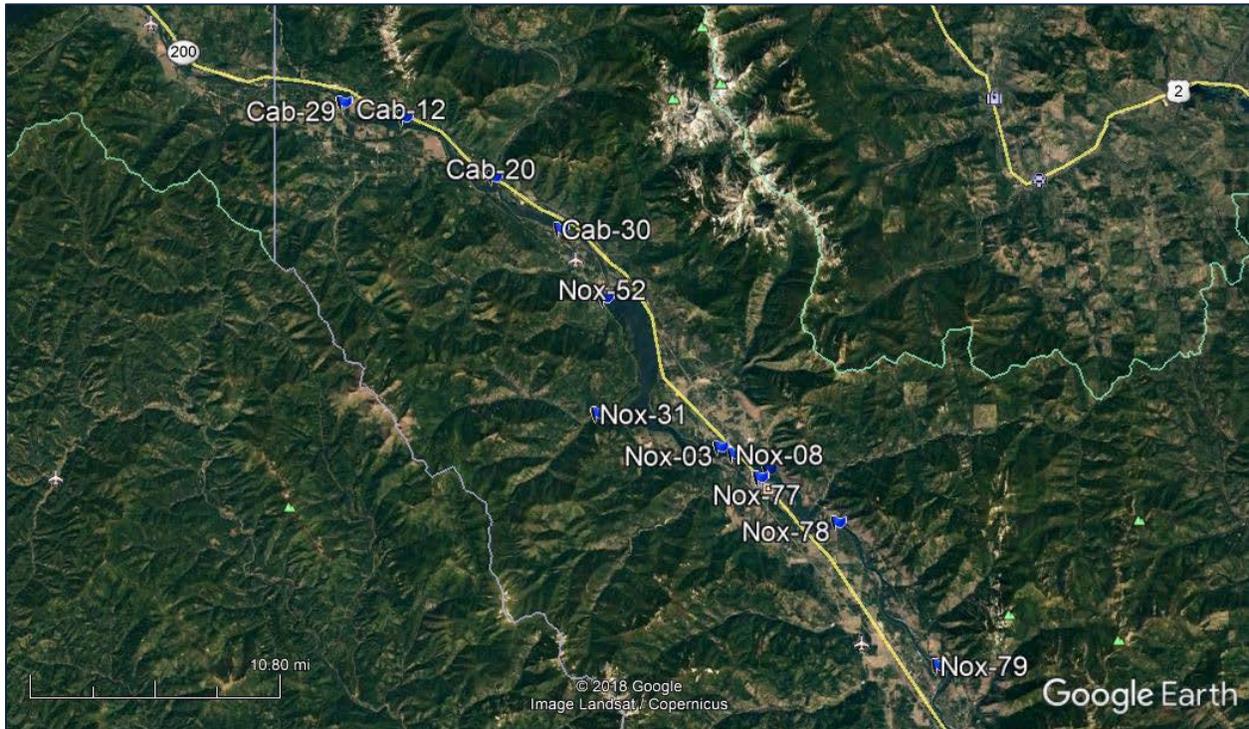


**NOXON RAPIDS & CABINET GORGE RESERVOIRS  
SANDERS COUNTY, MONTANA**

**2018 Aquatic Invasive Species  
Aquatic Pesticide Application Report (APAR)**



Prepared By:

**CLEAN LAKES INC.**

[www.cleanlake.com](http://www.cleanlake.com)

P. O. Box 3548

Coeur d'Alene, Idaho 83814

Prepared For:

Sanders County

1111 Main Street

Thompson Falls, MT 59873

October 2018

**BACKGROUND INFORMATION:** Clean Lakes, Inc. (CLI) was contracted by Sanders County, Montana to provide aquatic herbicide applications for the control of Aquatic Invasive Species (AIS) within discrete areas of Noxon Rapids and Cabinet Gorge Reservoirs in 2018. Aquatic herbicide applications were conducted in compliance with the Montana Department of Environmental Quality, Montana Pollutant Discharge Elimination System (NPDES) Pesticide General Permit (PGP) for Pesticide Application (NOI Permit # MTG870011), as well as the Pesticide Discharge Management Plan (PDMP) developed as part of the PGP. The Permit related information is included in the Noxon Rapids & Cabinet Gorge Reservoirs, Sanders County, Montana 2018 Aquatic Invasive Species Aquatic Pesticide Application Plan (APAP)<sup>1</sup>.

**SCOPE OF WORK:** The scope of work was for the application of aquatic herbicides for the control of Eurasian watermilfoil (EWM) and Curly-leaf pondweed (CLP) in up to 31 acres within previously identified areas of Noxon Rapids and Cabinet Gorge Reservoirs.

**PRE-TREATMENT SURVEYS:** In July 2018 Craig McLane (Montana Fish, Wildlife and Parks) carried out visual and point intercept surveys of areas where nuisance growths of aquatic invasive species (AIS) were identified in the 2017 AIS report provided by Water and Environmental Technologies, Inc (WFT). The July 2018 survey was used as the basis for planning the 2018 treatments. Preliminary survey information from the 2017 WFT survey was received on July 17, 2018 from Craig McLane. On July 31, 2018, CLI received the potential 2018 treatment GIS polygons and survey points from Craig McLane. CLI developed a budgetary plan on August 3, 2018 based on late July 2018 survey information.

**SUMMARY OF ACRES TREATED:** The final plan consisted of treating 30.9 acres of EWM in Noxon Rapids and Cabinet Gorge Reservoirs. Treatment plots were identified through GIS shapefiles and treatment plans at the direction of the county.

---

<sup>1</sup> NOXON RAPIDS AND CABINET GORGE RESERVOIRS, SANDERS COUNTY, MONTANA, 2018 AIS Aquatic Pesticide Application Plan (APAP)

**TREATMENT SCHEDULE:** The aquatic herbicide applications were performed on August 16, 2018, by CLI staff Thomas McNabb and Thomas Moorhouse as outlined in Table 1 below:

**Table 1: Treatment Plots, Dates and Times**

2018 Noxon Rapids-Cabinet Gorge Reservoirs Treatment Plan									
Plot Number	Acreage (Ac)	Mean Depth (ft)	Date	Start	Stop	Wind (mph)	Wind Direction	Sky	Water Temp (F)
NOX-79	1.1	3.3	8/16/2018	2:22	2:29	0		Smoky	72.40
NOX-78	0.2	11.5	8/16/2018	2:55	3:00	<1	NE	Smoky	72.40
NOX-77	0.5	7.5	8/16/2018	3:36	3:44	<1	NE	Smoky	72.40
NOX-04	6.2	6.8	8/16/2018	12:00	12:20	<1	NE	Smoky	72.40
NOX-08	10.6	4.9	8/16/2018	11:13	11:32	0	NE	Smoky	72.40
NOX-03	2.3	8.6	8/16/2018	1:35	1:45	<1	NE	Smoky	72.40
NOX-31	2.3	8.7	8/16/2018	1:04	1:18	<1	NE	Smoky	72.40
NOX-52	1.9	6.6	8/16/2018	12:41	12:47	6	NE	Smoky	72.30
<b>Sub Total</b>	<b>25.1</b>								
CAB-30	3.4	4	8/16/2018	5:15	5:20	4	NE	Smoky	69.00
CAB-20	0.4	8.7	8/16/2018	6:19	6:24	3	NE	Smoky	69.00
CAB-12	1.2	4.9	8/16/2018	5:43	5:48	4	NE	Smoky	69.00
CAB-29	0.8	3.4	8/16/2018	5:57 AM	6:00 AM	3	NE	Smoky	69.00
<b>Sub Total</b>	<b>5.8</b>								
<b>Total</b>	<b>30.9</b>								

**EQUIPMENT USED:** A CLI Littoral Zone Treatment vessel (LittLine®) was used to perform the aquatic herbicide applications on August 16, 2018. The herbicide applications were made to the lower portion of the water column to increase herbicide concentration and exposure time

(CET) relationships for the control of the target species.

The application vessel was inspected on August 15, 2018 at the Clark Fork, Idaho Aquatic Invasive Species inspection station prior to entering Montana.





The AIS treatment area GIS shapefiles were loaded into the LittLine<sup>®</sup> computer system for vessel guidance and herbicide application data recording. The LittLine<sup>®</sup> can place herbicides at any depth within the water column (2 - 30 feet), as well as within the bottom 2 foot of the water

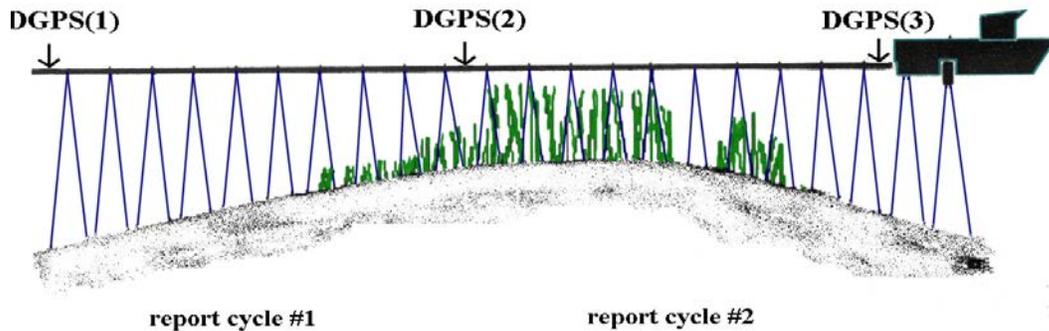


column. Impacts from currents, wind and wave action are reduced in deep water applications through the use of the LittLine<sup>®</sup> application system when compared to conventional subsurface applications. The herbicide application in all of the plots was within the bottom portion of the water column.

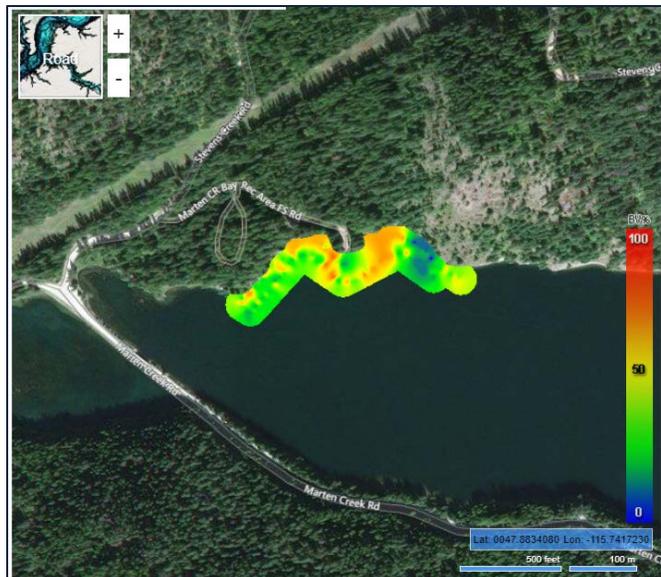


The LittLine system's computerized rate controllers regulate the aquatic herbicide applications through preset treatment rates. When the vessel speeds up and or slows down, the rate controllers adjust the herbicide application rate to match the preset rate in gallons of product per acre.

A Digital Echosounder System with a Structure Scan Module was used to record data of the submerged aquatic vegetation (SAV) profile in the control plots during treatment and during the post treatment survey. Data was collected in both the .SLG (traditional sonar on HDS line) and the .SL2 (multi-channel structure scan) formats.



The sonar data collected was processed and analyzed for At Time of Treatment Submerged Aquatic Vegetation (SAV) in the treatment plots (August 16, 2018), and at six (6) Weeks Post Treatment (September 27, 2018). Data was collected to compare At Time of Treatment to six (6) Week Post Treatment SAV coverage, height in the water column, and bio-volume to support post-treatment efficacy evaluations. An example of SAV conditions at the time of treatment for Plot Nox-31, Noxon Reservoir, is pictured to the right. The MT Fish, Wildlife and Parks crew, led by Craig McLean, met with CLI staff at the Finlay Flats boat ramp on Thursday, September 27, 2018 as they were completing the post treatment and reservoir wide surveys.



**AQUATIC HERBICIDES:** CLI provided the aquatic herbicides for the project some of which were delivered to Avista in 2.5 gallon containers which were then delivered to the staging area.

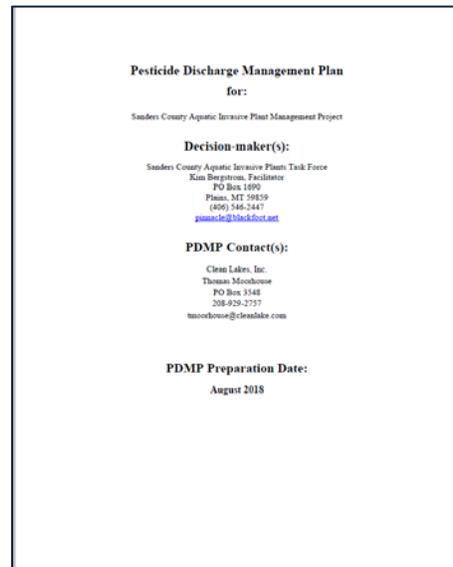
CLI also transported some herbicides to the loading site in 2.5 gallon containers.

CLI provided the required support equipment for material handling (herbicide transfer) as well as support vehicles for the vessels assigned to the project. The aquatic herbicides were applied to the specified areas of Noxon



Rapids and Cabinet Gorge Reservoirs for the control of Eurasian watermilfoil and Curly-leaf pondweed, as outlined in the Site Data Tables below (Herbicide Label's and Material Safety Data Sheets (MSDS's) are included in the APAP). Kim Bergstrom accompanied CLI for several plot treatments and Nate Hall of Avista Corporation supported efforts through material transport to Noxon Rapids Reservoir.

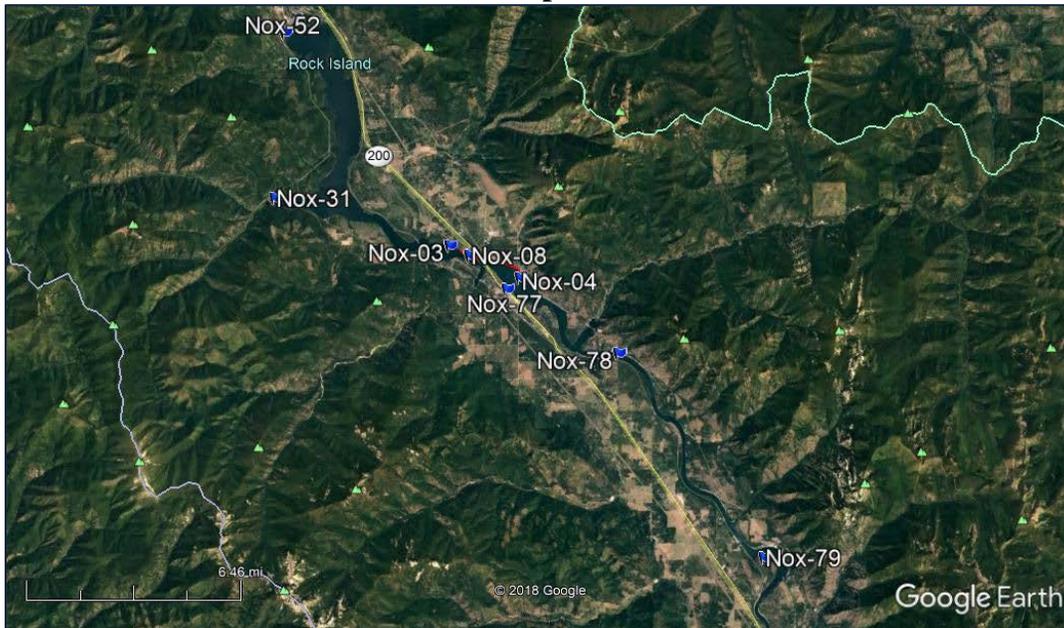
**PERMIT COMPLIANCE:** CLI developed the Aquatic Pesticide Application Plan on August 13, 2018, as well as the Pesticide Discharge Management Plan (PDMP) required for the new NPDES Permit cycle and Sanders County provided the required permits and approvals for the herbicide treatments from the Montana Department of Environmental Quality. There were no adverse incidents to report. Herbicide equipment calibration occurred on August 10, 2018.



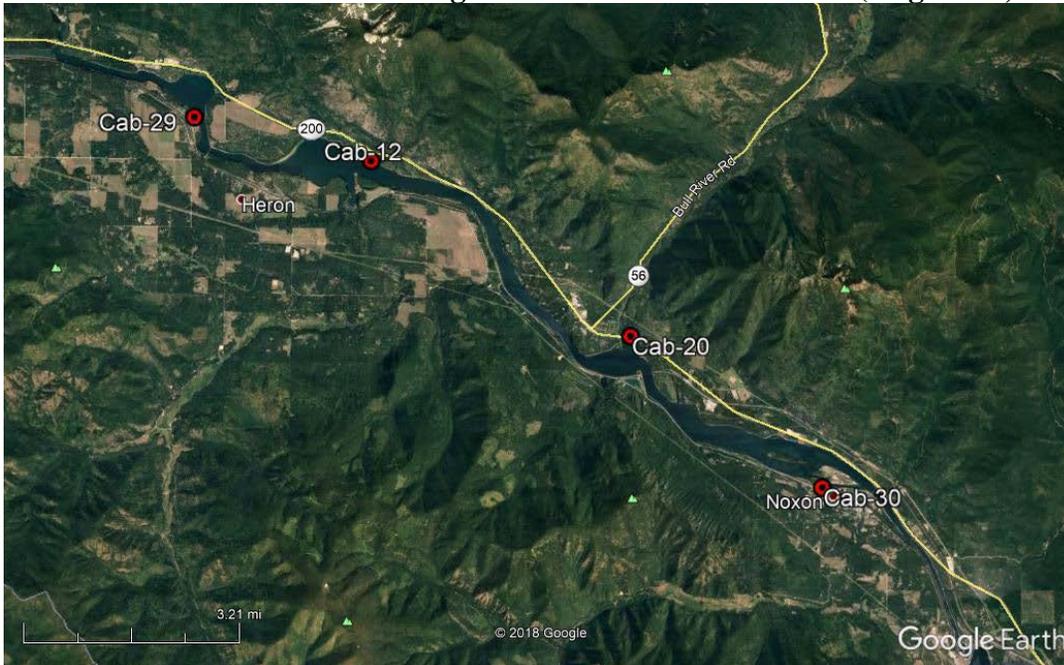
**SERVICES PROVIDED BY CLI:** All manpower, materials, insurance, equipment and technical advice required to perform aquatic herbicide applications in the project areas.

**SERVICES PROVIDED BY SANDERS COUNTY:** Sanders County provided the required permits, published legal notices in newspapers, provided notification to property owners, posting at public boat launch facilities, and provided the project area GIS shapefiles from the 2018 Pre-Treatment Surveys that were used to generate the final 2018 Treatment Plan.

