected one sample on each the starboard and port sides. Technicians spun the rake 720 degrees and then provided a percent of rake fullness. This method allows a consistent sampled area for each sample.

At the sample point level, these scores were then averaged together, and a cover class was assigned to each point. Like a Daubenmire Method of estimating cover percentages (Coulloudon et al, 1999), FWP utilized a predefined set of cover classes. The cover classes FWP used after 2018 are listed in Table 2. They varied from 2018, as 2018 cover classes seemed too coarse to detect changes among years.

These points were used to find the average canopy cover of each species within each plot. Potential areas of treatments were then determined based upon Eurasian watermilfoil and curlyleaf pondweed densities and are provided in the maps within the results section.

In addition, the results were compared among years. The percent change for each species was calculated for the current year compared to 2018 and subsequent years. Sampling in 2018 followed a different cover class set (Table 3) so data were normalized between 2018 and subsequent years to be comparable. The sampling methods after 2018 are the same so results are directly comparable.

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	27.8	28
C06	Potential Treat	4	21
C12	Potential Treat	1.5	19
C20	Potential Treat	1	14
C29	Potential Treat	0.5	13
C30	Potential Treat	2	39
C31	Control	3.7	12
C32	Control	3.7	13
C33	Control	6.4	10
N01	Potential Treat	69.7	52
N02	Potential Treat	44.1	38
N03	Potential Treat	2.3	19
N04	Potential Treat	13	32
N05	Control	22.0	10
N06	Control	13.6	13
N08	Potential Treat	15.9	41
N09	Control	16.8	12
N10	Harvester	13.1	13
N11	Potential Treat	17.3	26
N31	Potential Treat	6.1	23
N30	Harvester	6.0	9
N37	Harvester		11
N52	Potential Treat	3.2	13
N73	Potential Treat	2	15
N77	Potential Treat	0.5	21
N78	Potential Treat	0.3	13
N79	Potential Treat	4	20
N88	Harvester	7.5	9

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

Cover Class – 2019-2021	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

Table 3. Cover class and range of coverage for 2018 sampling efforts.

Cover Class - 2018	Range of Coverage	Midpoint of Range
0	0	0.0
1	1 to 20	10.5
2	21 to 40	30.5
3	41 to 60	50.5
4	61 to 80	70.5
5	81 to 100	90.5

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

Results:

Table 4 contains the survey results showing acreage of Eurasian watermilfoil within the potential treatment areas and untreated control plots in 2018-2022. Table 5 shows the estimated acreage of curlyleaf pondweed within each plot for 2020-2022. Table 6-10 show the 2018-2022 estimated cover based on rake fullness calculations.

Table 4. Pre-treatment acres of Eurasian watermilfoil within each plot (2018-2022).

Plot	Acres of EWM - 2022	Acres of EWM - 2021	Acres of EWM - 2020	Acres of EWM - 2019	Acres of EWM - 2018	Plot Location
Cab-05†	0	4.0	1.8	12.1	11.4	Southeast of Bull River Bridge on Hwy 200
Cab-06*†	0	0	3.7	4.2	6.1	Southwest of Bull River Bridge on Hwy 200
Cab-12*†‡	0	0	0.3	1.7	1.2	Big Eddy Campground
Cab-20‡	0	0	0.0	0.0	0.4	Bull River Campground
Cab-29†‡	0	0	1.2	0.5	0.8	Heron Boat Ramp
Cab-30*†‡	2.3	0	2.1	2.3	3.4	Noxon Community Park
Cab-31 (Untreated Control)	0.7	1.9	1.9	No Survey	No Survey	Northwest of Heron Bridge
Cab-32 (Untreated Control)	0	4.0	2.9	No Survey	No Survey	Downstream of Bull River at Power Lines
Cab-33 (Untreated Control)	0	0	0	No Survey	No Survey	North of Heron Boat Ramp
Nox-01#^†	41.2	35.2	0	34.0	12.3	Near Rock Island - Mid Lake
Nox-02^†	0	32.2	25.6	21.3	2.1	Mid Lake at entrance to Marten Creek Bay
Nox-03#^*†‡	1.7	1.3	1.2	1.4	2.3	North Shore Campground
Nox-04#^*†‡	5.9	1.3	5.9	7.7	6.2	North Shore Shoreline East of Hwy 200 Bridge
Nox-05 (Untreated Control)	12.4	3.6	1.2	No Survey	No Survey	South Shoreline E of Hwy 200 Bridge
Nox-06 (Untreated Control)	13.6	10.4	approx. 1	No Survey	No Survey	North shoreline West of Train Bridge
Nox-08#^†‡	0.9	8.5	0.3	8.2	10.6	North Shore Shoreline W of Hwy 200 Bridge
Nox-09 (Untreated Control)	0	No Survey (Boat Trouble)	0	No Survey	No Survey	South Shoreline across from Vermillion Bay
Nox-11#†	15.9	13.5	0.1	9.6	6.7	West of Train Bridge on N side
Nox-31#*†‡	2.5	0	2.1	3.7	2.3	Marten Creek Campground
Nox-52#†‡	2.8	0	0	0.8	1.9	South Shore Campground
Nox-61	No Survey	No Survey	No Survey	No Survey	0.0	Flatiron Fishing Access Site
Nox-73^†	0	.5	0.0	0.6	0.0	Vermillion Bay Boat Ramp
Nox-77#†‡	0.4	0	0.2	0.4	0.5	Trout Creek Boat Ramp
Nox-78†‡	0	0 (snorkel Survey estimate)	0.0	0.1	0.2	Kirby Gulch Boat Ramp
Nox-79^†‡	0	No Survey (Boat Trouble)	0.0	0.7	1.1	Finley Flats Campground

Year treated for Eurasian watermilfoil: #=2022; ^= 2021; * = 2020; † = 2019; ‡ = 2018

Table 5. Pre-treatment acres of curlyleaf pondweed within each plot for 2020 - 2022. No treatments targeting curlyleaf pondweed have been conducted.

Plot	Acres of curlyleaf pondweed - 2022	Acres of curlyleaf pondweed - 2021	Acres of curlyleaf pondweed - 2020	Plot Location
Cab-05†	8.9	9.0	8.1	SE of Bull River Bridge on Hwy 200
Cab-06*†	0	0.0	3.7	SW of Bull River Bridge on Hwy 200
Cab-12*†‡	0	0.0	1.1	Big Eddy Campground
Cab-20‡	0	0.0	0.4	Bull River Campground
Cab-29†‡	0	0.0	0	Heron Boat Ramp
Cab-30*†‡	0	0.0	0.4	Noxon Community Park
Cab-31 (Untreated Control)	0.9	0.0	0.6	NW of Heron Bridge
Cab-32 (Untreated Control)	5.1	0.8	0.0	Downstream Bull River at Power Lines
Cab-33 (Untreated Control)	0.1	0.0	0.0	North of Heron Boat Ramp
Nox-01#^†	0	11.5	17.8	Near Rock Island - Mid Lake
Nox-02^†	9.6	9.0	17.4	Mid Lake at entrance to Marten Creek Bay
Nox-03#^*†‡	1.7	0.2	1.2	North Shore Campground
Nox-04#^*†‡	3.3	4.9	5.9	North Shore Shoreline E of Hwy 200 Bridge
Nox-05 (Untreated Control)	0.5	0.5	0	South Shoreline E of Hwy 200 Bridge
Nox-06 (Untreated Control)	7.4	4.9	1.4	North shoreline West of Train Bridge
Nox-08#^†‡	5.4	7.9	7.9	North Shore Shoreline W of Hwy 200 Bridge
Nox-09 (Untreated Control)	0	No Survey (Boat Trouble)	0	South Shoreline across from Vermillion Bay
Nox-11#†	0	6.1	5.8	W of Train Bridge on N side
Nox-31#*†‡	3.6	3.9	4.4	Marten Creek Campground
Nox-52#†‡	0	0.0	0.1	South Shore Campground
Nox-61	No Survey	No Survey	No Survey	Flatiron Fishing Access Site
Nox-73^†	0.6	0.6	0.6	Vermillion Bay Boat Ramp
Nox-77#†‡	0	0.0	0.1	Trout Creek Boat Ramp
Nox-78†‡	0	0.0	0.0	Kirby Gulch Boat Ramp
Nox-79^†‡	0	No Survey (Boat Trouble)	0.1	Finley Flats Campground

Year treated for Eurasian watermilfoil: #=2022; ^= 2021; * = 2020; † = 2019; ‡ = 2018

Tables 6-13. Calculated % canopy cover (based on modified Daubenmire Method using rake fullness as a substitute of percent cover for 2018-2022.)

Table 6.	Potential Treatment Plots																	
2022	**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

Table 7.	Untreated Control Plots						Potential Harvester Plots				
2022	**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

Table 8. 2021	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

Untreated Controls

Table 9. 2021	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

Table 10. 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 Controls - First Surveyed in 2020

Table 11. 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

Table 12. 2019	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

Table 13. 2018	C05	C06	C12	C20	C29	C30	N01	N02	N03‡	N04‡	N08‡	N11	N31‡	N52‡	N61	N73	N77‡	N78‡	N79‡
Elodea spp.	19	30	11	24	7	7	25	8	2	11	6	12	15	2	0	10	2	17	9
Coontail	25	29	19	0	0	11	13	15	29	16	25	19	32	4	0	19	6	0	20
Eurasian watermilfoil	22	18	21	5	25	9	23	6	13	11	19	28	14	13	0	6	7	7	2
Curlyleaf pondweed	23	3	5	4	0	0.6	2	1	8	6	8	6	1	0	0	4	1	0	3
Leafy pondweed	0.5	3	1	2	0	7	6	7	0.5	6	14	15	14	4	0	0	1	7	2
White water buttercup	7	5	2	0.6	0	0	4	0	0	0	0	2	0	0	0	1	0	2	0
Chara spp.	5	0	1	0	0	3	3	0.5	0.5	8	9	8	0	20	0	4	3	0	0
Richardson's pondweed	0	2	2	1	0	9	4	7	2	2	2	3	0	5	0	1	3	0	0
Flowering rush	0	0	0	0	0	0.6	0.6	3	0	0	1	0	0	4	0	0	0	2	0.6
Northern watermilfoil	2	0	0	0	0	0	5	1	0.5	1	0	0.6	0	2	0	0.9	2	0	0.6
Grass leaved pondweed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Isoetes spp.	0.5	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alpine pondweed	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
Ribbon leaf pondweed	0	0	0	0	0	0	2	0	0	0	0	0	0	0.5	0	0	0	0	0.6
Sheathed pondweed	0	0.5	0	0	0	3	0	0	0.5	0	0	0	0	0	0	0	0	0	0

‡ = plots treated in 2018

Species level differences among plots in 2018 - 2022

Percent change among years were calculated and results are in the tables below for each species. It is difficult to make much inference of 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 local macrophyte community variations and responses to herbicide among years. Additionally, sample methods varied with the use of a rake attached to a rope in 2018 versus a pole-attached rake in subsequent years. More sampling points per plot were collected after 2018 to increase analysis power.

The pole-attached rake implemented in 2019 helped improve repeatability of sample area. A rope attached rake can have variations in sampled area due to distance the rake was tossed, the depth of the water thus changing the angle of retrieval, and the rate of retrieval. In general, the pole-attached method appears more precise, but anecdotal evidence suggests it underestimates plant cover at the plot level. Subsequent consistent sampling among years will improve the overall sampling effort's precision but accuracy needs to be further evaluated. Even if the rake-pole sampling method underestimates cover, inference of variations among years can still be made in the future. Three control plots for each reservoir were added in 2020 to help note changes in abundances due to environmental changes such as water temperature, water clarity, etc. Subsequent sampling on control plots will continue.

Tables 14-24 show the calculated rake fulness used to compare EWM abundance among years for each plot. Percent changes represent those differences between 2021 and 2022 as well as between 2018 and 2022.

Table 14. Myriophyllum spicatum
Eurasian watermilfoil

Plot	2018	2019	2020	2021	2022	2021-2022 % Change	2018-2022 % Change
C05	21.9	7.4	0.1	11.0	2.0	-82	-91
C06	17.9	3.4	0.6	2.5	2.2	-15	-88
C12	21.0	5.2	1.2	1.3	2.0	62	-90
C20	4.6	0.0	0.0	2.0	0.3	-87	-94
C29	24.8	0.9	0.7	0.2	1.5	928	-94
C30	8.7	1.9	1.1	0.1	1.9	1,572	-79
C31[c]	No Survey	No Survey	4.1	10.3	1.1	-89	N/A
C32[c]	No Survey	No Survey	19.1	5.6	0.0	-100	N/A
C33[c]	No Survey	No Survey	0.0	0.0	0.0	0	N/A
N01	23.0	33.1	0.0	10.3	9.0	-12	-61
N02	6.2	26.0	0.8	19.8	0.0	-100	-100
N03	13.3	0.5	2.8	14.9	2.5	-83	-81
N04	11.4	4.7	4.9	3.2	17.7	451	55
N05[c]	No Survey	No Survey	4.5	14.5	36.9	154	N/A
N06[c]	No Survey	No Survey	26.7	25.2	41.7	65	N/A
N08	19.4	1.9	0.1	22.4	2.7	-88	-86
N09[c]	No Survey	No Survey	0.0	-	0.0	N/A	N/A
N10[h]	No Survey	No Survey	No Survey	No Survey	29.7	N/A	N/A
N11	27.8	26.0	0.0	19.0	43.8	130	57
N30[h]	No Survey	No Survey	No Survey	No Survey	20.1	N/A	N/A
N31	14.1	4.2	1.5	1.8	10.1	449	-28
N37[h]	No Survey	No Survey	No Survey	No Survey	4.5	N/A	N/A
N52	12.8	0.8	0.0	2.4	9.6	308	-25
N73	6.1	25.9	0.1	7.1	0.0	-100	-100
N77	6.6	3.4	3.0	2.6	19.2	643	192
N78	7.0	5.6	0.0	No Survey	0.0	N/A	-100
N79	1.7	0.3	0.1	No Survey	0.0	N/A	-100
N88[h]	No Survey	No Survey	No Survey	No Survey	9.7	N/A	N/A

[c] = Control Plots (First surveyed in 2020)

[h] = Plots surveyed for potential of harvester use (First surveyed in 2022)

Table 15. Butomus umbellatus
Flowering rush

Plot	2018	2019	2020	2021	2022	2021-2022 % Change	2018-2022 % Change
C05	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C06	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C20	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C29	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C30	0.6	0.08	0.06	0.1	2.1	3758.5	287.9
C31[c]	No Survey	No Survey	0.0	0.0	0.0	0.0	N/A
C32[c]	No Survey	No Survey	0.0	0.0	0.0	0.0	N/A
C33[c]	No Survey	No Survey	0.0	0.0	0.0	0.0	N/A
N01	0.6	0.0	0.1	0.0	0.0	11.5	-94.8
N02	3.1	0.0	0.0	0.6	0.8	22.9	-75.3
N03	0.0	0.0	0.0	0.0	0.0	0.0	0.0
N04	0.0	0.0	0.0	0.0	0.2	Increase by 0.2	Increase by 0.2
N05[c]	No Survey	No Survey	0.0	0.0	0.0	0.0	N/A
N06[c]	No Survey	No Survey	0.0	0.4	0.3	-23.1	N/A
N08	1.1	0.0	0.0	0.0	0.0	0.0	-100.0
N09[c]	No Survey	No Survey	0.0	No Survey	0.0	N/A	N/A
N10[h]	No Survey	No Survey	No Survey	No Survey	0.0	N/A	N/A
N11	0.0	0.05	0.0	0.0	0.0	0.0	0.0
N30[H]	No Survey	No Survey	No Survey	No Survey	0.2	N/A	N/A
N31	0.0	0.0	0.0	0.0	0.0	0.0	0.0
N37[h]	No Survey	No Survey	No Survey	No Survey	0.0	N/A	N/A
N52	4.2	1.0	0.2	2.3	0.7	-71.3	-84.1
N73	0.0	0.0	0.0	0.0	0.0	0.0	0.0
N77	0.0	0.0	0.0	0.0	0.1	Increase by 0.1	Increase by 0.1
N78	1.8	0.0	0.0	No Survey	0.0	N/A	-100.0
N79	0.6	0.0	0.0	No Survey	0.0	N/A	-100.0
N88[h]	No Survey	No Survey	No Survey	No Survey	0.0	N/A	N/A

Table 16. Potamogeton crispus
Curlyleaf pondweed

Plot	2018	2019	2020	2021	2022	2021-2022 % Change	2018-2022 % Change
C05	23.3	10.1	15.2	12.2	11.8	-2.9	-49.2
C06	2.6	0.1	1.0	0.0	0.0	0.0	-100.0
C12	4.8	4.3	1.2	2.5	0.5	-78.9	-88.9
C20	3.5	9.7	11.2	0.0	0.0	0.0	-100.0
C29	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C30	0.6	0.0	0.0	0.1	0.0	-100.0	-100.0
C31[c]	No Survey	No Survey	0.7	0.0	4.4	Increase by 4.4	N/A
C32[c]	No Survey	No Survey	0.0	0.0	20.1	Increase by 20.1	N/A
C33[c]	No Survey	No Survey	0.0	0.0	1.0	0.0	N/A
N01	1.7	0.0	0.6	1.3	0.7	-43.8	-55.1
N02	1.1	0.1	1.5	0.4	0.7	70.9	-31.7
N03	7.9	1.5	3.8	2.6	3.5	32.9	-55.4
N04	6.3	4.8	5.5	5.7	3.0	-46.6	-51.7
N05[c]	No Survey	No Survey	0.0	1.0	4.3	323.9	N/A
N06[c]	No Survey	No Survey	0.9	10.1	17.6	74.8	N/A
N08	7.6	6.5	10.6	16.6	15.6	-6.1	106.2
N09[c]	No Survey	No Survey	0.0	No Survey	2.7	N/A	N/A
N10[h]	No Survey	No Survey	No Survey	No Survey	26.5	N/A	N/A
N11	6.1	0.8	8.7	18.7	2.8	-85.0	-54.0
N30[h]	No Survey	No Survey	No Survey	No Survey	29.7	N/A	N/A
N31	0.6	28.2	20.9	27.3	13.4	-50.9	2328.7
N37[h]	No Survey	No Survey	No Survey	No Survey	9.1	N/A	N/A
N52	0.0	1.0	0.6	0.7	0.3	-61.5	0.0
N73	3.5	2.0	4.0	4.4	16.8	281.4	0.0
N77	1.0	0.0	0.2	0.0	0.3	Increase by 0.3	-64.6
N78	0.0	0.0	0.0	No Survey	0.0	N/A	0.0
N79	2.8	0.1	0.1	No Survey	2.1	N/A	-22.9
N88[h]	No Survey	No Survey	No Survey	No Survey	41.2	N/A	N/A

[c] = Control Plots (First surveyed in 2020)

[h] = Plots surveyed for potential of harvester use (First surveyed in 2022)

Table 17. Ceratophyllum demersum
Coontail

Plot	2018	2019	2020	2021	2022	2021-2022 % Change	2018-2022 % Change
C05	25.4	18.2	12.9	33.0	17.0	-48.5	-33.1
C06	28.9	14.5	13.8	19.2	9.9	-48.8	-65.8
C12	18.9	17.3	11.8	28.9	21.6	-25.2	14.0
C20	0.0	0.2	0.0	0.0	0.3	Increase by 0.3	Increase by 0.3
C29	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C30	10.7	1.6	2.3	3.3	3.4	2.1	-68.3
C31[c]	No Survey	No Survey	27.4	46.6	3.6	-92.2	N/A
C32[c]	No Survey	No Survey	9.1	43.6	32.8	-24.8	N/A
C33[c]	No Survey	No Survey	71.8	62.1	18.0	-71.0	N/A
N01	12.8	17.4	6.2	5.6	17.9	219.8	39.9
N02	15.4	27.0	13.3	24.5	4.8	-80.4	-68.9
N03	29.0	10.2	6.5	29.8	9.8	-67.2	-66.4
N04	15.8	22.7	7.7	9.7	4.4	-54.9	-72.2
N05[c]	No Survey	No Survey	14.5	26.3	22.3	-15.2	N/A
N06[c]	No Survey	No Survey	28.4	44.6	21.3	-52.3	N/A
N08	24.6	18.3	9.5	14.9	2.0	-86.8	-92.0
N09[c]	No Survey	No Survey	11.3	-	4.2	N/A	N/A
N10[h]	No Survey	No Survey	No Survey	No Survey	16.3	N/A	N/A
N11	18.8	53.1	4.1	9.7	14.2	46.5	-24.1
N30[h]	No Survey	No Survey	No Survey	No Survey	12.4	N/A	N/A
N31	32.1	12.4	12.4	4.4	37.0	747.9	15.6
N37[h]	No Survey	No Survey	No Survey	No Survey	5.1	N/A	N/A
N52	4.2	12.2	11.3	18.8	13.9	-26.4	233.8
N73	18.8	26.7	11.6	25.3	6.0	-76.2	-67.9
N77	5.7	1.5	3.3	0.0	1.9	Increase by 1.3	-66.1
N78	0.0	0.3	0.0	No Survey	0.1	N/A	Increase by 0.1
N79	20.2	20.9	12.1	No Survey	16.8	N/A	-16.7
N88[h]	No Survey	No Survey	No Survey	No Survey	19.7	N/A	N/A

[c] = Control Plots (First surveyed in 2020)

[h] = Plots surveyed for potential of harvester use (First surveyed in 2022)

Table 18. Chara species
Muskgrass species

Plot	2018	2019	2020	2021	2022	2021-2022 % Change	2018-2022 % Change
C05	4.5	0.9	0.2	1.6	0.3	-78.5	-92.5
C06	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C12	1.4	0.1	0.0	0.1	0.0	-100.0	-100.0
C20	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C29	0.0	0.0	0.0	0.2	0.0	-100.0	0.0
C30	3.3	0.2	0.4	0.8	0.2	-77.1	-94.1
C31[c]	No Survey	No Survey	0.0	0.0	0.0	0.0	N/A
C32[c]	No Survey	No Survey	0.0	0.0	0.0	0.0	N/A
C33[c]	No Survey	No Survey	0.0	0.0	0.0	0.0	N/A
N01	3.3	0.1	0.2	18.9	5.5	-70.8	66.5
N02	0.5	0.1	0.3	2.4	0.2	-92.8	-67.2
N03	0.5	0.0	0.0	5.1	0.3	-94.8	-46.8
N04	8.2	0.1	0.2	6.1	0.2	-97.4	-98.1
N05[c]	No Survey	No Survey	0.0	10.6	0.0	-100.0	N/A
N06[c]	No Survey	No Survey	0.0	0.0	0.0	0.0	N/A
N08	8.6	0.2	0.1	6.6	1.0	-85.6	-88.9
N09[c]	No Survey	No Survey	0.0	-	0.4	N/A	N/A
N10[h]	No Survey	No Survey	No Survey	No Survey	0.0	N/A	N/A
N11	8.0	0.3	0.0	18.3	0.8	-95.7	-90.1
N30[h]	No Survey	No Survey	No Survey	No Survey	0.0	N/A	N/A
N31	0.0	0.0	0.1	1.3	0.0	-100.0	0.0
N37[h]	No Survey	No Survey	No Survey	No Survey	0.7	N/A	N/A
N52	19.8	1.5	2.7	11.9	3.8	-68.3	-80.9
N73	4.3	0.0	0.0	0.1	0.1	0.0	-97.7
N77	2.9	0.0	0.1	5.3	0.4	-92.3	-85.7
N78	0.0	0.0	0.0	No Survey	0.1	N/A	Increase by 0.1
N79	0.0	0.5	0.6	No Survey	0.2	N/A	Increase by 0.2
N88[h]	No Survey	No Survey	No Survey	No Survey	0.0	N/A	N/A

Table 19. Elodea species
Waterweed species

Plot	2018	2019	2020	2021	2022	2021-2022 % Change	2018-2022 % Change
C05	19.4	6.6	3.6	12.3	0.8	-93.6	-95.9
C06	29.9	18.7	7.8	31.9	13.7	-57.1	-54.2
C12	11.1	24.3	18.1	19.9	43.2	116.9	290.6
C20	24.3	30.0	11.9	12.9	10.2	-21.4	-58.2
C29	6.9	30.6	9.4	21.0	0.5	-97.8	-93.3
C30	6.6	5.3	23.8	13.0	3.4	-73.9	-48.4
C31[c]	No Survey	No Survey	4.7	26.4	2.6	-90.0	N/A
C32[c]	No Survey	No Survey	11.0	18.6	2.3	-87.5	N/A
C33[c]	No Survey	No Survey	7.6	12.9	9.0	-30.5	N/A
N01	25.1	5.8	1.1	4.5	2.1	-52.9	-91.6
N02	8.3	39.6	3.6	41.9	0.5	-98.7	-93.6
N03	2.0	0.2	12.4	18.1	2.5	-86.2	24.3
N04	10.8	18.5	5.8	23.0	8.5	-63.2	-21.4
N05[c]	No Survey	No Survey	1.6	28.3	21.6	-23.5	N/A
N06[c]	No Survey	No Survey	12.5	8.2	7.1	-12.5	N/A
N08	6.1	3.0	13.2	14.2	1.7	-88.4	-72.8
N09[c]	No Survey	No Survey	0.5	-	20.3	N/A	N/A
N10[h]	No Survey	No Survey	No Survey	No Survey	15.5	N/A	N/A
N11	11.9	9.4	0.5	19.3	4.1	-79.0	-65.9
N30[h]	No Survey	No Survey	No Survey	No Survey	7.9	N/A	N/A
N31	14.5	11.6	13.3	30.4	43.0	41.2	196.3
N37[h]	No Survey	No Survey	No Survey	No Survey	3.2	N/A	N/A
N52	1.6	0.5	0.0	4.3	1.9	-55.2	22.8
N73	10.3	20.0	0.1	8.9	0.9	-89.8	-91.1
N77	1.9	1.7	0.6	2.8	2.7	-2.6	41.7
N78	17.0	43.6	5.3	No Survey	4.5	N/A	-73.6
N79	8.6	5.9	1.8	No Survey	0.6	N/A	-92.9
N88[h]	No Survey	No Survey	No Survey	No Survey	9.9	N/A	N/A

[c] = Control Plots (First surveyed in 2020)

[h] = Plots surveyed for potential of harvester use (First surveyed in 2022)

Table 20. Myriophyllum sibiricum
Northern watermilfoil

Plot	2018	2019	2020	2021	2022	2021-2022 % Change	2018-2022 % Change
C05	1.6	0.0	0.0	0.0	0.0	0.0	-100.0
C06	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C12	0.0	0.0	0.0	0.0	0.3	Increase by 0.3	Increase by 0.3
C20	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C29	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C30	0.0	0.0	0.0	0.0	0.1	Increase by 0.1	Increase by 0.1
C31[c]	No Survey	No Survey	0.0	0.0	0.0	0.0	N/A
C32[c]	No Survey	No Survey	0.0	0.0	0.0	0.0	N/A
C33[c]	No Survey	No Survey	0.0	0.0	0.0	0.0	N/A
N01	4.9	0.0	0.1	0.1	0.7	1051.5	-85.5
N02	1.1	0.0	0.0	0.3	0.0	-100.0	-100.0
N03	0.5	0.0	0.1	0.0	0.0	0.0	-100.0
N04	1.1	0.0	0.0	0.0	0.2	Increase by 0.2	-85.0
N05[c]	No Survey	No Survey	0.6	0.0	0.0	0.0	N/A
N06[c]	No Survey	No Survey	0.0	0.0	0.0	0.0	N/A
N08	0.0	0.0	0.0	0.0	0.0	0.0	0.0
N09[c]	No Survey	No Survey	0.0	-	0.0	N/A	N/A
N10[h]	No Survey	No Survey	No Survey	No Survey	0.1	N/A	N/A
N11	0.6	0.2	0.0	0.0	0.2	Increase by 0.2	-64.9
N30[h]	No Survey	No Survey	No Survey	No Survey	1.0	N/A	N/A
N31	0.0	0.0	0.0	0.0	0.2	Increase by 0.2	Increase by 0.2
N37[h]	No Survey	No Survey	No Survey	No Survey	0.1	N/A	N/A
N52	1.6	0.0	0.0	0.0	0.8	Increase by 0.8	-50.9
N73	0.9	0.0	0.1	0.0	0.0	0.0	-100.0
N77	1.9	0.0	0.0	0.0	0.0	0.0	-100.0
N78	0.0	0.0	0.0	No Survey	0.0	N/A	0.0
N79	0.6	0.0	0.0	No Survey	0.2	N/A	-67.9
N88[h]	No Survey	No Survey	No Survey	No Survey	1.2	N/A	N/A

Table 21. Narrow leaved *Potamogeton* species
Pondweed species (sago, leafy, etc.)

