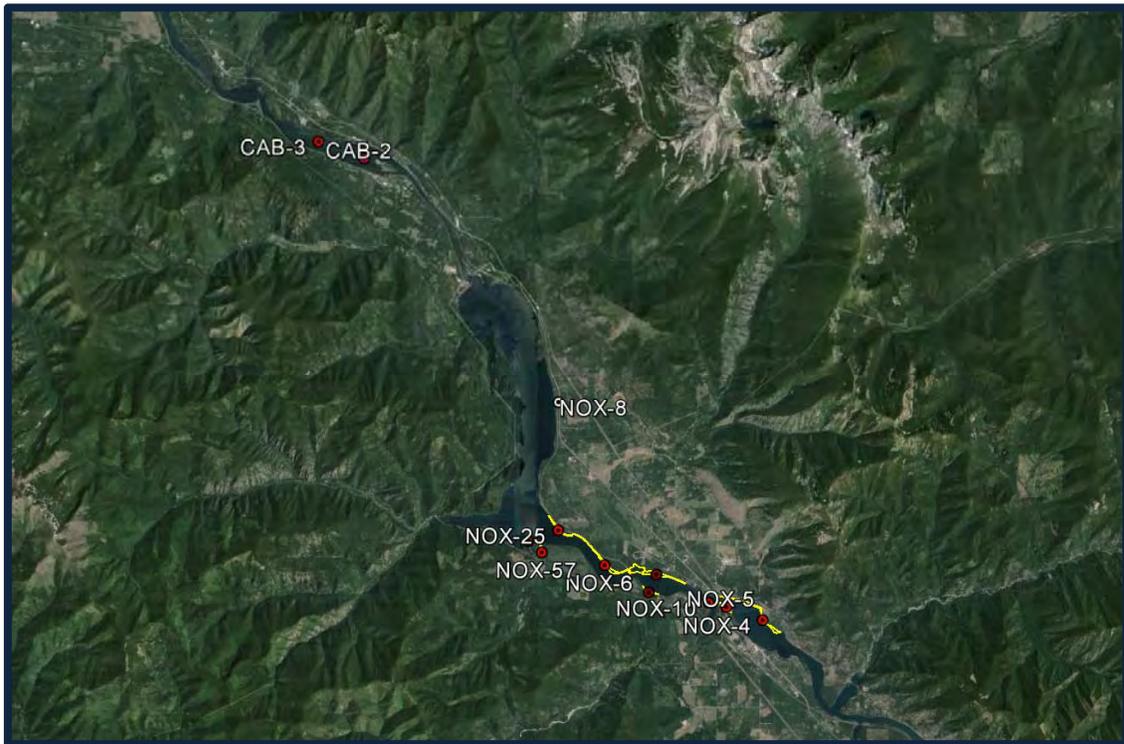


**CABINET GORGE & NOXON RAPIDS RESERVOIRS  
SANDERS COUNTY, MONTANA**

**2015 AIS Aquatic Pesticide Application Report (APAR)**



Prepared By:

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October 2015

**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 specific areas of Cabinet Gorge and Noxon Rapids Reservoirs in 2015. 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 # MTG870000), as well as the Pesticide Discharge Management Plan (PDMP) developed as part of the PGP. The Permit related information is included in the Cabinet Gorge & Noxon Rapids Reservoirs, Sanders County, Montana 2015 AIS 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 Curlyleaf pondweed (CLP) in up to 200 acres within pre identified areas of Cabinet Gorge & Noxon Rapids Reservoirs. In addition, the application of a tracer dye (rhodamine) in Cabinet Gorge was implemented to determine water exchange rates.

**PRE-TREATMENT SURVEYS:** Erik Hansen (Hansen Environmental), Celestine Duncan and other Task Force members carried out the 2014 Post Treatment surveys and the 2015 Pre Treatment Surveys from June 23<sup>rd</sup> through July 3<sup>rd</sup>, 2015. The fall 2014 surveys of Cabinet Gorge and Noxon Rapids Reservoirs were used to develop the tentative 2015 treatment plan to treat approximately 8 acres in Noxon Rapids and up to 192 acres in Cabinet Gorge reservoir. Following the 2015 Pre Treatment Survey, a change in treatment strategies was required as widespread EWM growth was found throughout Noxon Rapids Reservoir.