**TREATMENT AREA PLOT MAPS**  
**Overview of the 2018 Noxon Rapids Reservoir Treatment Plots**



**Overview of the 2018 Cabinet Gorge Reservoir Treatment Plots (August 16, 2018)**



## TREATMENT SITE DATA

Table 2: Noxon Rapids  
Reservoir, Plot Treatment Site Data, Aquatic Herbicides Used:

2018 Noxon-Cabinet Reservoirs Treatment Plan					Tribune (diquat)			Aquathol K (endothall)/ Tribune (diquat)		
Plot Number	Acreage	Mean Depth	Volume	Product	Rate ppm	Gal/Aft	Gal Total Site	Rate ppm	Gal/Aft	Gal Total Site
NOX-79	1.1	3.3	4	End/Diq	0.37	0.5	2.2	1.80	1.14	4.1
NOX-78	0.2	11.5	2	Diquat	0.37	0.5	0.4	0.00	0.00	0.00
NOX-77	0.5	7.5	4	Diquat	0.37	0.5	1.0	0.00	0.00	0.00
NOX-04	6.2	6.8	42	End/Diq	0.37	0.5	12.4	1.80	1.14	48.0
NOX-08	10.6	4.9	52	End/Diq	0.37	0.5	21.2	1.80	1.14	59.1
NOX-03	2.3	8.6	20	End/Diq	0.37	0.5	4.6	1.80	1.14	22.5
NOX-31	2.3	8.7	20	End/Diq	0.37	0.5	4.6	1.80	1.14	22.8
NOX-52	1.9	6.6	13	End/Diq	0.37	0.5	3.8	1.80	1.14	14.3
CAB-30	3.4	4	14	End/Diq	0.37	0.5	6.8	1.80	1.14	15.5
CAB-20	0.4	8.7	3	Diquat	0.37	0.5	0.8	0.00	0.00	0.00
CAB-12	1.2	4.9	6	End/Diq	0.37	0.5	2.4	1.80	1.14	6.7
CAB-29	0.8	3.4	3	End/Diq	0.37	0.5	1.6	1.80	1.14	3.1
<b>Total</b>	<b>30.9</b>		<b>182</b>				<b>61.8</b>			<b>195.9</b>

Table 2 Notes: The 2018 Treatment priority was based on treatment of higher use or recreationally important areas. End = Endothall, Diq = Diquat.

**Table 3: Plot Percent SAV Cover and SAV Bio-Volume Present  
At Time of Application and Six (6) Weeks Post Treatment**

2018 Noxon Rapids Reservoir AIS Treatment Plots: At Time of and ~ Six (6) Week Post Plot SAV % Cover and SAV BioVolume Data (Grid Data)									
Plot Number	SAV % Cover	SAV % Bio-Volume	Date Data Collected Pre Treatment	SAV % Cover	SAV % Bio-Volume	Date Data Collected- Post Treatment	SAV % BV Change	Post Treatment EWM Injury Rank	Herbicides Used (Aquathol K and or Tribune)
<b>Noxon Rapids</b>									
Nox-03	100.0	35.5	8/16/2018	94.1	19.1	9/27/2018	-46%	90% +/-	Endo/Diquat
Nox-04	96.6	35.8	8/16/2018	97.6	18.5	9/27/2018	-48%	50% +/-	Endo/Diquat
Nox-08	100.0	45.3	8/16/2018	87.2	23.1	9/27/2018	-49%	60% +/-	Endo/Diquat
Nox-31	99.9	39.4	8/16/2018	75.1	21.7	9/27/2018	-45%	70% +/-	Endo/Diquat
Nox-52	92.3	27.4	8/16/2018	100.0	32.8	9/27/2018	20%	90% +/-	Endo/Diquat
Nox-77	100.0	28.6	8/16/2018	100.0	28.6	9/27/2018	0%	95% +/-	Diquat
Nox-78	100.0	32.3	8/16/2018	100.0	32.3	9/27/2018	0%	50% +/-	Diquat
Nox-79	99.9	39.0	8/16/2018	100.0	44.9	9/27/2018	15%	85% +/-	Endo/Diquat

2018 Cabinet Gorge Reservoir AIS Treatment Plots: At Time of and ~ Six (6) Week Post Plot SAV % Cover and SAV BioVolume Data (Grid Data)									
Plot Number	SAV % Cover	SAV % Bio-Volume	Date Data Collected Pre Treatment	SAV % Cover	SAV % Bio-Volume	Date Data Collected- Post Treatment	SAV % BV Change	Post Treatment EWM Injury Rank	Herbicides Used (Aquathol K and or Tribune)
<b>Cabinet Gorge Reservoir</b>									
Cab-12	100.0	50.6	8/16/2018	99.6	19.2	9/27/2018	-62%	95% +/-	Endo/Diquat
Cab-20	100.0	43.6	8/16/2018	99.2	33.1	9/27/2018	-24%	95% +/-	Diquat
Cab-29	100.0	27.7	8/16/2018	98.2	11.3	9/27/2018	-59%	95% +/-	Endo/Diquat
Cab-30	100.0	33.2	8/16/2018	98.5	26.7	9/27/2018	-20%	95% +/-	Endo/Diquat

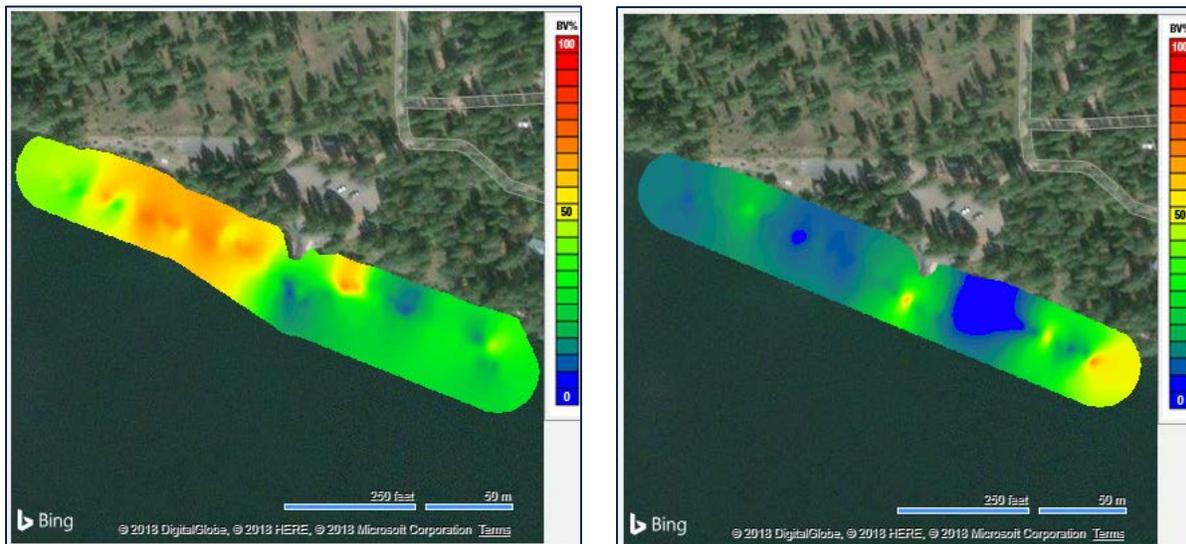
Note: Herbicides used Endo/Diquat = Combination of Aquathol K (Endothall) and Tribune (Diquat).  
Post Treatment Injury Rank of herbicide injury to EWM on September 27, 2018, approximately 6 weeks post treatment, were estimated during a survey by Tom Moorhouse.

The observations contained in this report are general six (6) week Post Treatment observations, and should not be used for control efficacy evaluations. In addition, it should be noted that a Post Treatment increase in Submerged Aquatic Vegetation (SAV) Percent Area Coverage, height in the water column, and bio-volume can result, and can be attributed to an increase in native vegetation in response to selectively controlling the target species.

PRE AND POST TREATMENT SUBMERSED AQUATIC VEGETATION (SAV) DATA,  
SAV PERCENT COVER, AND BIO-VOLUME DATA SETS

NOXON RAPIDS RESERVOIR

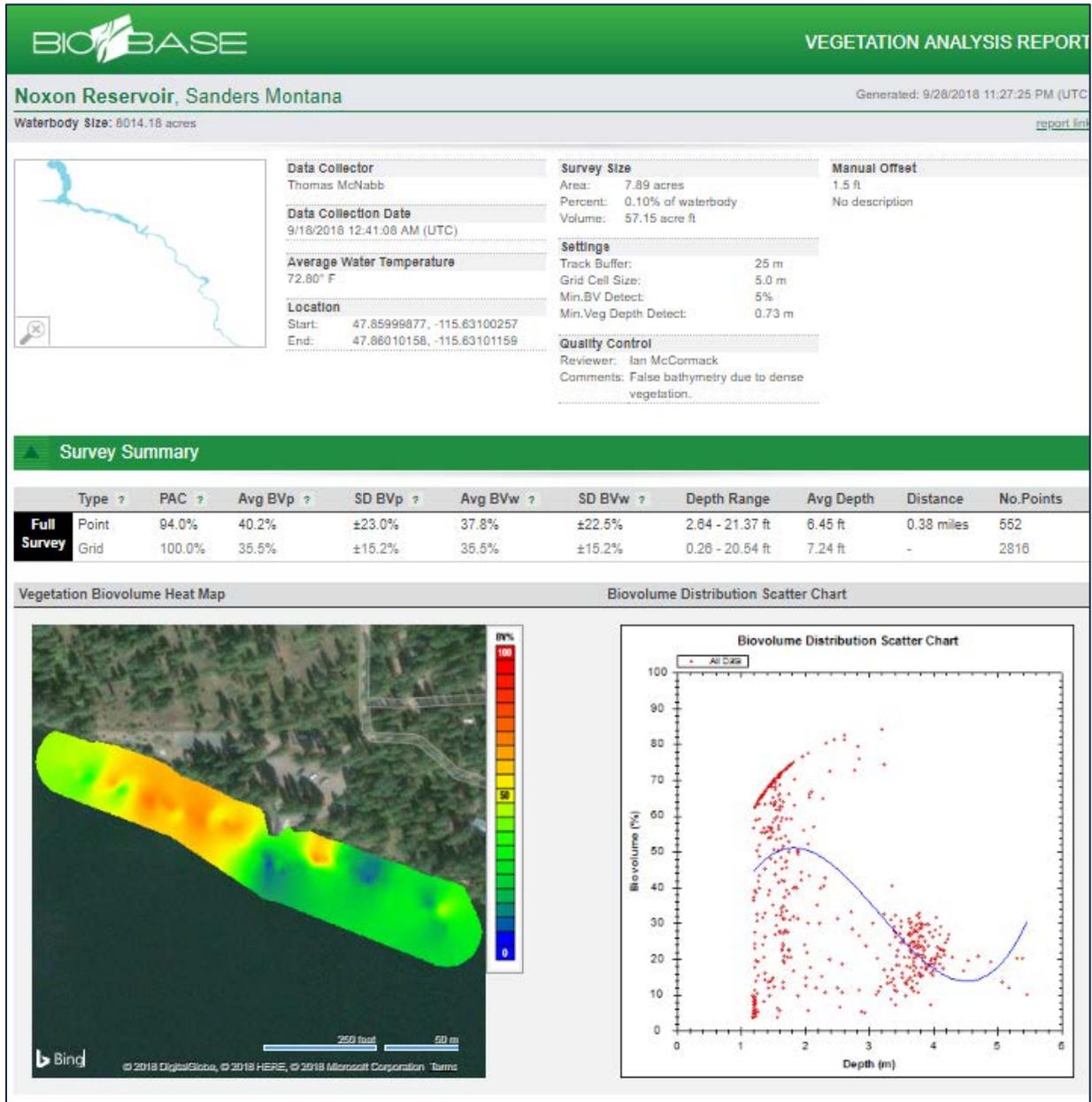
Plot Nox-03: At Time of Treatment (August 16, 2018 Left),  
~ Six (6) Weeks Post (September 27, 2018 Right)



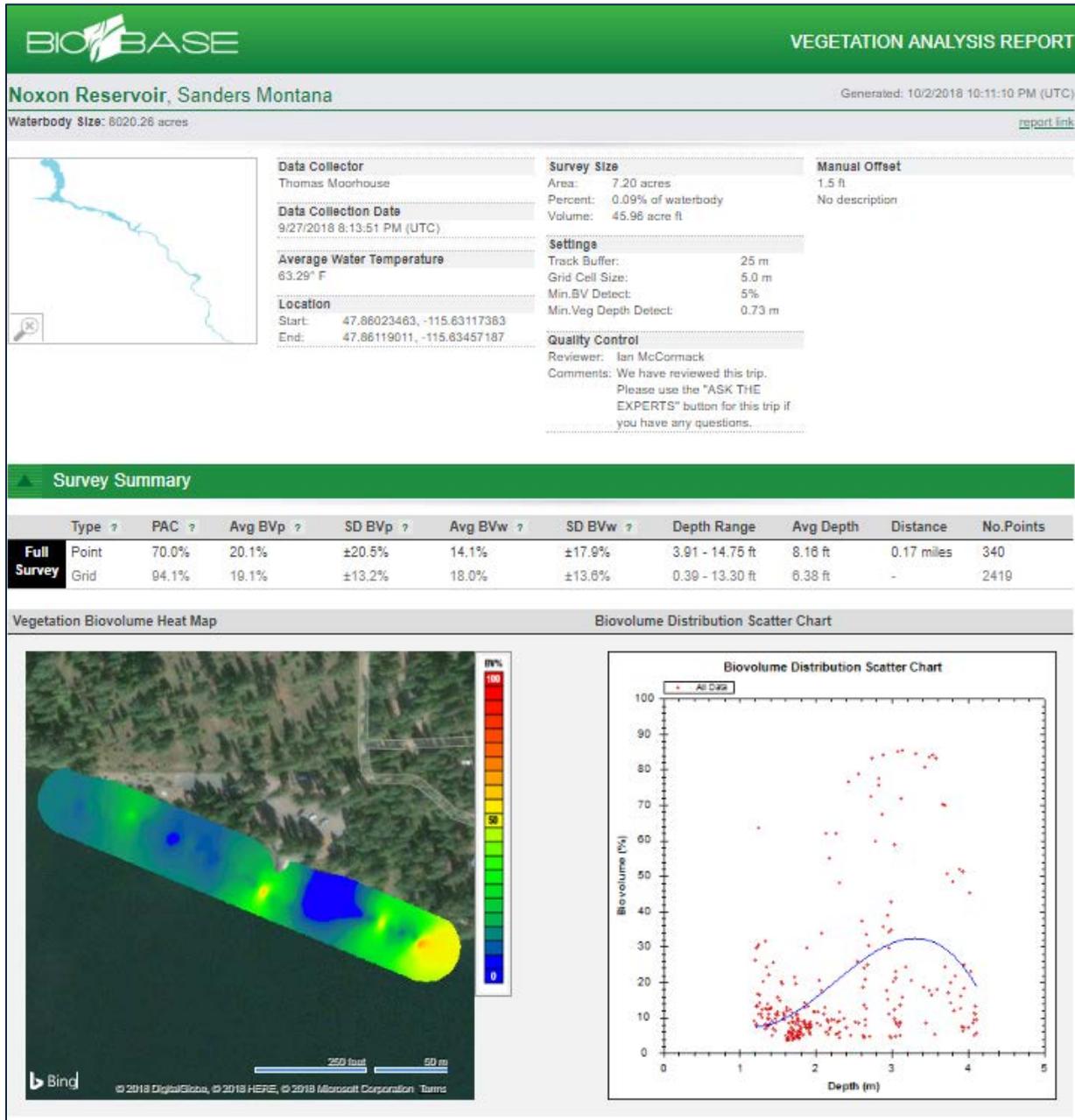
2018 Noxon Rapids Reservoir AIS Treatment Plots: At Time of and ~ Six (6) Week Post Plot SAV % Cover and SAV BioVolume Data (Grid Data)									
Plot Number	SAV % Cover	SAV % Bio-Volume	Date Data Collected Pre Treatment	SAV % Cover	SAV % Bio-Volume	Date Data Collected- Post Treatment	SAV % BV Change	Post Treatment EWM Injury Rank	Herbicides Used (Aquathol K and or Tribune)
Nox-03	100.0	35.5	8/16/2018	94.1	19.1	9/27/2018	-46%	90% +/-	Endo/Diquat

**Observations/Notes Nox-03:** Treated with combination of endothall and diquat, control visually estimated at +/- 90%. Good control shallow and deep.

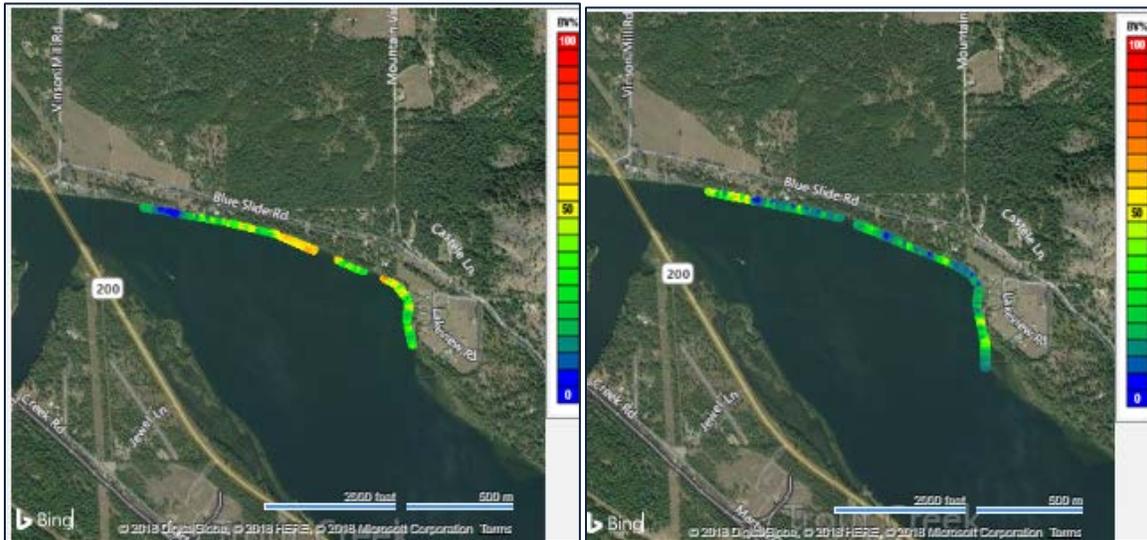
Plot Nox-03: At Time of Treatment (August 16, 2018)



Plot Nox-03: ~ Six (6) Weeks Post (September 27, 2018 Right)