Plot	2018	2019	2020	2021	2022	2021-2022 % Change	2018-2022 % Change
C05	0.5	0.1	0.0	0.0	0.0	-100.0	-100.0
C06	2.6	0.2	0.0	0.0	0.0	0.0	-100.0
C12	1.4	0.0	0.0	0.0	0.0	0.0	-100.0
C20	1.8	0.0	0.0	0.0	0.0	0.0	-100.0
C29	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C30	7.0	2.7	1.7	4.4	2.5	-43.1	-64.5
C31[c]	No Survey	No Survey	0.0	0.0	0.0	0.0	N/A
C32[c]	No Survey	No Survey	0.0	0.0	0.0	0.0	N/A
C33[c]	No Survey	No Survey	0.0	0.0	0.0	0.0	N/A
N01	6.0	1.0	0.9	2.1	1.3	-39.9	-78.8
N02	6.8	1.4	1.4	1.8	4.5	144.0	-34.0
N03	0.5	0.3	0.1	2.2	0.4	-80.7	-15.3
N04	5.7	0.1	0.0	4.3	1.4	-67.1	-75.0
N05[c]	No Survey	No Survey	1.7	0.4	0.3	-15.5	N/A
N06[c]	No Survey	No Survey	1.2	3.4	1.7	-50.7	N/A
N08	14.1	0.8	4.6	19.3	2.0	-89.5	-85.6
N09[c]	No Survey	No Survey	1.6	-	5.8	N/A	N/A
N10[h]	No Survey	No Survey	No Survey	No Survey	9.6	N/A	N/A
N11	15.1	1.8	2.8	4.4	1.4	-67.7	-90.6
N30[h]	No Survey	No Survey	No Survey	No Survey	0.8	N/A	N/A
N31	13.8	0.4	0.3	1.9	0.0	-100.0	-100.0
N37[h]	No Survey	No Survey	No Survey	No Survey	0.9	N/A	N/A
N52	4.2	0.5	0.5	0.2	0.4	159.0	-90.8
N73	0.0	0.0	0.0	1.4	0.0	-100.0	0.0
N77	1.0	0.0	0.2	2.7	0.3	-89.6	-70.1
N78	7.0	0.8	9.4	No Survey	0.9	N/A	-86.6
N79	2.2	6.8	1.2	No Survey	6.6	N/A	205.2
N8[h]	No Survey	No Survey	No Survey	No Survey	0.4	N/A	N/A

[c] = Control Plots (First surveyed in 2020)

[h] = Plots surveyed for potential of harvester use (First surveyed in 2022)

Table 22. Potamogeton praelongus
White-stemmed pondweed

Plot	2018	2019	2020	2021	2022	2021-2022 % Change	2018-2022 % Change
C05	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C06	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C20	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C29	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C30	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C31[c]	No Survey	No Survey	0.0	0.0	0.0	0.0	N/A
C32[c]	No Survey	No Survey	0.0	0.0	0.0	0.0	N/A
C33[c]	No Survey	No Survey	0.0	0.0	0.0	0.0	N/A
N01	0.0	0.0	0.0	0.0	0.0	-100.0	0.0
N02	0.0	0.1	0.0	0.8	1.1	35.0	Increase by 1.1
N03	0.0	0.0	0.0	0.0	0.0	0.0	0.0
N04	0.0	0.0	0.6	0.0	0.0	0.0	0.0
N05[c]	No Survey	No Survey	0.2	0.0	0.0	0.0	N/A
N06[c]	No Survey	No Survey	1.0	1.0	0.0	-100.0	N/A
N08	0.0	0.2	0.8	0.6	2.5	299.8	Increase by 2.5
N09[c]	No Survey	No Survey	0.0	-	0.0	N/A	N/A
N10[h]	No Survey	No Survey	No Survey	No Survey	0.0	N/A	N/A
N11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
N30[h]	No Survey	No Survey	No Survey	No Survey	0.0	N/A	N/A
N31	0.0	0.0	1.5	0.0	0.0	0.0	0.0
N37[h]	No Survey	No Survey	No Survey	No Survey	0.0	N/A	N/A
N52	0.0	0.0	0.2	8.0	0.0	-100.0	0.0
N73	0.0	0.0	0.0	0.0	0.0	0.0	0.0
N77	0.0	0.0	0.0	0.0	0.0	0.0	0.0
N78	0.0	0.0	0.0	No Survey	0.0	N/A	0.0
N79	0.0	0.0	0.0	No Survey	0.0	N/A	0.0
N88[h]	No Survey	No Survey	No Survey	No Survey	3.6	N/A	N/A

Table 23. Potamogeton richardsonii
Richardson's pondweed

Plot	2018	2019	2020	2021	2022	2021-2022 % Change	2018-2022 % Change
C05	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C06	1.6	0.0	0.0	0.0	0.0	0.0	-100.0
C12	2.1	0.0	0.0	0.0	0.0	0.0	-100.0
C20	1.2	0.2	0.0	3.3	0.0	-100.0	-100.0
C29	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C30	8.7	1.2	0.1	0.0	0.4	Increase by 0.4	-95.1
C31[c]	No Survey	No Survey	0.0	0.0	0.0	0.0	N/A
C32[c]	No Survey	No Survey	0.0	0.0	0.3	Increase by 0.3	N/A
C33[c]	No Survey	No Survey	0.0	0.0	0.0	0.0	N/A
N01	3.9	0.0	0.1	0.0	0.0	Increase by 0.03	-99.3
N02	6.7	0.0	0.0	0.0	0.1	Increase by 0.1	-98.6
N03	1.5	0.0	0.0	1.7	0.2	-89.1	-87.5
N04	1.6	0.0	0.0	1.3	0.7	-44.5	-53.1
N05[c]	No Survey	No Survey	0.0	0.0	0.0	0.0	N/A
N06[c]	No Survey	No Survey	0.0	0.0	0.0	0.0	N/A
N08	2.2	0.1	0.1	0.0	0.0	0.0	-100.0
N09[c]	No Survey	No Survey	0.0	No Survey	0.0	N/A	N/A
N10[h]	No Survey	No Survey	No Survey	No Survey	0.0	N/A	N/A
N11	3.3	0.1	0.0	0.0	0.0	0.0	-100.0
N30[h]	No Survey	No Survey	No Survey	No Survey	0.0	N/A	N/A
N31	0.0	0.0	0.0	0.3	0.0	-100.0	0.0
N37[h]	No Survey	No Survey	No Survey	No Survey	0.0	N/A	N/A
N52	4.7	1.0	0.0	0.0	0.1	Increase by 0.1	-97.6
N73	0.9	0.0	0.0	2.2	0.0	-100.0	-100.0
N77	2.8	0.2	0.0	2.5	0.0	-100.0	-100.0
N78	0.0	0.0	0.0	No Survey	0.0	N/A	0.0
N79	0.0	0.1	0.1	No Survey	0.0	N/A	0.0
N88[h]	No Survey	No Survey	No Survey	No Survey	0.0	N/A	N/A

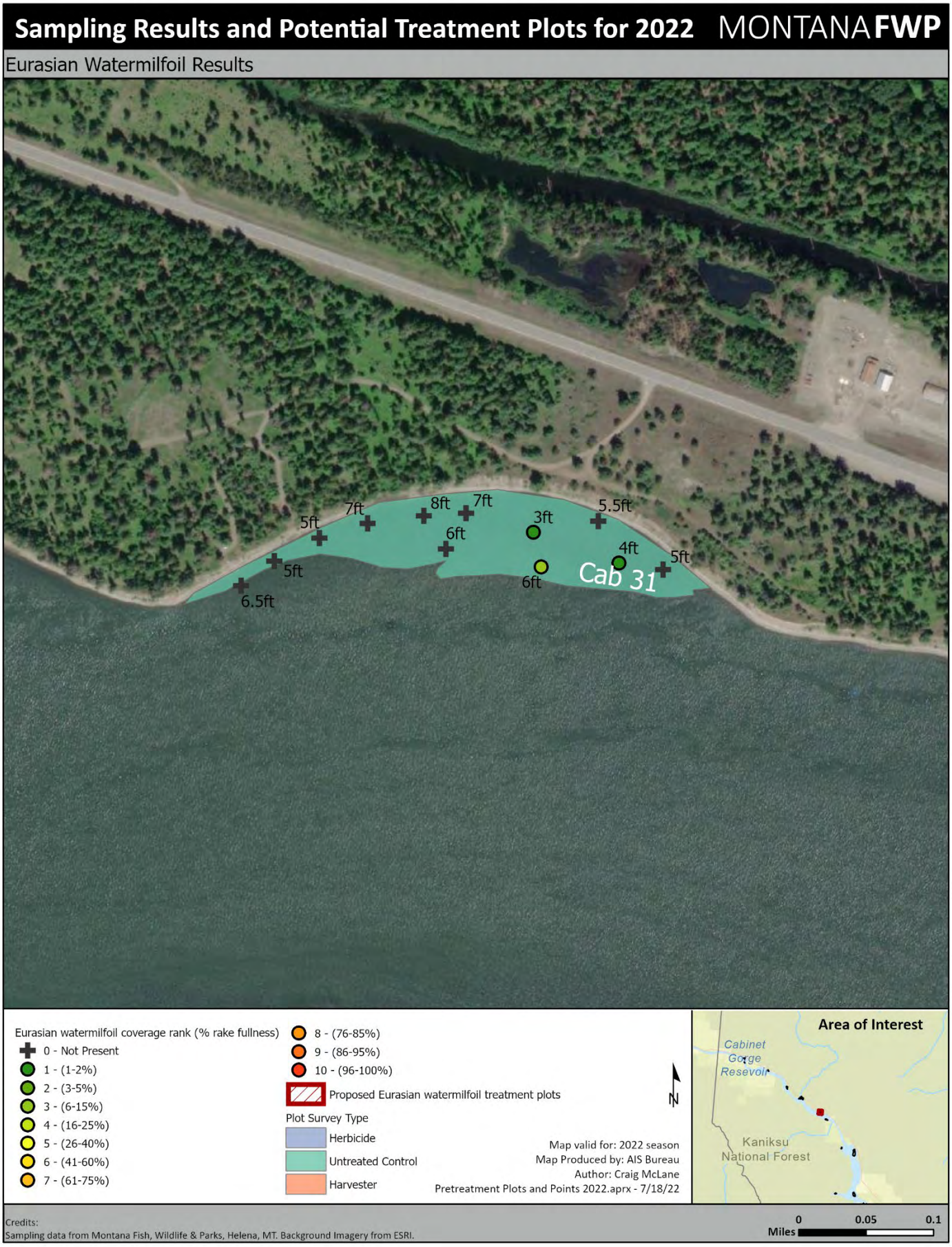
[c] = Control Plots (First surveyed in 2020)

[h] = Plots surveyed for potential of harvester use (First surveyed in 2022)

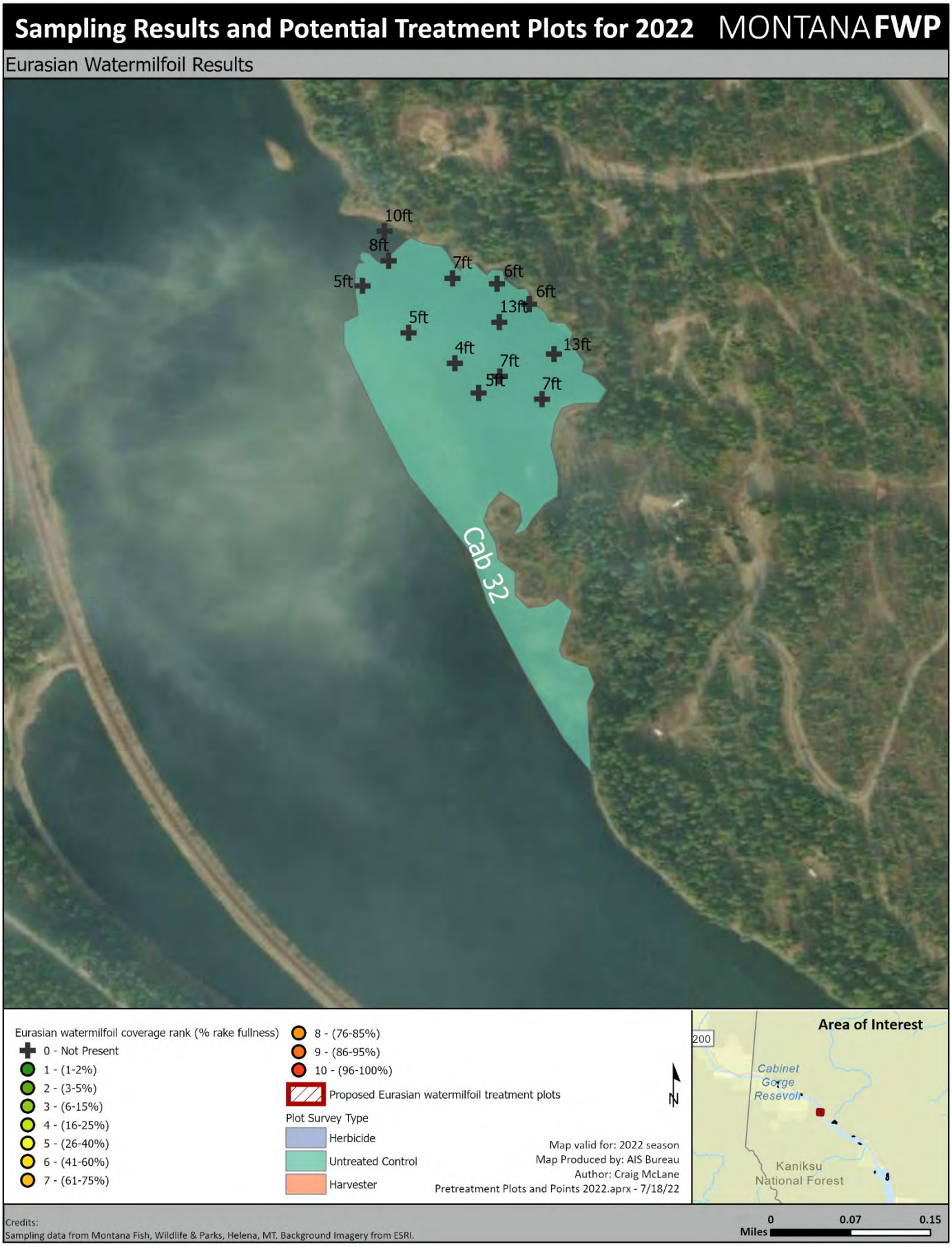
Table 24. Ranunculus aquatilis
White waterbuttercup

Plot	2018	2019	2020	2021	2022	2021-2022 % Change	2018-2022 % Change
C05	7.3	5.9	10.1	20.8	14.9	-28.0	104.8
C06	4.7	4.7	15.3	23.4	16.4	-30.0	246.6
C12	2.0	0.1	0.7	0.4	0.0	-100.0	-100.0
C20	0.6	0.0	0.0	0.4	3.0	739.0	410.6
C29	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C30	0.0	0.0	0.3	0.4	0.0	-89.7	Increase by 0.04
C31[c]	No Survey	No Survey	0.0	0.0	0.0	0.0	N/A
C32[c]	No Survey	No Survey	9.9	25.5	20.4	-20.1	N/A
C33[c]	No Survey	No Survey	0.0	0.0	0.0	0.0	N/A
N01	3.9	0.9	4.3	11.6	0.2	-98.1	-94.2
N02	0.0	0.1	0.0	0.1	0.0	-100.0	0.0
N03	0.1	0.0	2.0	0.5	0.2	-64.7	86.8
N04	0.0	0.4	1.8	16.1	8.7	-46.1	Increase by 8.7
N05[c]	No Survey	No Survey	0.0	0.4	0.0	-100.0	N/A
N06[c]	No Survey	No Survey	0.0	0.2	0.3	82.1	N/A
N08	0.0	0.5	4.0	13.7	0.3	-97.9	Increase by 0.3
N09[c]	No Survey	No Survey	0.0	No Survey	0.8	N/A	N/A
N10	No Survey	No Survey	No Survey	No Survey	1.0	N/A	N/A
N11	2.2	0.6	0.1	2.6	0.7	-74.5	-70.2
N30	No Survey	No Survey	No Survey	No Survey	6.6	N/A	N/A
N31	0.0	0.0	0.8	0.0	1.4	Increase by 1.4	Increase by 1.4
N37	No Survey	No Survey	No Survey	No Survey	6.5	N/A	N/A
N52	0.0	0.0	0.0	0.2	0.3	82.1	Increase by 0.3
N73	0.9	0.5	1.0	6.2	0.5	-92.3	-45.9
N77	0.0	1.2	0.0	0.0	0.9	Increase by 0.9	Increase by 0.9
N78	1.8	1.9	0.0	No Survey	0.0	N/A	-100.0
N79	0.0	0.1	0.1	No Survey	0.3	N/A	Increase by 0.25
N88	No Survey	No Survey	No Survey	No Survey	1.5	N/A	N/A

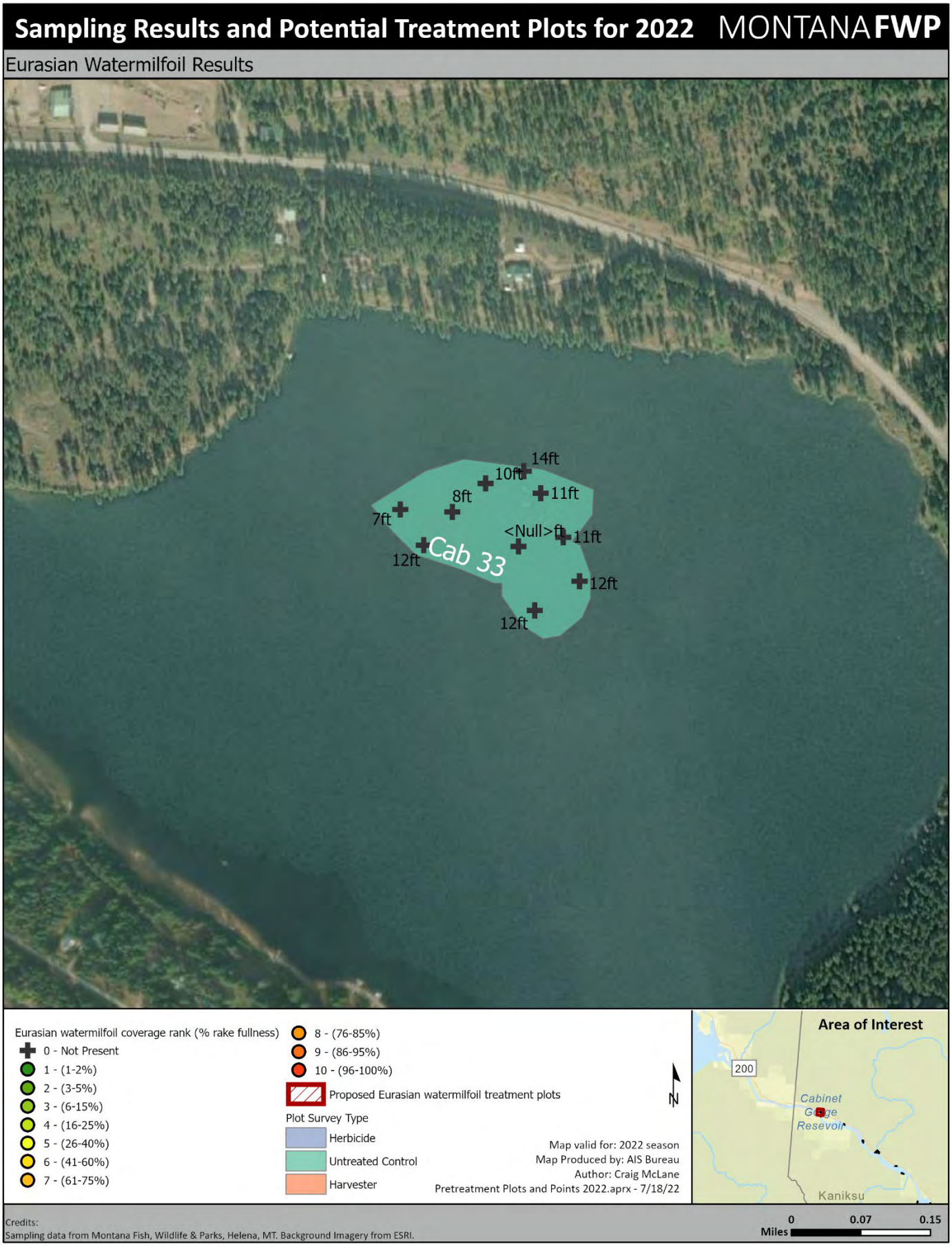
Untreated Control Plot Maps – Eurasian Watermilfoil (*Myriophyllum spicatum*)


Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Eurasian Watermilfoil Results
5ft
7ft
8ft
7ft
6ft
3ft
5.5ft
4ft
5ft
6ft
5ft
6.5ft
Cab 31
Eurasian watermilfoil coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed Eurasian watermilfoil treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
N
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
Cabinet Gorge Reservoir
Kaniksu National Forest
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0
0.05
0.1
Miles

Cab-31


Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Eurasian Watermilfoil Results
10ft
8ft
7ft
6ft
5ft
6ft
13ft
5ft
4ft
13ft
7ft
5ft
7ft
Cab 32
Eurasian watermilfoil coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed Eurasian watermilfoil treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
N
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
200
Cabinet Gorge Resevoir
Kaniksu National Forest
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0
0.07
0.15
Miles

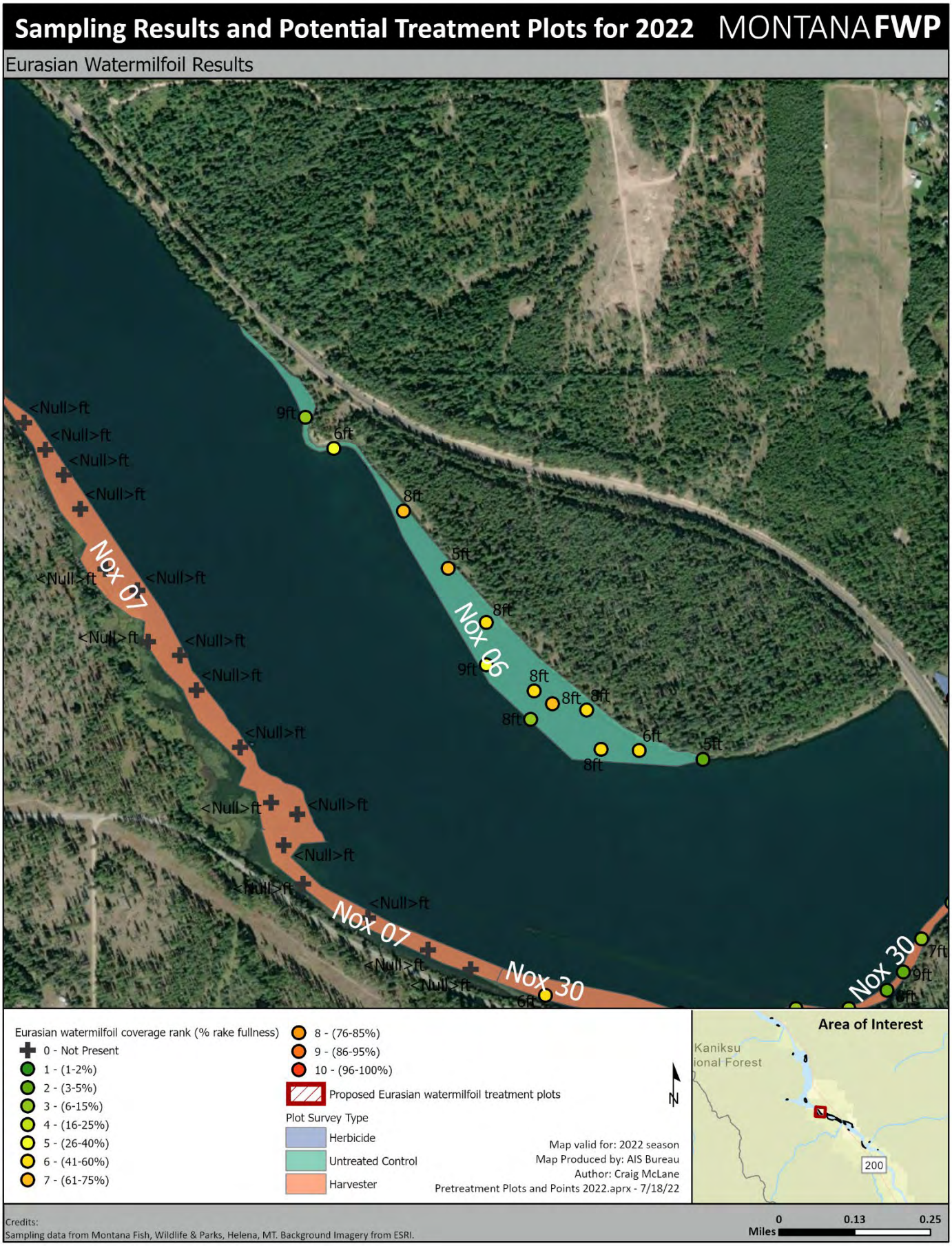
Cab-32


Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Eurasian Watermilfoil Results
14ft
10ft
11ft
8ft
7ft
<Null>ft
11ft
12ft
Cab 33
12ft
12ft
Eurasian watermilfoil coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed Eurasian watermilfoil treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
N
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
200
Cabinet Gorge Reservoir
Kaniksu
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0
0.07
0.15
Miles