Hansen Environmental provided the 2014 post treatment report on July 6, 2015 (Draft Report: 2014 Post-Treatment Assessment of Treatment Plots for Noxon and Cabinet Gorge Reservoirs 2015).

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<sup>1</sup> NOXON RAPIDS & CABINET GORGE RESERVOIRS SANDERS COUNTY, MONTANA, 2015 AIS Aquatic Pesticide Application Plan (APAP)

Based on the efficacy of the 2014 Cabinet Gorge Reservoir herbicide applications, three (3) plots were selected for Rhodamine dye trials to determine water exchange rates within Cabinet Gorge. CLI (Moorhouse), Coldwater Environmental (Skogerboe), and Sanders County Aquatic Invasive



Plant Task Force members (Badger, Bergstrom and Mitchell) performed a pre-dye treatment survey of the sites on July 7<sup>th</sup>, followed by a conference call with the US Army Corps of Engineers (Getsinger) to finalize plans. Three plots located within treatment sites known as CAB-2, CAB-3, and CAB-6 were confirmed for the water exchange evaluations. The Rhodamine dye trials were performed on July 8<sup>th</sup> and 9<sup>th</sup>, 2015.

On July 17, 2015, a conference call was held between the Task Force, Celestine Duncan, Kurt Getsinger and Clean Lakes, Inc. (CLI), to finalize the 2015 herbicide application plan for Noxon Rapids and Cabinet Gorge Reservoirs based on the July 2015 Pre Treatment Surveys.



The USCOE agreed to support a diquat demonstration trial in Cabinet Gorge Reservoir, and supplied 45 gallons of diquat to augment the 15 gallons of

diquat that Sanders County had on hand. The information obtained from the July 2015 water exchange evaluations using the Rhodamine dye was utilized to develop the diquat application plan for Cabinet Gorge Reservoir. Hansen Environmental provided the final GIS Treatment shapefiles for the project on July 21, 2015.

**SUMMARY OF ACRES TREATED:** The final plan consisted of treating 20 acres in Cabinet Gorge, and 148.8 acres in Noxon Rapids Reservoir, for a total of 168.8 acres. Based on the Pre Treatment Surveys, water depths were adjusted in the Plots due to water level conditions at the

time of treatment. Treatment plots were named through an alphanumeric system to differentiate plots on Cabinet Gorge and Noxon Rapids Reservoirs.

**TREATMENT SCHEDULE:** The aquatic herbicide applications were performed on July 22<sup>nd</sup>, 23<sup>rd</sup>, 29<sup>th</sup> and 30<sup>th</sup>, 2015, as outlined in Table 1 below:

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

2015 Noxon Rapids and Cabinet Gorge Reservoir Treatment Data								
2015 Noxon Rapids Reservoir Treated Plots								
Plot Number	Acreage	Mean Depth	Date	Start	Stop	Wind (mph)	Wind Direction	Sky
NOX-59	58.0	7.2	7/30/2015	9:49 AM	12:49 PM	6	SE	clear
NOX-4	28.2	7.0	7/29/2015	12:16 PM	2:25 PM	0.0	n/a	clear
NOX-5	11.8	7.0	7/29/2015	3:01 PM	3:29 PM	7.2	N/W	PC
NOX-6	23.1	6.1	7/23/2015	8:45 AM	11:02 AM	0.0	n/a	PC
NOX-10	2.6	7.4	7/30/2015	10:45 AM	11:00 AM	1	w	clear
NOX-25	13.1	7.0	7/23/2015	12:17 PM	2:40 PM	3.1	W	PC
NOX-56	2.6	4.0	7/30/2015	10:10 AM	10:17 AM	2	W	clear
NOX-57	6.6	4.0	7/30/2015	10:25 AM	10:35 AM	2	W	clear
NOX-58	2.3	7.5	7/30/2015	1:20 AM	12:35 PM	2	w	clear
NOX-8	0.5	7.0	7/30/2015	9:45 AM	9:55 AM	2	W	clear
<b>Total Noxon</b>	<b>148.8</b>							
2015 Cabinet Gorge Reservoir Treated Plots								
CAB-2	10.0	6	7/22/2015	7:29 AM	7:40 AM	0	n/a	PC
CAB-3	10.0	6	7/22/2015	7:00 AM	7:16 AM	0	n/a	PC
<b>Total CG</b>	<b>20.0</b>							
<b>Total</b>	<b>168.8</b>							