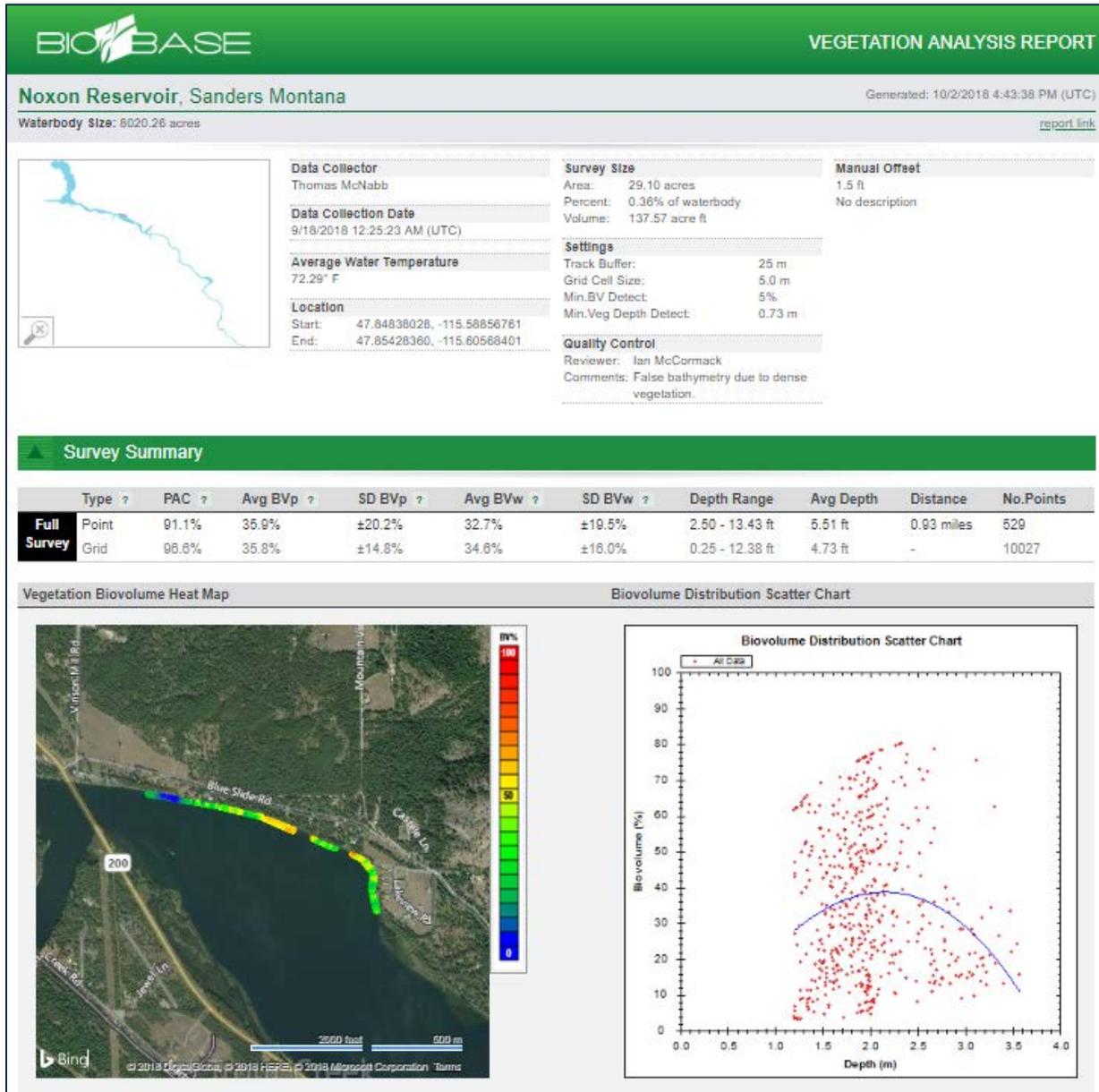
**Plot Nox-04: At Time of Treatment (August 16, 2018 Left),  
~ Six (6) Weeks Post (September 27, 2018 Right)**



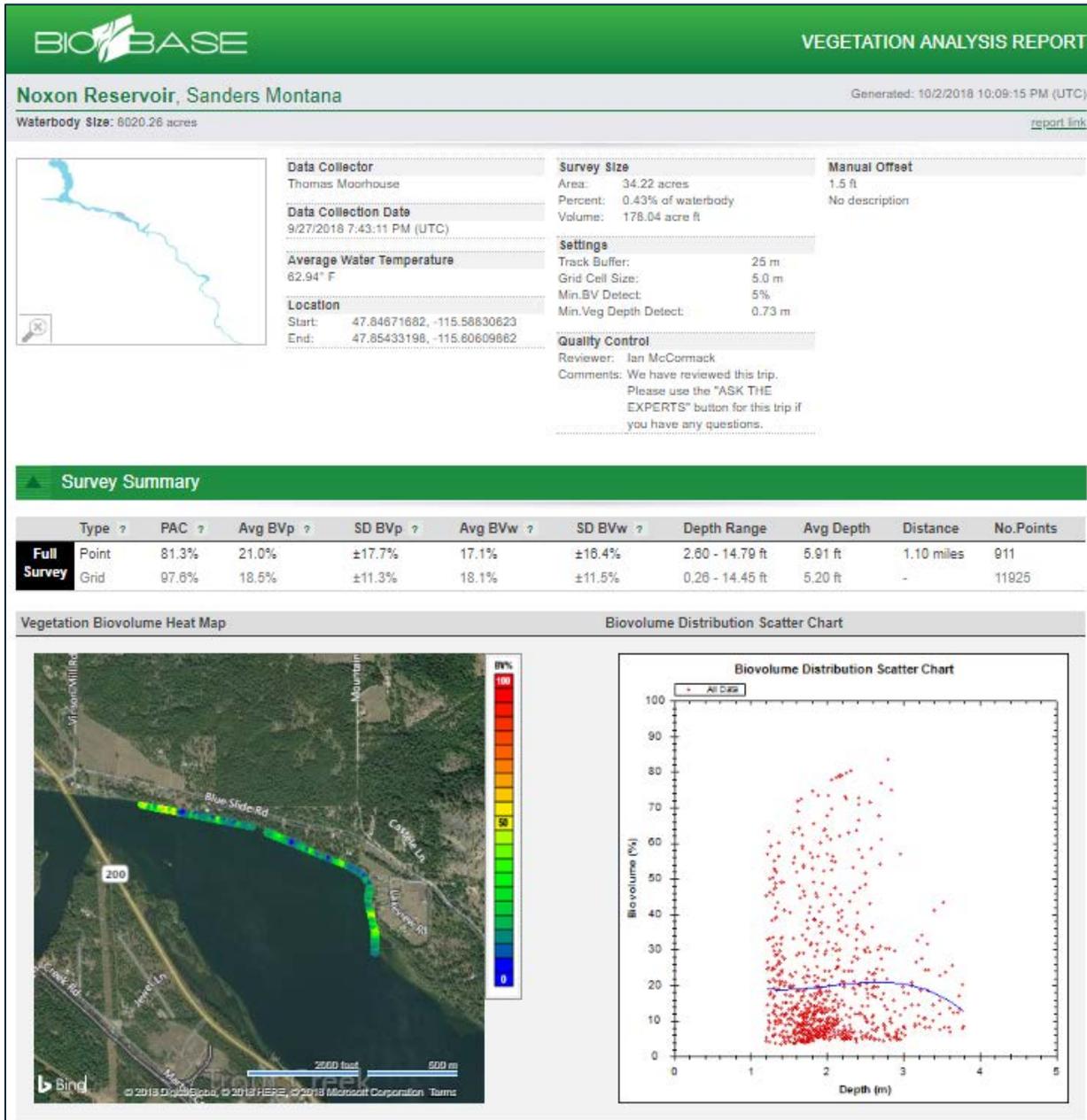
2018 Noxon Rapids Reservoir AIS Treatment Plots: At Time of and ~ Six (6) Week Post Plot SAV % Cover and SAV BioVolume Data (Grid Data)									
Plot Number	SAV % Cover	SAV % Bio-Volume	Date Data Collected Pre Treatment	SAV % Cover	SAV % Bio-Volume	Date Data Collected-Post Treatment	SAV % BV Change	Post Treatment EWM Injury Rank	Herbicides Used (Aquathol K and or Tribune)
Nox-04	96.6	35.8	8/16/2018	97.6	18.5	9/27/2018	-48%	50% +/-	Endo/Diquat

**Observations/Notes Nox-04:** Treated with combination of endothall and diquat, control visually estimated at +/- 50%. Control variable, from 30% to 90%. Control appeared better in deep water. Elodea and Coontail present. 50% +/- control.

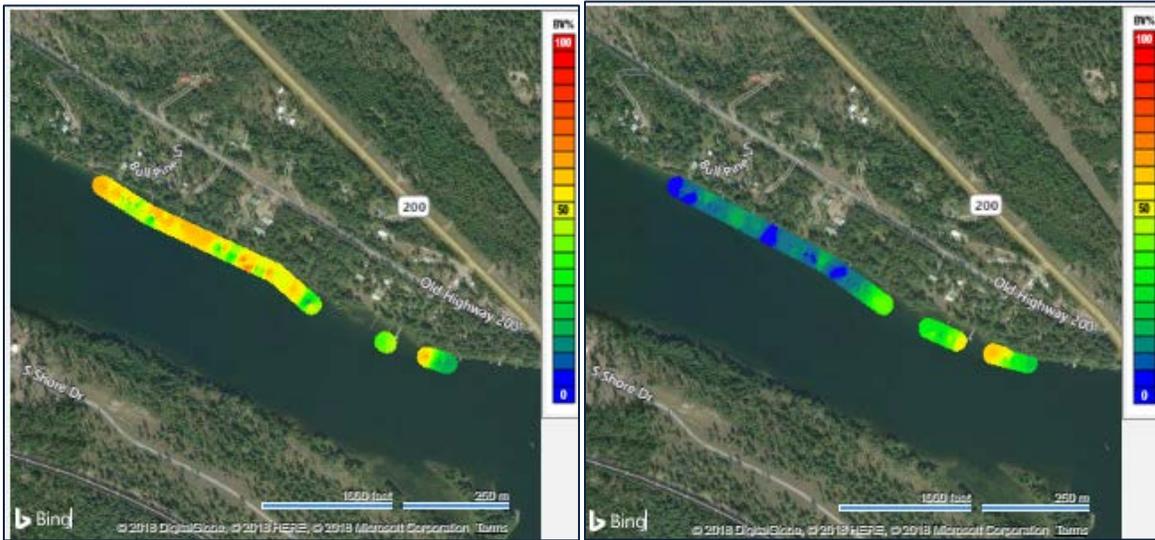
Plot Nox-04: At Time of Treatment (August 16, 2018)



Plot Nox-04: ~ Six (6) Weeks Post (September 27, 2018 Right)



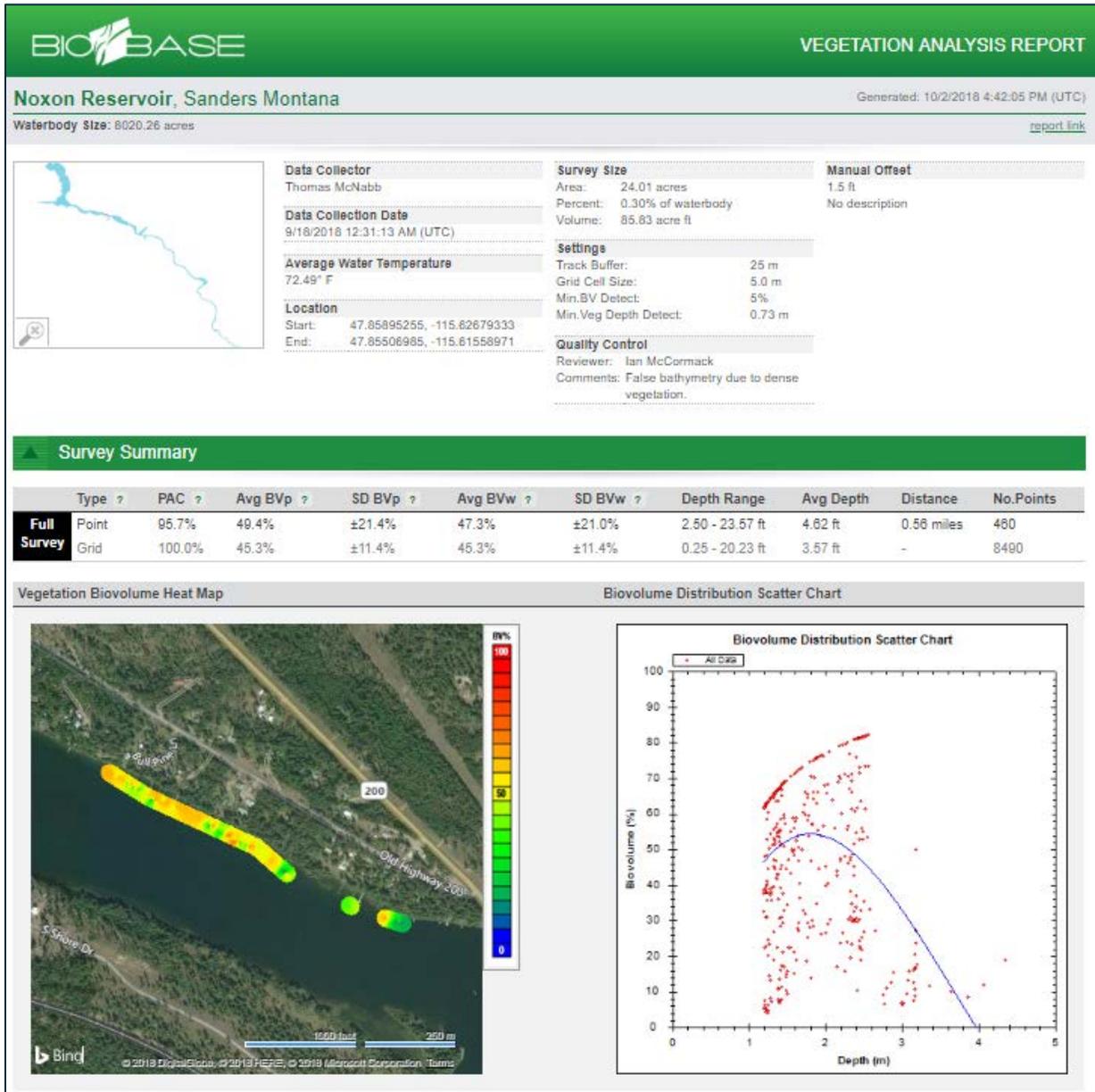
**Plot Nox-08: At Time of Treatment (August 16, 2018 Left),  
~ Six (6) Weeks Post (September 27, 2018 Right)**



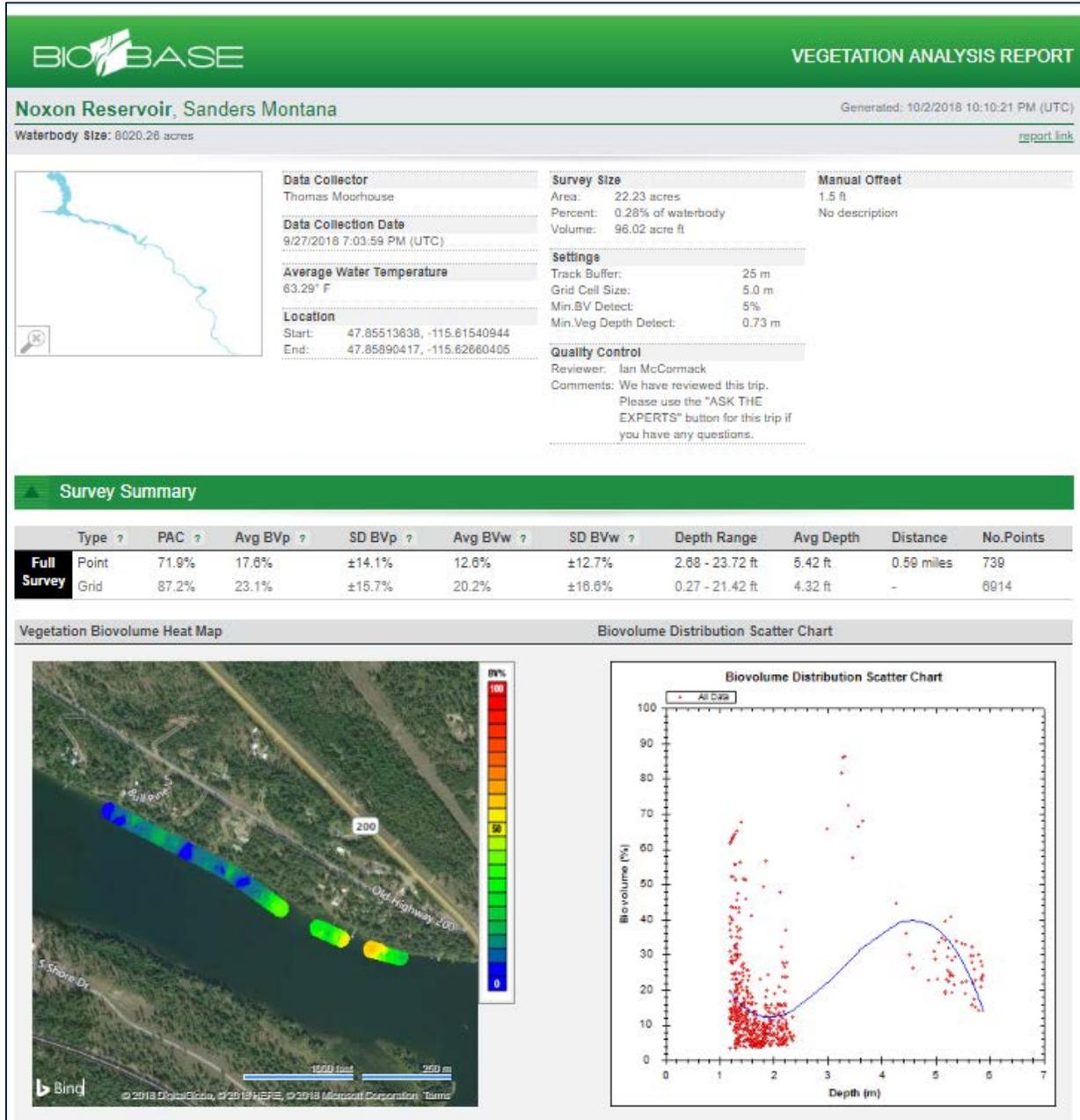
2018 Noxon Rapids Reservoir AIS Treatment Plots: At Time of and ~ Six (6) Week Post Plot SAV % Cover and SAV BioVolume Data (Grid Data)									
Plot Number	SAV % Cover	SAV % Bio-Volume	Date Data Collected Pre Treatment	SAV % Cover	SAV % Bio-Volume	Date Data Collected- Post Treatment	SAV % BV Change	Post Treatment EWM Injury Rank	Herbicides Used (Aquathol K and or Tribune)
Nox-08	100.0	45.3	8/16/2018	87.2	23.1	9/27/2018	-49%	60% +/-	Endo/Diquat

**Observations/Notes Nox-08:** Treated with combination of endothall and diquat, control visually estimated at +/- 60%. Control variable, from 30% to 90%. Better control in deep water. Downstream part of plot looks better than upstream part.