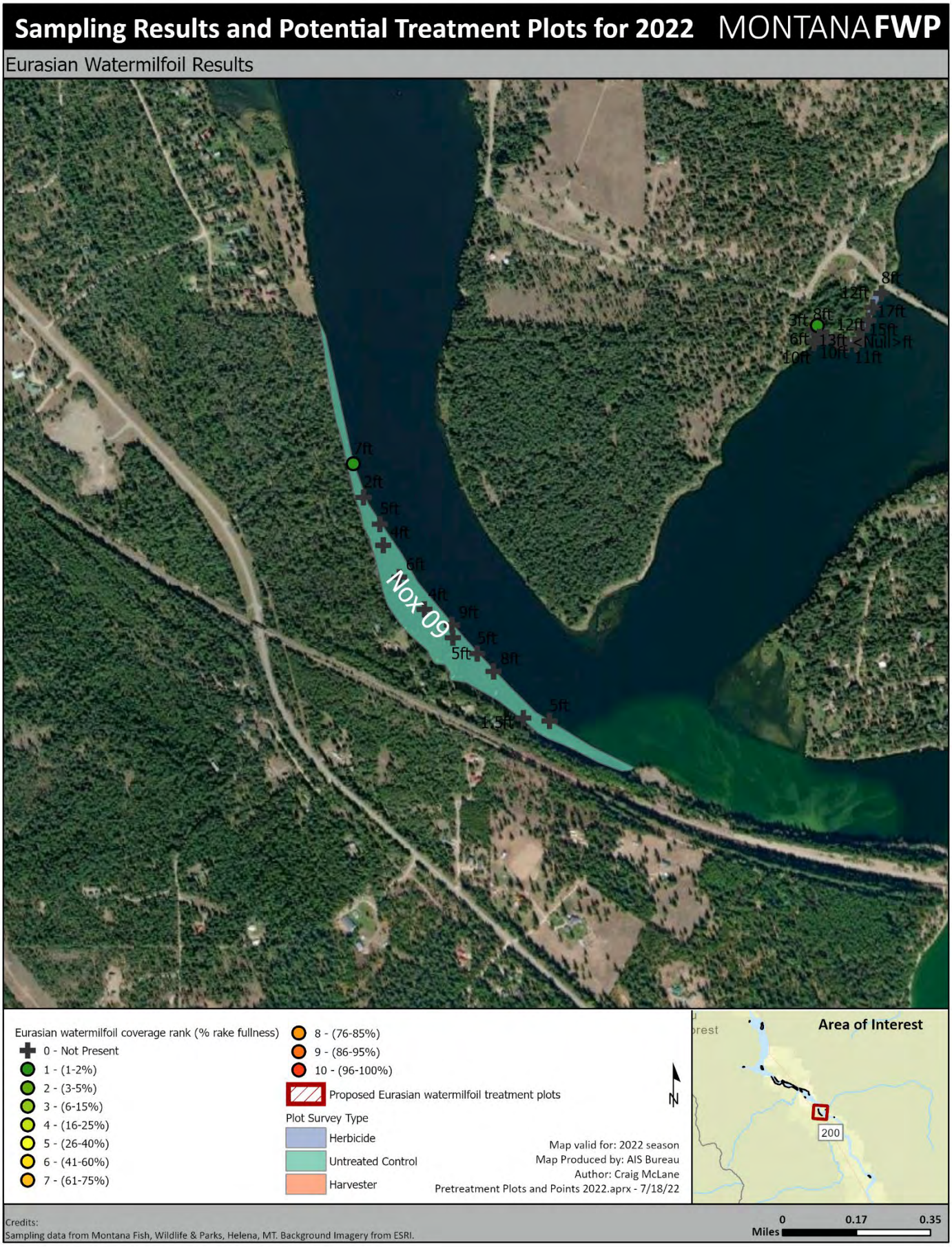
Cab-33


Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Eurasian Watermilfoil Results
Nox 04
Nox 04
Nox 05
8ft
7ft
6ft
7ft
6ft
9ft
12ft
3ft
12ft
5ft
9ft
9ft
3ft
7ft
8ft
9ft
Eurasian watermilfoil coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed Eurasian watermilfoil treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
N
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
200
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0
0.05
0.1
Miles

Nox-05

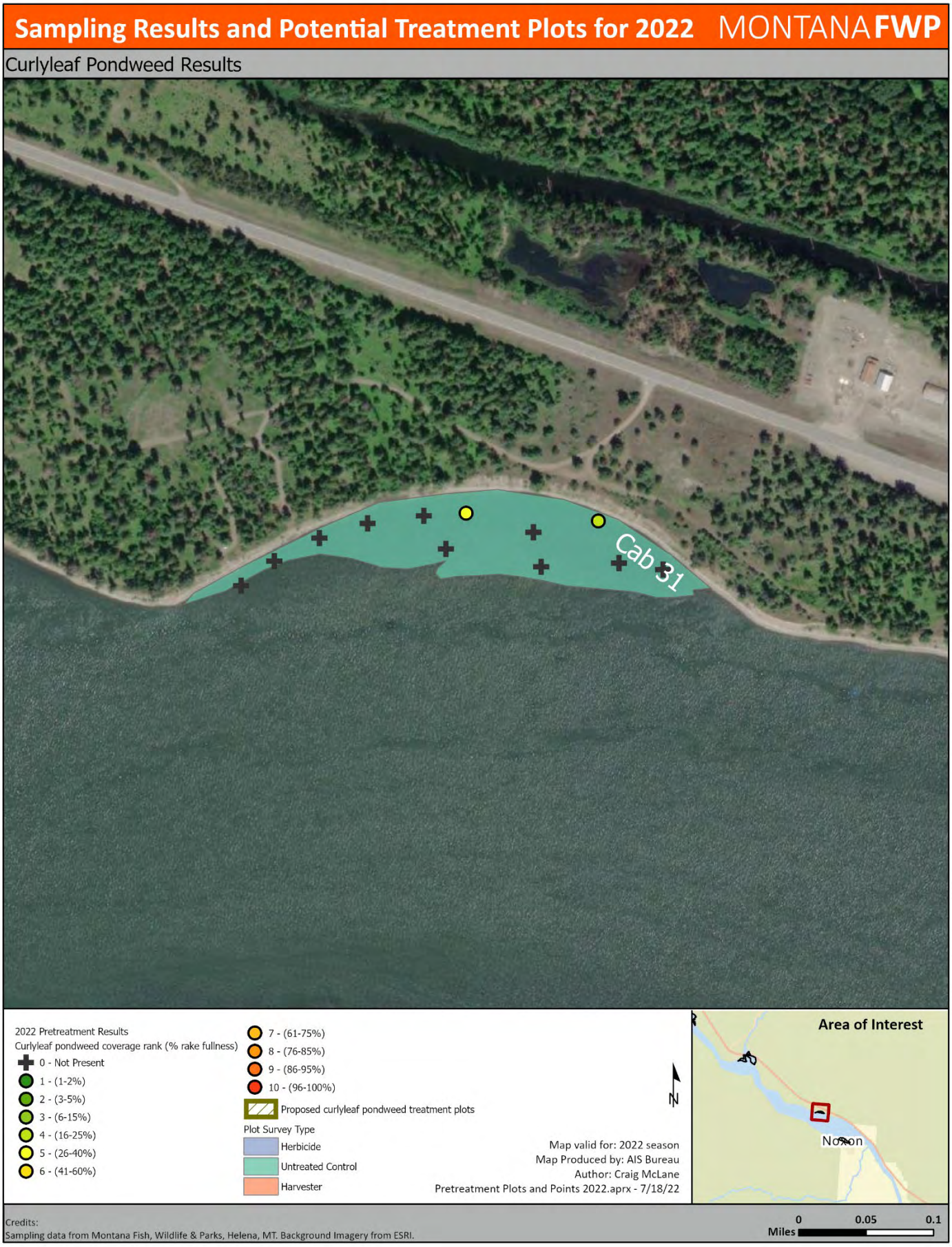

Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Eurasian Watermilfoil Results
Nox 07
Nox 06
Nox 07
Nox 30
Nox 30
Eurasian watermilfoil coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed Eurasian watermilfoil treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
Kaniksu
onal Forest
200
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0
0.13
0.25
Miles

Nox-06

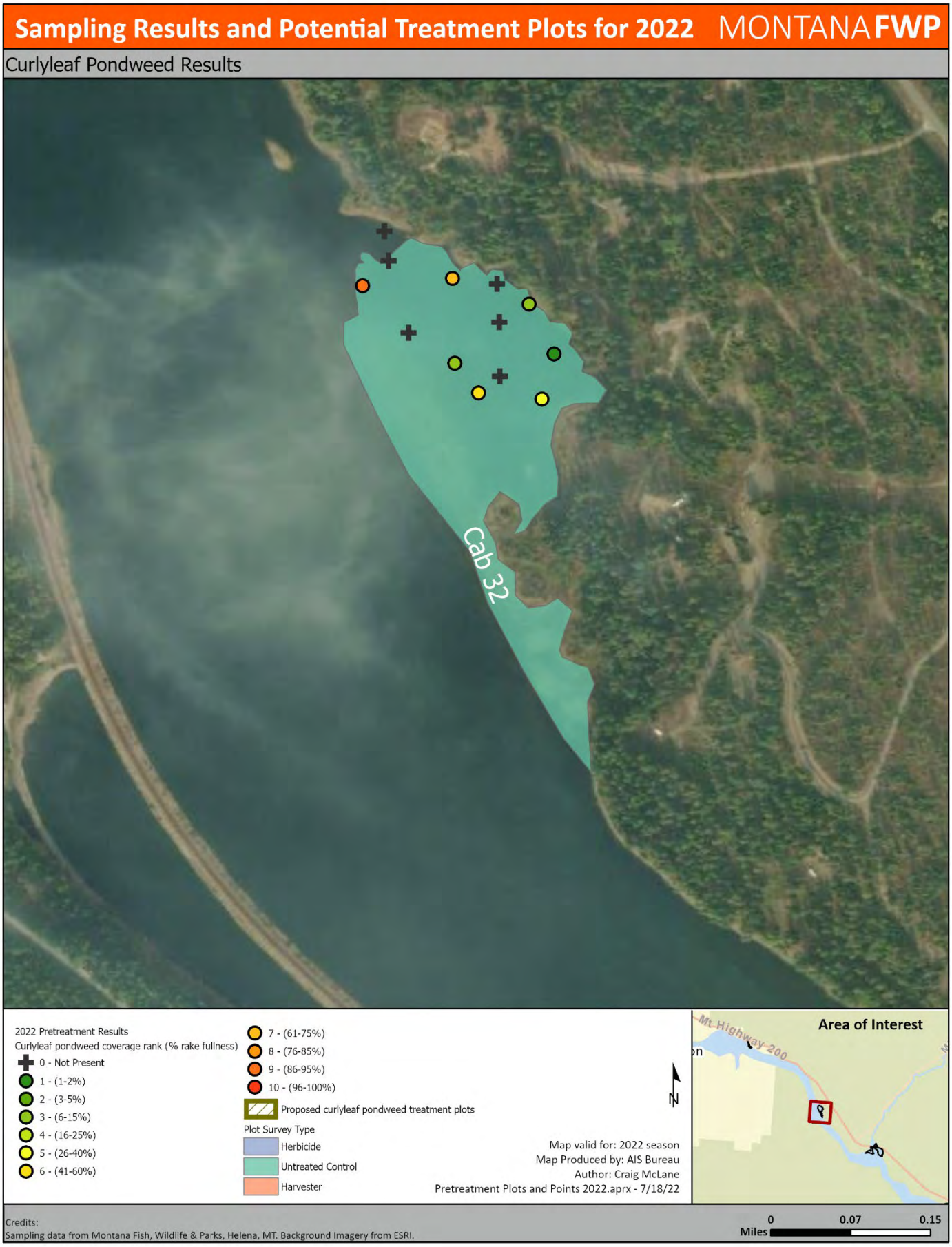

Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Eurasian Watermilfoil Results
Nox-09
7ft
2ft
5ft
4ft
6ft
4ft
9ft
5ft
5ft
8ft
5ft
15ft
8ft
12ft
17ft
3ft
8ft
12ft
15ft
6ft
13ft
<Null> ft
10ft
10ft
11ft
Eurasian watermilfoil coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed Eurasian watermilfoil treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
N
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
200
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0
0.17
0.35
Miles

Nox-09

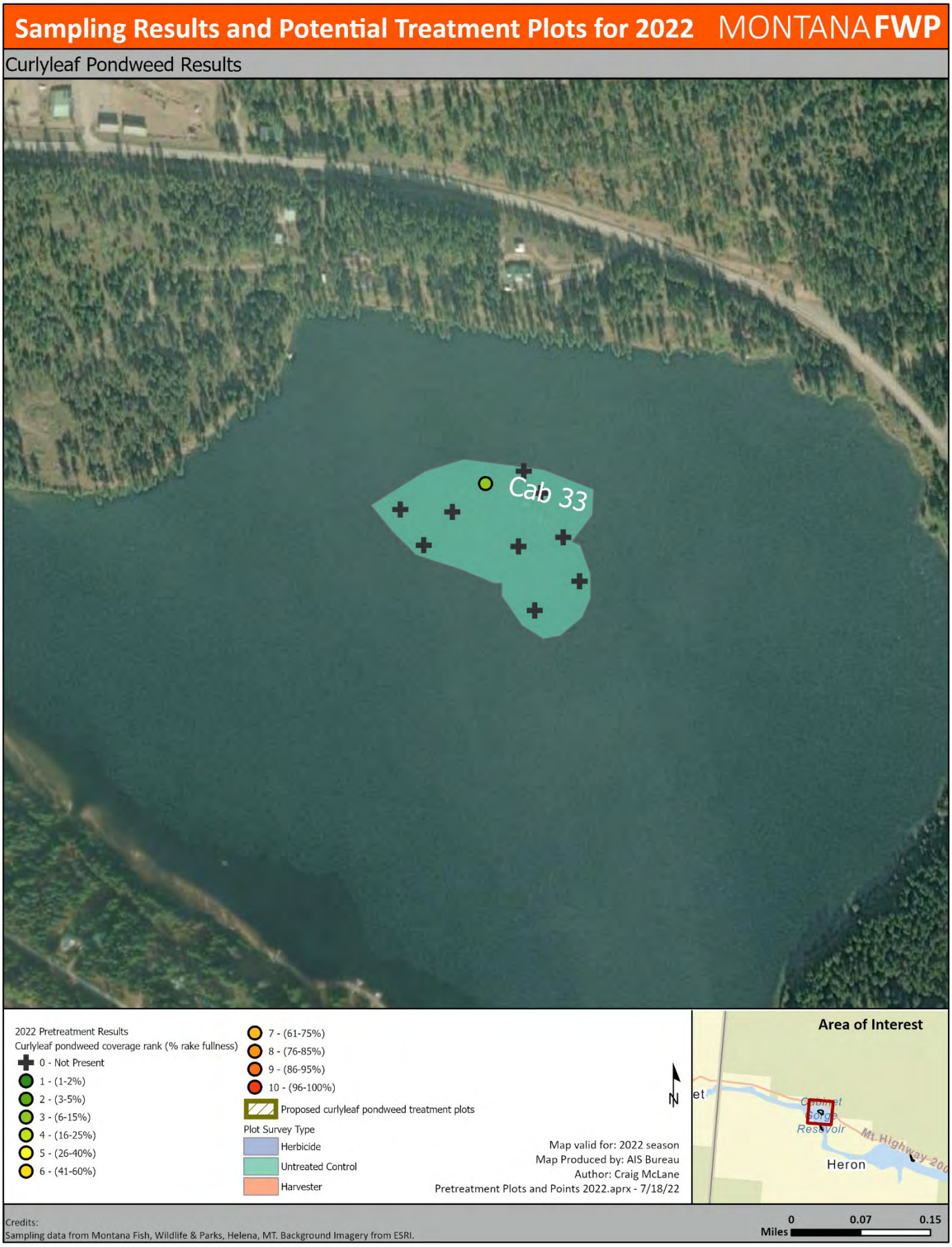
Untreated Control Plot Maps – Curlyleaf Pondweed (*Potamogeton crispus*)


Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Curlyleaf Pondweed Results
Cab 31
2022 Pretreatment Results
Curlyleaf pondweed coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed curlyleaf pondweed treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
N
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
Noxon
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0
0.05
0.1
Miles

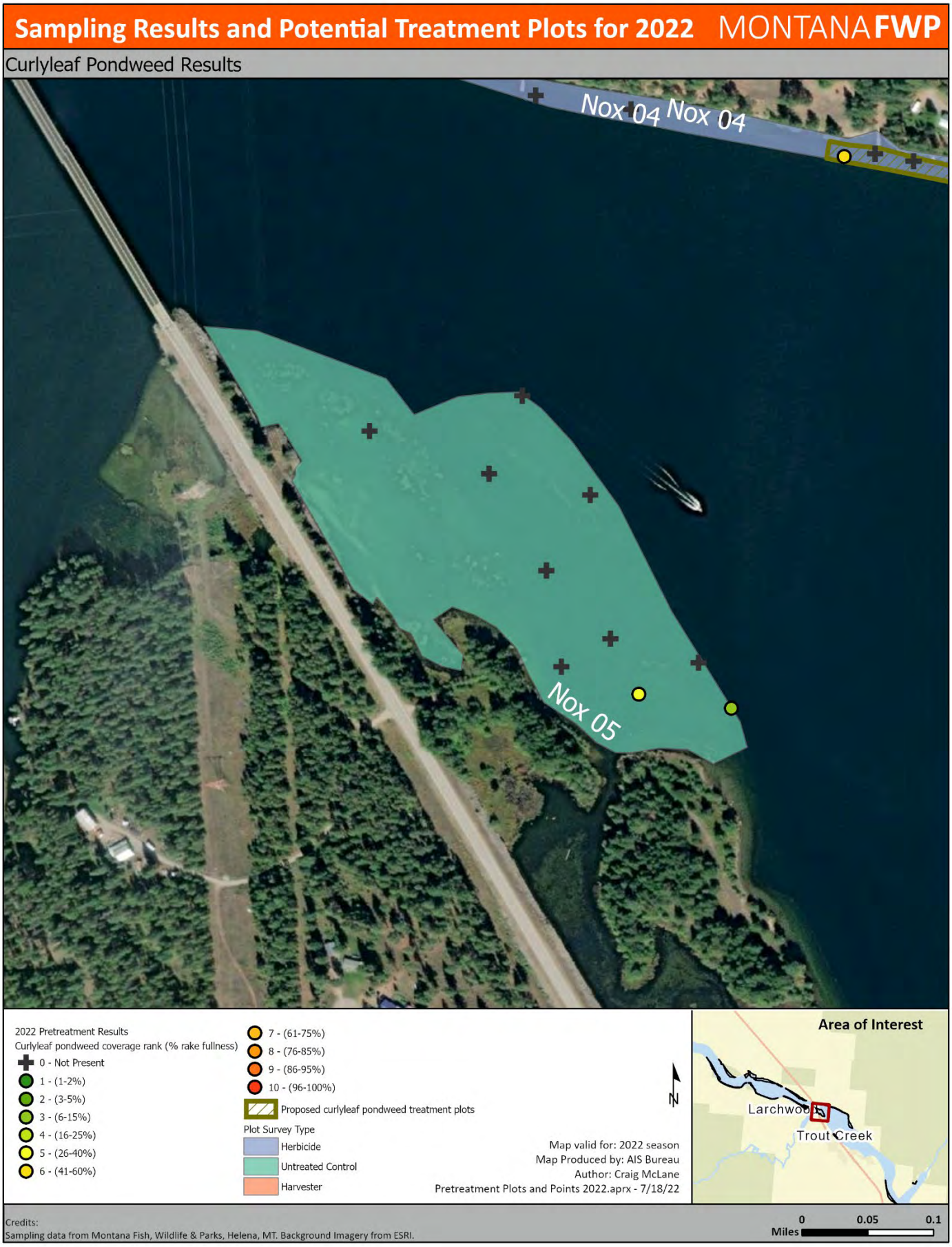
Cab-31


Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Curlyleaf Pondweed Results
Cab 32
2022 Pretreatment Results
Curlyleaf pondweed coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed curlyleaf pondweed treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
N
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
Mt Highway 200
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0
0.07
0.15
Miles

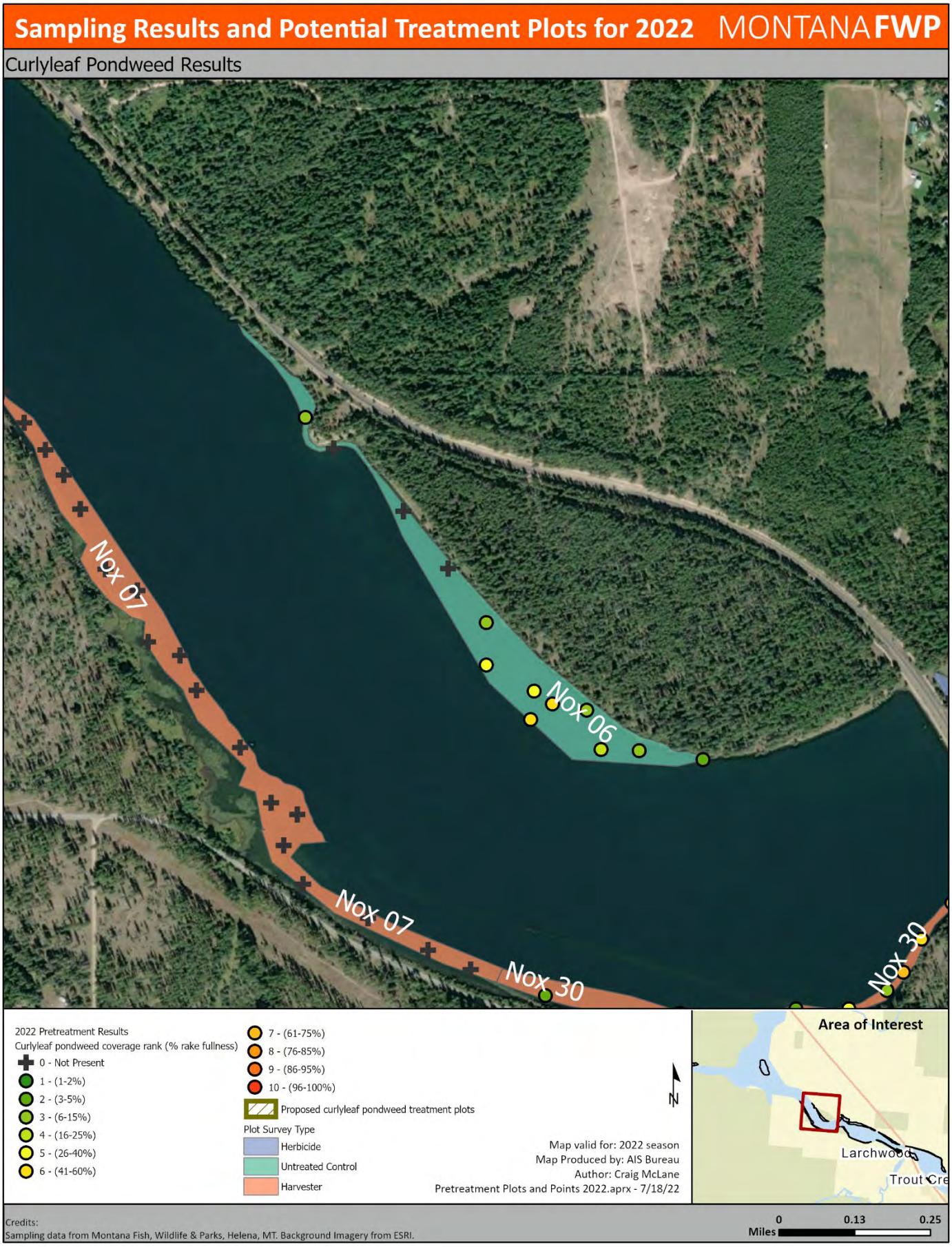
Cab-32


Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Curlyleaf Pondweed Results
Cab 33
2022 Pretreatment Results
Curlyleaf pondweed coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed curlyleaf pondweed treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
N
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
Heron
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0
0.07
0.15
Miles

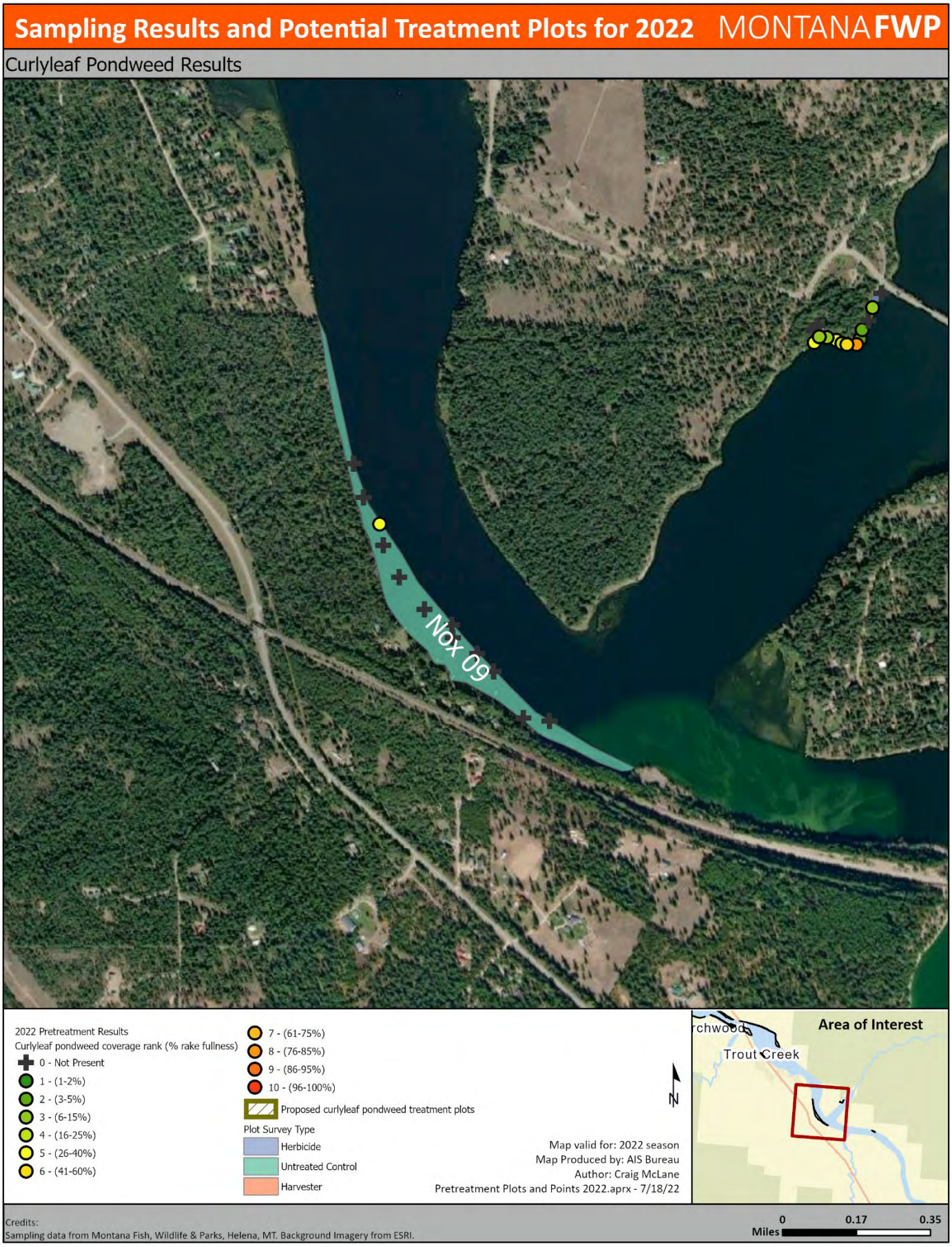
Cab-33


Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Curlyleaf Pondweed Results
Nox 04 Nox 04
Nox 05
2022 Pretreatment Results
Curlyleaf pondweed coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed curlyleaf pondweed treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
N
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
Larchwood
Trout Creek
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0 0.05 0.1
Miles