**EQUIPMENT USED:** Two of CLI's Littoral Zone Treatment vessels (LittLine®) were used to perform the aquatic herbicide applications. 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 AIS treatment area GIS shapefiles were loaded into the LittLine® computer system for vessel guidance and herbicide application data recording. The LittLine® can place herbicides at any depth within the water column (2 - 30 feet), as well as within the bottom 2 foot of the water



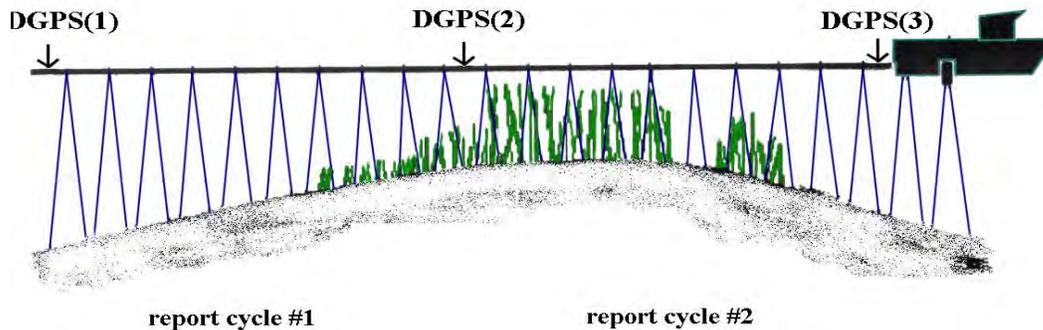
column. Impacts from currents, wind and wave action are reduced in deep water applications through the use of the LittLine® application system when compared to conventional subsurface applications. The herbicide application in all of the plots was within the bottom portion of the water

column.

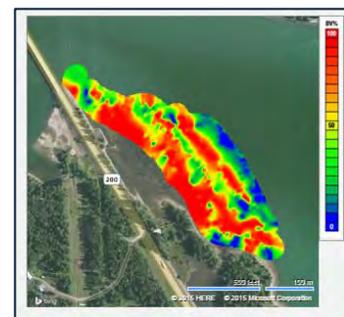


The LittLine system's computerized rate controllers regulate the aquatic herbicide applications through preset treatment rates. When the vessel speeds up and or slows down, the rate controllers adjust the herbicide application rate to match the preset rate in gallons of product per acre.

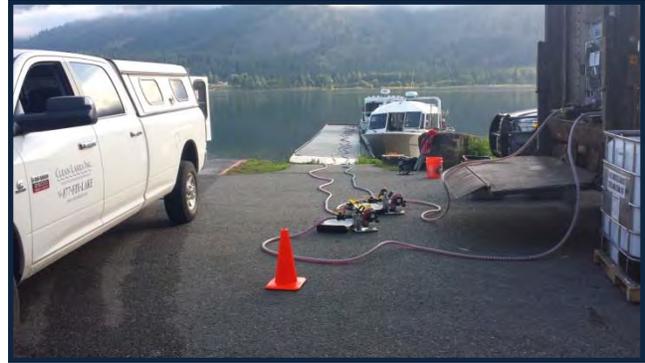
A Digital Echosounder System with a Structure Scan Module was used to record data of the submerged aquatic vegetation (SAV) profile in the control plots during treatment and during the post treatment survey. Data was collected in both the .SLG (traditional sonar on HDS line) and the .SL2 (multi-channel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



The sonar data collected was processed and analyzed for At Time of Treatment Submerged Aquatic Vegetation (SAV) in the treatment plots and at six (6) Weeks Post Treatment. 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-5, Noxon Reservoir, is pictured to the right.