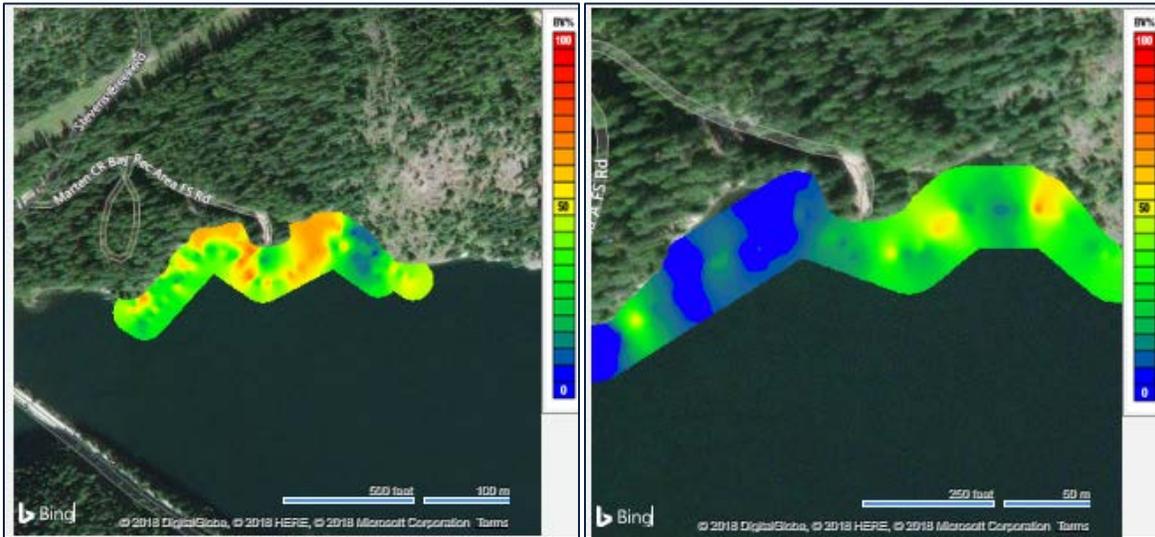
Plot Nox-08: At Time of Treatment (August 16, 2018)



Plot Nox-08: ~ Six (6) Weeks Post (September 27, 2018 Right)



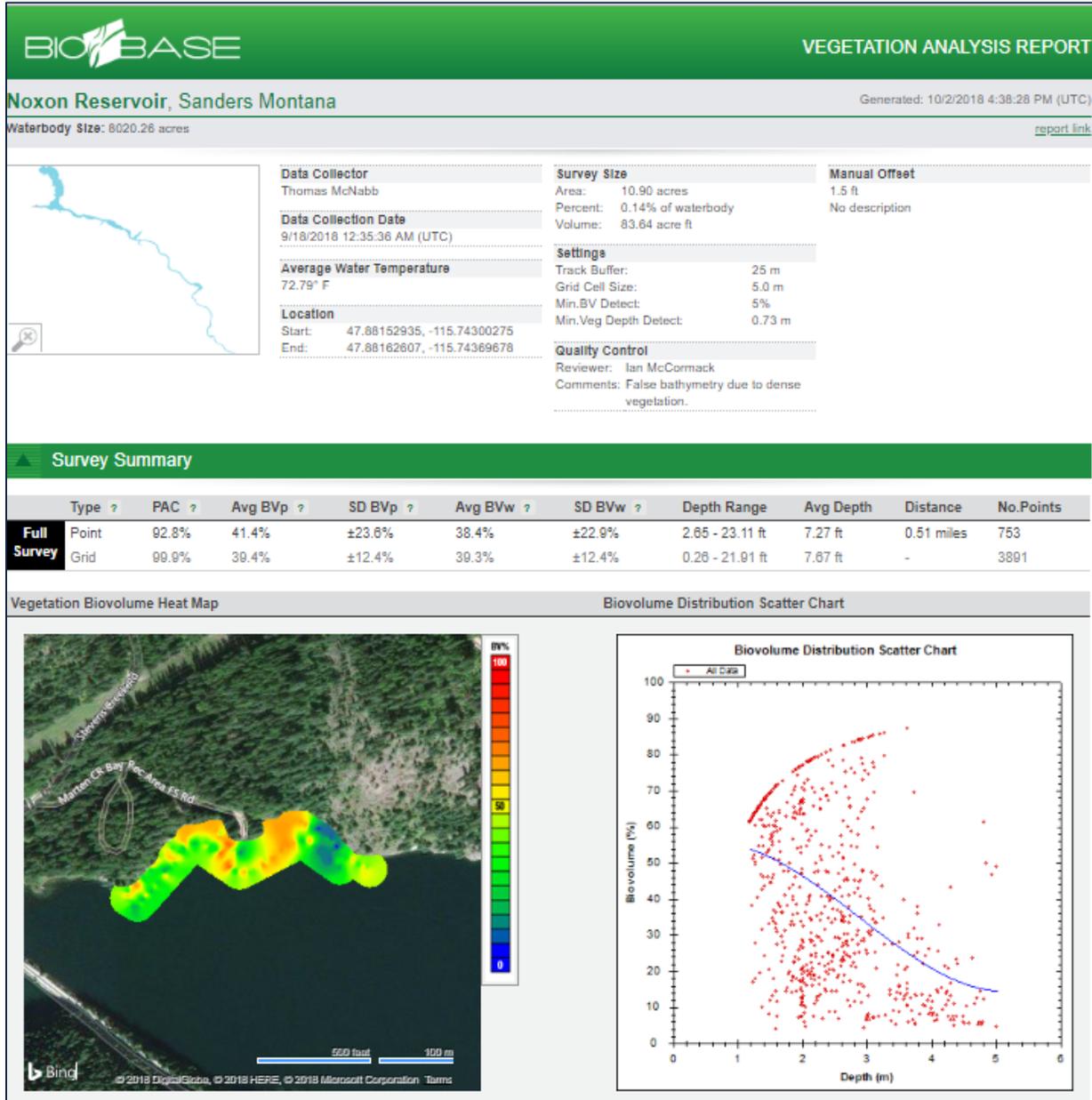
**Plot Nox-31: At Time of Treatment (August 16, 2018 Left),  
~ Six (6) Weeks Post (September 27, 2018 Right)**



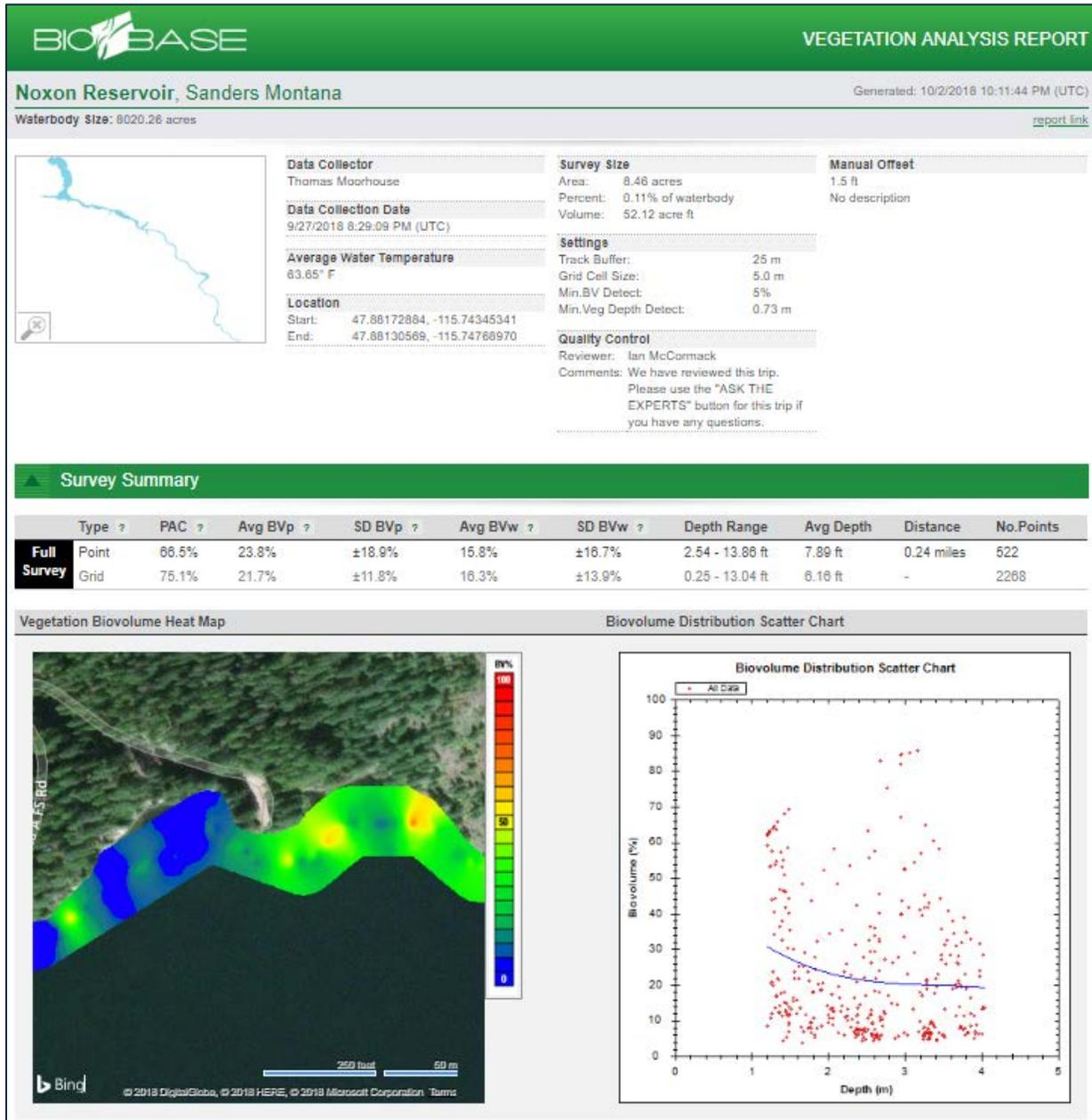
2018 Noxon Rapids Reservoir AIS Treatment Plots: At Time of and ~ Six (6) Week Post Plot SAV % Cover and SAV BioVolume Data (Grid Data)									
Plot Number	SAV % Cover	SAV % Bio-Volume	Date Data Collected Pre Treatment	SAV % Cover	SAV % Bio-Volume	Date Data Collected-Post Treatment	SAV % BV Change	Post Treatment EWM Injury Rank	Herbicides Used (Aquathol K and or Tribune)
Nox-31	99.9	39.4	8/16/2018	75.1	21.7	9/27/2018	-45%	70% +/-	Endo/Diquat

**Observations/Notes Nox-31:** Treated with combination of endothall and diquat, control visually estimated at +/- 60%. Control variable, from 50% to 90%. Very good control deep, patchy control near shore. Elodea dominating the plot.

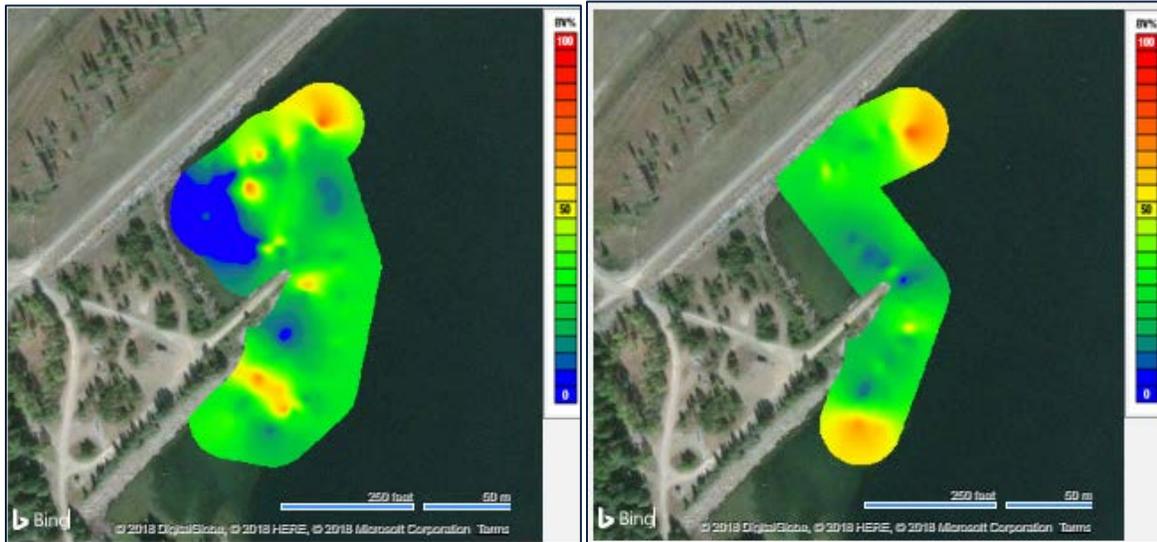
Plot Nox-31: At Time of Treatment (August 16, 2018)



Plot Nox-31: ~ Six (6) Weeks Post (September 27, 2018 Right)



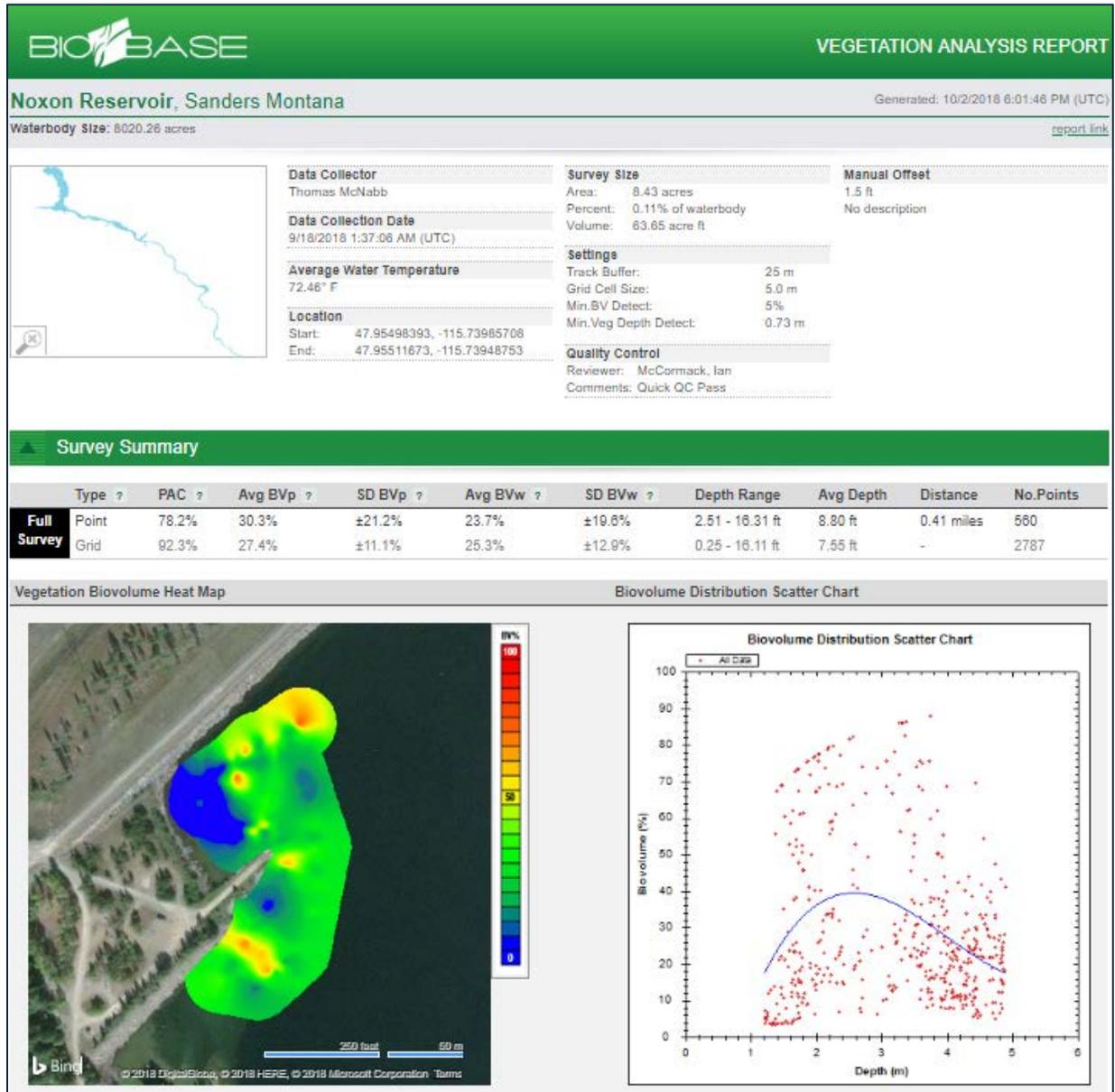
**Plot Nox-52: At Time of Treatment (August 16, 2018 Left),  
~ Six (6) Weeks Post (September 27, 2018 Right)**



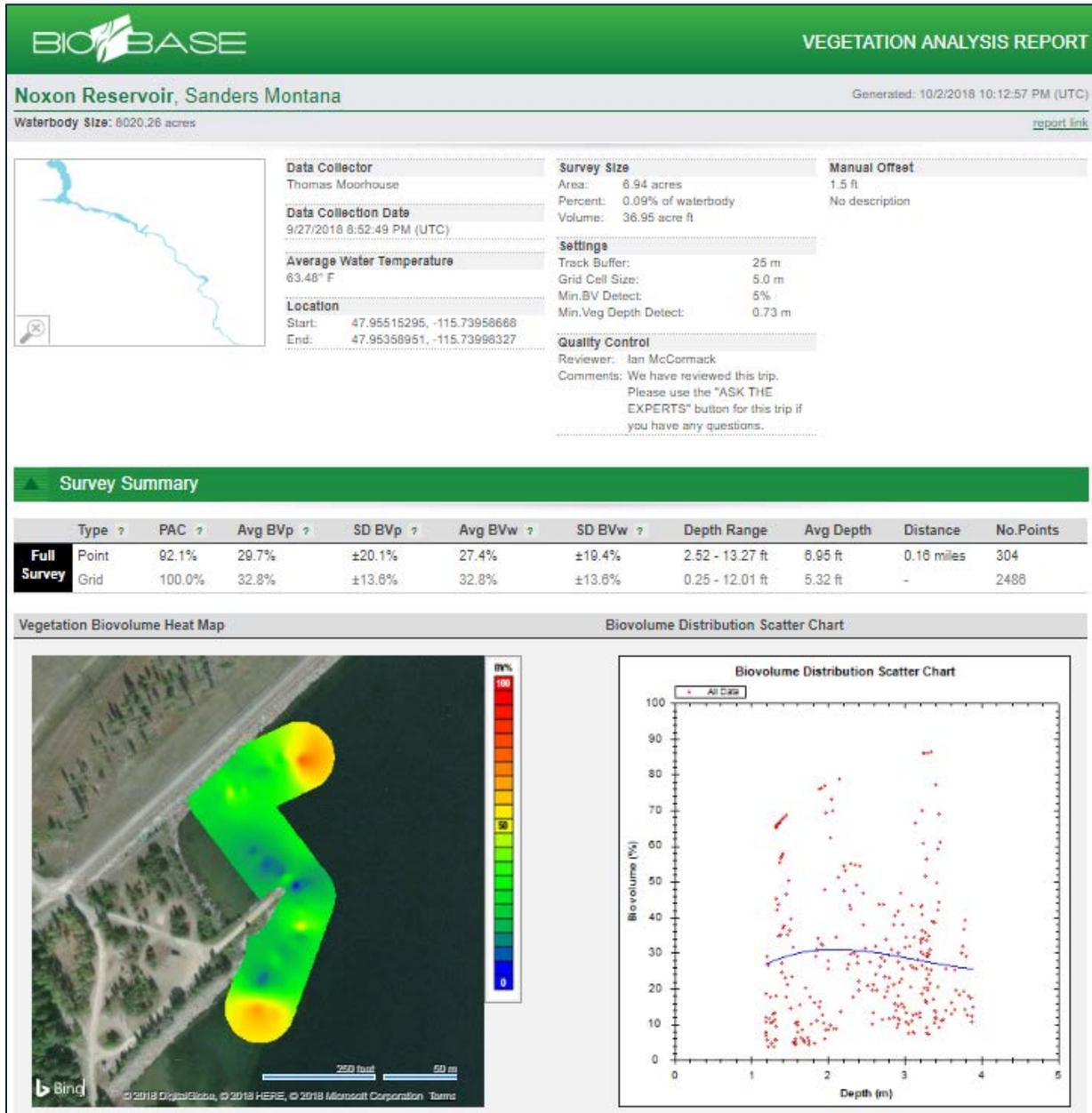
2018 Noxon Rapids Reservoir AIS Treatment Plots: At Time of and ~ Six (6) Week Post Plot SAV % Cover and SAV BioVolume Data (Grid Data)									
Plot Number	SAV % Cover	SAV % Bio-Volume	Date Data Collected Pre Treatment	SAV % Cover	SAV % Bio-Volume	Date Data Collected-Post Treatment	SAV % BV Change	Post Treatment EWM Injury Rank	Herbicides Used (Aquathol K and or Tribune)
Nox-52	92.3	27.4	8/16/2018	100.0	32.8	9/27/2018	20%	90% +/-	Endo/Diquat

**Observations/Notes Nox-52:** Treated with combination of endothall and diquat, control visually estimated at +/- 90%. Control looks better deep, some bruised EWM in shallow. Looks very good.