Nox-05

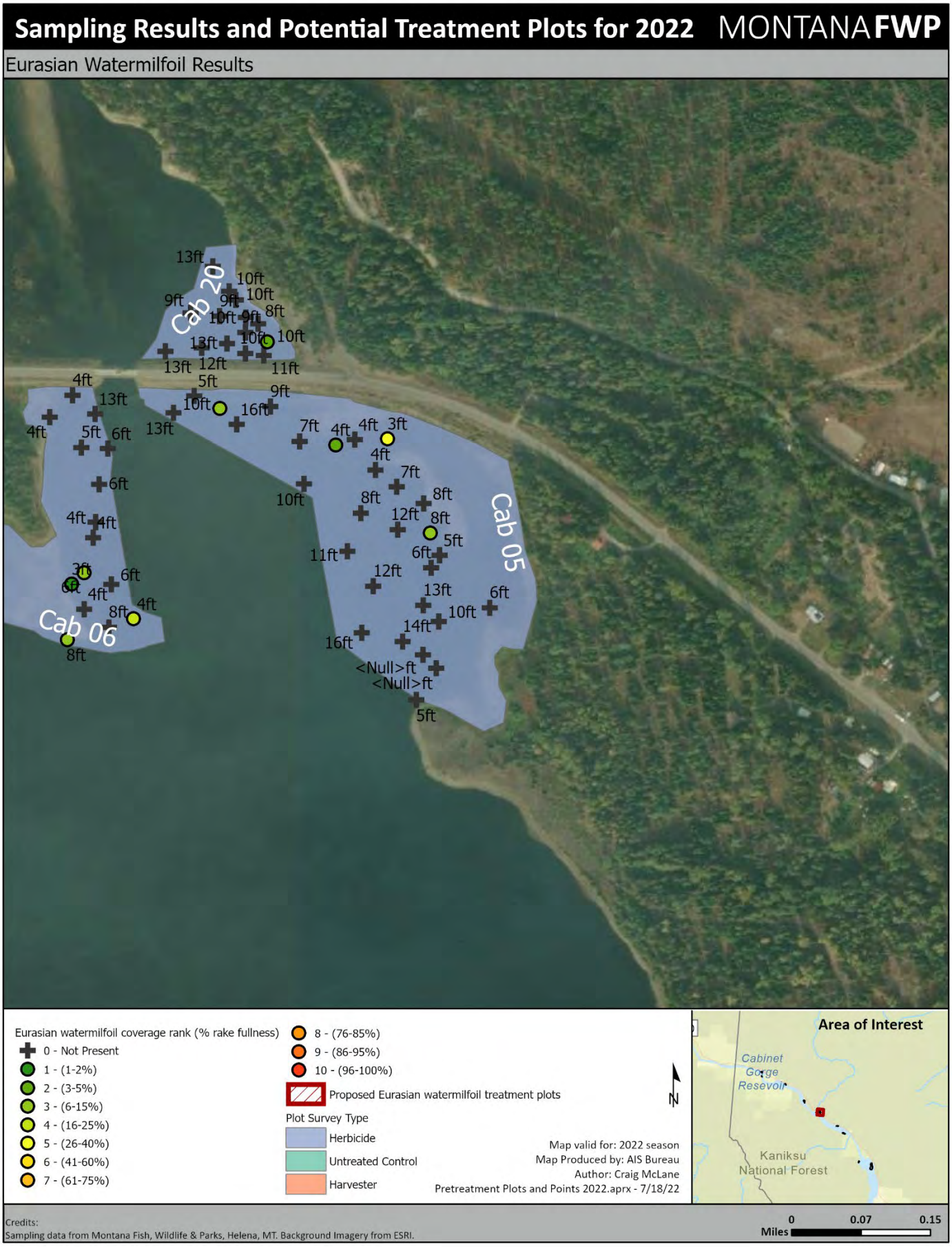

Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Curlyleaf Pondweed Results
Nox 07
Nox 06
Nox 07
Nox 30
Nox 30
2022 Pretreatment Results
Curlyleaf pondweed coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed curlyleaf pondweed treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
N
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
Larchwood
Trout Cre
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0
0.13
0.25
Miles

Nox-06

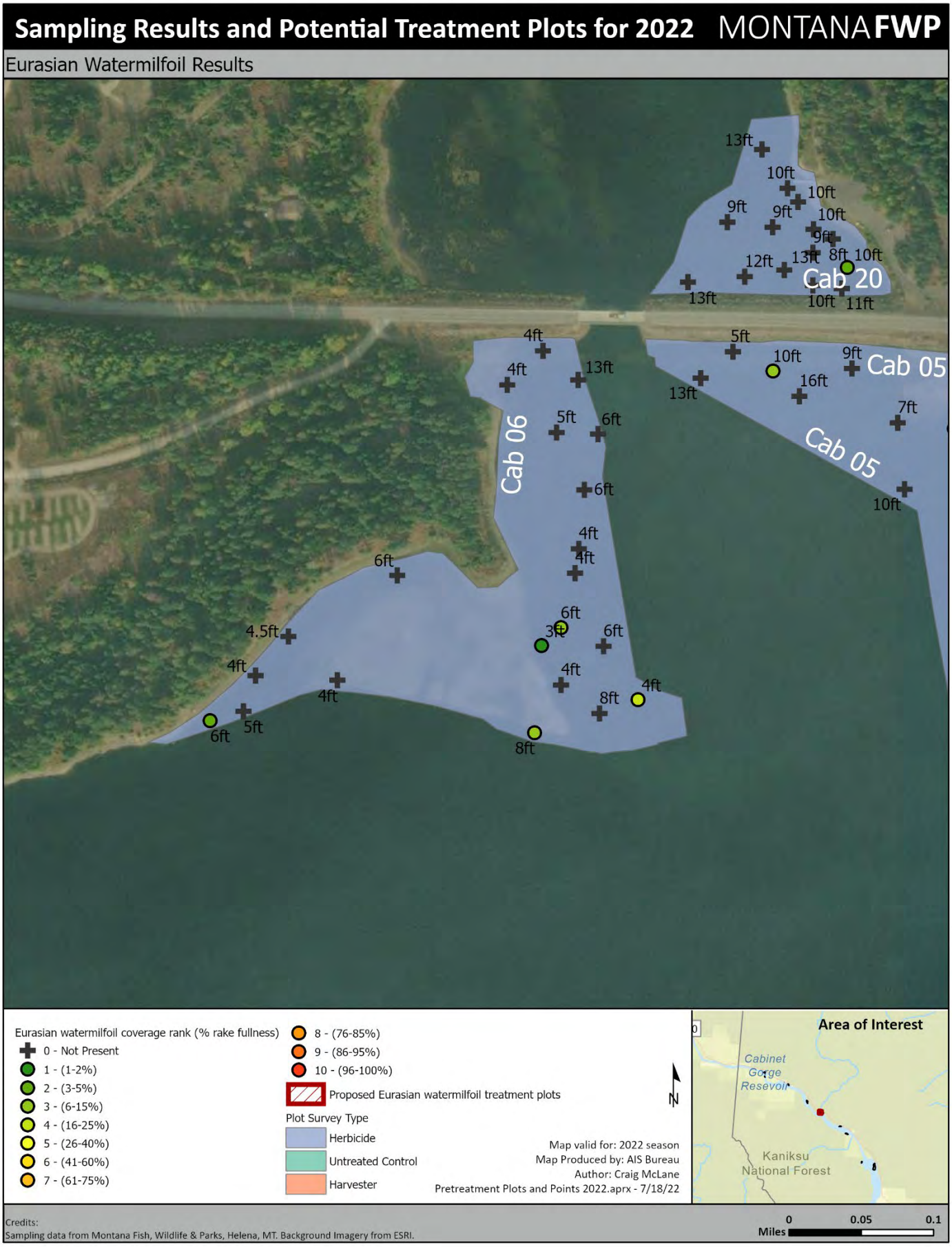

Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Curlyleaf Pondweed Results
Nox 09
2022 Pretreatment Results
Curlyleaf pondweed coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed curlyleaf pondweed treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
N
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
Trout Creek
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0
0.17
0.35
Miles

Nox-09

Treatment Plot Maps –
Eurasian Watermilfoil (*Myriophyllum spicatum*)


Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Eurasian Watermilfoil Results
Cab 20
Cab 05
Cab 06
Eurasian watermilfoil coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed Eurasian watermilfoil treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
N
Area of Interest
Cabinet Gorge Reservoir
Kaniksu National Forest
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0
0.07
0.15
Miles

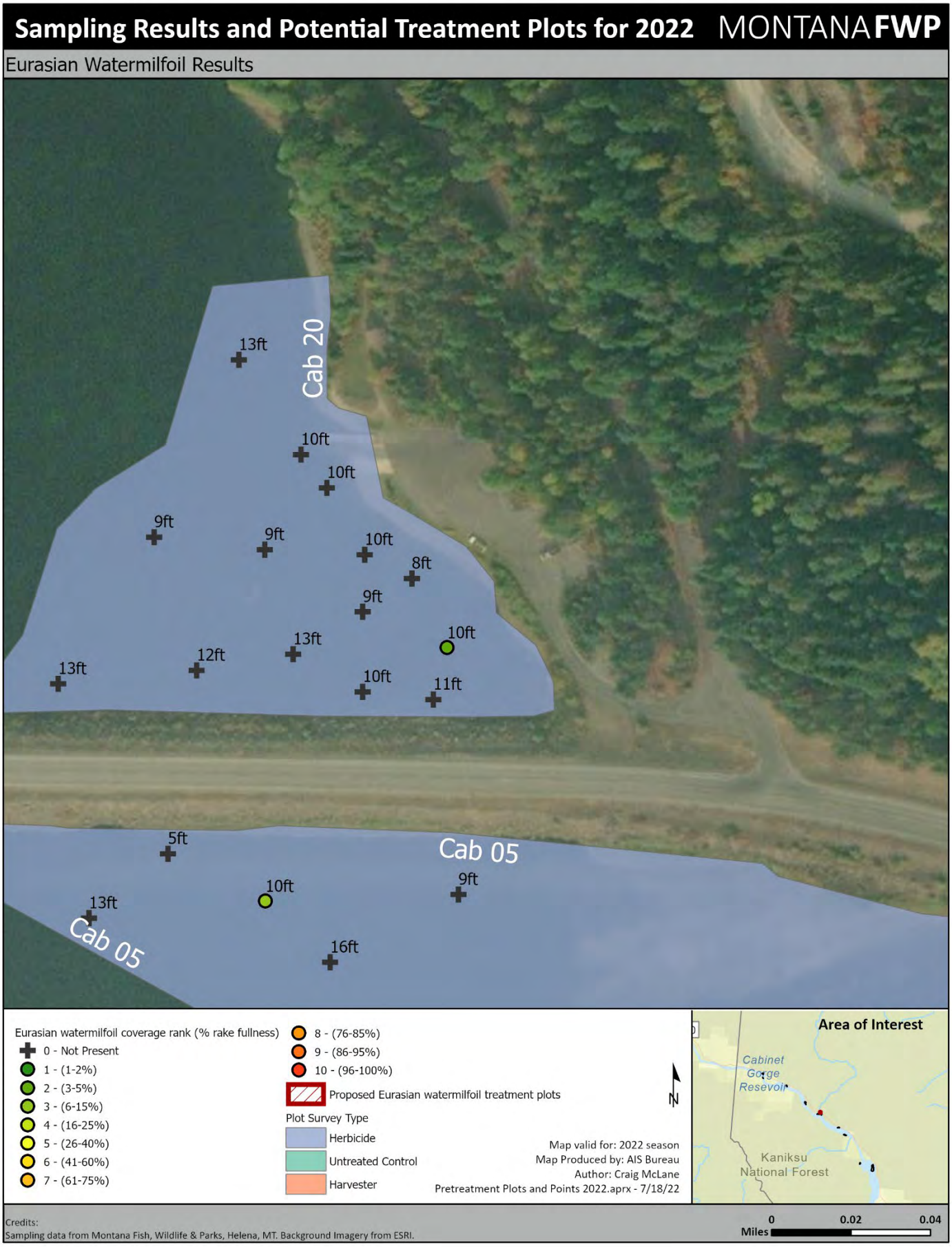
Cab-05


Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Eurasian Watermilfoil Results
Cab 20
Cab 06
Cab 05
Cab 05
Eurasian watermilfoil coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed Eurasian watermilfoil treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
Cabinet Gorge Reservoir
Kaniksu National Forest
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0 0.05 0.1
Miles

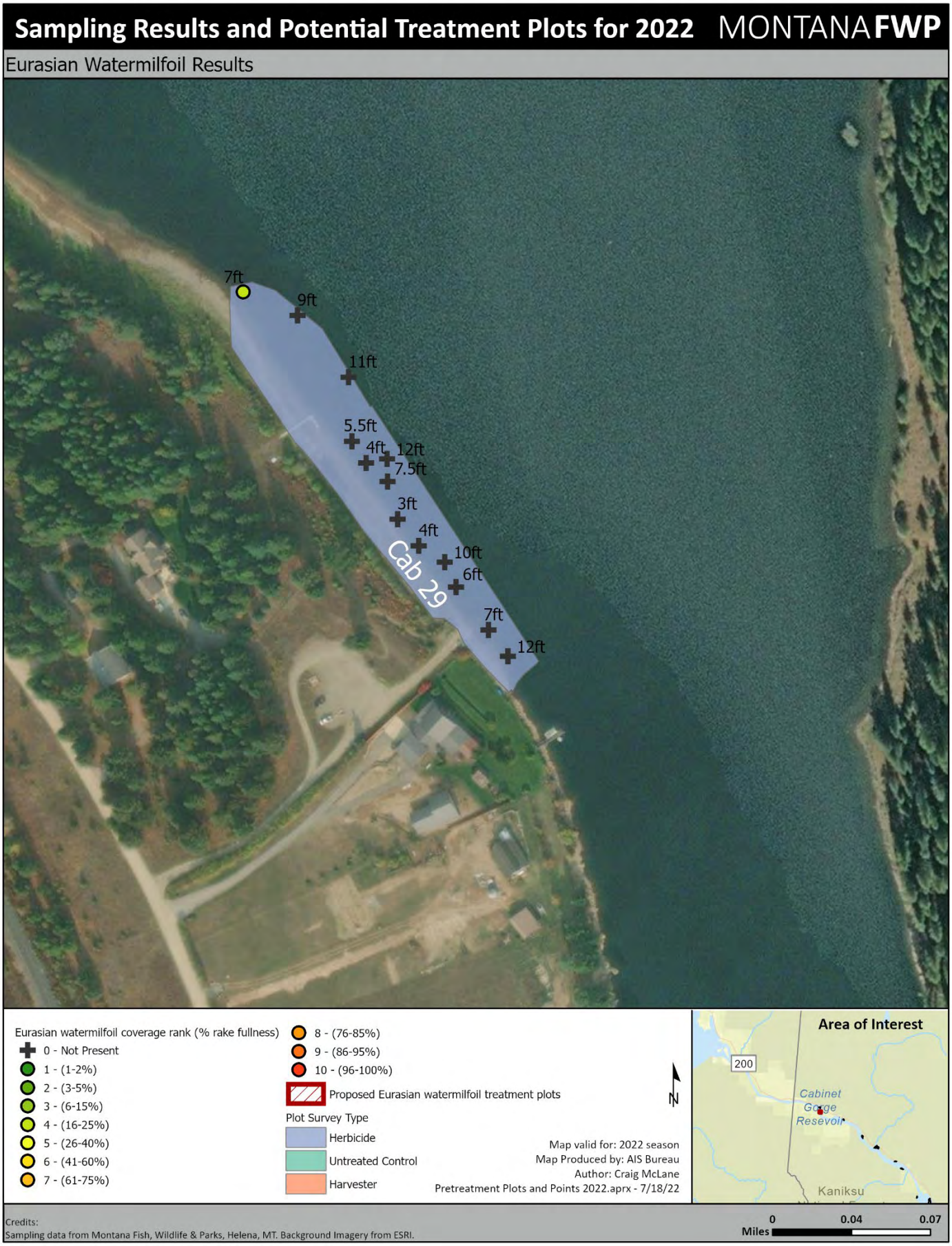
Cab-06


Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Eurasian Watermilfoil Results
14ft
12ft
6ft
6.5ft
13ft
8ft
9ft
4.5ft
8ft
7ft
6ft
5ft
9ft
3ft
6ft
8ft
Cab 12
12ft
7ft
8.5ft
Eurasian watermilfoil coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed Eurasian watermilfoil treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
N
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
200
Cabinet Gorge Resevoir
Kaniksu National Forest
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0
0.05
0.1
Miles

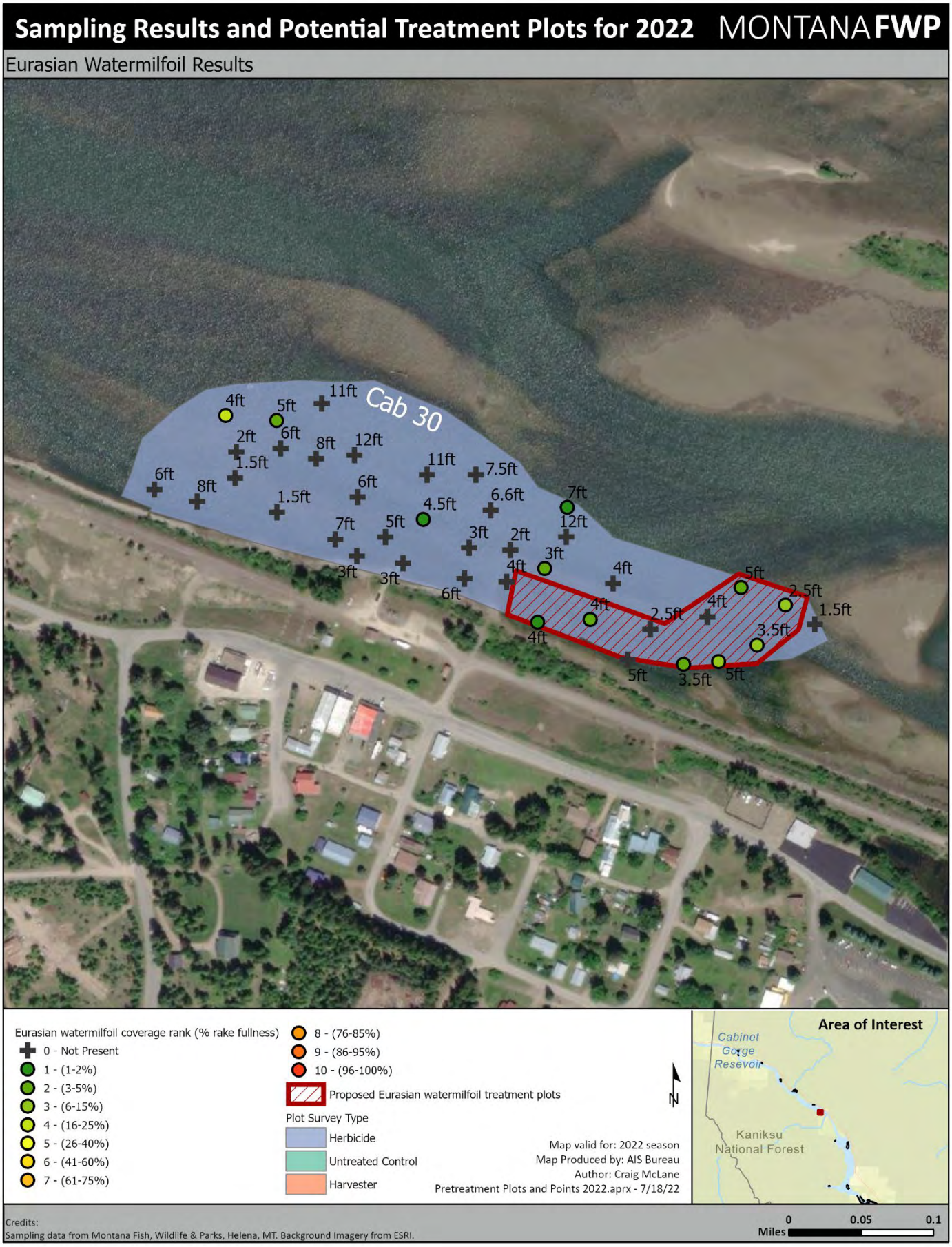
Cab-12


Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Eurasian Watermilfoil Results
Cab 20
13ft
10ft
10ft
9ft
9ft
10ft
8ft
9ft
10ft
13ft
12ft
13ft
10ft
11ft
Cab 05
5ft
10ft
9ft
13ft
16ft
Cab 05
Eurasian watermilfoil coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed Eurasian watermilfoil treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
N
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
Cabinet Gorge Reservoir
Kaniksu National Forest
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0
0.02
0.04
Miles

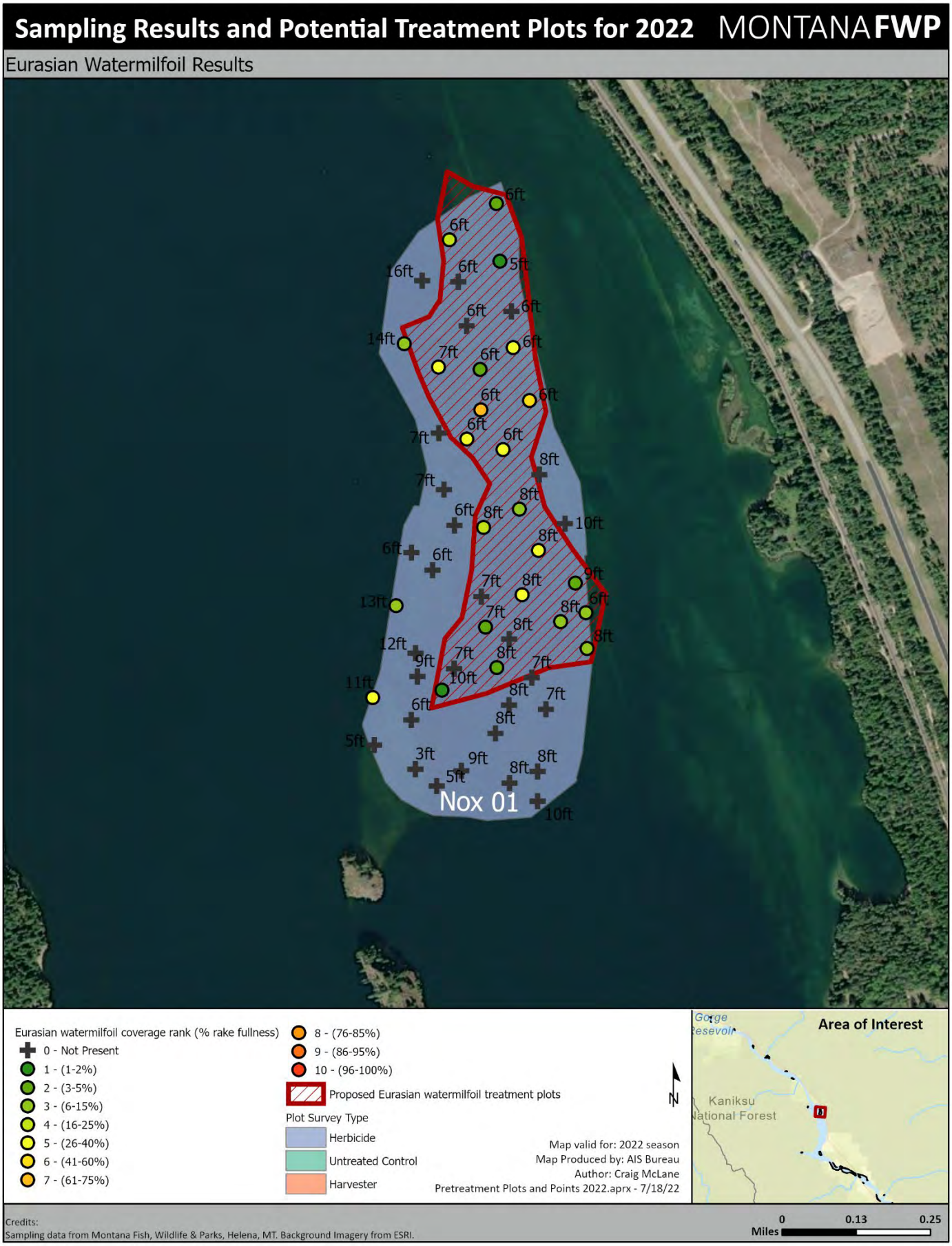
Cab-20


Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Eurasian Watermilfoil Results
7ft
9ft
11ft
5.5ft
4ft
12ft
7.5ft
3ft
4ft
10ft
6ft
7ft
12ft
Cab 29
Eurasian watermilfoil coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed Eurasian watermilfoil treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
N
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
200
Cabinet Gorge Reservoir
Kaniksu
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0
0.04
0.07
Miles