**AQUATIC HERBICIDES:** Sanders County and CLI provided the aquatic herbicides for the project, and they were delivered by Avista staff and IEDS of Spokane, WA in recyclable totes and 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 areas of Noxon Rapids and Cabinet Gorge Reservoirs for the



control of Eurasian watermilfoil and Curlyleaf pondweed as outlined in the Site Data Tables below (Herbicide Label's and Material Safety Data Sheets (MSDS's) are included in the APAP).

#### **PERMIT COMPLIANCE: CLI**

supported the development of the Aquatic Pesticide Application Plan, 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 July 10, 2015 and July 26, 2015.

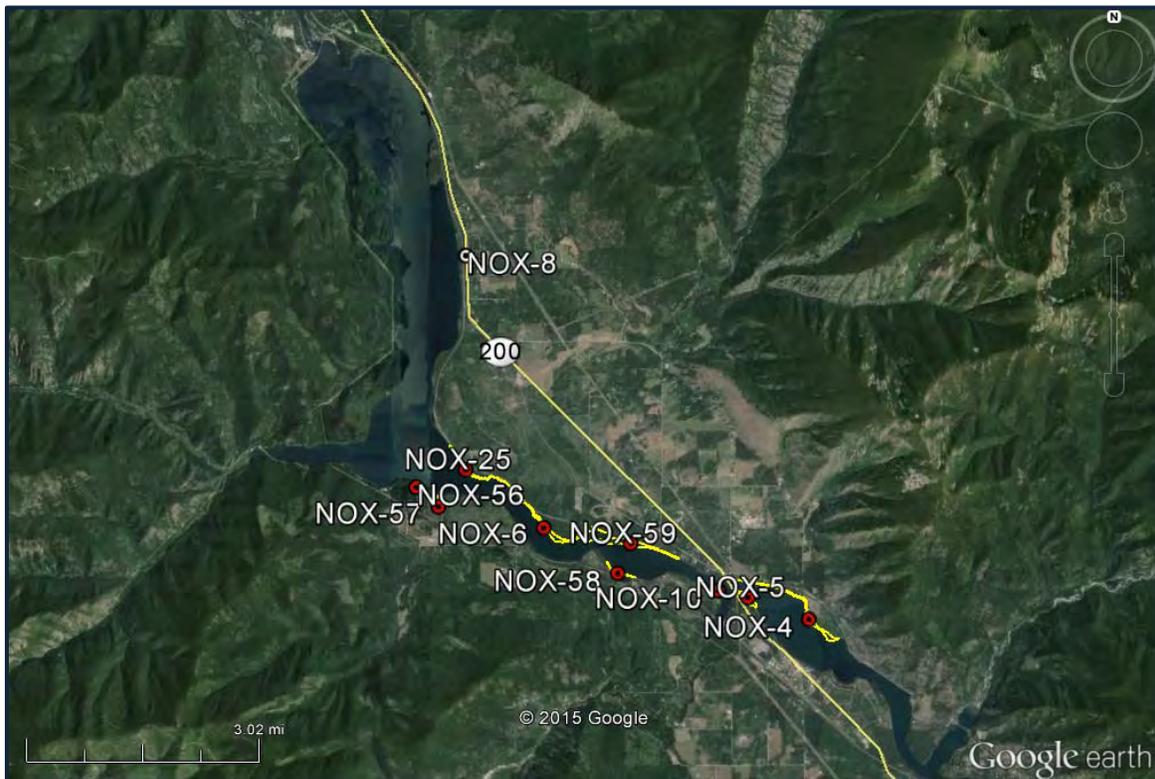
**SERVICES PROVIDED BY CLI:** All manpower, materials, insurance, equipment and technical advice required to perform aquatic herbicide applications in the project areas. In addition, CLI hosted a webpage at <http://www.cleanlake.com/2015noxonrapidsais.html> to provide project related information to the public.