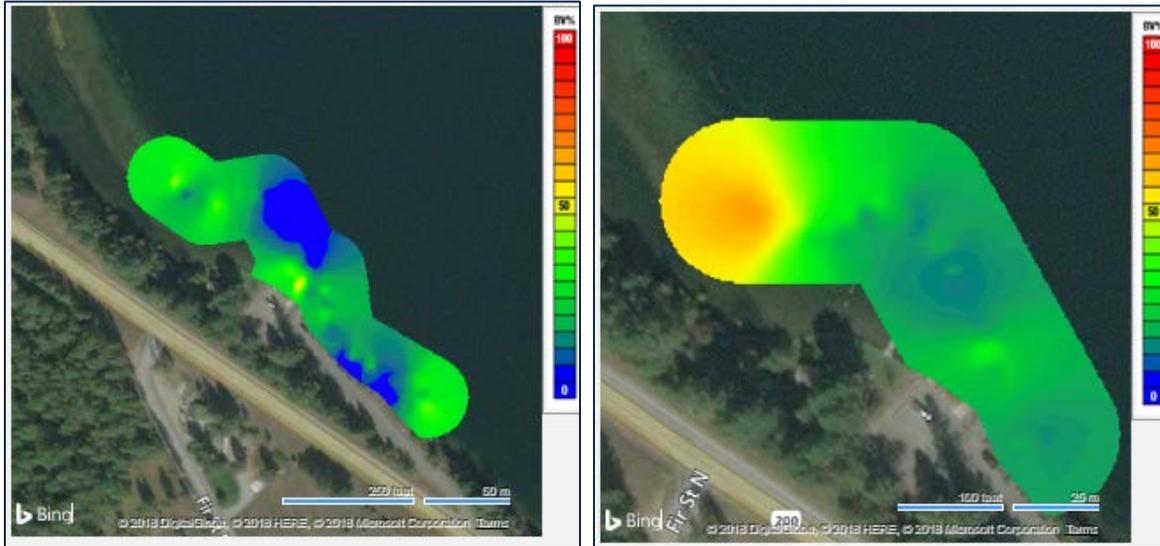
Plot Nox-52: At Time of Treatment (August 16, 2018)



Plot Nox-52: ~ Six (6) Weeks Post (September 27, 2018 Right)



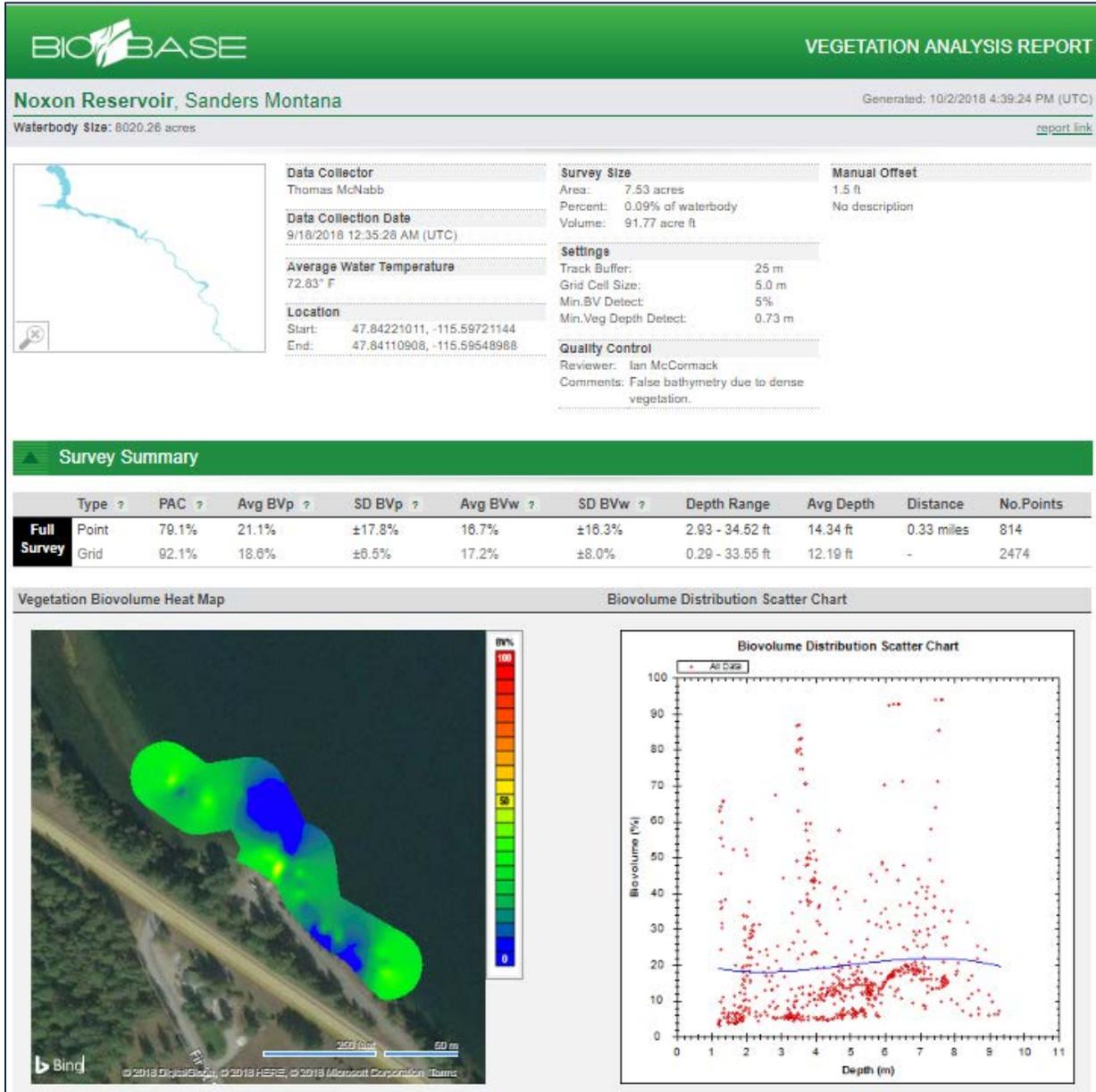
**Plot Nox-77: At Time of Treatment (August 16, 2018 Left),  
~ Six (6) Weeks Post (September 27, 2018 Right)**



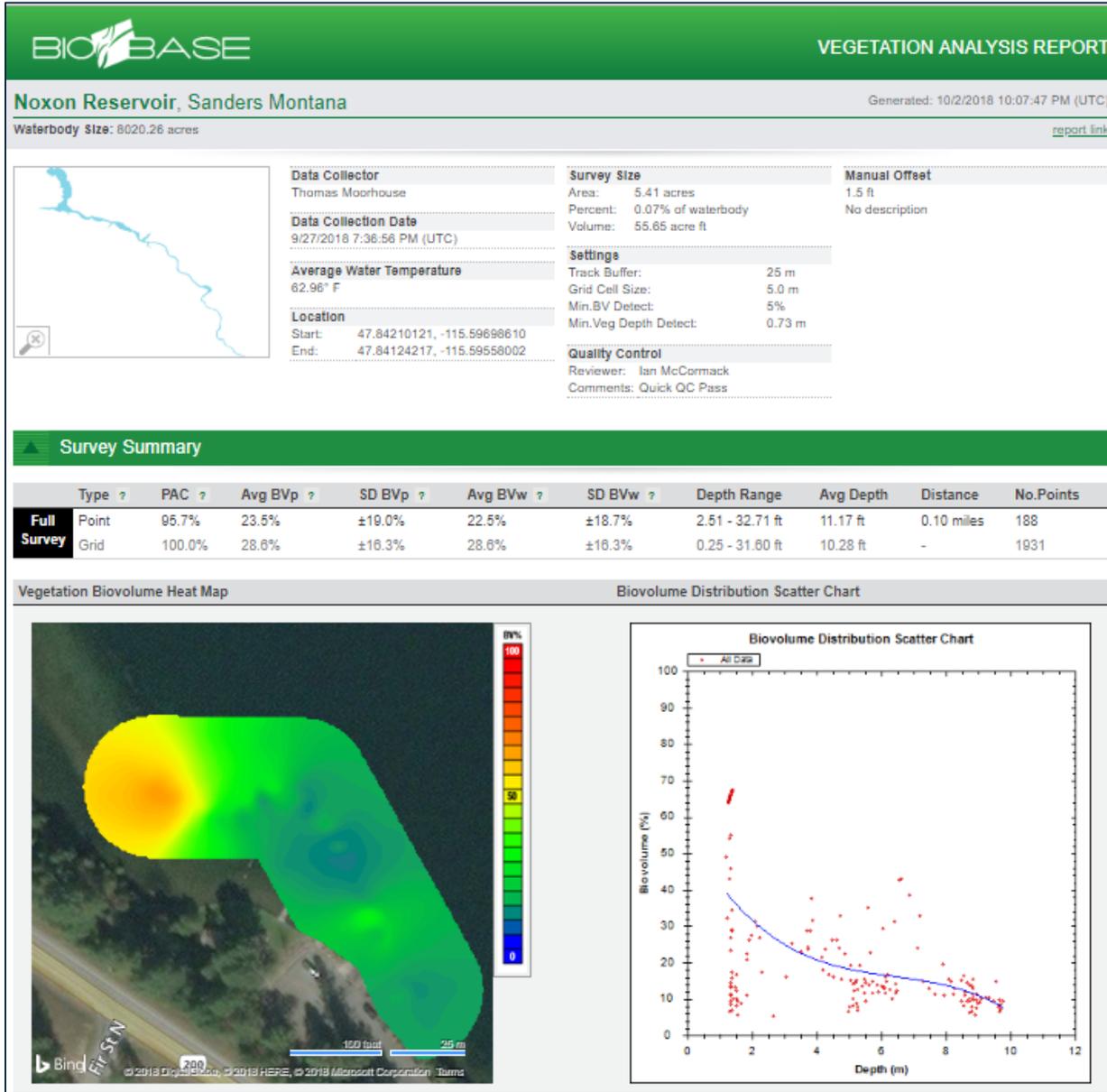
2018 Noxon Rapids Reservoir AIS Treatment Plots: At Time of and ~ Six (6) Week Post Plot SAV % Cover and SAV BioVolume Data (Grid Data)									
Plot Number	SAV % Cover	SAV % Bio-Volume	Date Data Collected Pre Treatment	SAV % Cover	SAV % Bio-Volume	Date Data Collected- Post Treatment	SAV % BV Change	Post Treatment EWM Injury Rank	Herbicides Used (Aquathol K and or Tribune)
Nox-77	100.0	28.6	8/16/2018	100.0	28.6	9/27/2018	0%	95% +/-	Diquat

**Observations/Notes Nox-77:** Treated with diquat only, control visually estimated at +/- 95%. No EWM visible in plot. Some present immediately outside the plot. Elodea visible on bottom.

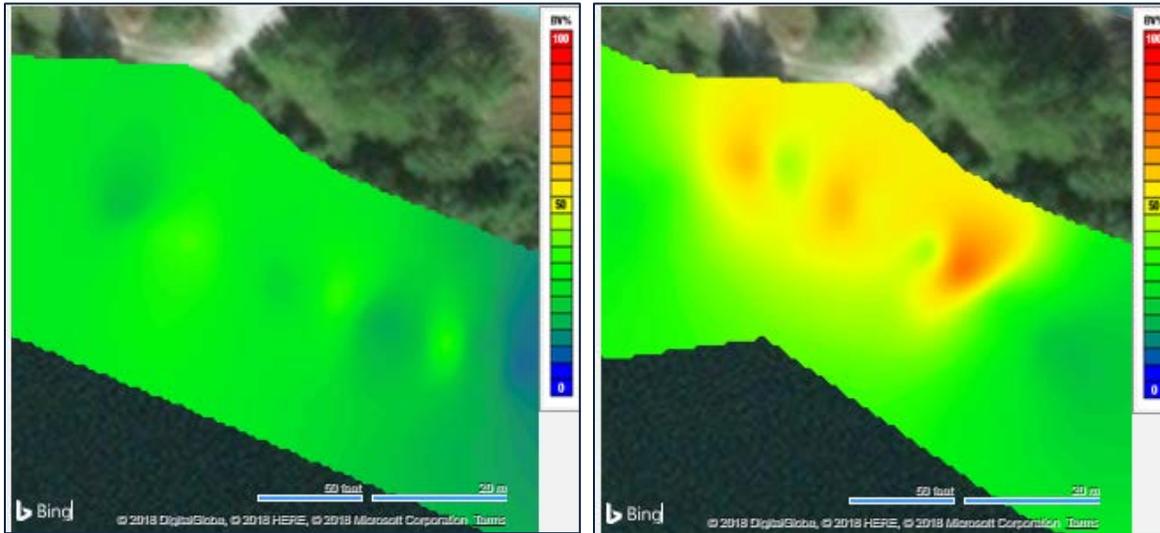
Plot Nox-77: At Time of Treatment (August 16, 2018)



Plot Nox-77: ~ Six (6) Weeks Post (September 27, 2018 Right)



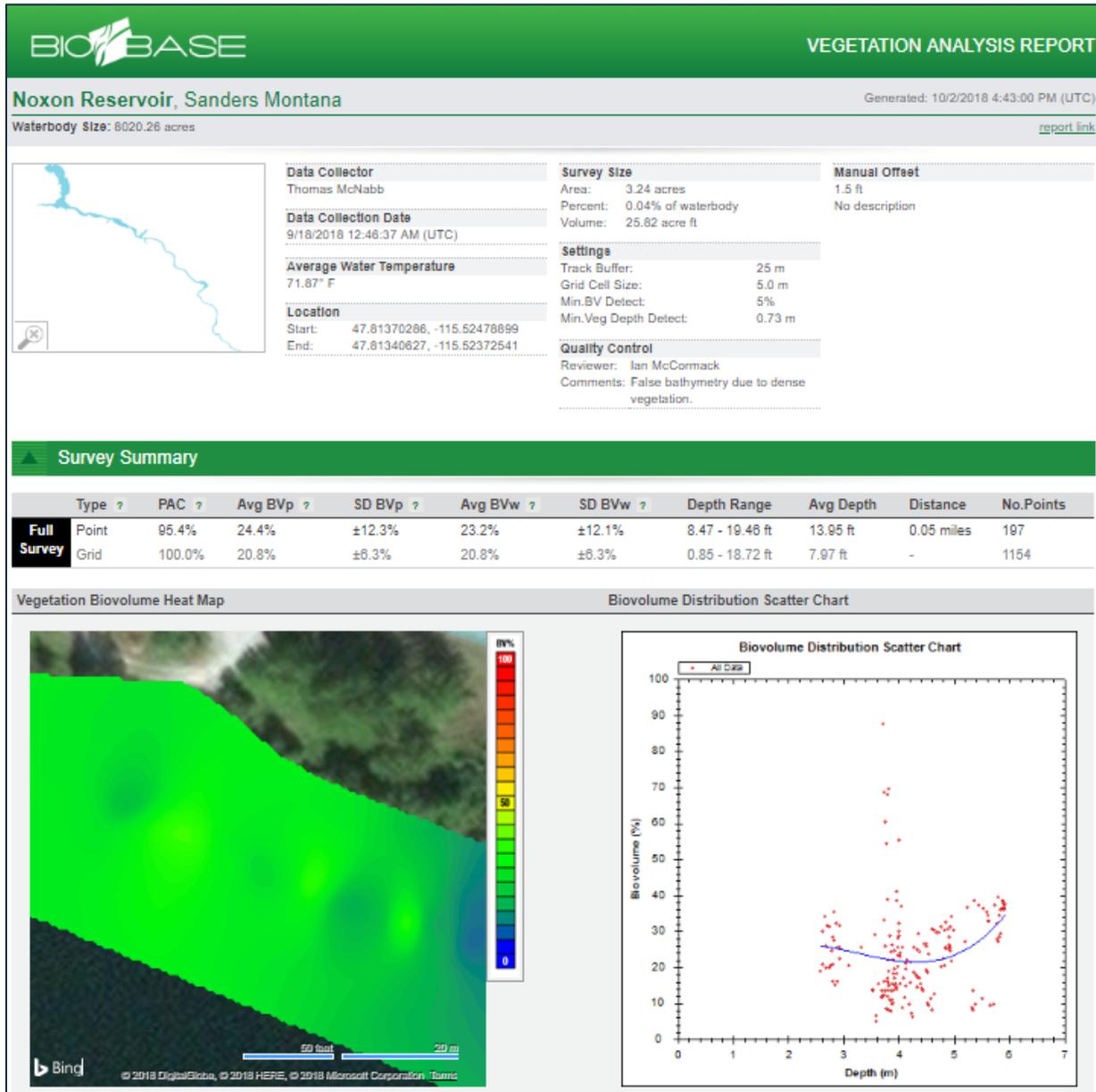
**Plot Nox-78: At Time of Treatment (August 16, 2018 Left),  
~ Six (6) Weeks Post (September 27, 2018 Right)**



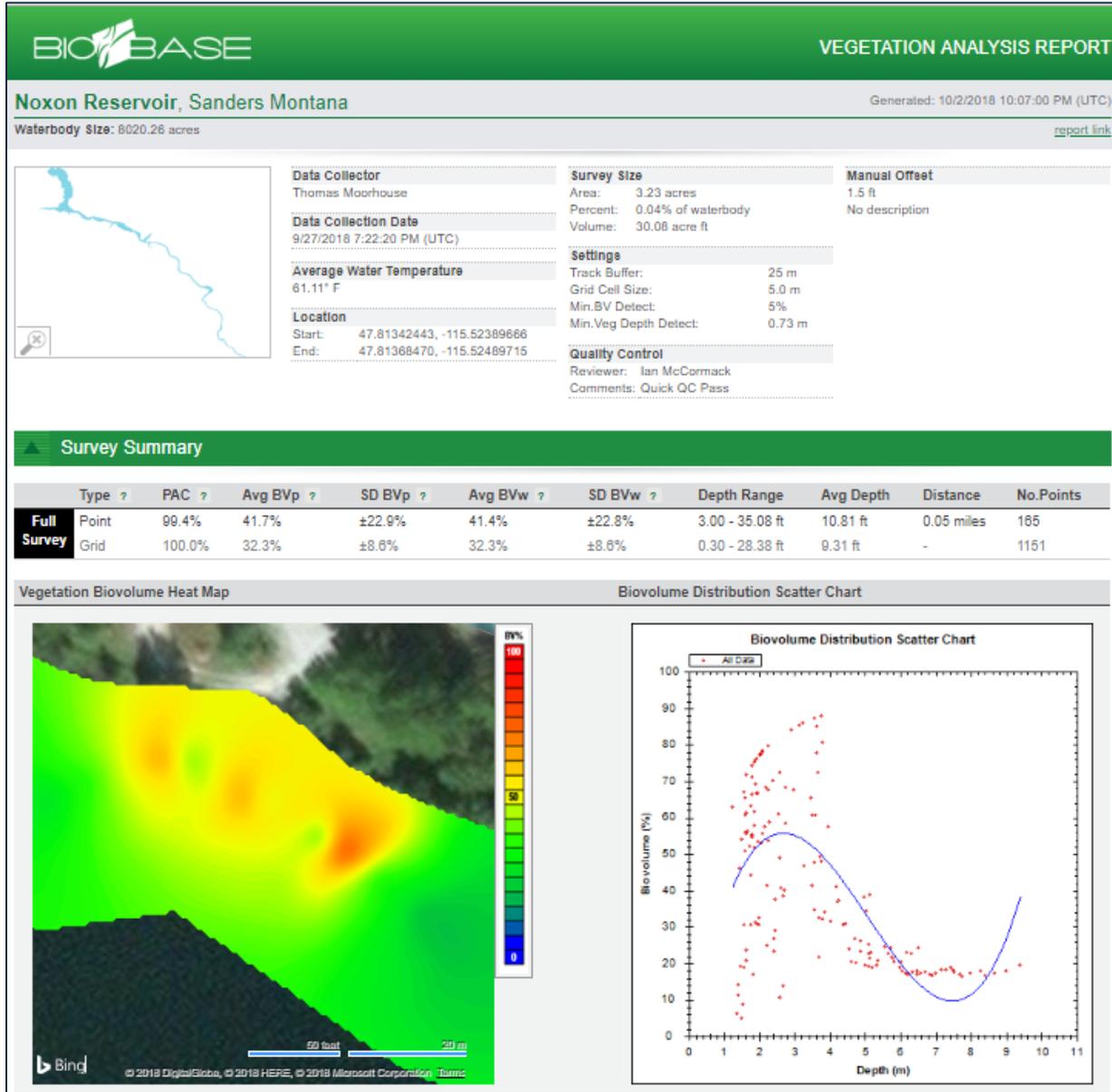
2018 Noxon Rapids Reservoir AIS Treatment Plots: At Time of and ~ Six (6) Week Post Plot SAV % Cover and SAV BioVolume Data (Grid Data)									
Plot Number	SAV % Cover	SAV % Bio-Volume	Date Data Collected Pre Treatment	SAV % Cover	SAV % Bio-Volume	Date Data Collected- Post Treatment	SAV % BV Change	Post Treatment EWM Injury Rank	Herbicides Used (Aquathol K and or Tribune)
Nox-78	100.0	32.3	8/16/2018	100.0	32.3	9/27/2018	0%	50% +/-	Diquat

**Observations/Notes Nox-78:** Treated with diquat only, control visually estimated at +/- 50%. Elodea abundant, EWM present upstream as strip.