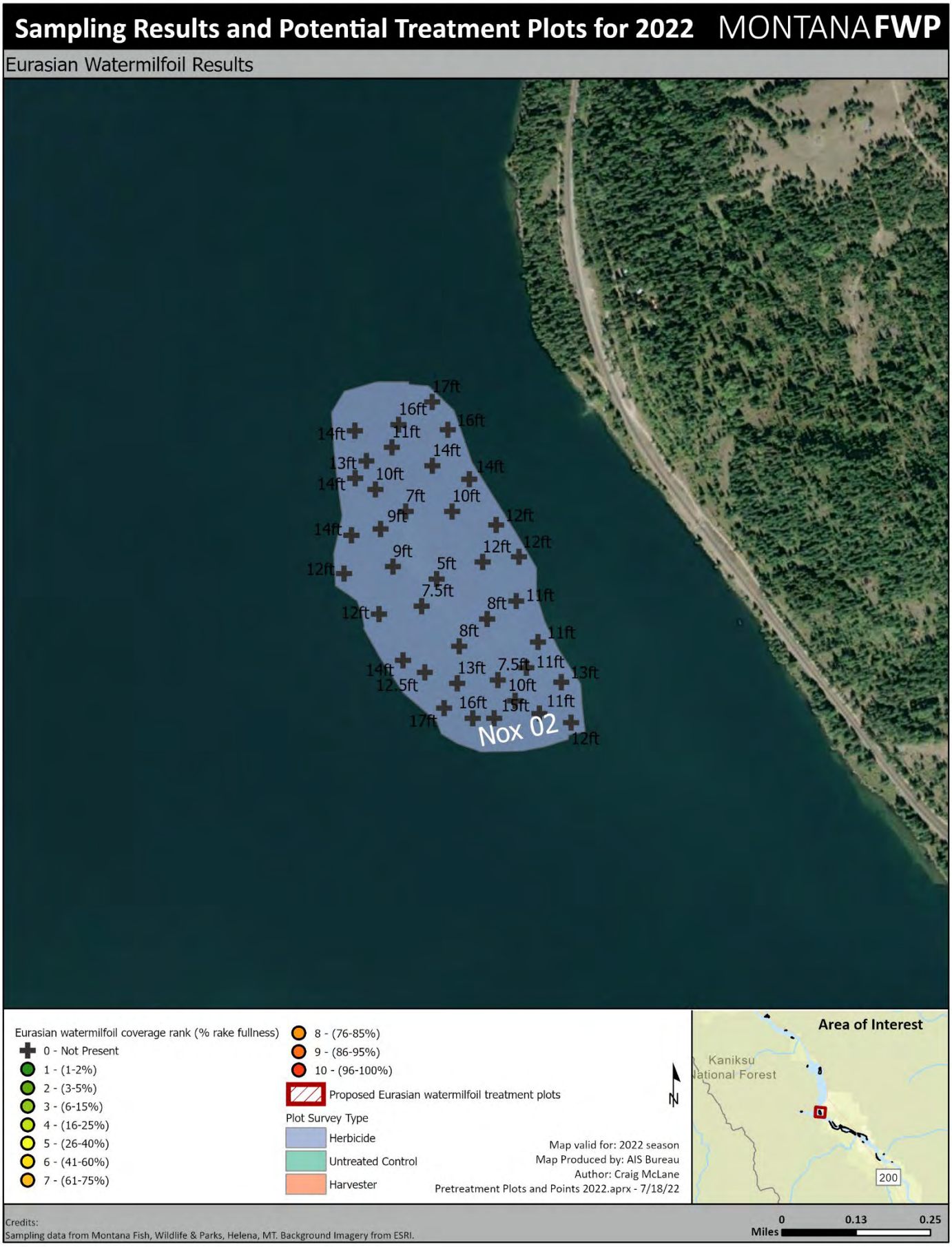
Cab-29


Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Eurasian Watermilfoil Results
Cab 30
4ft
5ft
11ft
2ft
6ft
8ft
12ft
1.5ft
11ft
7.5ft
6ft
8ft
6ft
1.5ft
4.5ft
6.6ft
7ft
7ft
5ft
12ft
3ft
2ft
3ft
4ft
3ft
3ft
4ft
6ft
5ft
2.5ft
4ft
4ft
2.5ft
4ft
1.5ft
3.5ft
4ft
5ft
3.5ft
5ft
Eurasian watermilfoil coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed Eurasian watermilfoil treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
N
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
Cabinet Gorge Reservoir
Kaniksu National Forest
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0
0.05
0.1
Miles

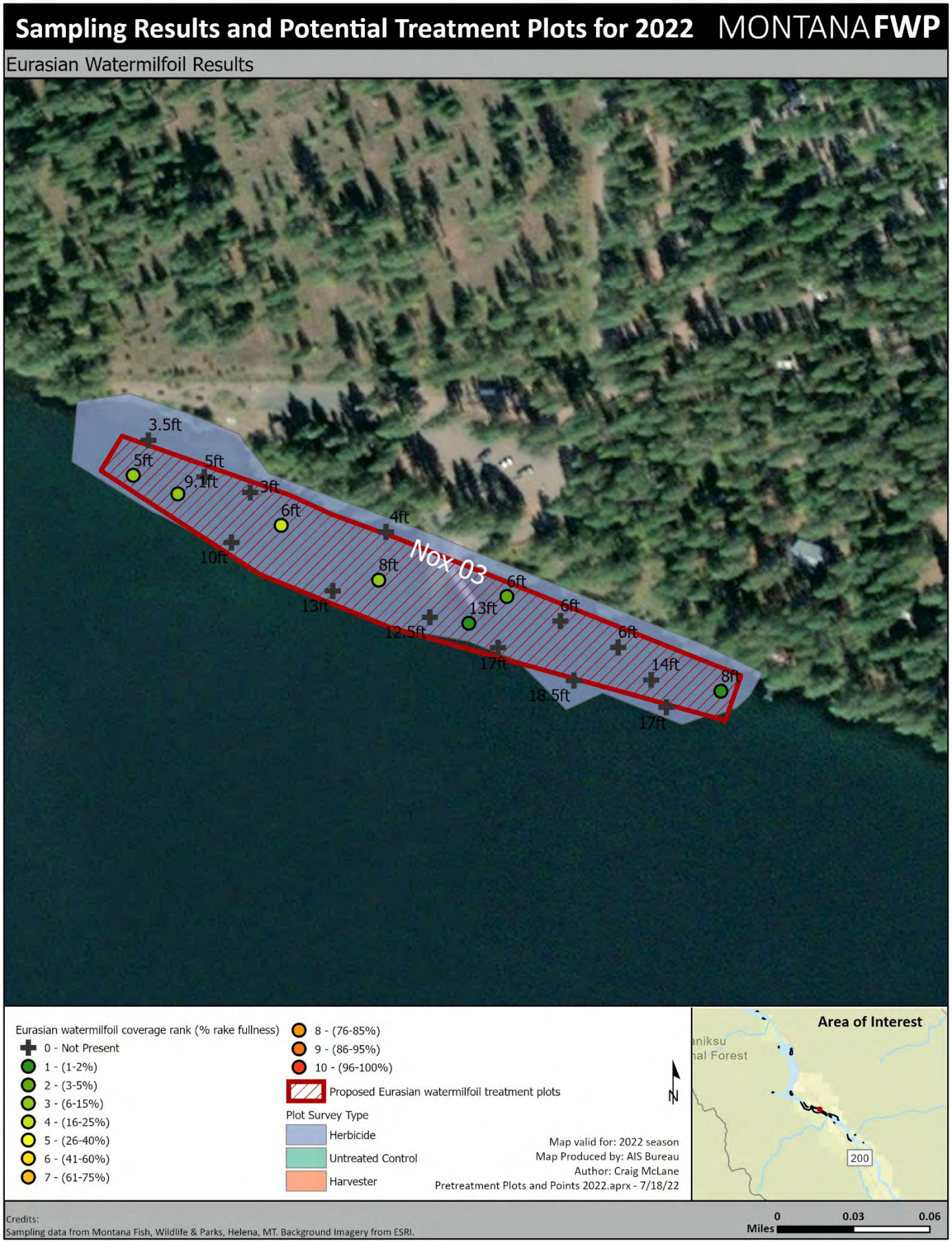
Cab-30


Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Eurasian Watermilfoil Results
Nox 01
Eurasian watermilfoil coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed Eurasian watermilfoil treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
N
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
Kaniksu National Forest
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0 0.13 0.25
Miles

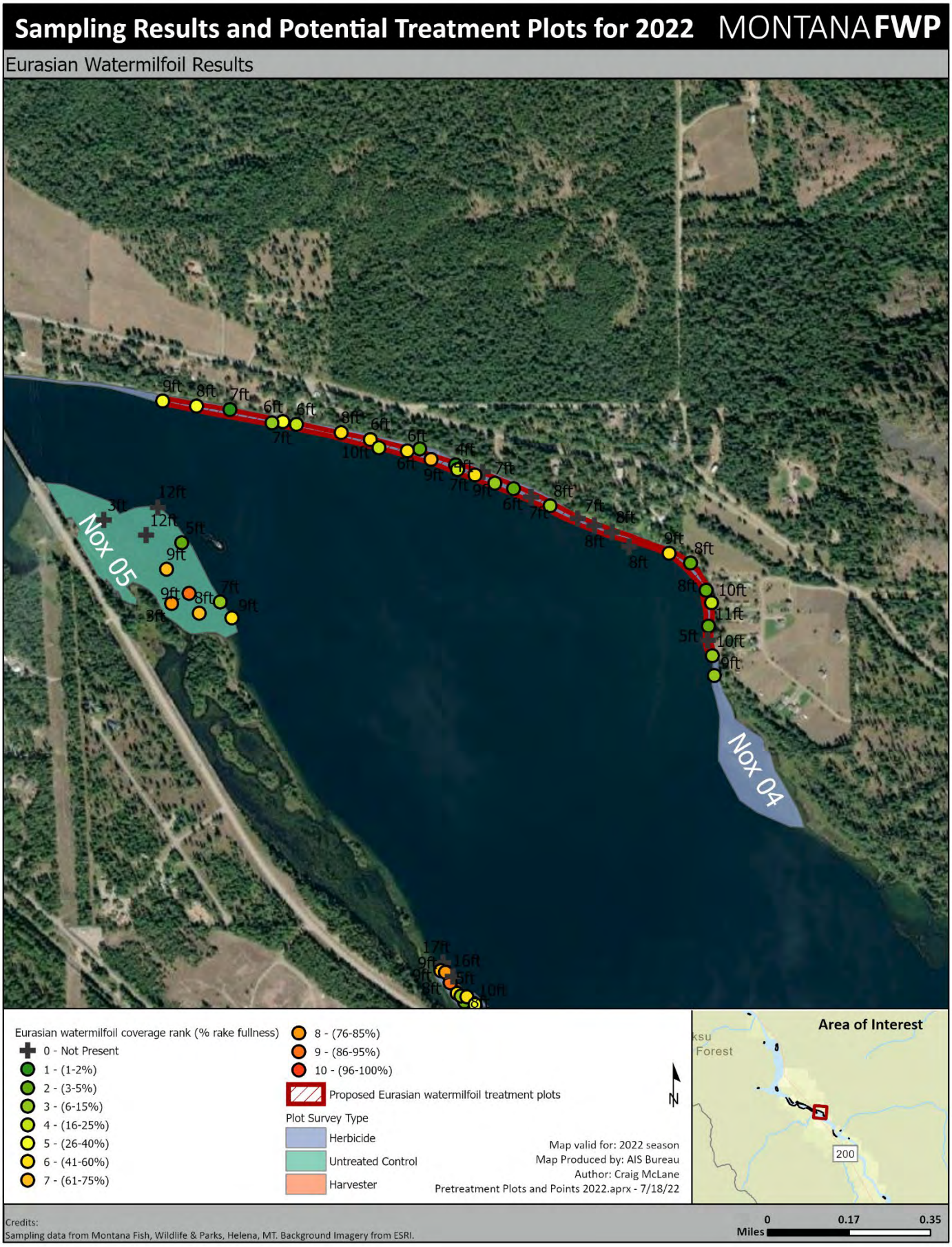
Nox-01


Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Eurasian Watermilfoil Results
17ft
16ft
16ft
14ft
11ft
14ft
13ft
10ft
14ft
14ft
7ft
10ft
9ft
12ft
14ft
12ft
12ft
9ft
5ft
12ft
7.5ft
8ft
11ft
12ft
8ft
11ft
14ft
13ft
7.5ft
11ft
13ft
12.5ft
10ft
16ft
15ft
11ft
17ft
Nox 02
12ft
Eurasian watermilfoil coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed Eurasian watermilfoil treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
N
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
Kaniksu
National Forest
200
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0
0.13
0.25
Miles

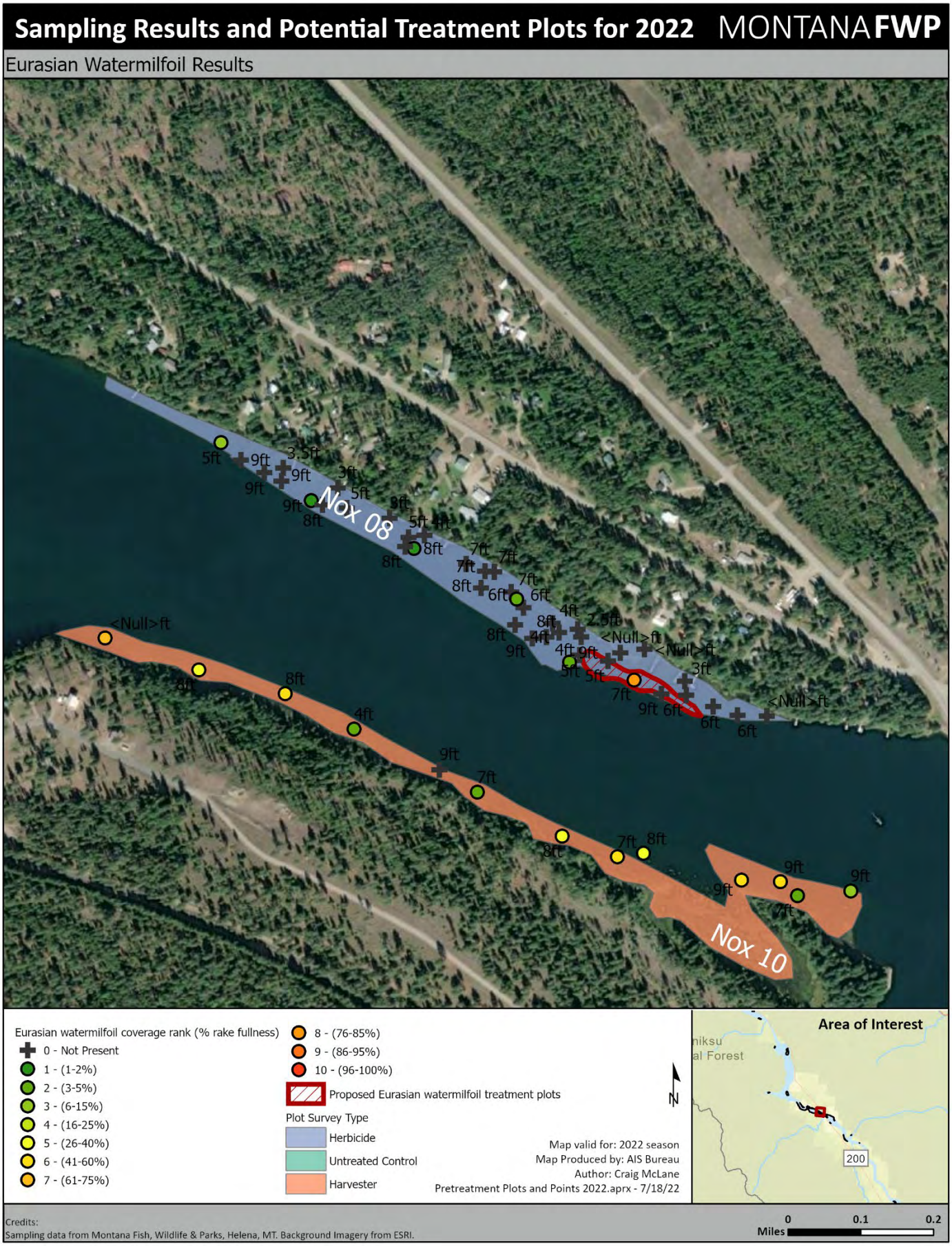
Nox-02


Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Eurasian Watermilfoil Results
3.5ft
5ft
5ft
9.1ft
3ft
6ft
4ft
10ft
8ft
Nox 03
6ft
13ft
13ft
6ft
12.5ft
6ft
17ft
14ft
8ft
18.5ft
17ft
Eurasian watermilfoil coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed Eurasian watermilfoil treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
N
Area of Interest
200
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0
0.03
0.06
Miles

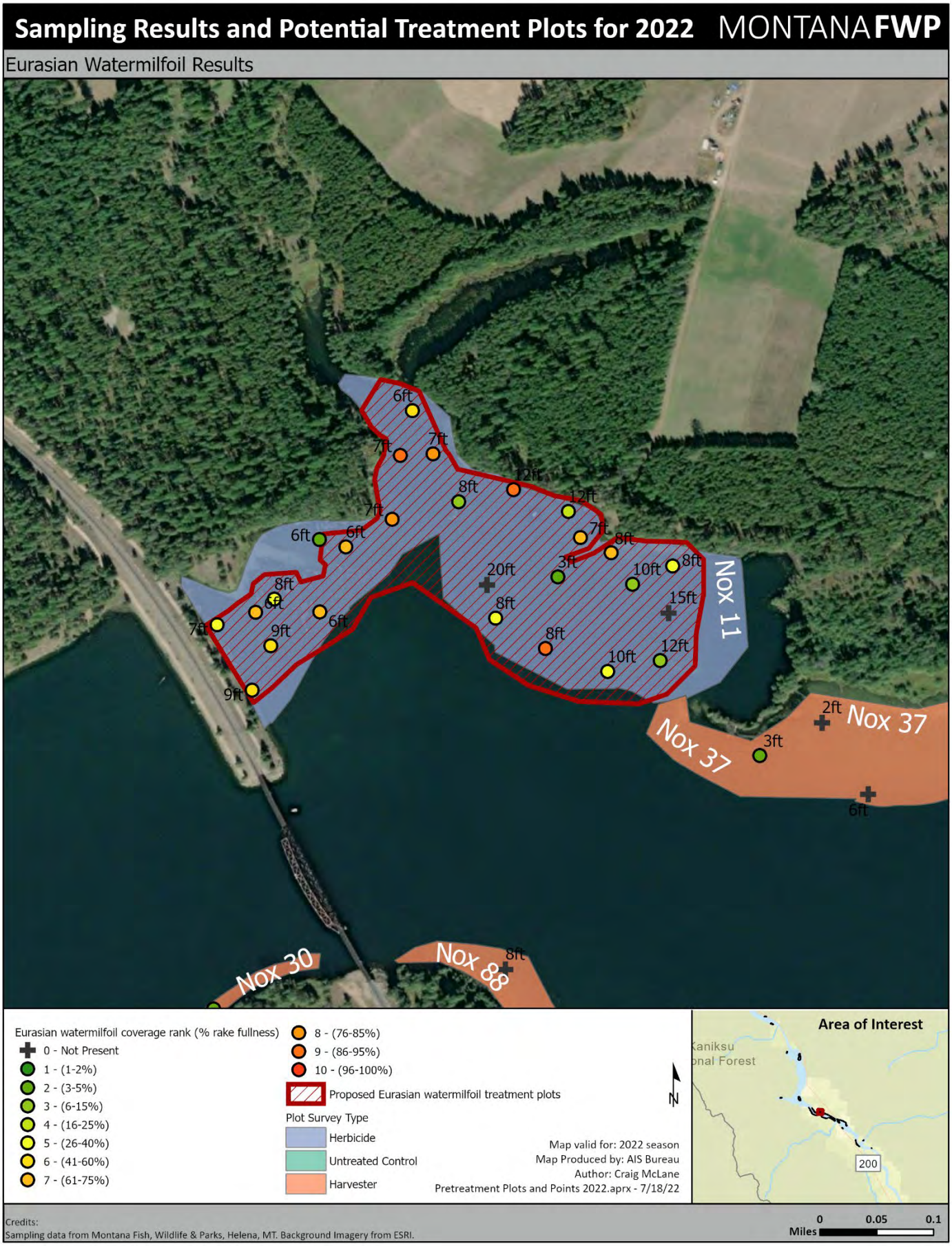
Nox-03


Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Eurasian Watermilfoil Results
Nox 05
Nox 04
Eurasian watermilfoil coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed Eurasian watermilfoil treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
N
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
Forest
200
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0
0.17
0.35
Miles

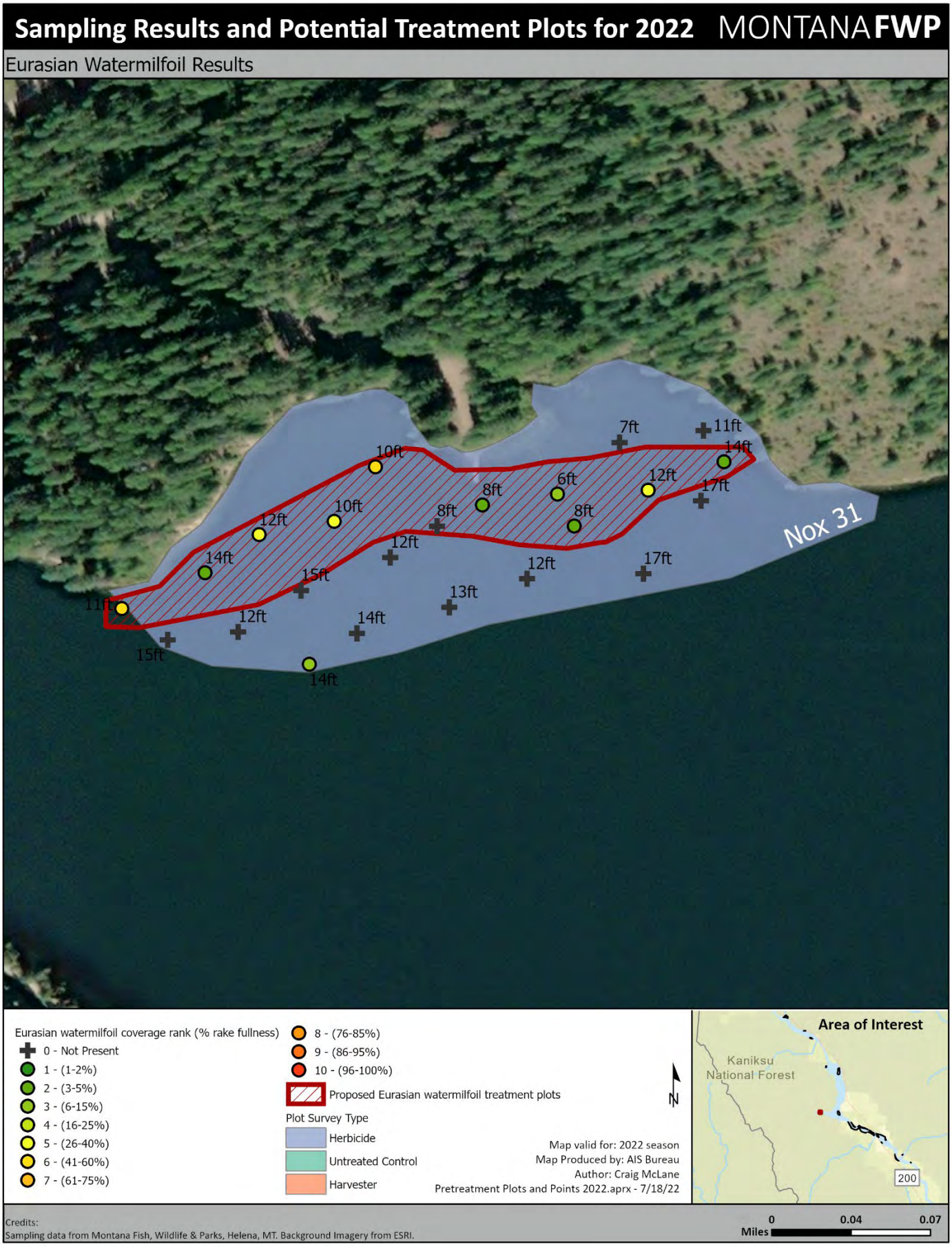
Nox-04


Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Eurasian Watermilfoil Results
Nox 08
Nox 10
Eurasian watermilfoil coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed Eurasian watermilfoil treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
200
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0 0.1 0.2
Miles

Nox-08


Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Eurasian Watermilfoil Results
Nox 11
Nox 37
Nox 37
Nox 30
Nox 88
Eurasian watermilfoil coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed Eurasian watermilfoil treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
Kaniksu
onal Forest
200
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0 0.05 0.1
Miles

Nox-11


Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Eurasian Watermilfoil Results
Nox 31
7ft
11ft
14ft
10ft
6ft
12ft
17ft
8ft
10ft
12ft
8ft
8ft
12ft
14ft
15ft
12ft
17ft
13ft
11ft
12ft
14ft
15ft
14ft
Eurasian watermilfoil coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed Eurasian watermilfoil treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
N
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
Kaniksu National Forest
200
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0
0.04
0.07
Miles

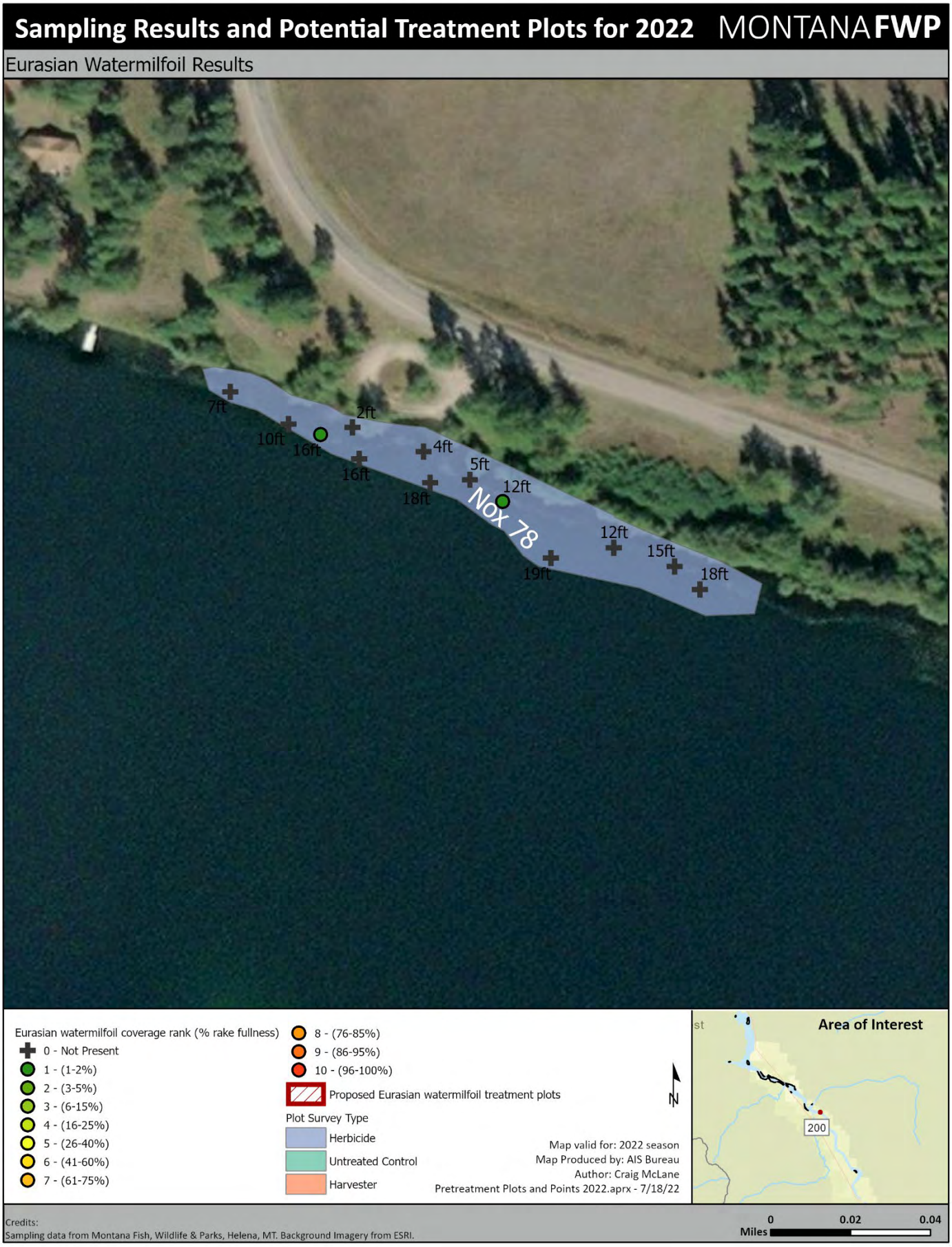
Nox-31


Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Curlyleaf Pondweed Results
Nox 73
2022 Pretreatment Results
Curlyleaf pondweed coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed curlyleaf pondweed treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
N
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
200
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0
0.03
0.07
Miles