**SERVICES PROVIDED BY SANDERS COUNTY:** Sanders County provided the required permits, published legal notices in newspapers, provided notification to property owners, posting

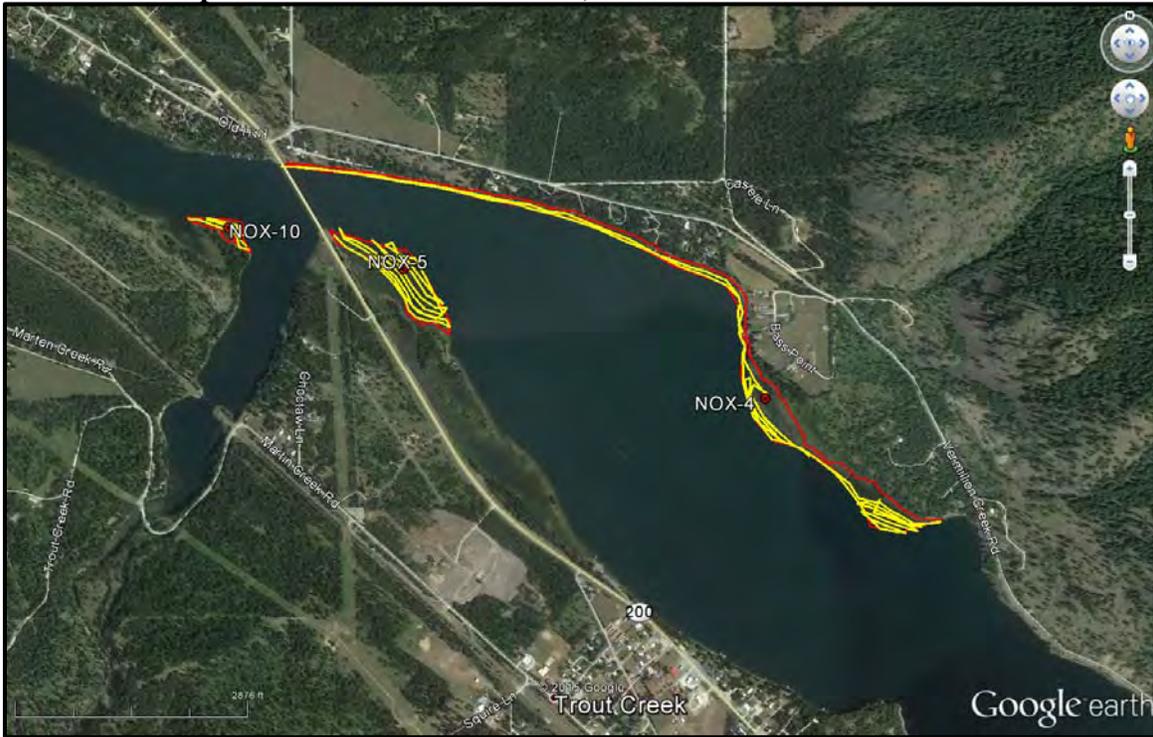
at public boat launch facilities, and provided the project area GIS shapefiles from the 2015 Pre Treatment Surveys that were used to generate the final 2015 Treatment Plan.