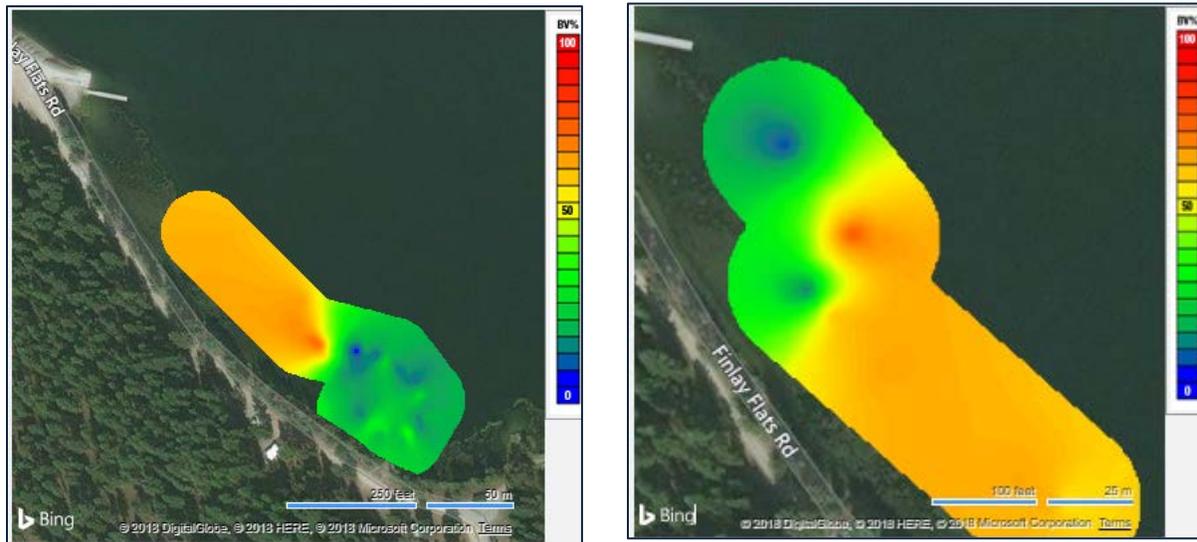
Plot Nox-78: At Time of Treatment (August 16, 2018)



Plot Nox-78: ~ Six (6) Weeks Post (September 27, 2018 Right)



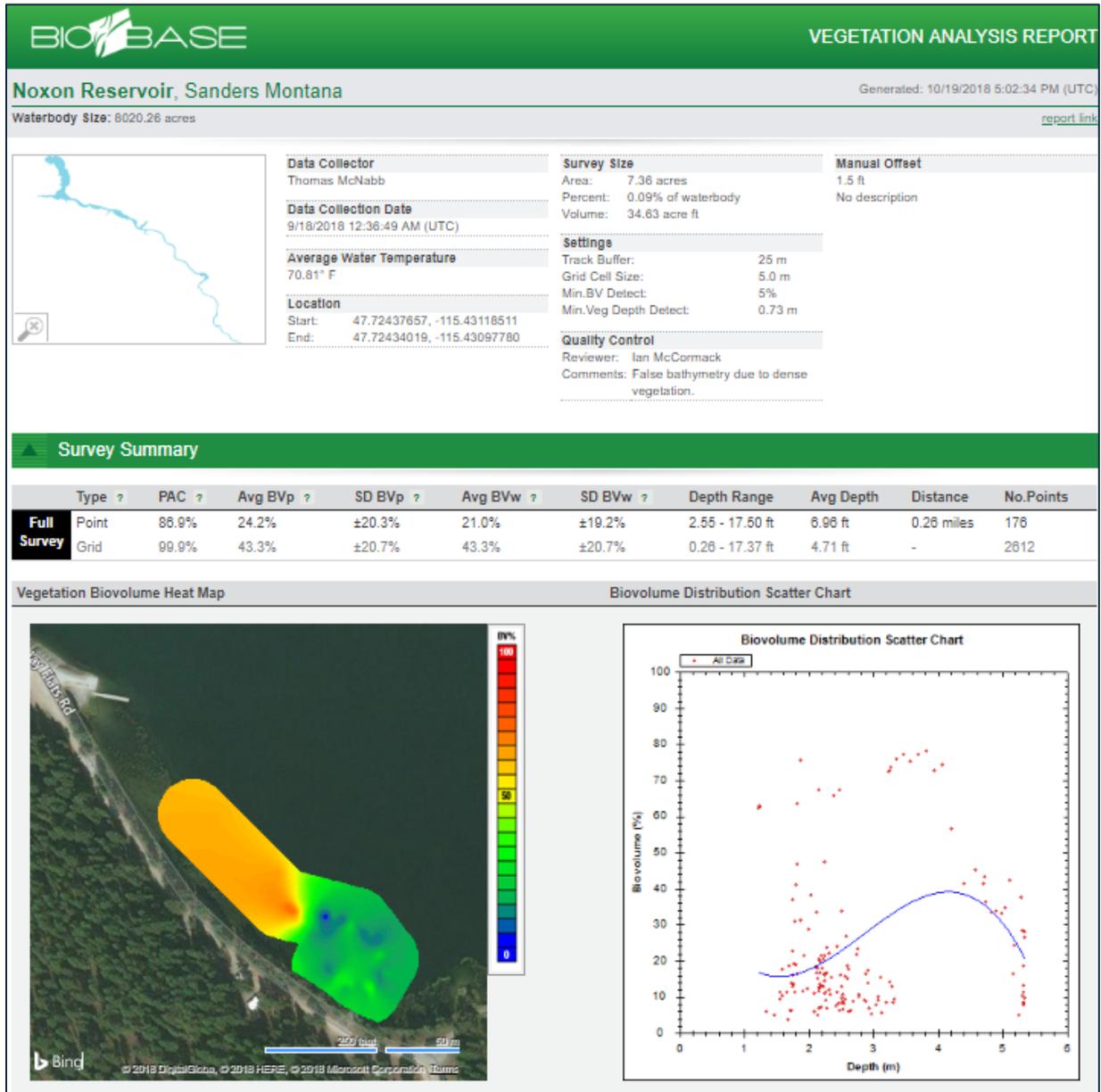
**Plot Nox-79: At Time of Treatment (August 16, 2018 Left),  
~ Six (6) Weeks Post (September 27, 2018 Right)**



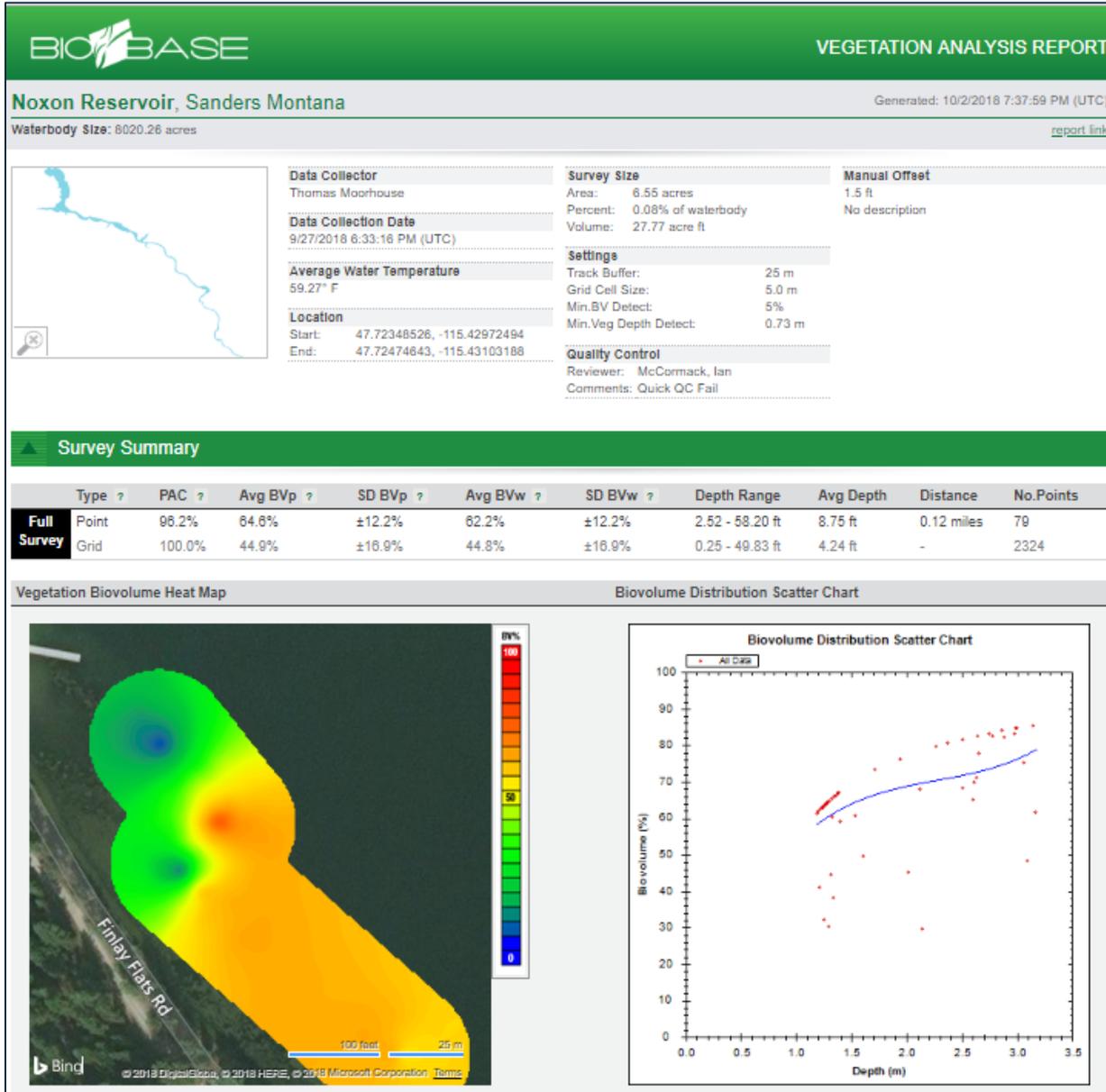
2018 Noxon Rapids Reservoir AIS Treatment Plots: At Time of and ~ Six (6) Week Post Plot SAV % Cover and SAV BioVolume Data (Grid Data)									
Plot Number	SAV % Cover	SAV % Bio-Volume	Date Data Collected Pre Treatment	SAV % Cover	SAV % Bio-Volume	Date Data Collected- Post Treatment	SAV % BV Change	Post Treatment EWM Injury Rank	Herbicides Used (Aquathol K and or Tribune)
Nox-79	99.9	39.0	8/16/2018	100.0	44.9	9/27/2018	15%	85% +/-	Endo/Diquat

**Observations/Notes Nox-79:** Treated with combination of endothall and diquat, control visually estimated at +/- 85%. Control looks good, dead EWM visible as well as some live. Dominated by Elodea and Coontail.

Plot Nox-79: At Time of Treatment (August 16, 2018)



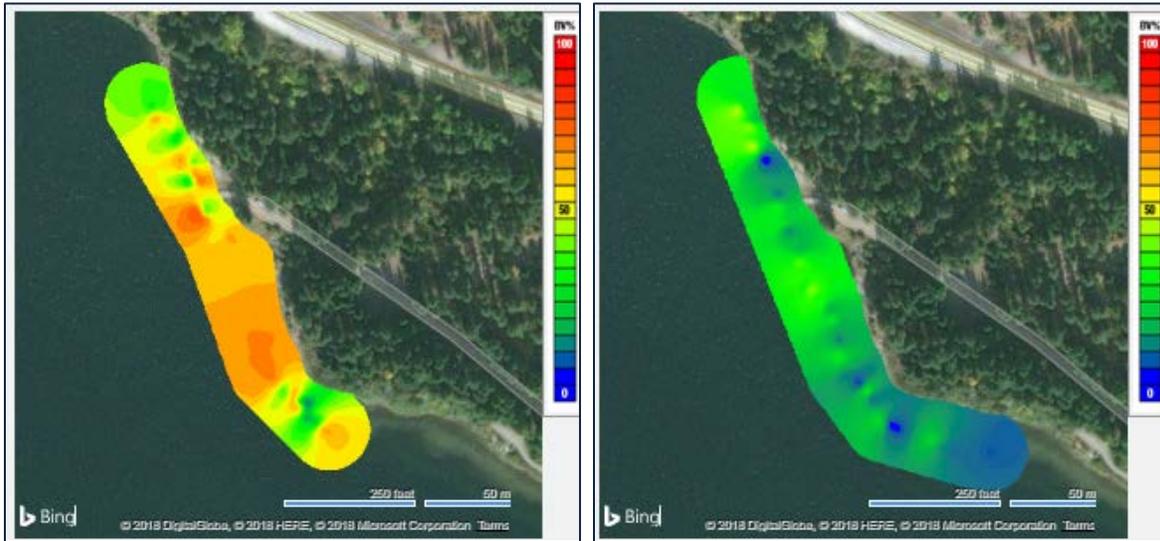
Plot Nox-79: ~ Six (6) Weeks Post (September 27, 2018 Right)



PRE AND POST TREATMENT SUBMERSED AQUATIC VEGETATION (SAV) DATA, SAV PERCENT COVER, AND BIO-VOLUME DATA SETS

CABINET GORGE RESERVOIR

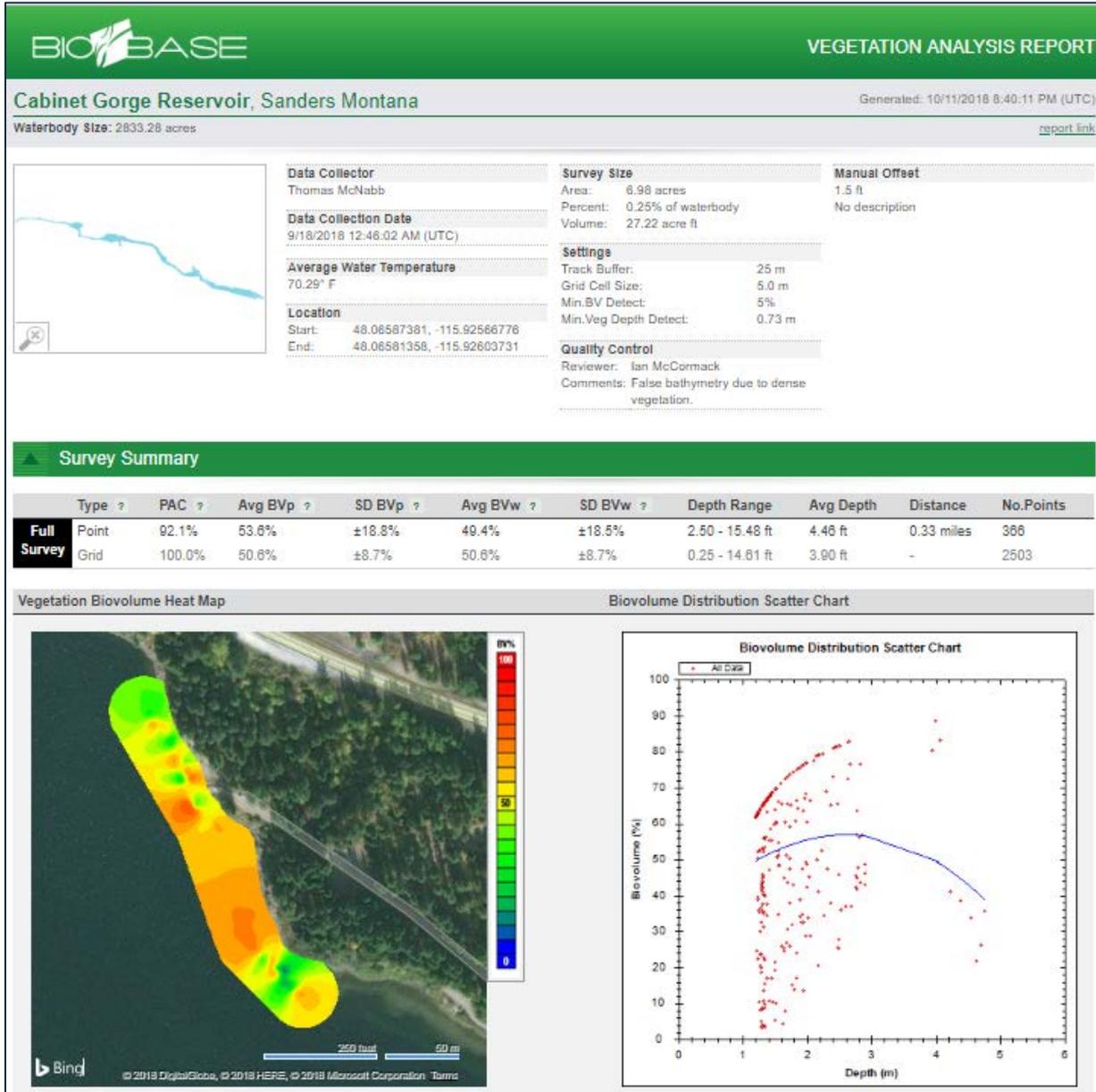
Plot Cab-12: At Time of Treatment (August 16, 2018 Left), ~ Six (6) Weeks Post (September 27, 2018 Right)