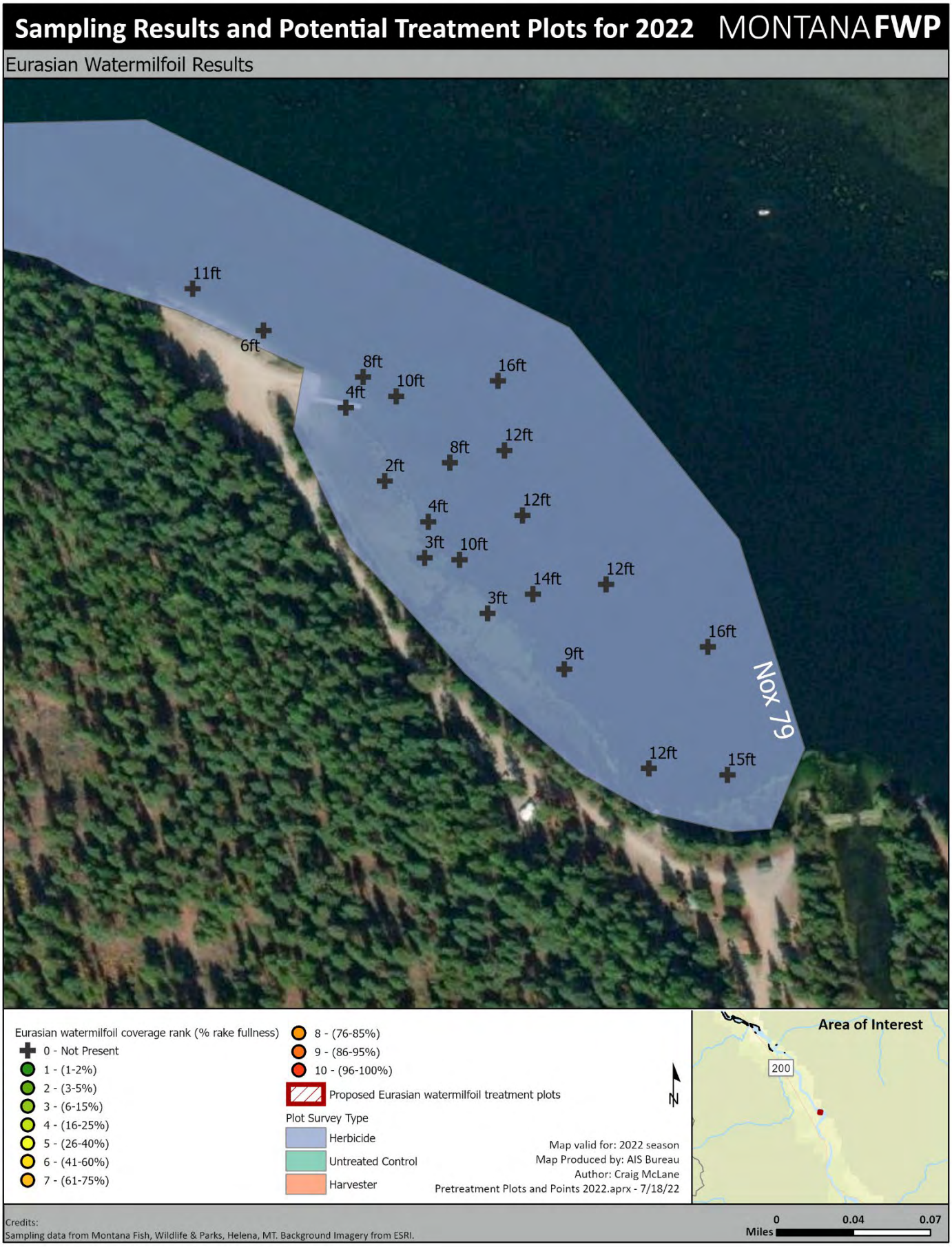
Nox-73


Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Eurasian Watermilfoil Results
17ft
9ft
9ft
16ft
8ft
5ft
8ft
10ft
6ft
10ft
10ft
17ft
6ft
7ft
32ft
10ft
13ft
Nox 77
5ft
23ft
10ft
Eurasian watermilfoil coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed Eurasian watermilfoil treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
N
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
Forest
200
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0
0.03
0.06
Miles

Nox-77

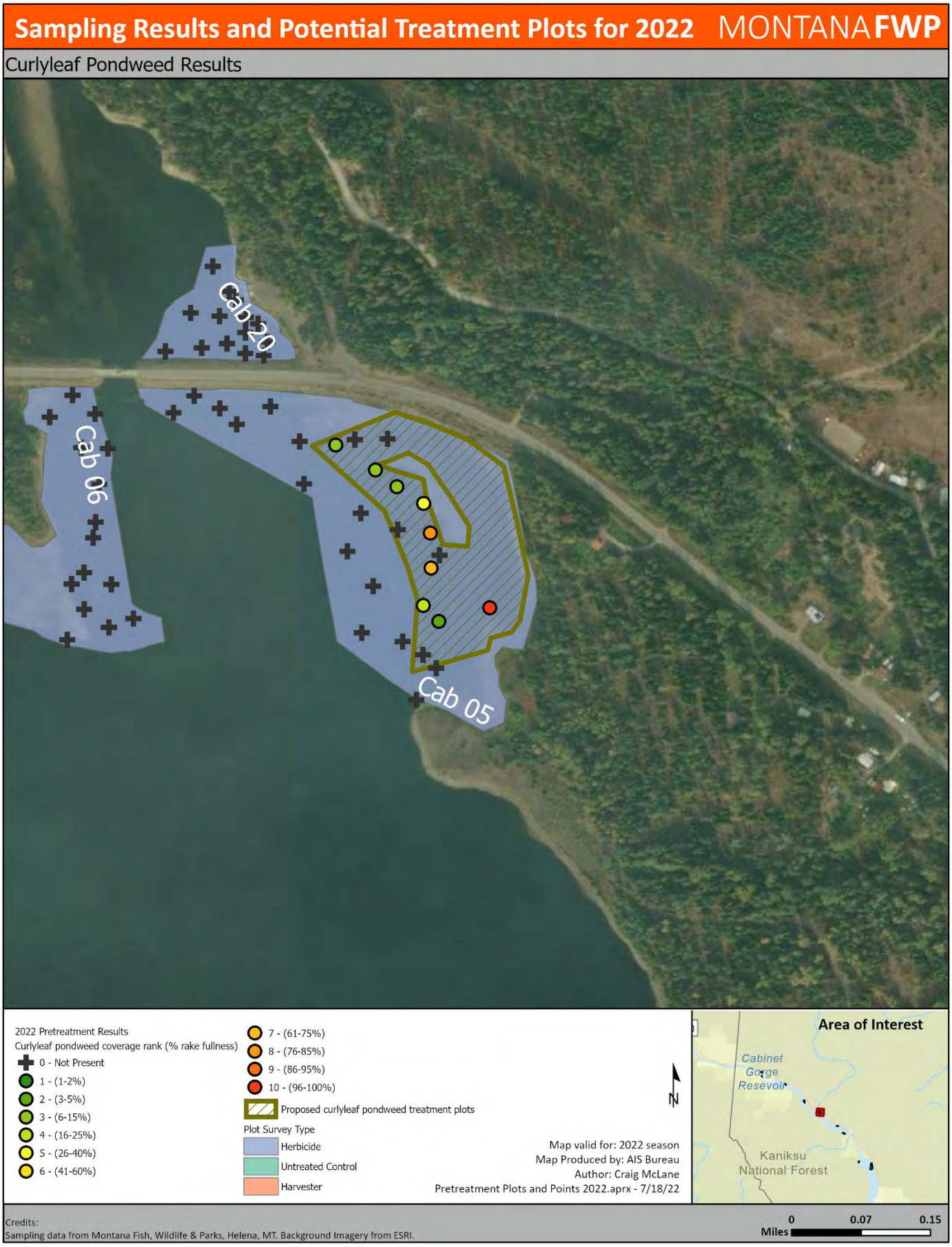

Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Eurasian Watermilfoil Results
7ft
10ft
16ft
2ft
16ft
4ft
18ft
5ft
12ft
Nox 78
19ft
12ft
15ft
18ft
Eurasian watermilfoil coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed Eurasian watermilfoil treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
N
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
200
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0
0.02
0.04
Miles

Nox-78

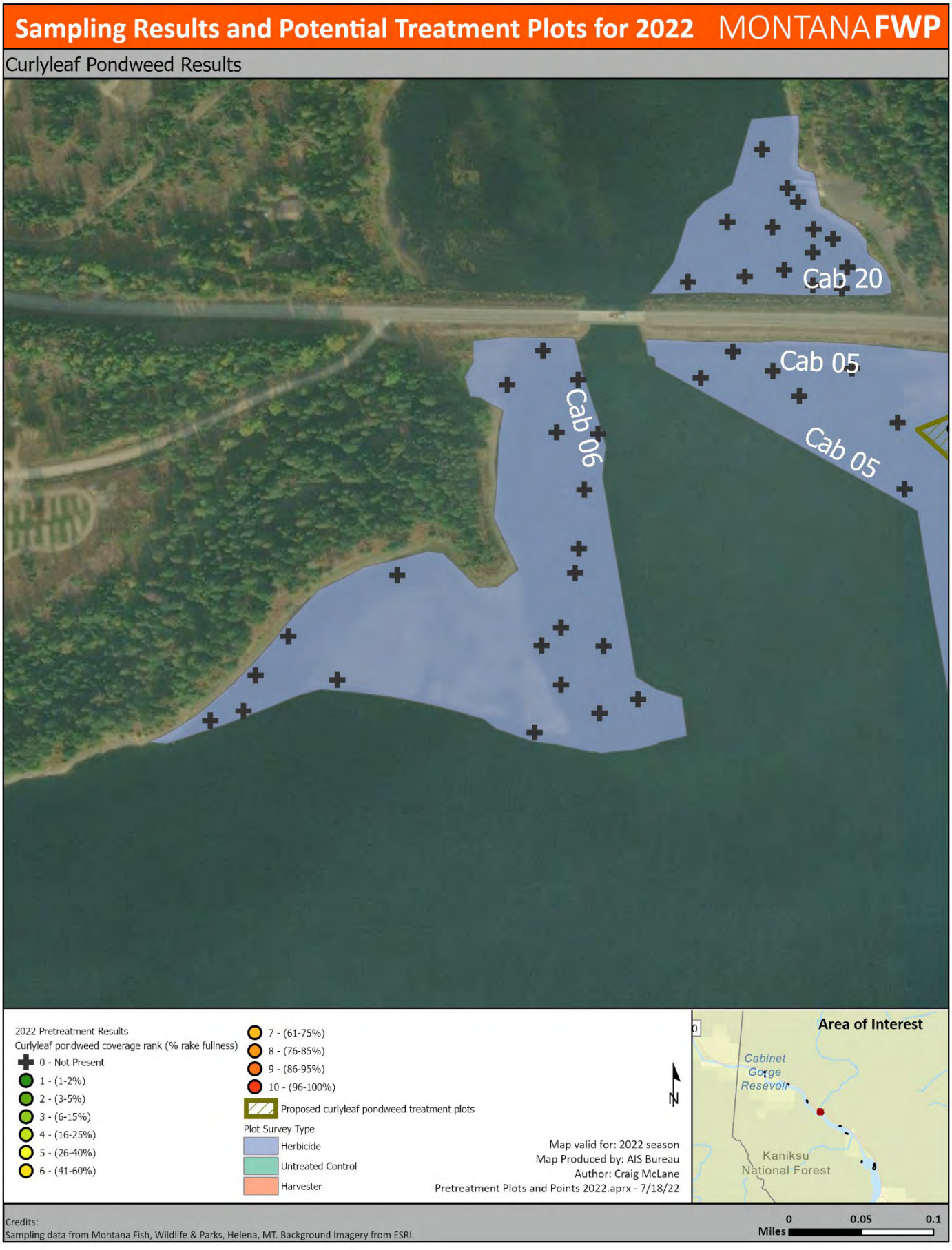

Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Eurasian Watermilfoil Results
11ft
6ft
8ft
4ft
10ft
16ft
8ft
12ft
2ft
4ft
12ft
3ft
10ft
14ft
12ft
3ft
16ft
9ft
Nox 79
12ft
15ft
Eurasian watermilfoil coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed Eurasian watermilfoil treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
N
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
200
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0
0.04
0.07
Miles

Nox-79

Treatment Plot Maps –
Curlyleaf Pondweed (*Potamogeton crispus*)


Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Curlyleaf Pondweed Results
Cab 20
Cab 06
Cab 05
2022 Pretreatment Results
Curlyleaf pondweed coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed curlyleaf pondweed treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
N
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
Cabinet Gorge Reservoir
Kaniksu National Forest
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0
0.07
0.15
Miles

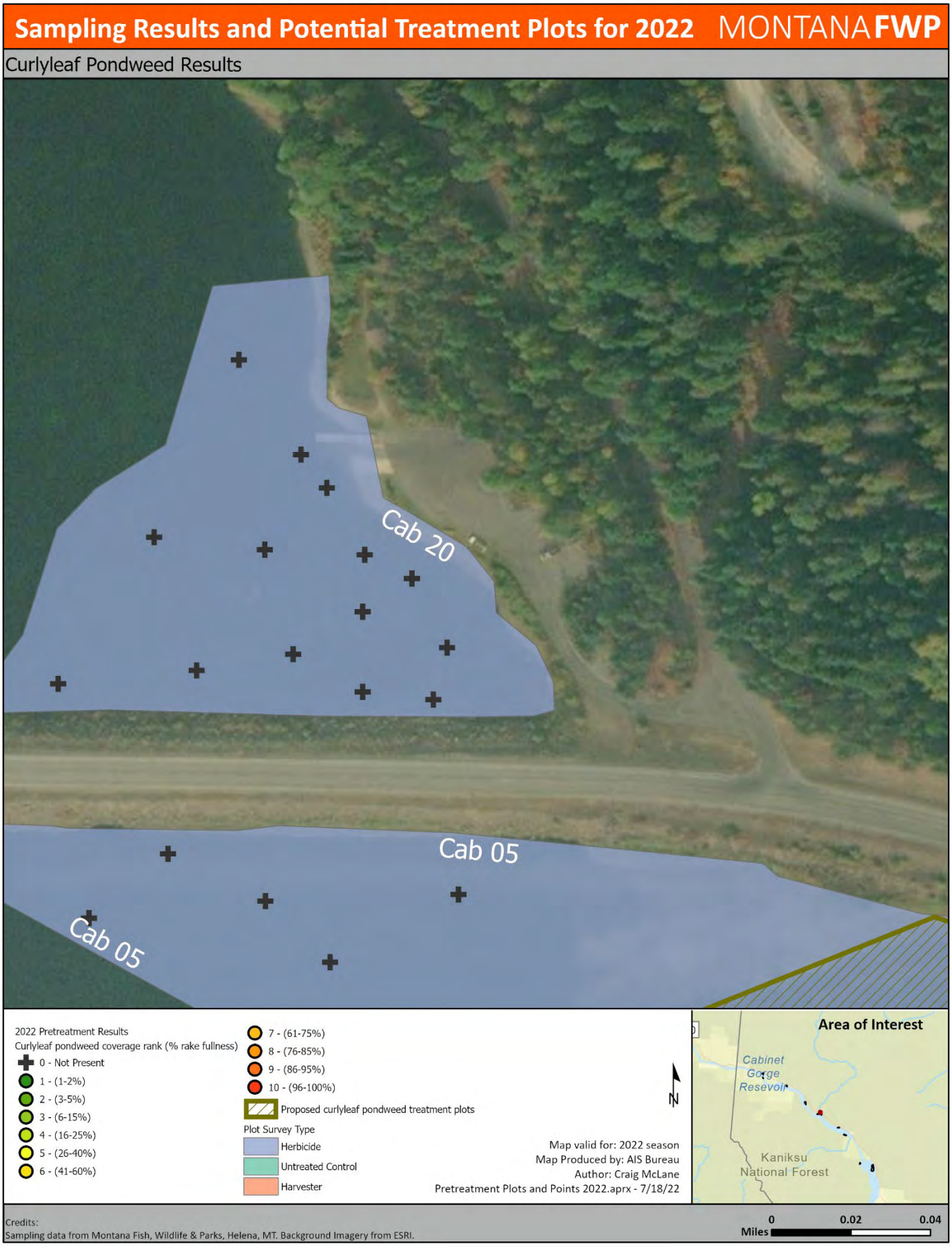
Cab-05


Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Curlyleaf Pondweed Results
Cab 20
Cab 05
Cab 06
Cab 05
2022 Pretreatment Results
Curlyleaf pondweed coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed curlyleaf pondweed treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
N
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
Cabinet Gorge Reservoir
Kaniksu National Forest
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0 0.05 0.1
Miles

Cab-06


Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Curlyleaf Pondweed Results
Cab 12
2022 Pretreatment Results
Curlyleaf pondweed coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed curlyleaf pondweed treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
N
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
200
Cabinet Gorge Reservoir
Kaniksu National Forest
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0
0.05
0.1
Miles

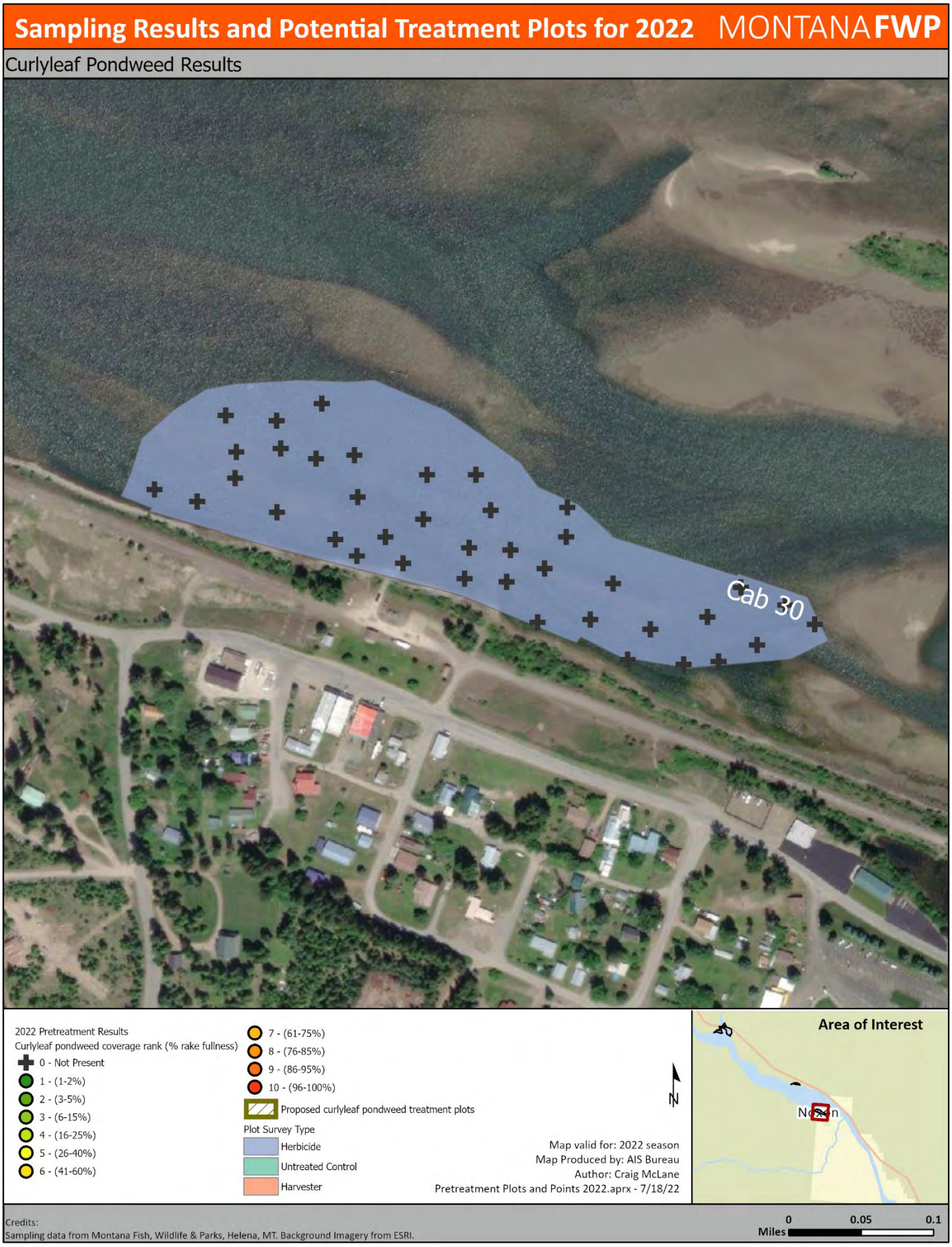
Cab-12


Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Curlyleaf Pondweed Results
Cab 20
Cab 05
Cab 05
2022 Pretreatment Results
Curlyleaf pondweed coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed curlyleaf pondweed treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
N
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
Cabinet Gorge Reservoir
Kaniksu National Forest
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0
0.02
0.04
Miles

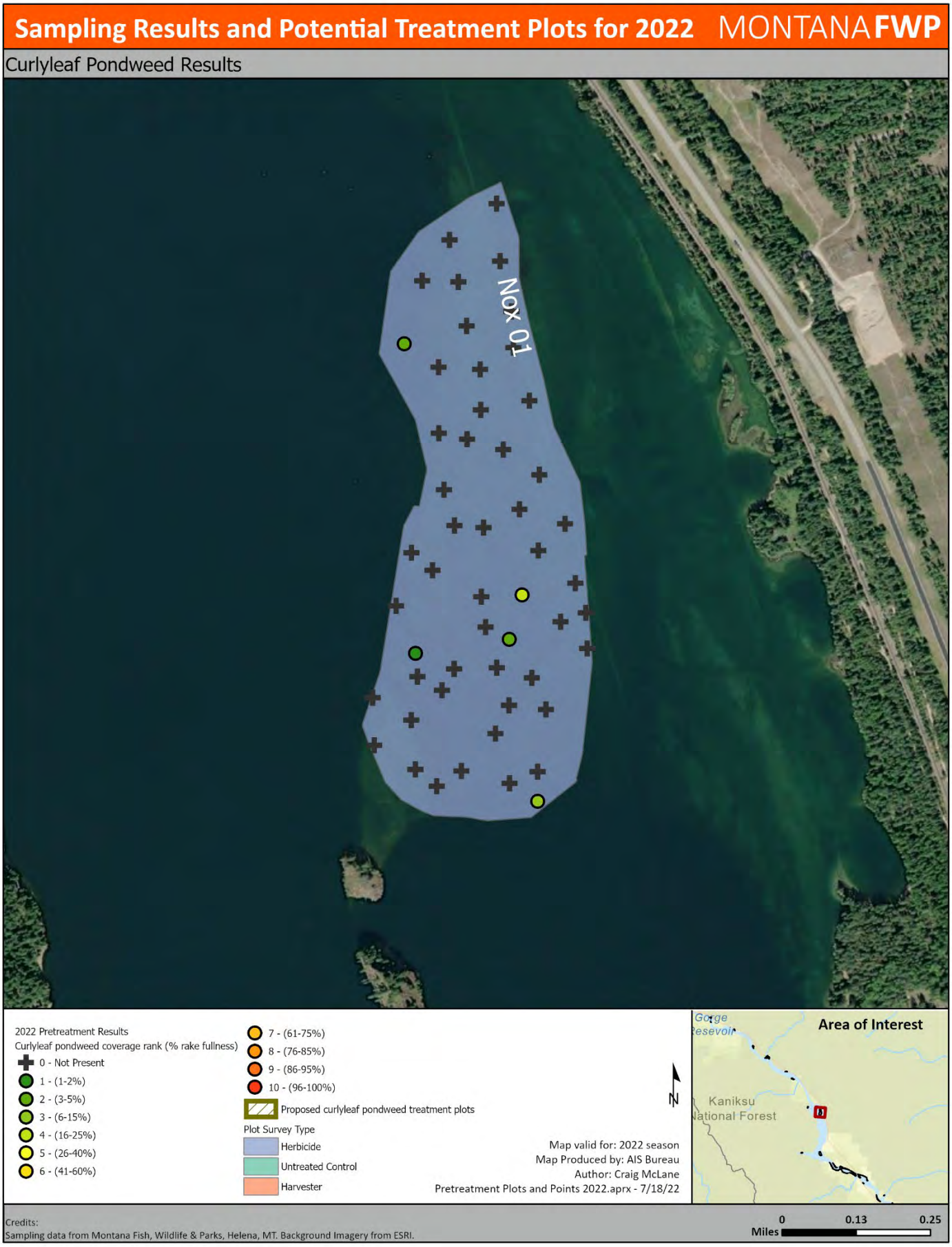
Cab-20


Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Curlyleaf Pondweed Results
Cab 29
2022 Pretreatment Results
Curlyleaf pondweed coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed curlyleaf pondweed treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
N
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
Cabinet Gorge Reservoir
Heron
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0
0.04
0.07
Miles