### TREATMENT AREA PLOT MAPS

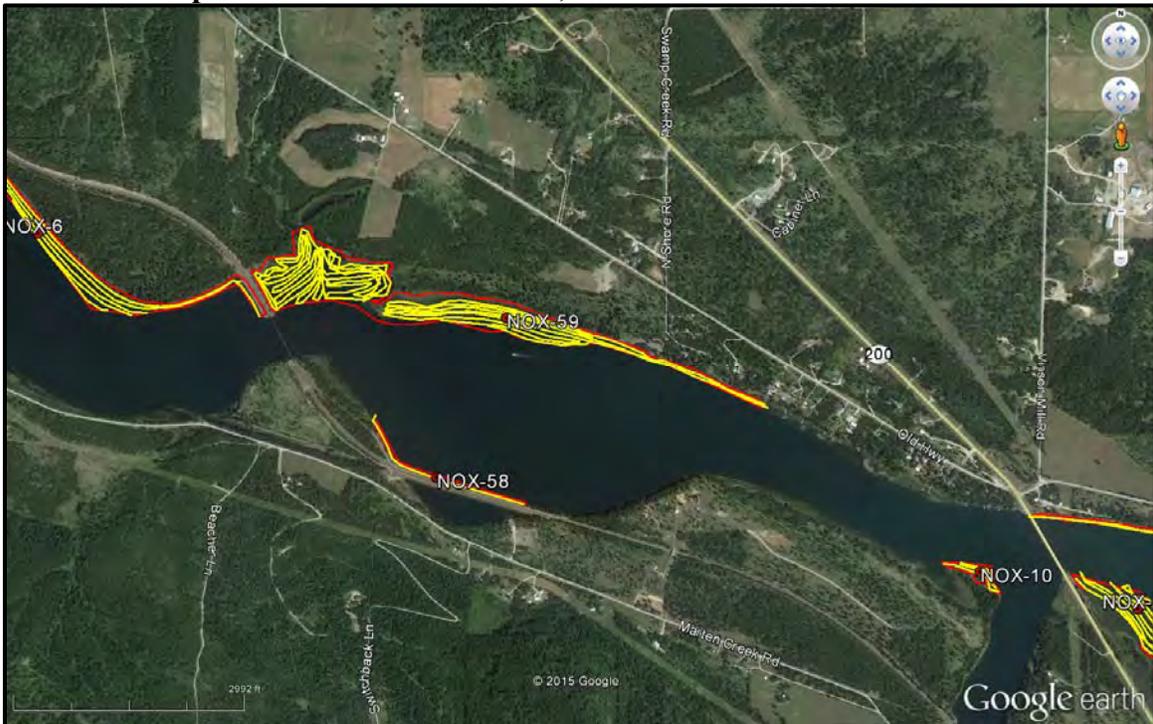
#### Overview of the 2015 Noxon Rapids Reservoir Treatment Plots



**Noxon Rapids Reservoir Plots NOX10, NOX5 and NOX4 Treatment Tracks**



**Noxon Rapids Reservoir Plots NOX6, NOX58 and NOX59 Treatment Tracks**



**Noxon Rapids Reservoir Plots NOX56, NOX57 and NOX25 Treatment Tracks**



**Noxon Rapids Reservoir Plot NOX8 Treatment Tracks**



Cabinet Gorge Reservoir Treatment Plot CAB2 and 3 Overview Map



Cabinet Gorge Reservoir Plots CAB2 and CAB3 Treatment Tracks



### TREATMENT SITE DATA

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

2015 Noxon Rapids and Cabinet Gorge Reservoir Treatment Data				Triclopyr		Endothall		Diquat	
Plot Number	Acreage	Mean Depth	Product	Rate ppm	Qty Total Site	Rate ppm	Qty Total Site	Rate ppm	Qty Total Site
Nox-59	58.0	7.2	End/Tri	1.00	378	2.0	536		
Nox-4	28.2	7.0	End/Tri	1.00	179	2.0	254		
Nox-5	11.8	7.0	End/Tri	1.00	75	2.0	106		
Nox-6	23.1	6.1	End/Tri	1.00	127	2.0	180		
Nox-10	2.6	7.4	End/Tri	1.00	17	2.0	25		
Nox-25	13.1	7.0	End			3.0	176		
Nox-56	2.6	4.0	End/Tri	1.00	9	2.0	13		
Nox-57	6.6	4.0	End/Tri	1.00	24	2.0	34		
Nox-58	2.3	7.5	End/Tri	1.00	16	2.0	22		
Nox-8	0.5	7.0	End/Tri	1.00	3	2.0	4		
<b>Total Noxon</b>	<b>148.8</b>				<b>828</b>		<b>1350</b>		
CAB-2	10.0	6	Diquat					0.37	30
CAB-3	10.0	6	Diquat					0.37	30
<b>Total CG</b>	<b>20.0</b>								<b>60</b>
<b>Total</b>	<b>168.8</b>				<b>828</b>		<b>1350</b>		<b>60</b>

Table 2 Notes: The 2015 Treatment priority was based on treatment progressing in an upstream to downstream direction.