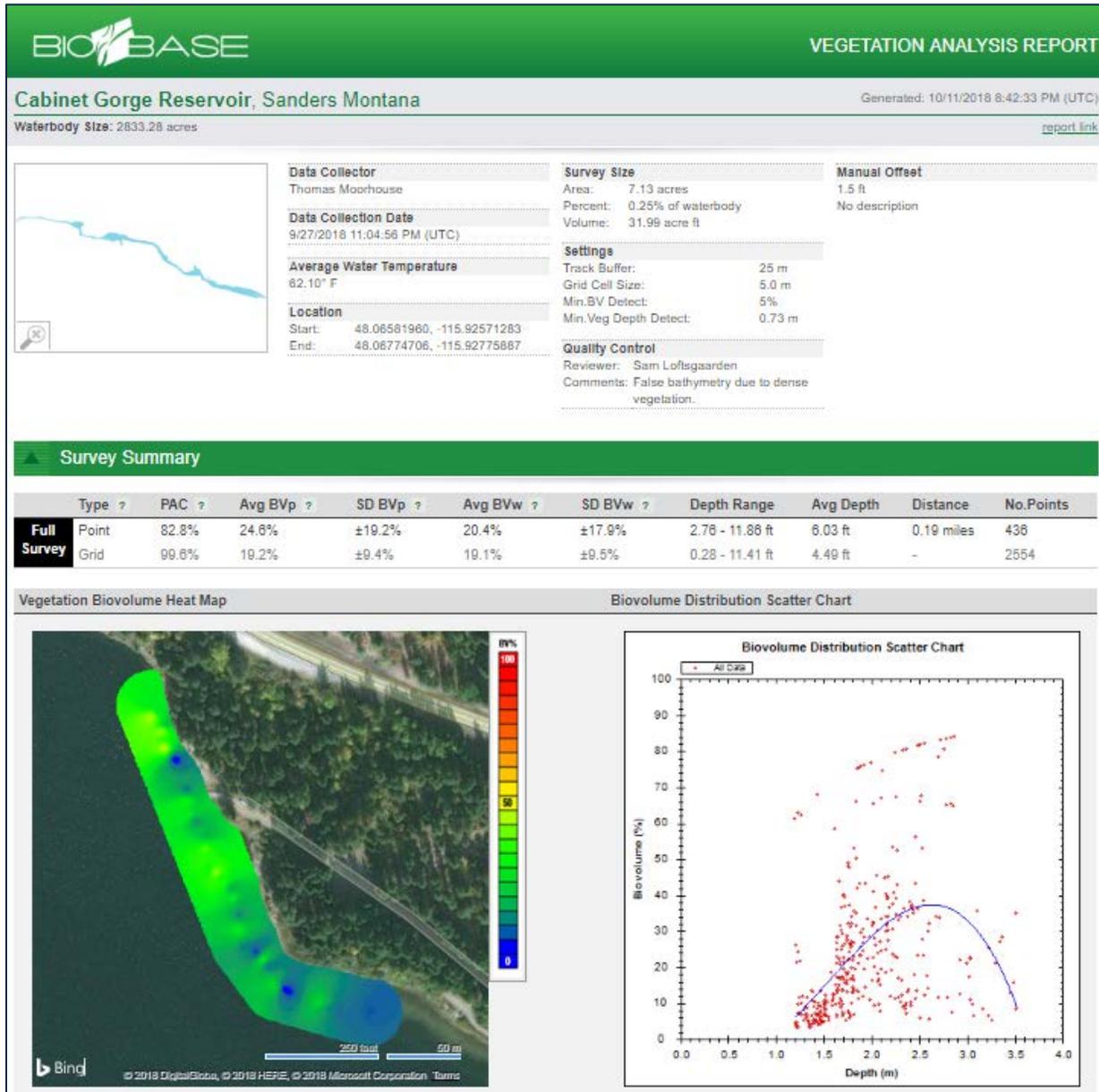
2018 Cabinet Gorge Reservoir AIS Treatment Plots: At Time of and ~ Six (6) Week Post Plot SAV % Cover and SAV BioVolume Data (Grid Data)									
Plot Number	SAV % Cover	SAV % Bio-Volume	Date Data Collected Pre Treatment	SAV % Cover	SAV % Bio-Volume	Date Data Collected-Post Treatment	SAV % BV Change	Post Treatment EWM Injury Rank	Herbicides Used (Aquathol K and or Tribune)
Cab-12	100.0	50.6	8/16/2018	99.6	19.2	9/27/2018	-62%	95% +/-	Endo/Diquat

**Observations/Notes Cab-12:** Treated with combination of endothall and diquat, control visually estimated at +/- 95%. Control looks very good.

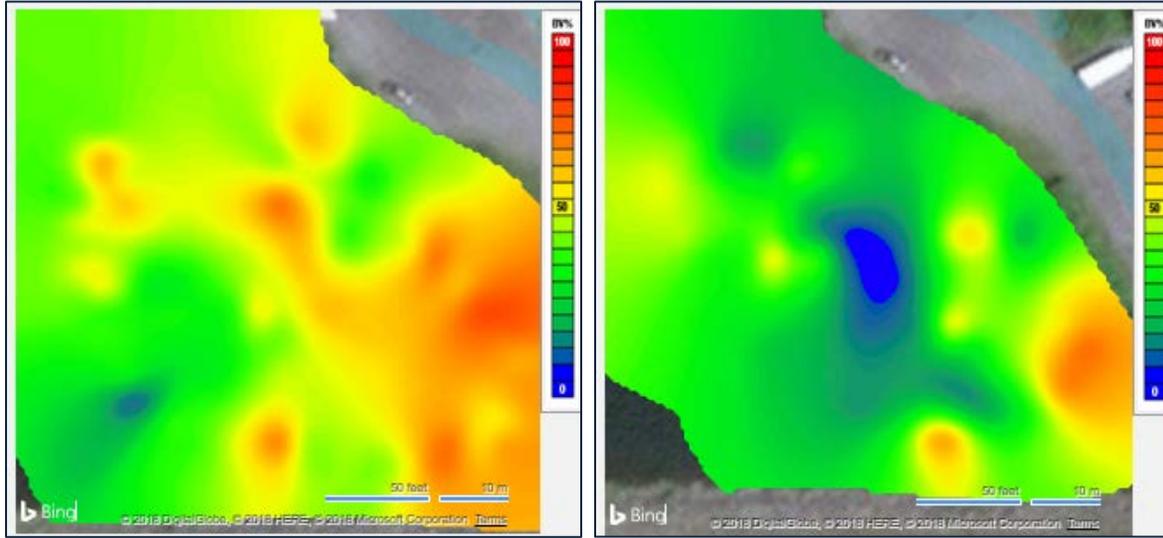
Plot Cab-12: At Time of Treatment (August 16, 2018)



Plot Cab-12: ~ Six (6) Weeks Post (September 27, 2018 Right)



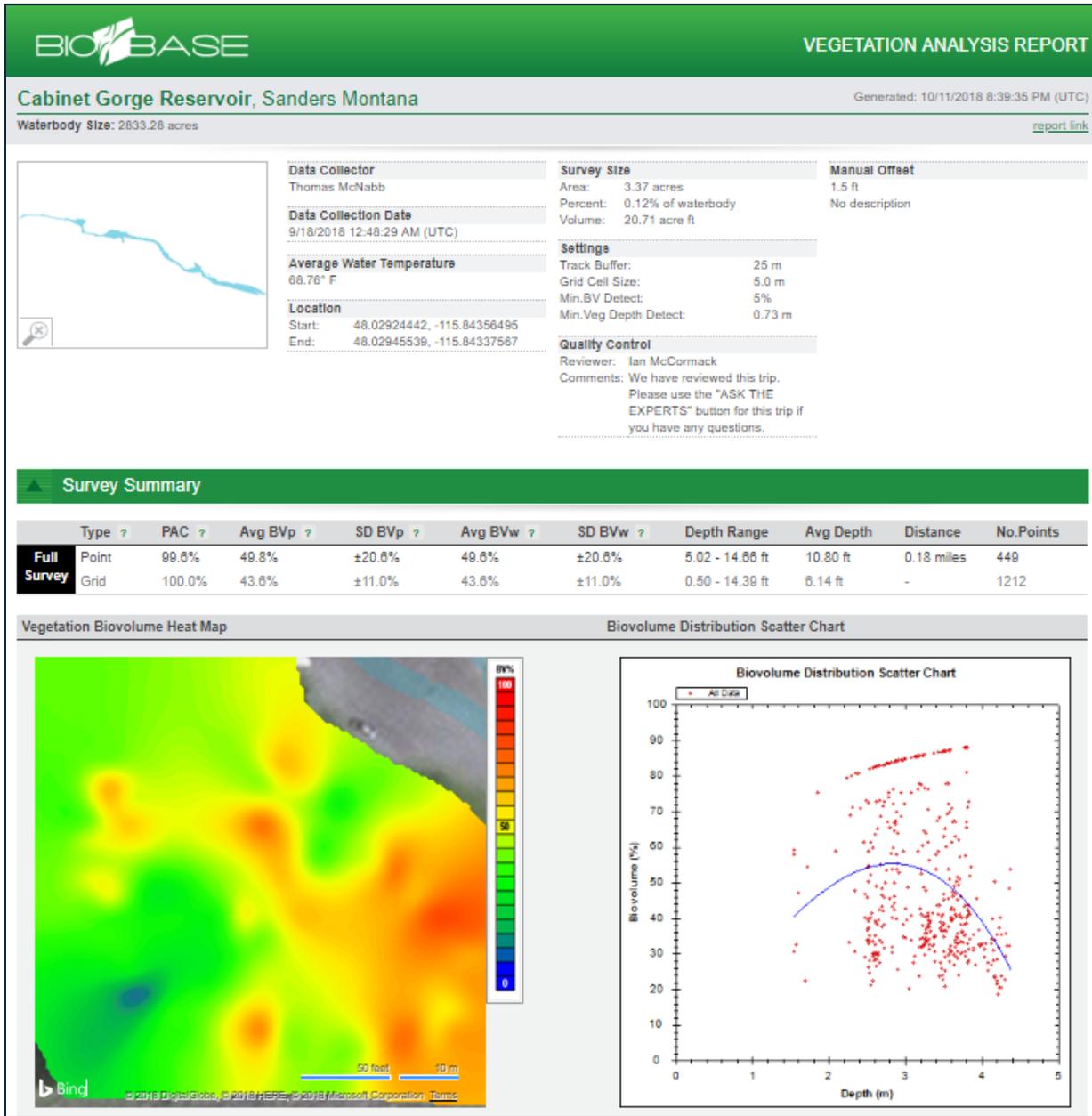
**Plot Cab-20: At Time of Treatment (August 16, 2018 Left),  
~ Six (6) Weeks Post (September 27, 2018 Right)**



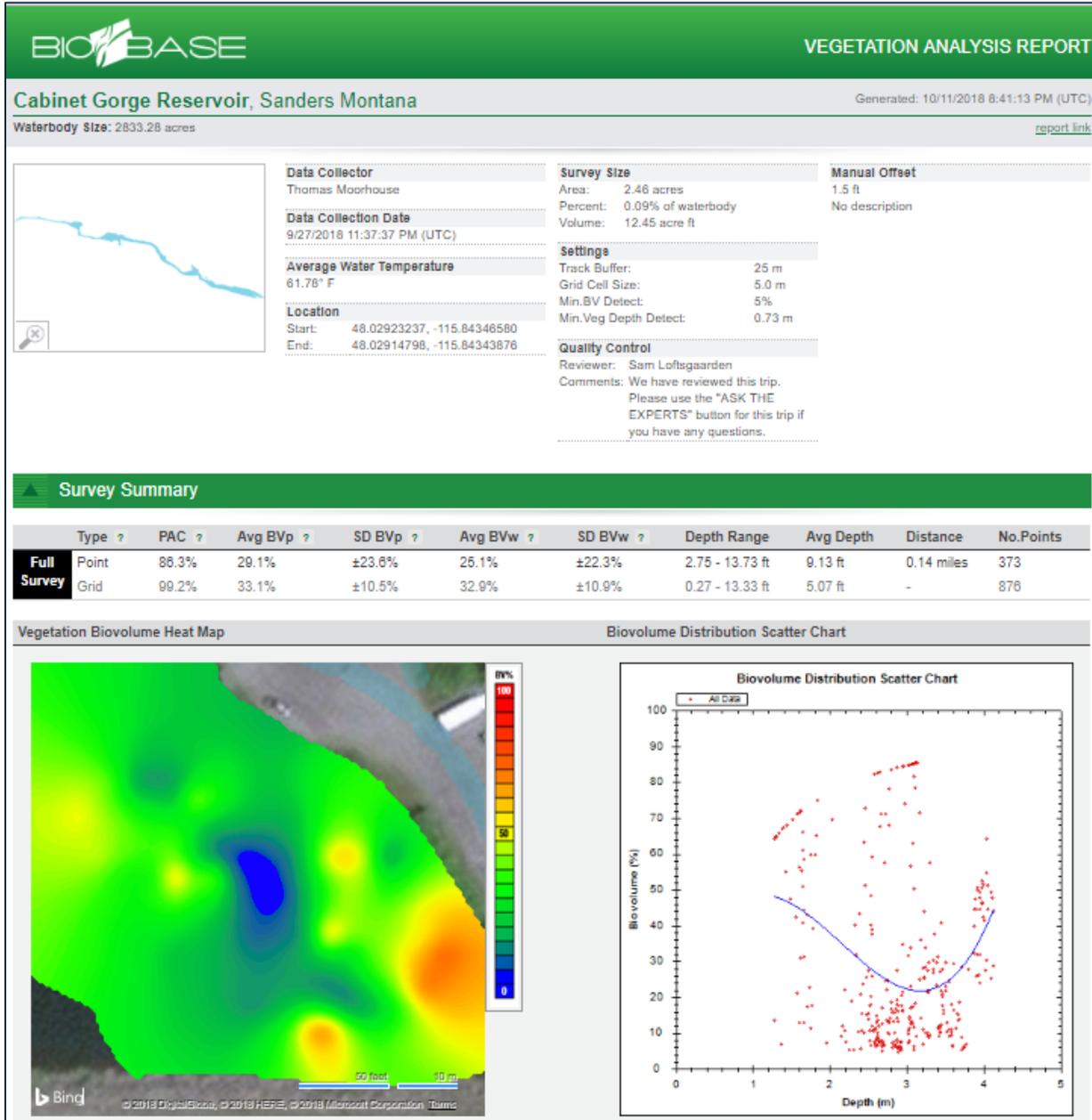
2018 Cabinet Gorge Reservoir AIS Treatment Plots: At Time of and ~ Six (6) Week Post Plot SAV % Cover and SAV BioVolume Data (Grid Data)									
Plot Number	SAV % Cover	SAV % Bio-Volume	Date Data Collected Pre Treatment	SAV % Cover	SAV % Bio-Volume	Date Data Collected-Post Treatment	SAV % BV Change	Post Treatment EWM Injury Rank	Herbicides Used (Aquathol K and or Tribune)
Cab-20	100.0	43.6	8/16/2018	99.2	33.1	9/27/2018	-24%	95% +/-	Diquat

**Observations/Notes Cab-20:** Treated with diquat only, control visually estimated at +/- 95%. No EWM observed in plot.

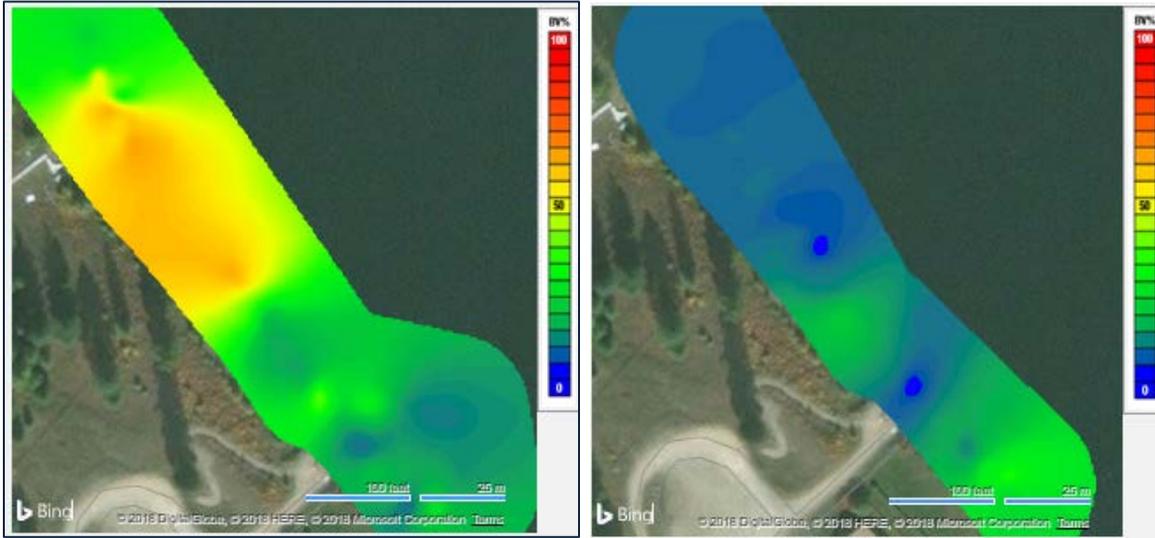
Plot Cab-20: At Time of Treatment (August 16, 2018)



Plot Cab-20: ~ Six (6) Weeks Post (September 27, 2018 Right)



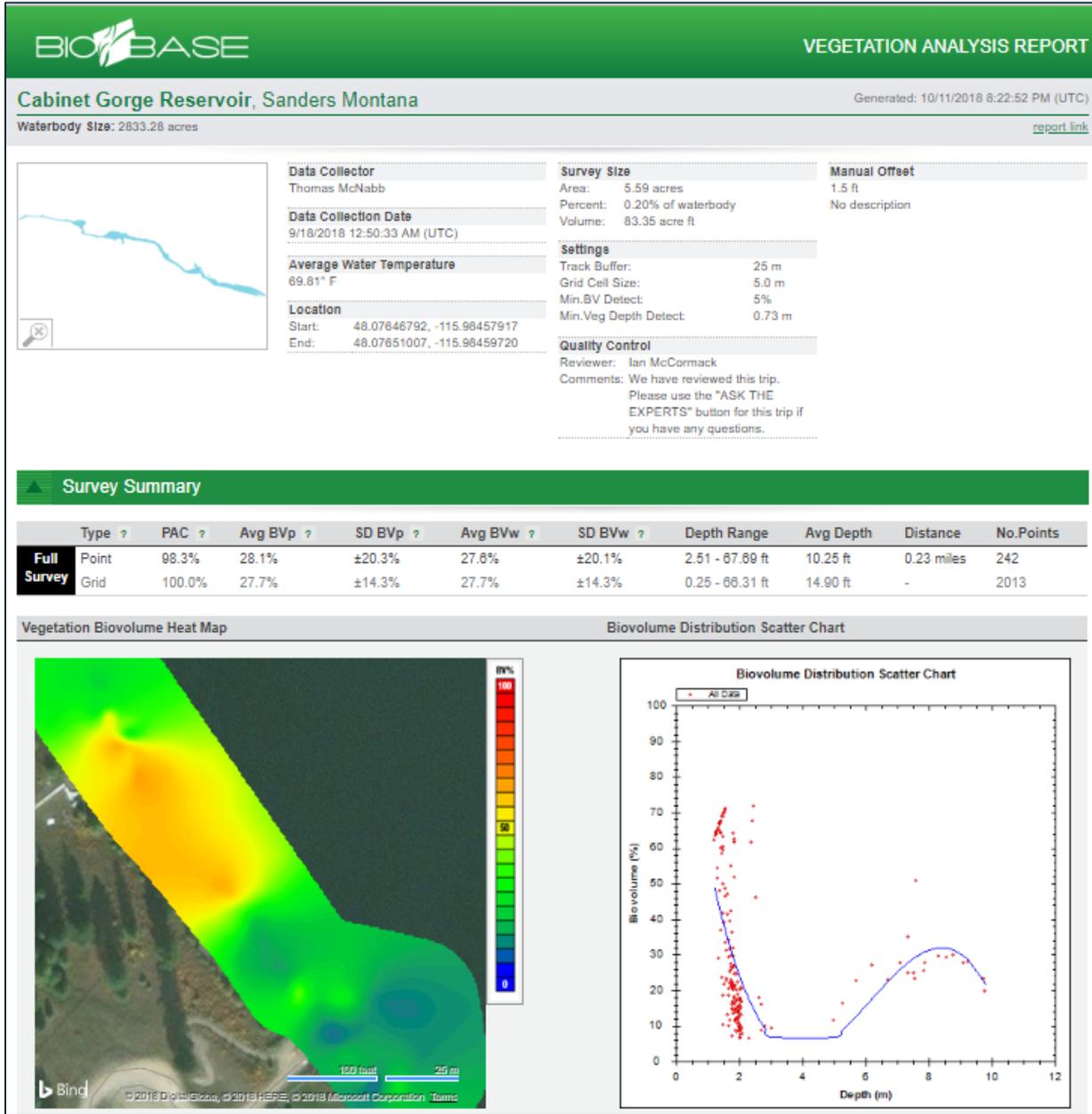
**Plot Cab-29: At Time of Treatment (August 16, 2018 Left),  
~ Six (6) Weeks Post (September 27, 2018 Right)**