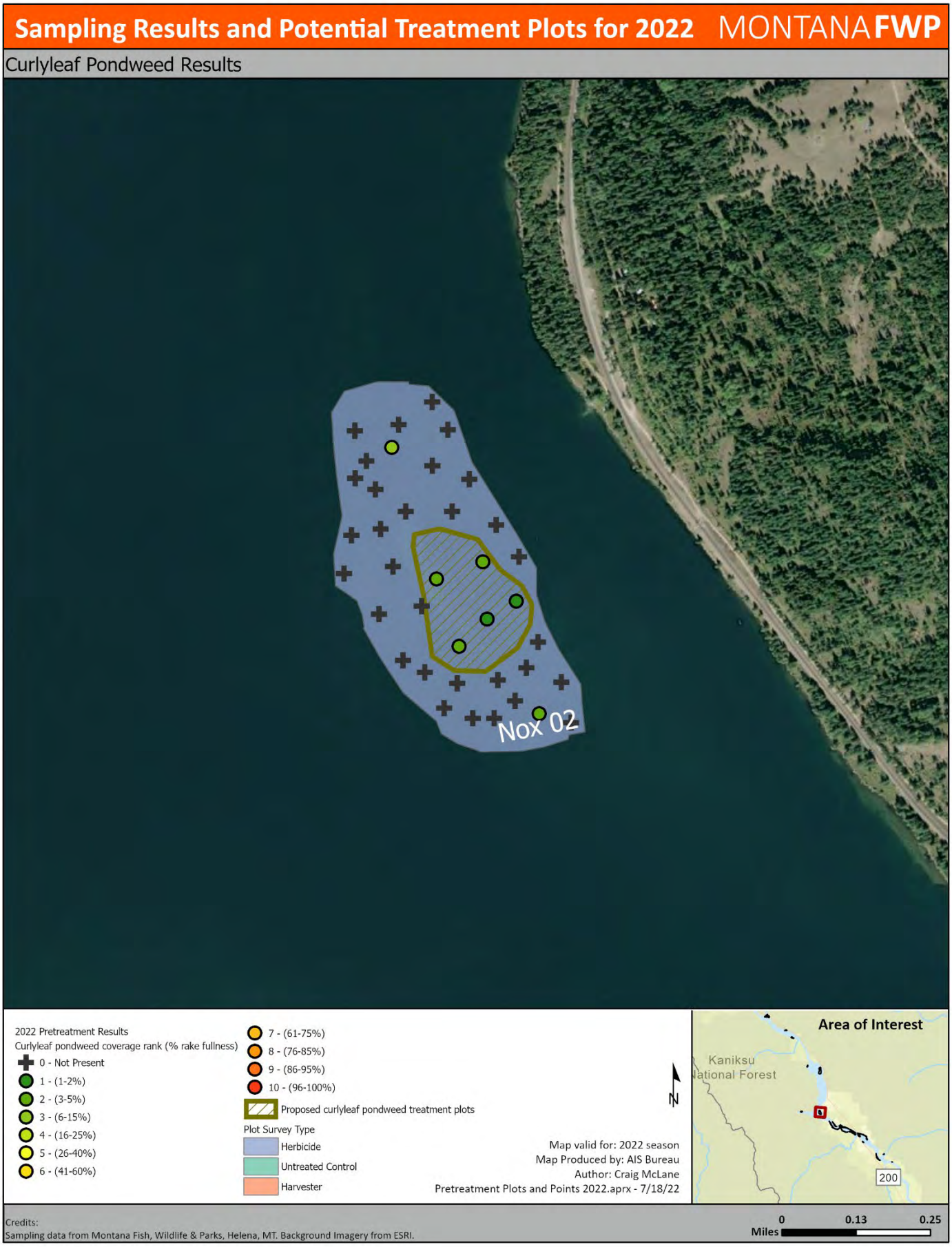
Cab-29


Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Curlyleaf Pondweed Results
Cab 30
2022 Pretreatment Results
Curlyleaf pondweed coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed curlyleaf pondweed treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
N
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0
0.05
0.1
Miles

Cab-30


Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Curlyleaf Pondweed Results
Nox 01
2022 Pretreatment Results
Curlyleaf pondweed coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed curlyleaf pondweed treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
N
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
Kaniksu
National Forest
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0
0.13
0.25
Miles

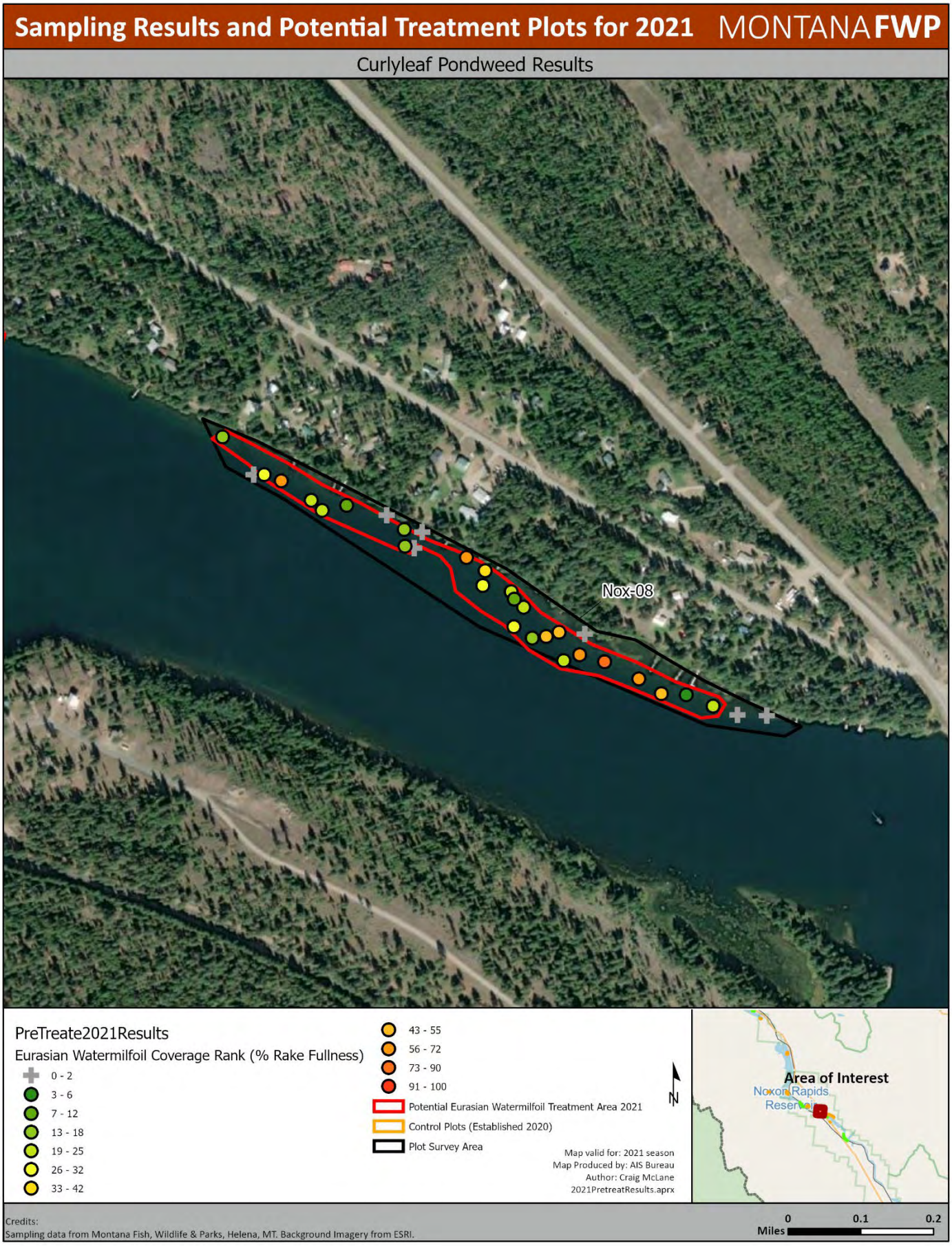
Nox-01


Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Curlyleaf Pondweed Results
Nox 02
2022 Pretreatment Results
Curlyleaf pondweed coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed curlyleaf pondweed treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
N
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
Kaniksu
National Forest
200
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0
0.13
0.25
Miles

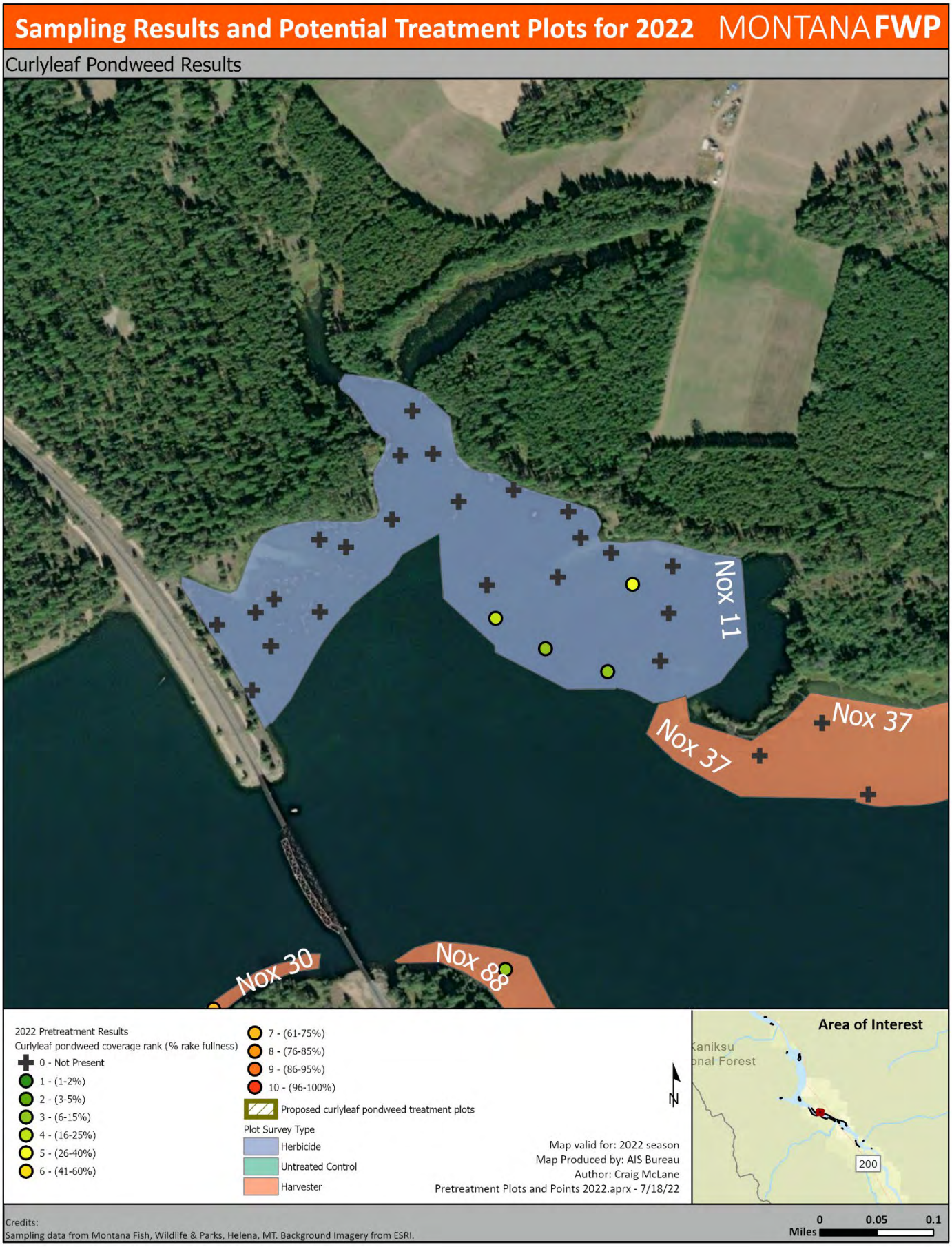
Nox-02


Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Curlyleaf Pondweed Results
Nox 08
Nox 10
2022 Pretreatment Results
Curlyleaf pondweed coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed curlyleaf pondweed treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
N
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
200
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0
0.1
0.2
Miles

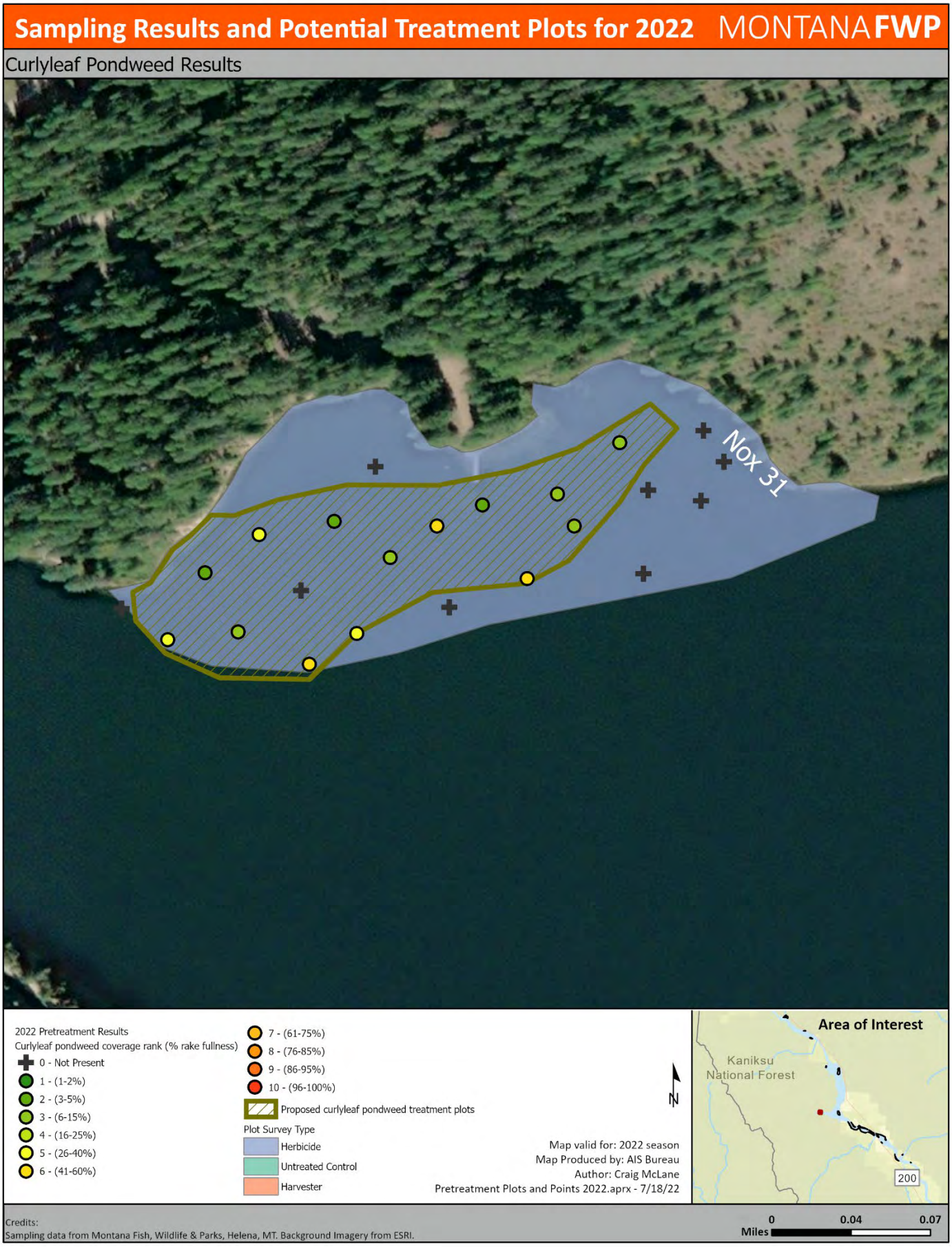
Nox-03


Sampling Results and Potential Treatment Plots for 2021
MONTANA FWP
Curlyleaf Pondweed Results
Nox-08
PreTreate2021Results
Eurasian Watermilfoil Coverage Rank (% Rake Fullness)
0 - 2
3 - 6
7 - 12
13 - 18
19 - 25
26 - 32
33 - 42
43 - 55
56 - 72
73 - 90
91 - 100
Potential Eurasian Watermilfoil Treatment Area 2021
Control Plots (Established 2020)
Plot Survey Area
Map valid for: 2021 season
Map Produced by: AIS Bureau
Author: Craig McLane
2021PretreatResults.aprx
N
Area of Interest
Noxon Rapids
Reservoir
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0
0.1
0.2
Miles

Nox-08


Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Curlyleaf Pondweed Results
Nox 11
Nox 37
Nox 37
Nox 30
Nox 88
2022 Pretreatment Results
Curlyleaf pondweed coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed curlyleaf pondweed treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
N
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
200
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0 0.05 0.1
Miles

Nox-11


Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Curlyleaf Pondweed Results
Nox 31
2022 Pretreatment Results
Curlyleaf pondweed coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed curlyleaf pondweed treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
N
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
Kaniksu
National Forest
200
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0
0.04
0.07
Miles

Nox-31


Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Curlyleaf Pondweed Results
Nox 52
2022 Pretreatment Results
Curlyleaf pondweed coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed curlyleaf pondweed treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
N
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
Gorge Reservoir
Kaniksu National Forest
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0 0.05 0.1
Miles

Nox-52


Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Curlyleaf Pondweed Results
Nox 73
2022 Pretreatment Results
Curlyleaf pondweed coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed curlyleaf pondweed treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
N
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
200
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0
0.03
0.07
Miles

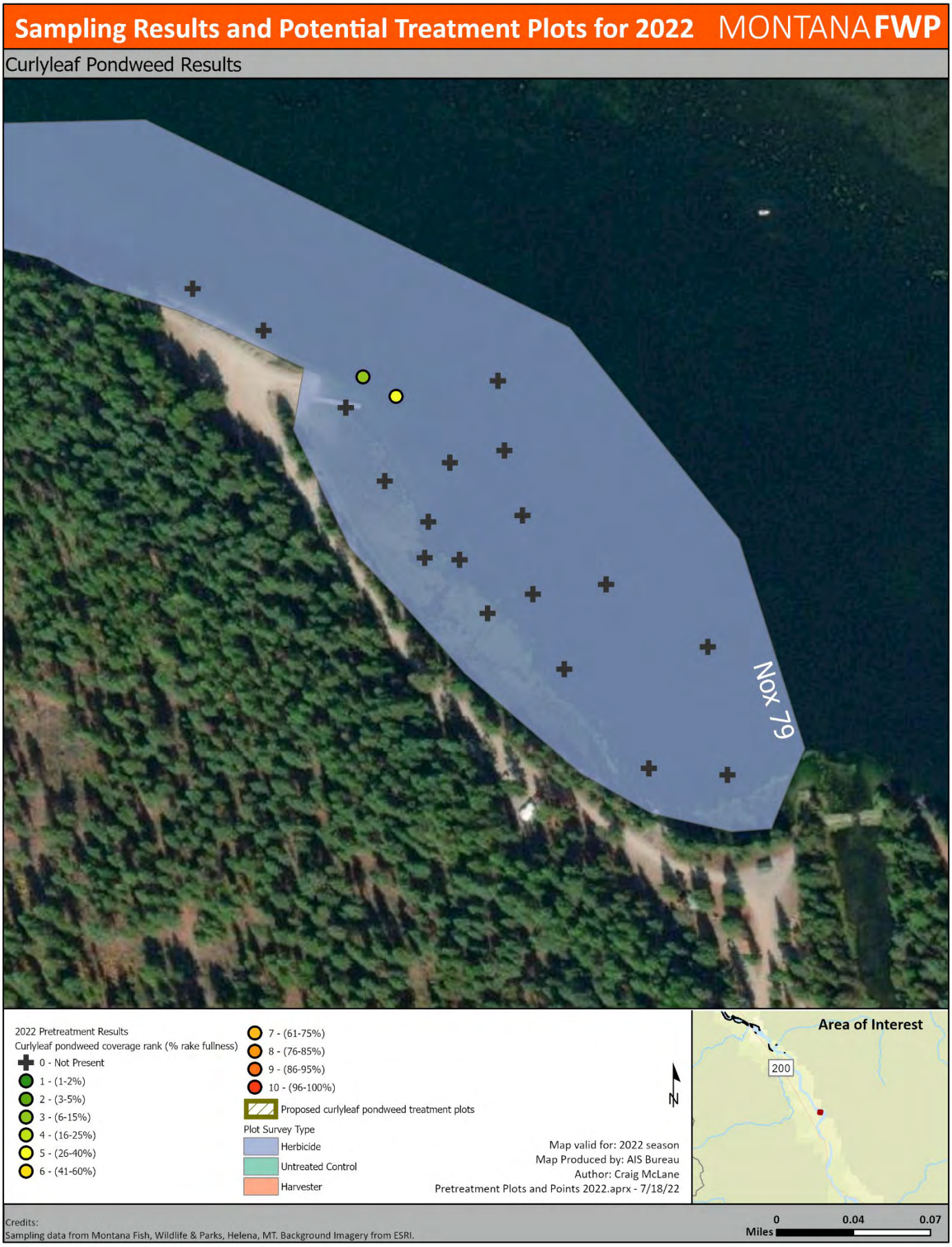
Nox-73


Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Curlyleaf Pondweed Results
Nox 77
2022 Pretreatment Results
Curlyleaf pondweed coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed curlyleaf pondweed treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
N
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
Forest
200
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0
0.03
0.06
Miles

Nox-77

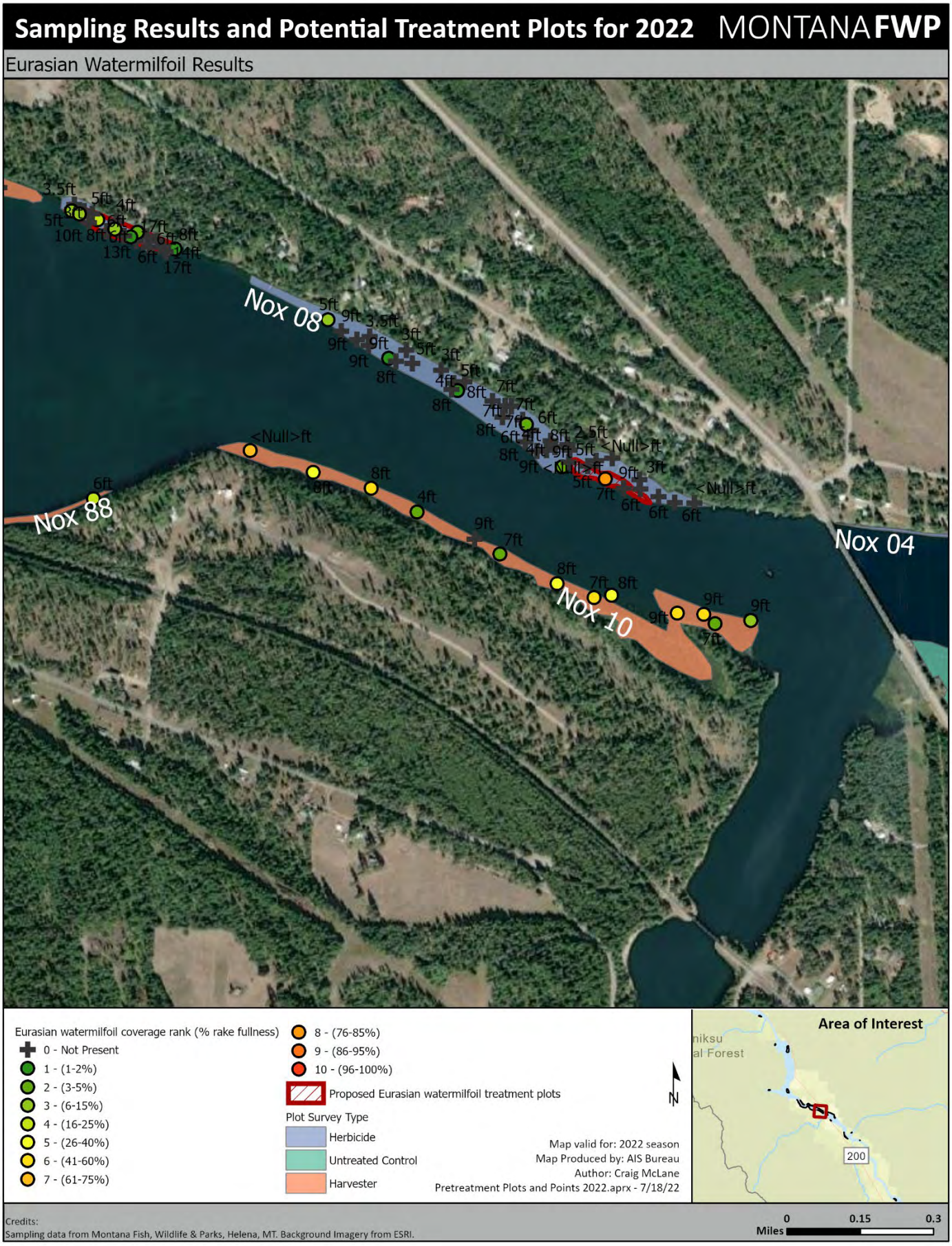

Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Curlyleaf Pondweed Results
Nox 78
2022 Pretreatment Results
Curlyleaf pondweed coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed curlyleaf pondweed treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
N
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
200
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0
0.02
0.04
Miles

Nox-78

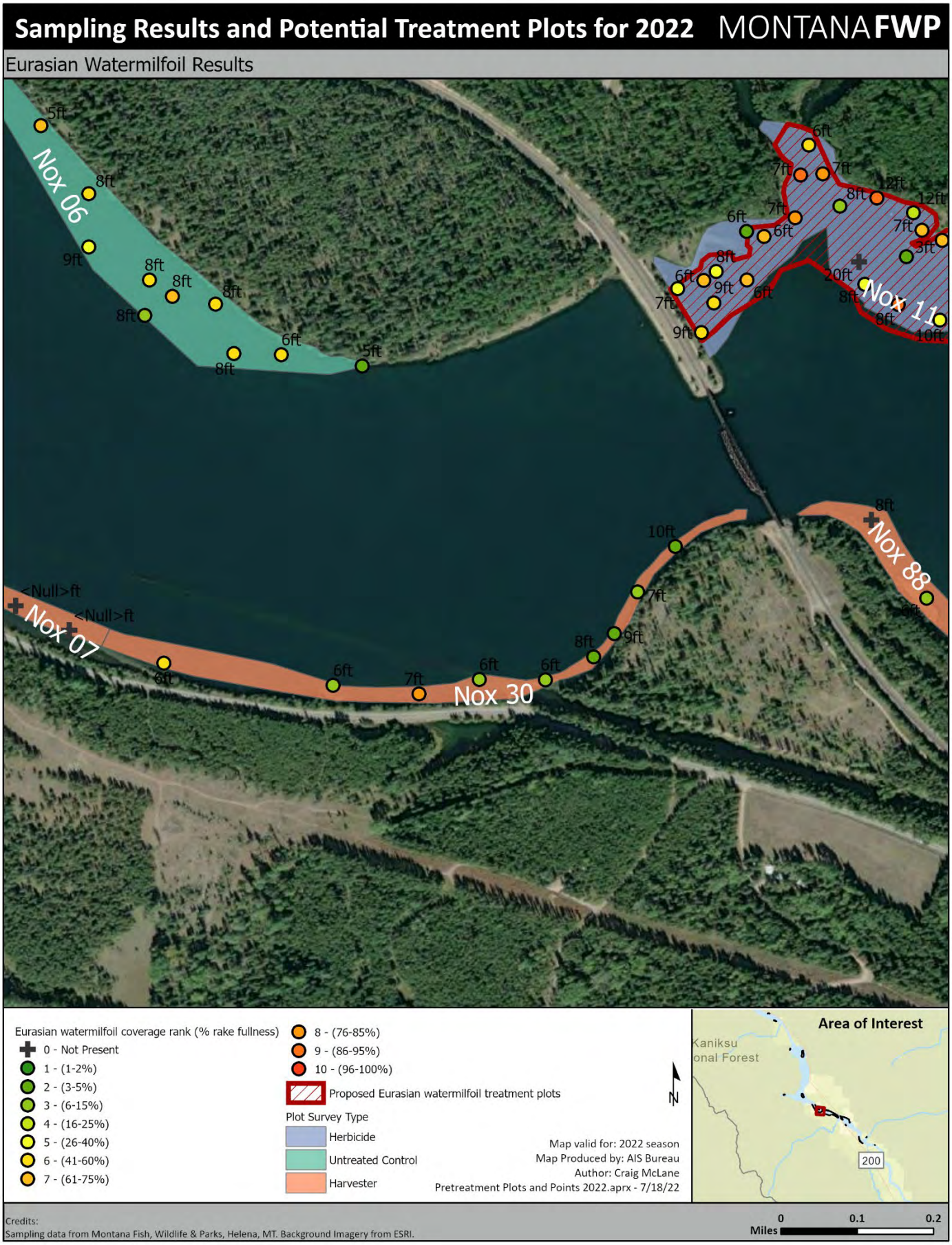

Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Curlyleaf Pondweed Results
Nox 79
2022 Pretreatment Results
Curlyleaf pondweed coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed curlyleaf pondweed treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
N
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
200
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0
0.04
0.07
Miles