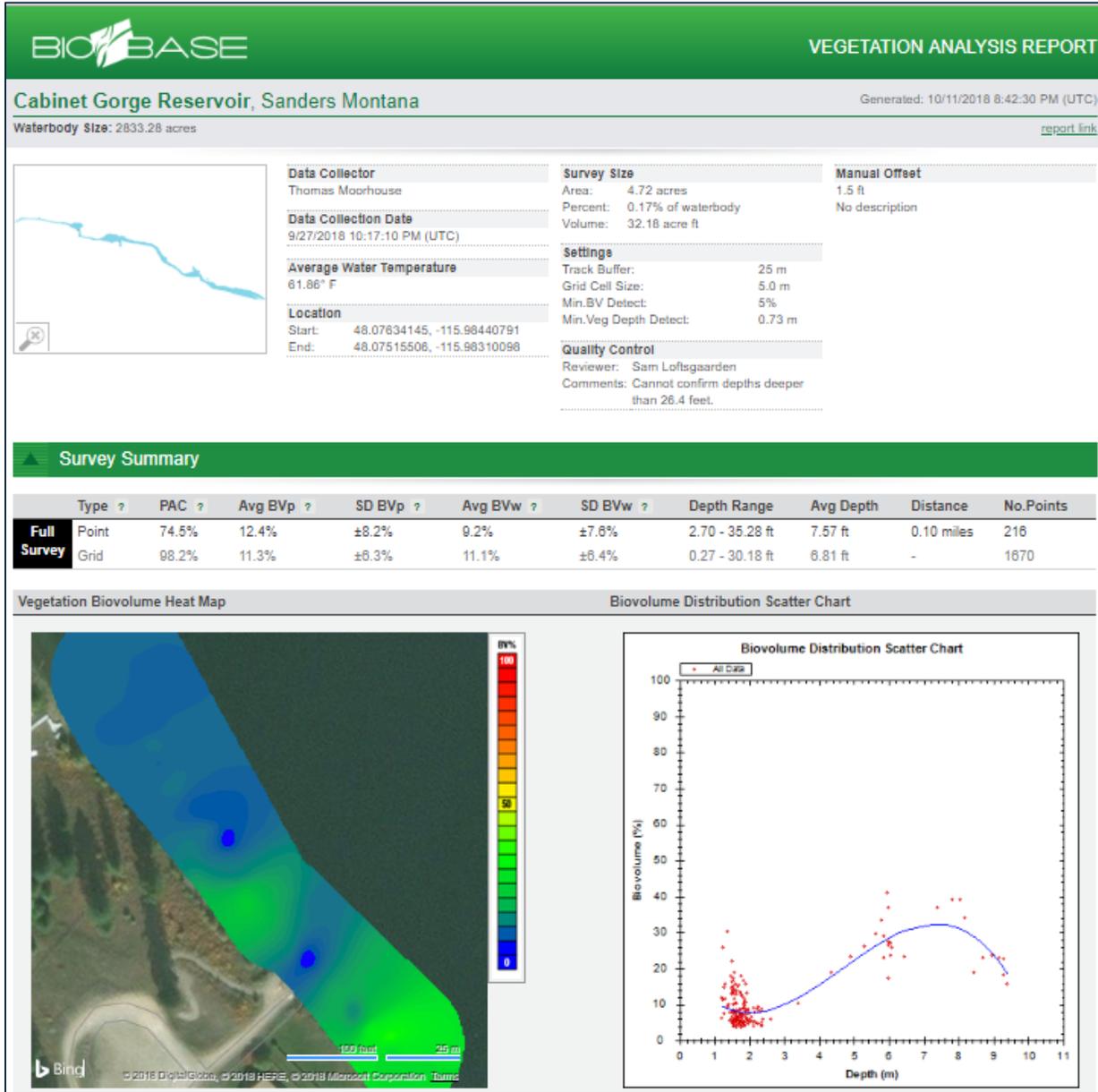
2018 Cabinet Gorge Reservoir AIS Treatment Plots: At Time of and ~ Six (6) Week Post Plot SAV % Cover and SAV BioVolume Data (Grid Data)									
Plot Number	SAV % Cover	SAV % Bio-Volume	Date Data Collected Pre Treatment	SAV % Cover	SAV % Bio-Volume	Date Data Collected-Post Treatment	SAV % BV Change	Post Treatment EWM Injury Rank	Herbicides Used (Aquathol K and or Tribune)
Cab-29	100.0	27.7	8/16/2018	98.2	11.3	9/27/2018	-59%	95% +/-	Endo/Diquat

**Observations/Notes Cab-29:** Treated with combination of endothall and diquat, control visually estimated at +/- 95%. No submersed aquatic vegetation visible.

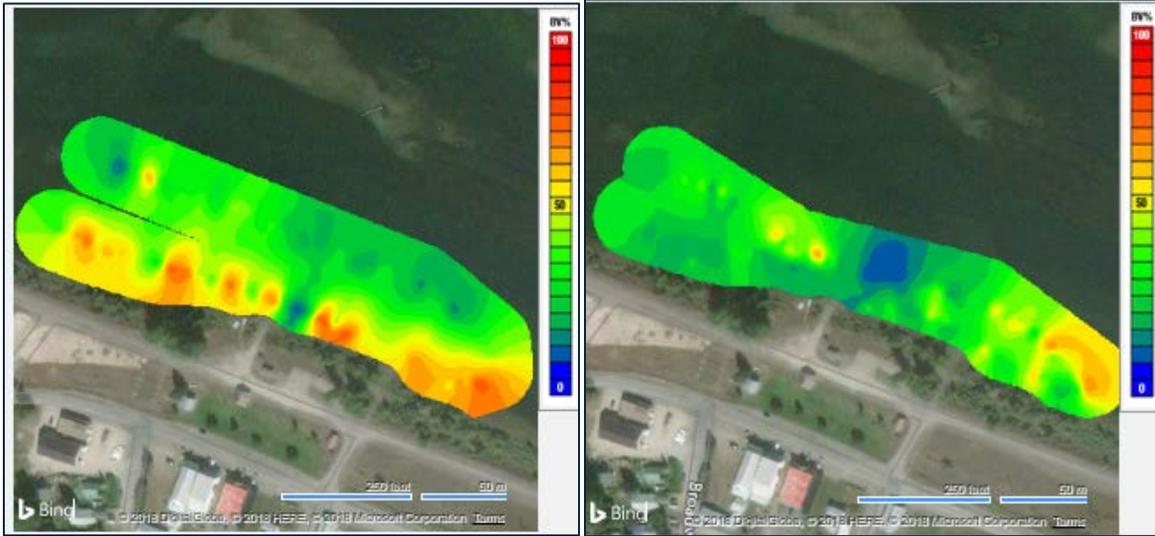
Plot Cab-29: At Time of Treatment (August 16, 2018)



Plot Cab-29: ~ Six (6) Weeks Post (September 27, 2018 Right)



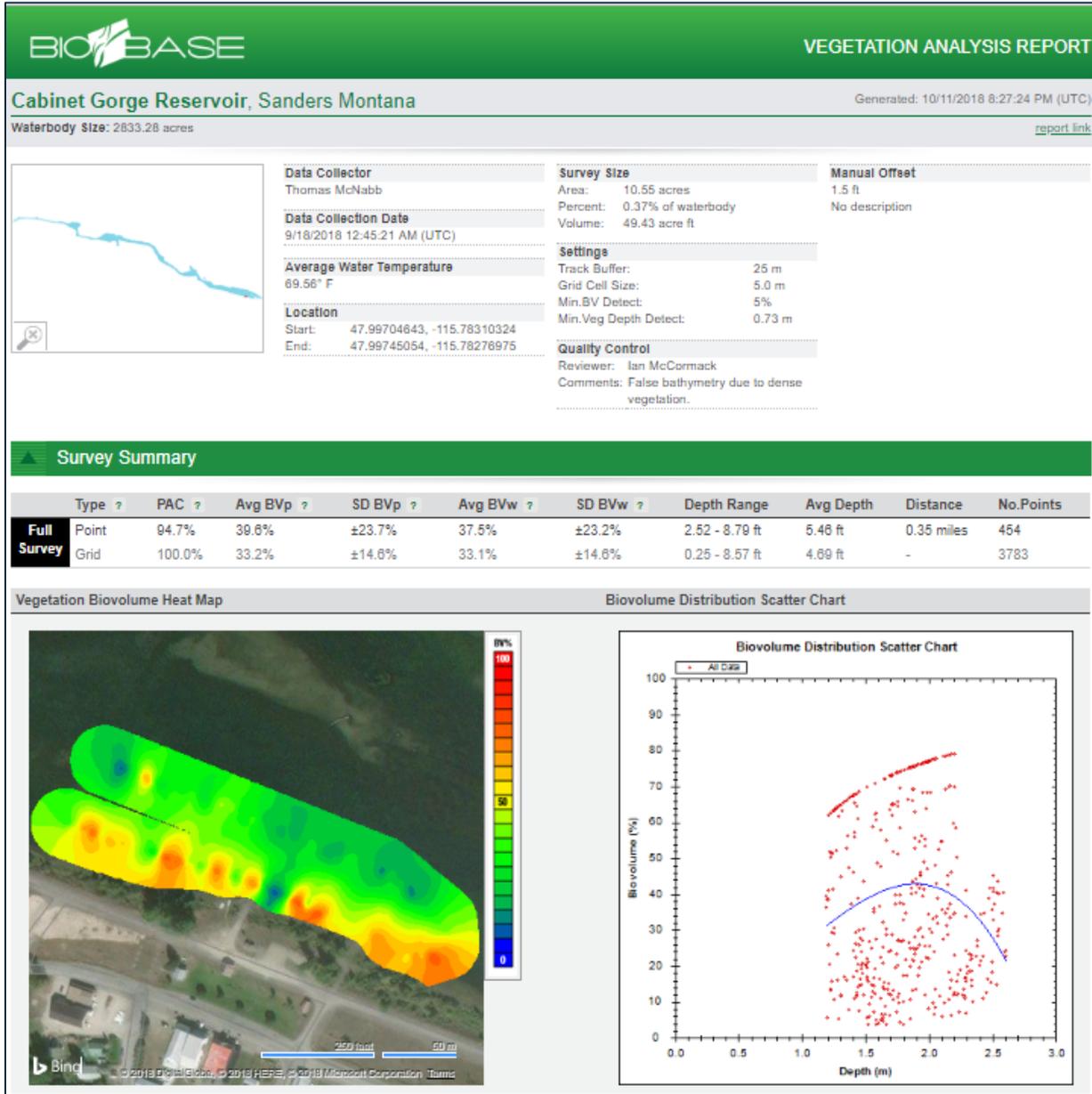
**Plot Cab-30: At Time of Treatment (August 16, 2018 Left),  
~ Six (6) Weeks Post (September 27, 2018 Right)**



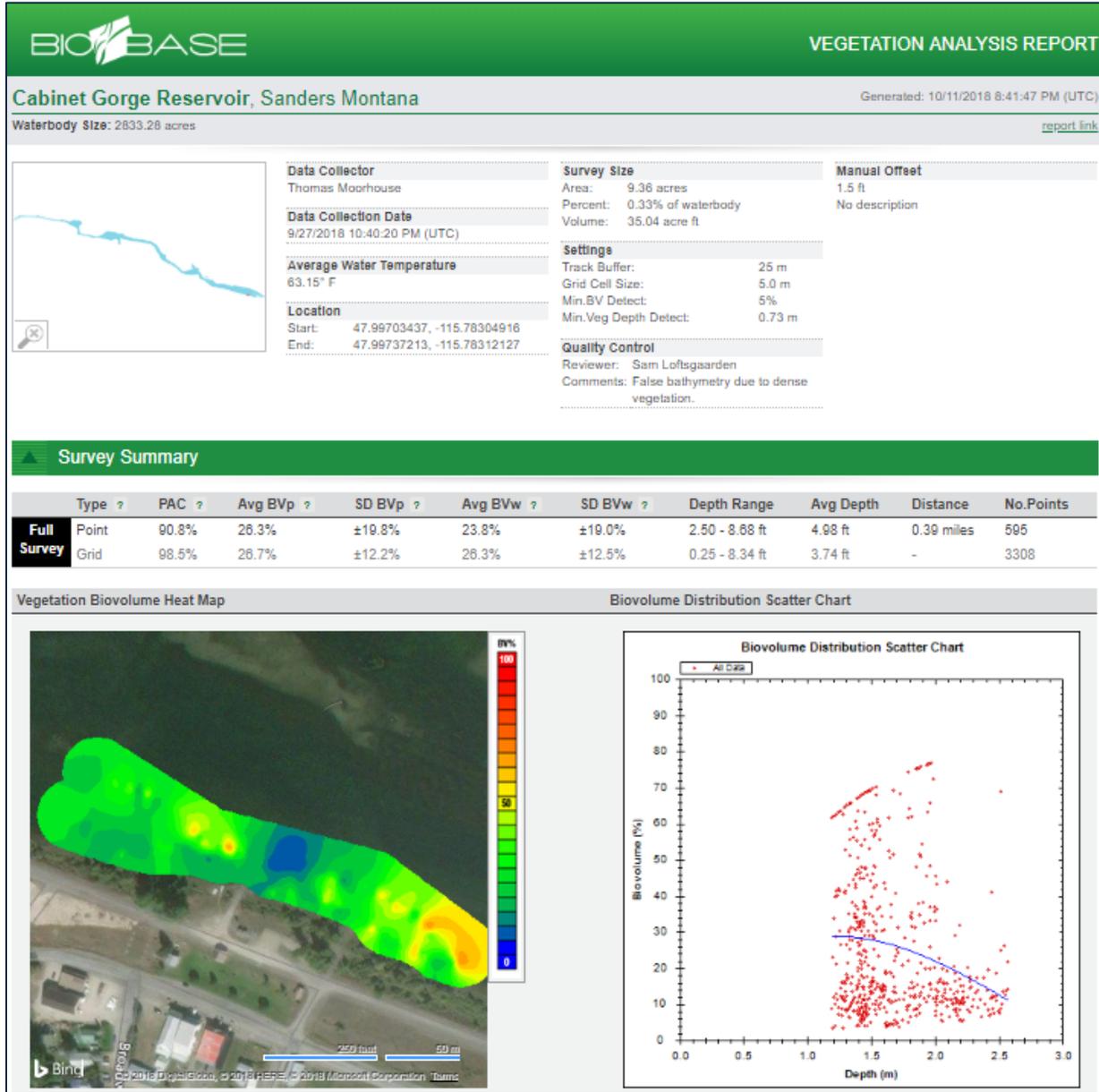
2018 Cabinet Gorge Reservoir AIS Treatment Plots: At Time of and ~ Six (6) Week Post Plot SAV % Cover and SAV BioVolume Data (Grid Data)									
Plot Number	SAV % Cover	SAV % Bio-Volume	Date Data Collected Pre Treatment	SAV % Cover	SAV % Bio-Volume	Date Data Collected-Post Treatment	SAV % BV Change	Post Treatment EWM Injury Rank	Herbicides Used (Aquathol K and or Tribune)
Cab-30	100.0	33.2	8/16/2018	98.5	26.7	9/27/2018	-20%	95% +/-	Endo/Diquat

**Observations/Notes Cab-30:** Treated with combination of endothall and diquat, control visually estimated at +/- 95%. No EWM visible.

Plot Cab-30: At Time of Treatment (August 16, 2018)

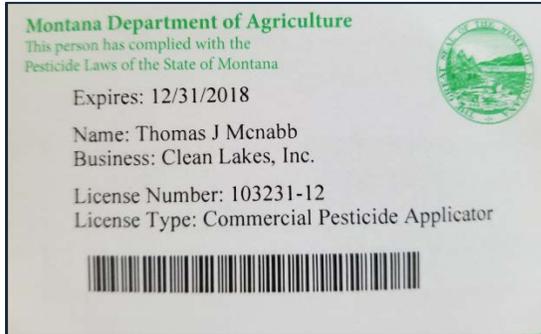


Plot Cab-30: ~ Six (6) Weeks Post (September 27, 2018 Right)



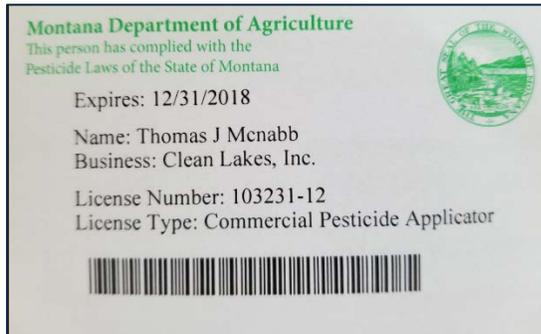
**LIST OF PROJECT PERSONNEL**

**PROJECT DIRECTOR:**



Thomas J. McNabb  
Montana Licensed Applicator  
Applicators License No. 103231-12  
Cell Phone: 208-929-2748  
Email: [tmcnabb@cleanlake.com](mailto:tmcnabb@cleanlake.com)

**PROJECT MANAGER**



Thomas G. Moorhouse  
Montana Licensed Applicator  
Applicators License No. 103230-12  
Cell Phone: 208-929-2757  
Email: [tmoorhouse@cleanlake.com](mailto:tmoorhouse@cleanlake.com)

**SITE SAFETY AND HEALTH OFFICER:**

Thomas G. Moorhouse  
Cell Phone: 208-929-2757

**ALTERNATE SITE SAFETY OFFICER:**

Thomas J. McNabb  
Cell Phone: 208-929-2748

**EMERGENCY RESPONSE COORDINATOR:**

Thomas J. McNabb  
Cell Phone: 208-929-2748

**ALTERNATE EMERGENCY COORDINATOR:**

Thomas G. Moorhouse  
Cell Phone: 208-929-2757

**CLI SUPPORT STAFF:**

None

**TASK FORCE COORDINATOR**

Kim Bergstrom  
Phone: 406-546-2447  
Email: [pinnacle@blackfoot.net](mailto:pinnacle@blackfoot.net)

**END OF AQUATIC PESTICIDE APPLICATION REPORT**