Nox-79

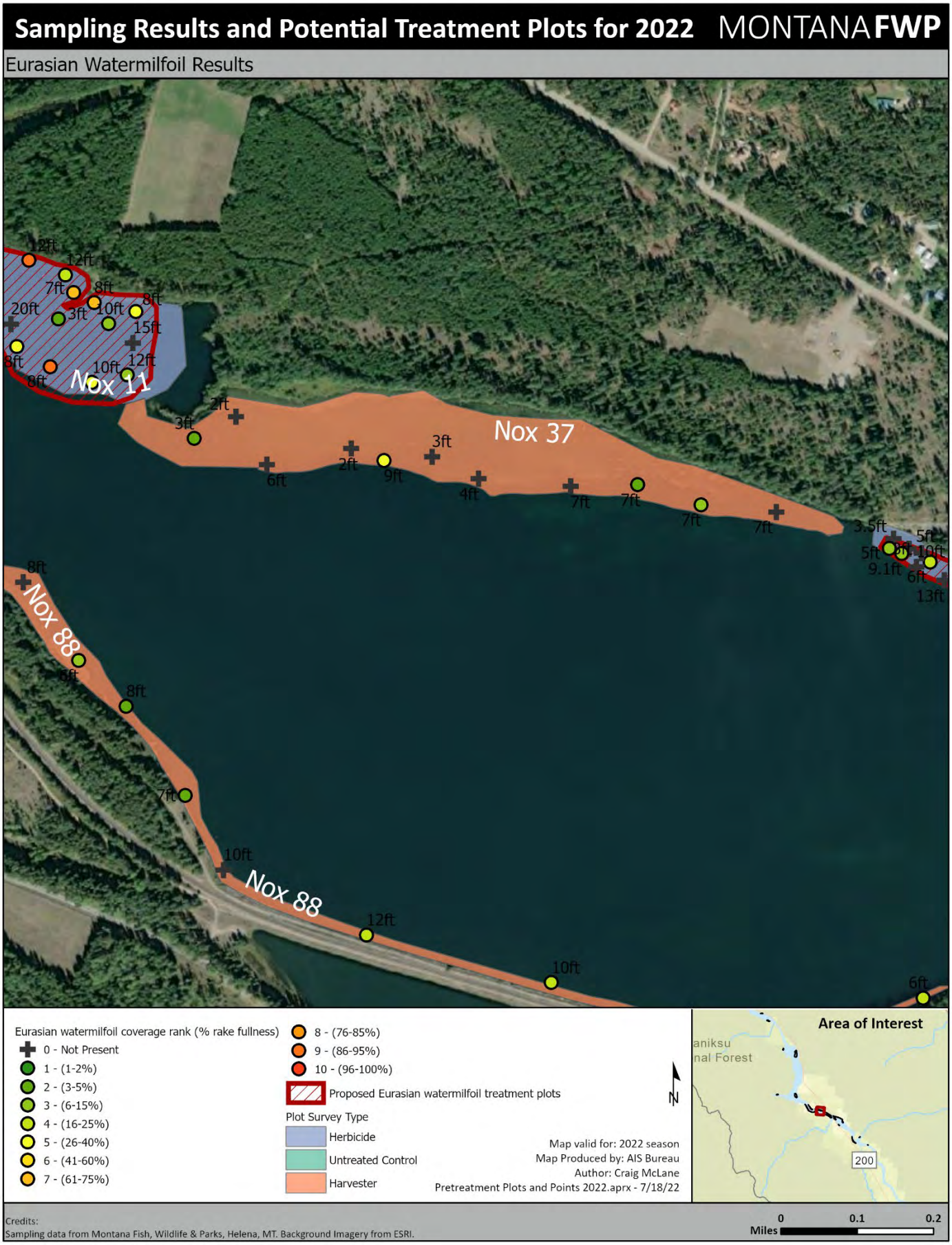
Harvester Plot Maps –
Eurasian Watermilfoil (*Myriophyllum spicatum*)


Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Eurasian Watermilfoil Results
Nox 08
Nox 88
Nox 10
Nox 04
<Null>ft
Eurasian watermilfoil coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed Eurasian watermilfoil treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
200
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0
0.15
0.3
Miles

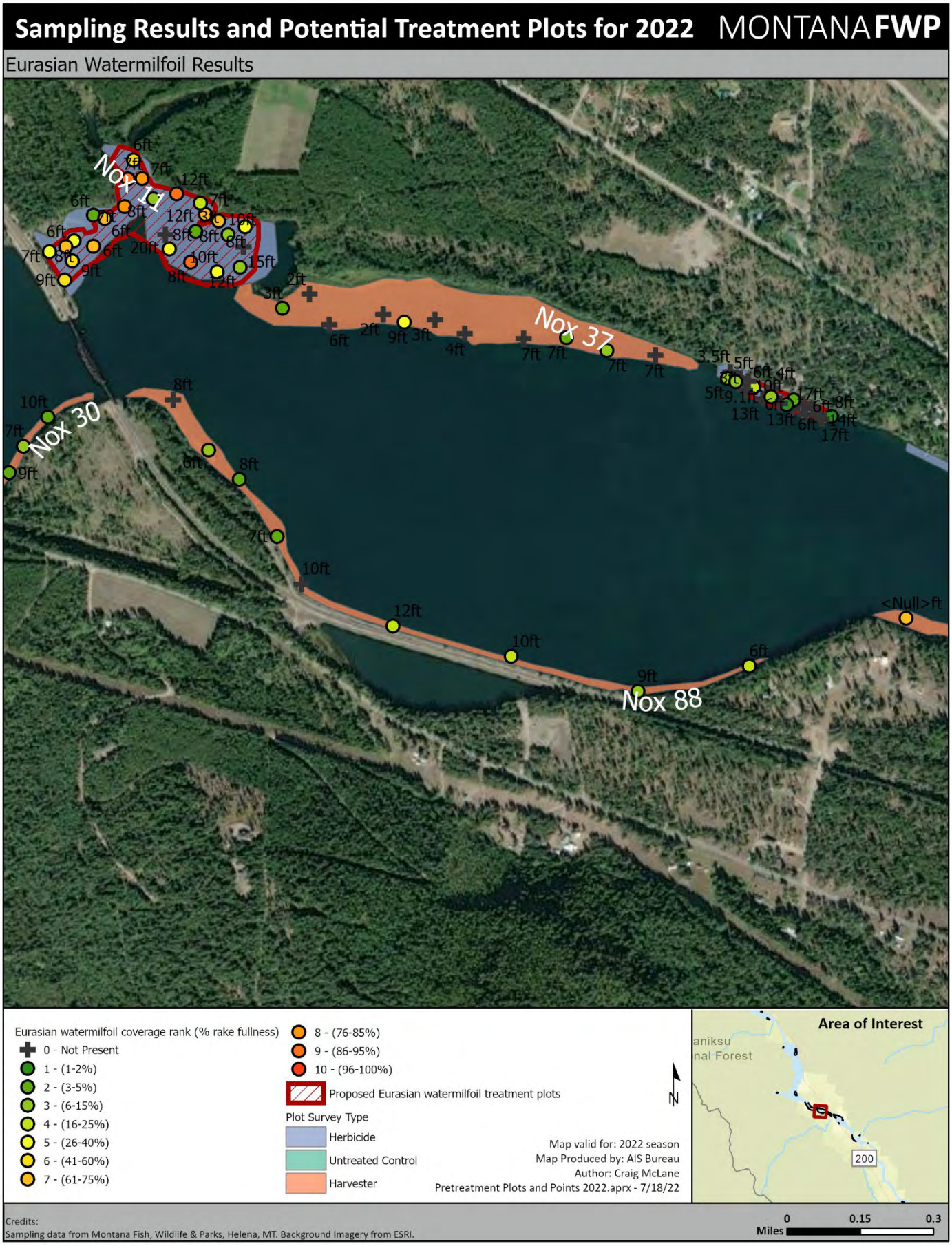
Nox-10


Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Eurasian Watermilfoil Results
Nox 06
Nox 11
Nox 88
Nox 07
Nox 30
Eurasian watermilfoil coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed Eurasian watermilfoil treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
Kaniksu
onal Forest
200
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0
0.1
0.2
Miles

Nox-30

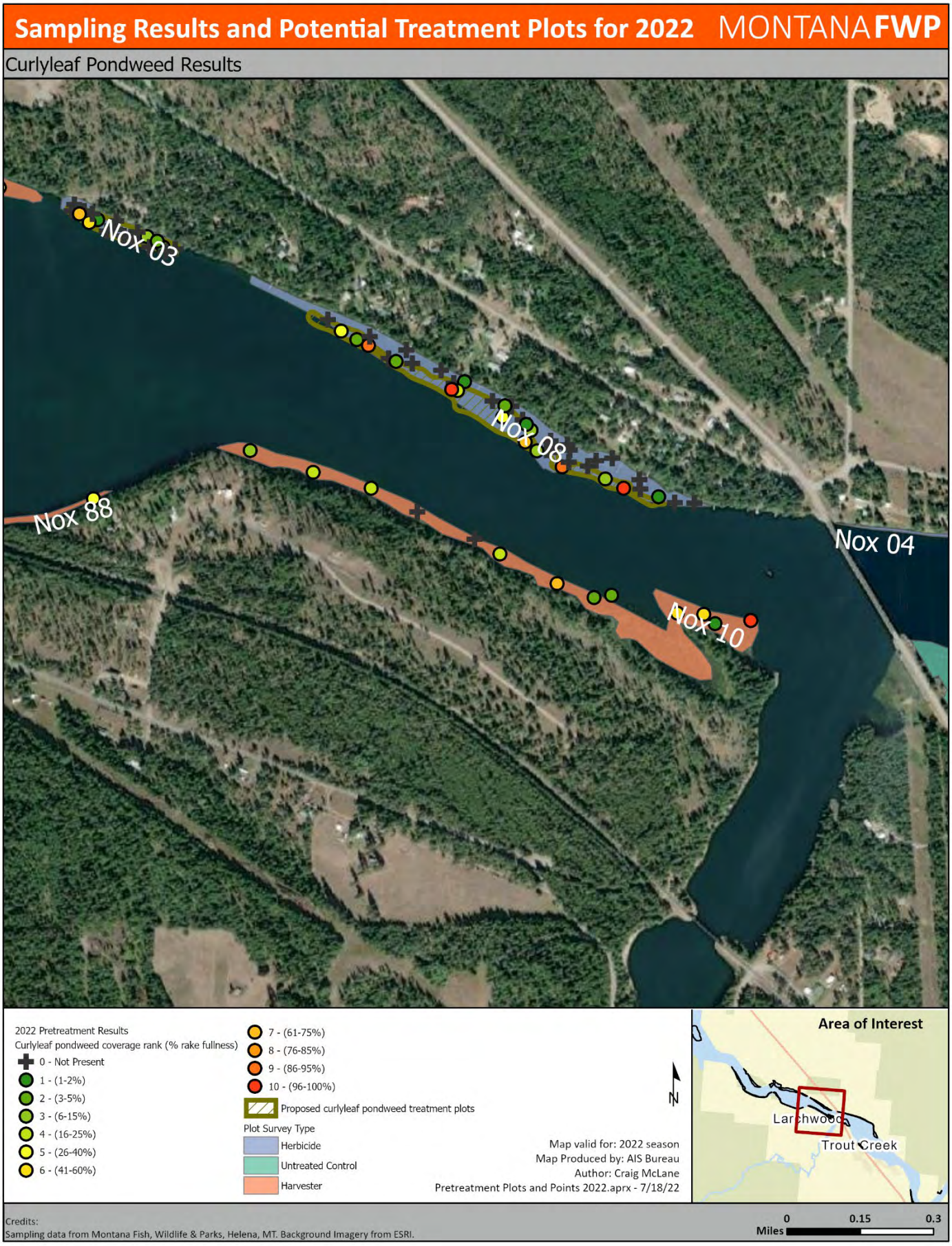

Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Eurasian Watermilfoil Results
Nox 11
Nox 37
Nox 88
Nox 88
12ft
12ft
7ft
8ft
8ft
20ft
3ft
10ft
15ft
8ft
12ft
10ft
8ft
2ft
3ft
6ft
2ft
9ft
3ft
4ft
7ft
7ft
7ft
7ft
3.5ft
5ft
5ft
3ft
10ft
9.1ft
6ft
13ft
8ft
8ft
8ft
7ft
10ft
12ft
10ft
6ft
Eurasian watermilfoil coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed Eurasian watermilfoil treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
N
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
aniksu
nal Forest
200
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0
0.1
0.2
Miles

Nox-37

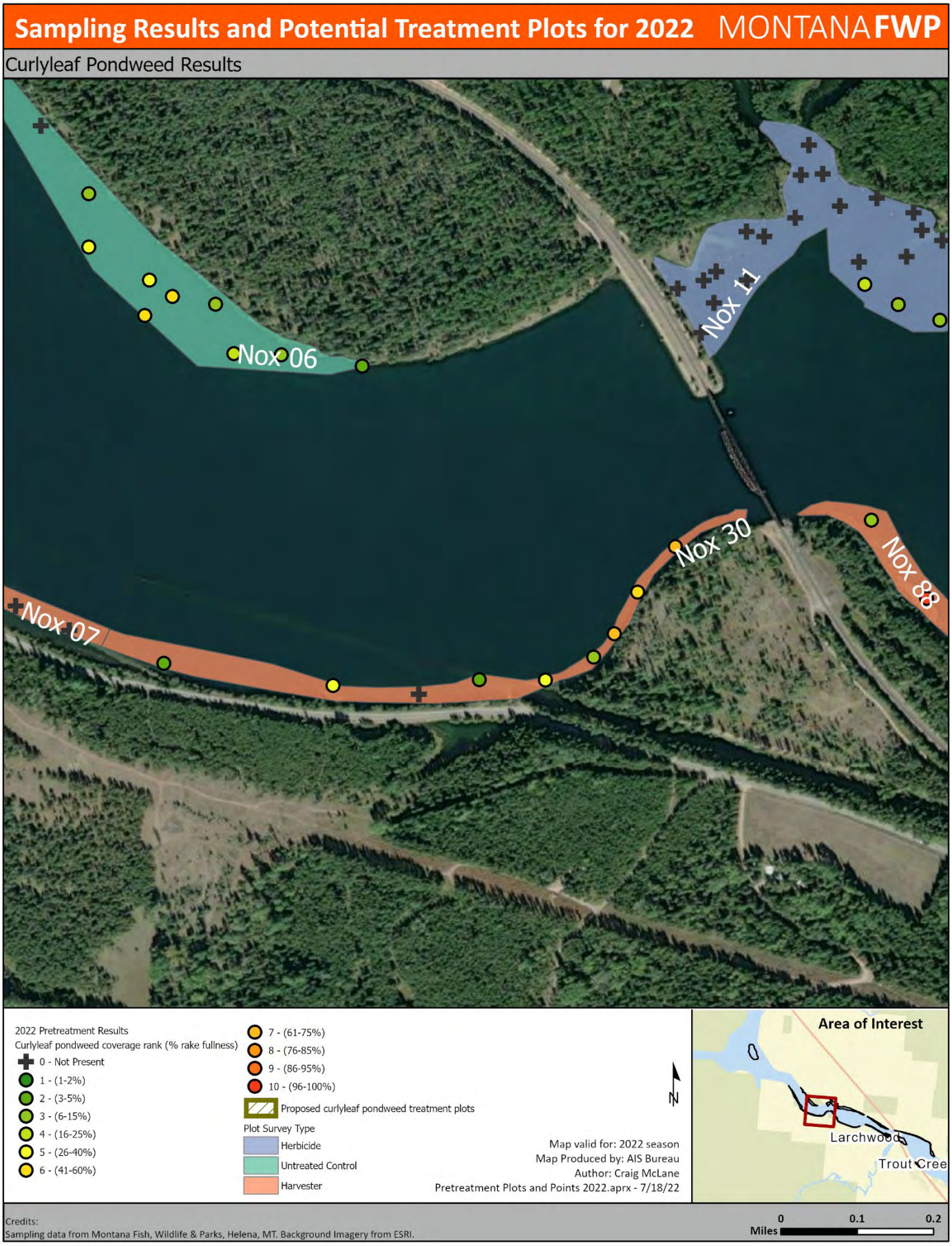

Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Eurasian Watermilfoil Results
Nox 11
Nox 37
Nox 30
Nox 88
Eurasian watermilfoil coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed Eurasian watermilfoil treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
N
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
200
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0
0.15
0.3
Miles

Nox-88

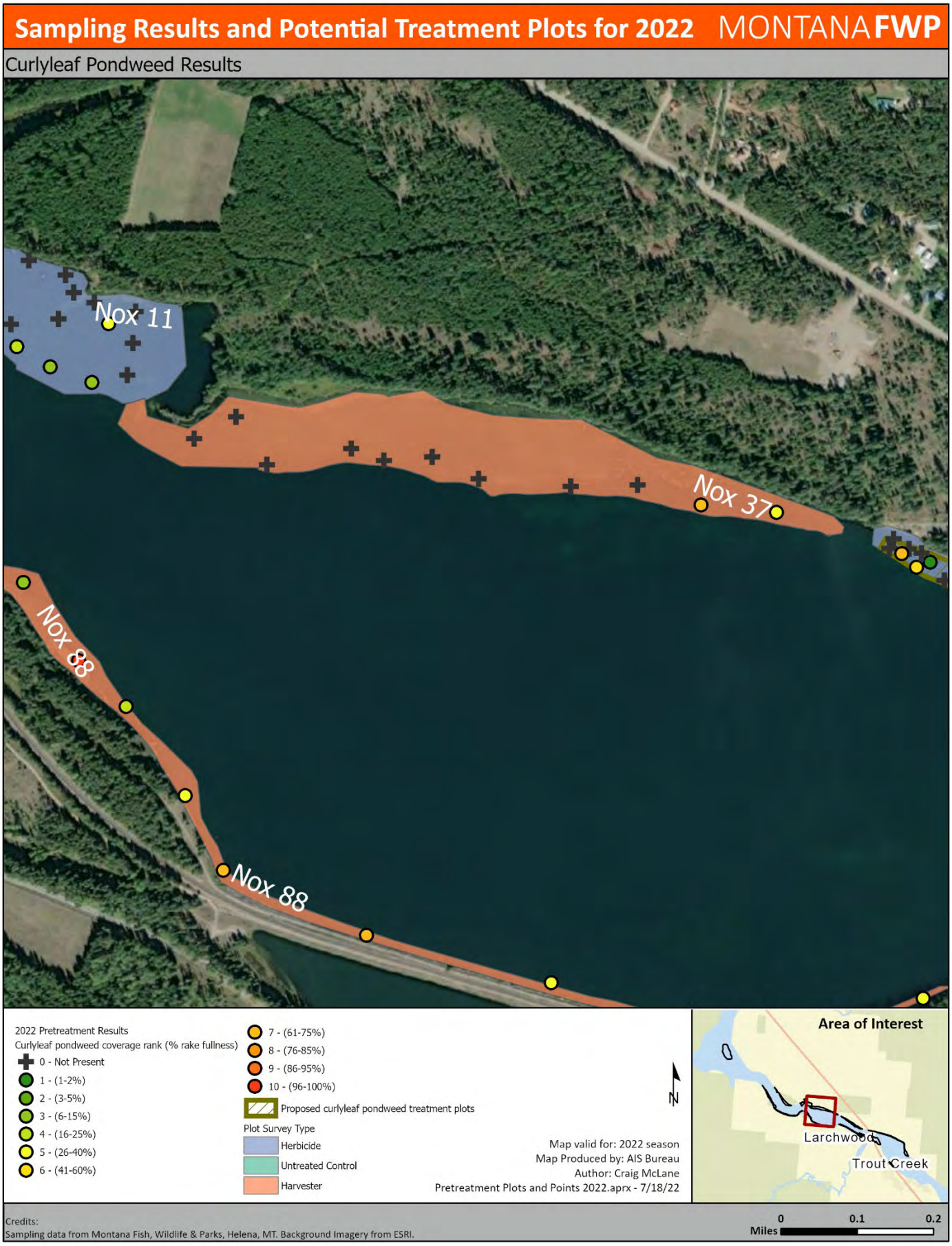
Harvester Plot Maps –
Curlyleaf Pondweed (*Potamogeton crispus*)


Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Curlyleaf Pondweed Results
Nox 03
Nox 08
Nox 88
Nox 04
Nox 10
2022 Pretreatment Results
Curlyleaf pondweed coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed curlyleaf pondweed treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
N
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
Larchwood
Trout Creek
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0
0.15
0.3
Miles

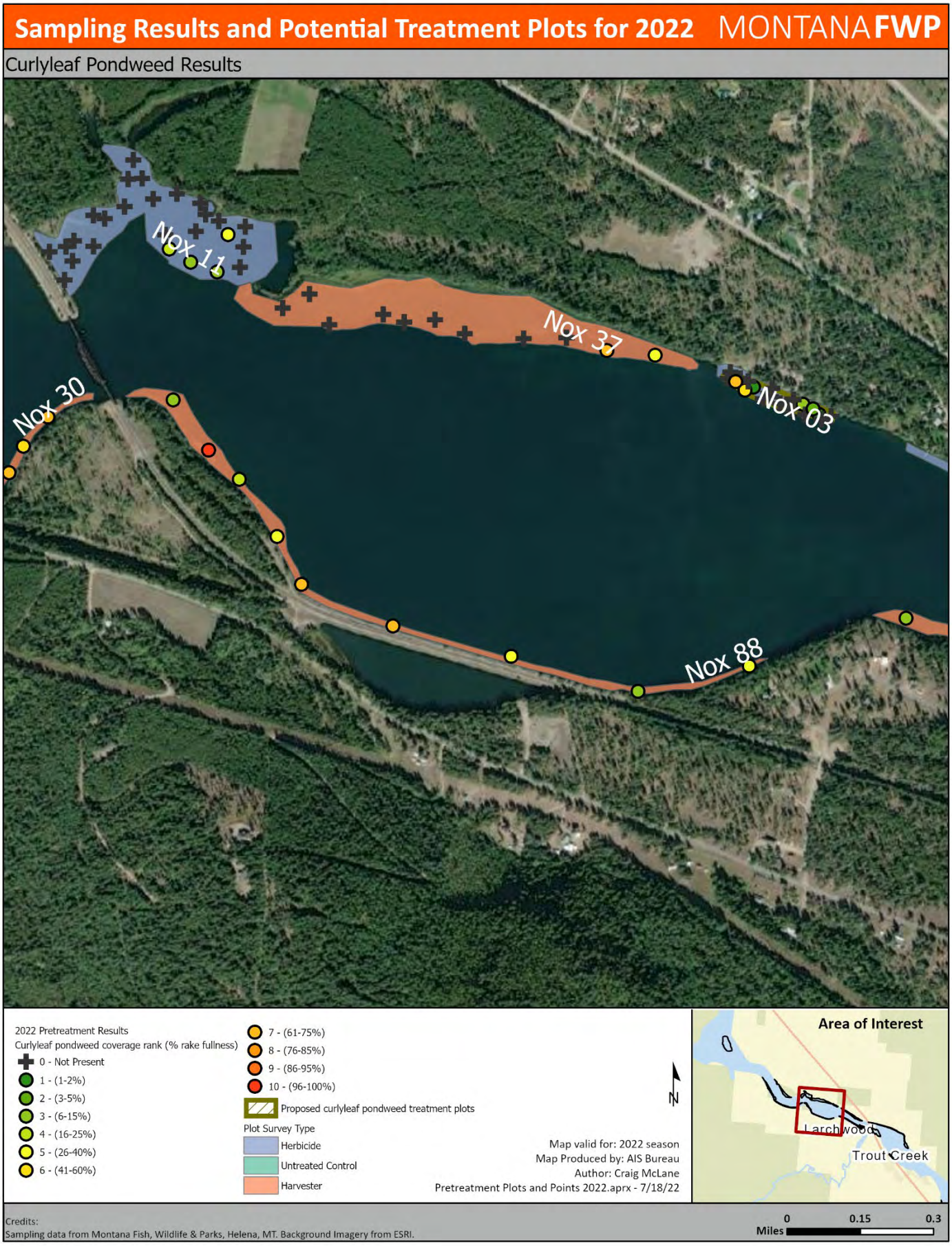
Nox-10


Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Curlyleaf Pondweed Results
Nox 06
Nox 11
Nox 30
Nox 88
Nox 07
2022 Pretreatment Results
Curlyleaf pondweed coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed curlyleaf pondweed treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
N
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
Larchwood
Trout Cree
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0
0.1
0.2
Miles

Nox-30


Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Curlyleaf Pondweed Results
Nox 11
Nox 37
Nox 88
Nox 88
2022 Pretreatment Results
Curlyleaf pondweed coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed curlyleaf pondweed treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
N
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
Larchwood
Trout Creek
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0
0.1
0.2
Miles

Nox-37


Sampling Results and Potential Treatment Plots for 2022
MONTANA FWP
Curlyleaf Pondweed Results
Nox 11
Nox 37
Nox 03
Nox 30
Nox 88
2022 Pretreatment Results
Curlyleaf pondweed coverage rank (% rake fullness)
0 - Not Present
1 - (1-2%)
2 - (3-5%)
3 - (6-15%)
4 - (16-25%)
5 - (26-40%)
6 - (41-60%)
7 - (61-75%)
8 - (76-85%)
9 - (86-95%)
10 - (96-100%)
Proposed curlyleaf pondweed treatment plots
Plot Survey Type
Herbicide
Untreated Control
Harvester
N
Map valid for: 2022 season
Map Produced by: AIS Bureau
Author: Craig McLane
Pretreatment Plots and Points 2022.aprx - 7/18/22
Area of Interest
Larchwood
Trout Creek
Credits:
Sampling data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI.
0
0.15
0.3
Miles

Nox-88