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

2015 Cabinet Gorge and Noxon Rapids Reservoir's 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
<b>Noxon Rapids</b>									
Nox-59	98.50	55.80	7/30/2015	98.20	46.2	9/10/2015	-17%	90% +/-	End/Tri
Nox-4	92.50	61.50	7/29/2015	99.40	62.5	9/10/2015	2%	70% +/-	End/Tri
Nox-5	96.20	62.00	7/29/2015	51.60	35.7	9/10/2015	-42%	90% +/-	End/Tri
Nox-6	90.50	52.30	7/23/2015	90.40	41.3	9/10/2015	-21%	80% +/-	End/Tri
Nox-10	88.40	49.30	7/30/2015	97.60	40.4	9/10/2015	-18%	98% +/-	End/Tri
Nox-25	85.30	59.70	7/23/2015	82.60	29.2	9/10/2015	-51%	75% +/-	End
Nox-56	100.00	71.60	7/30/2015	n/a	n/a	n/a	n/a	85% +/-	End/Tri
Nox-57	83.60	70.10	7/30/2015	n/a	n/a	n/a	n/a	98% +/-	End/Tri
Nox-58	99.90	83.20	7/30/2015	n/a	n/a	n/a	n/a	75% +/-	End/Tri
Nox-8	97.30	26.10	7/30/2015	99.40	37.00	9/10/2015	42%	55% +/-	End/Tri
<b>Cabinet Gorge</b>									
Cab-2	n/a	n/a	n/a	100.00	48.20	9/10/2015	n/a	88% +/-	Diquat
Cab-3	n/a	n/a	n/a	100.00	61.20	9/10/2015	n/a	85% +/-	Diquat

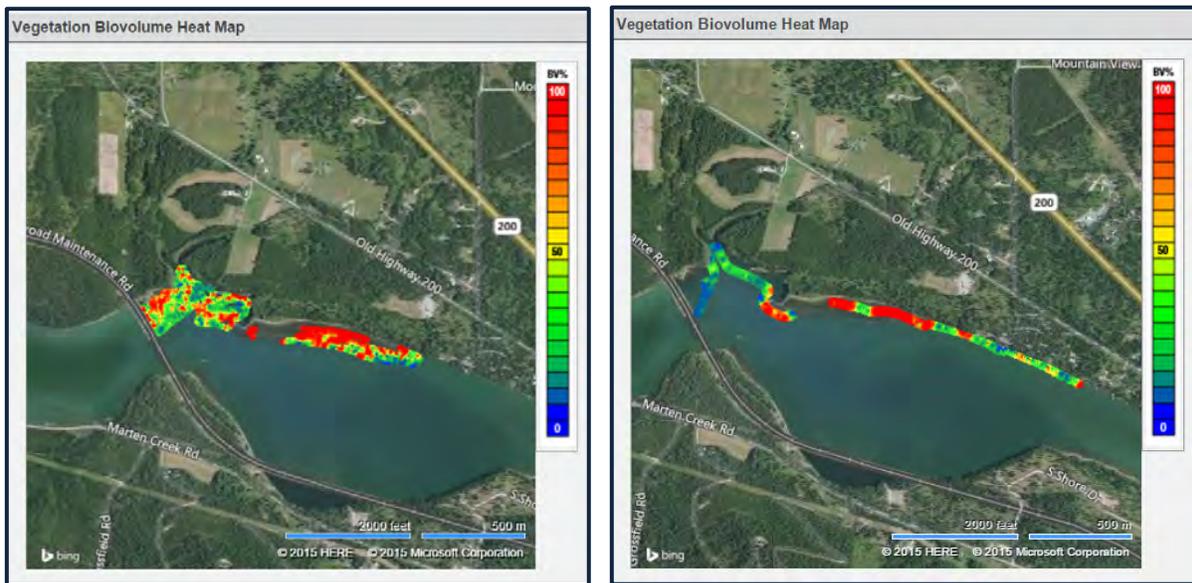
Note: Herbicides used End/Tri = Combination of Endothall and Triclopyr.  
 Post Treatment Injury Rank are the observers (Moorhouse, Duncan) visual estimates of herbicide injury to EWM on September 10, 2015, approximately 6 weeks post treatment during a survey with Kim Bergstrom, Jason Badger, Tanner Mitchell, Ryan Thum, Ruth Watkins, Mike McPhee (CLI), MT DNR Staff, and others.



A 52 week Post Treatment Survey to determine efficacy will be performed in 2016. 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 SAV DATA  
SAV PERCENT COVER AND BIO-VOLUME DATA SETS**

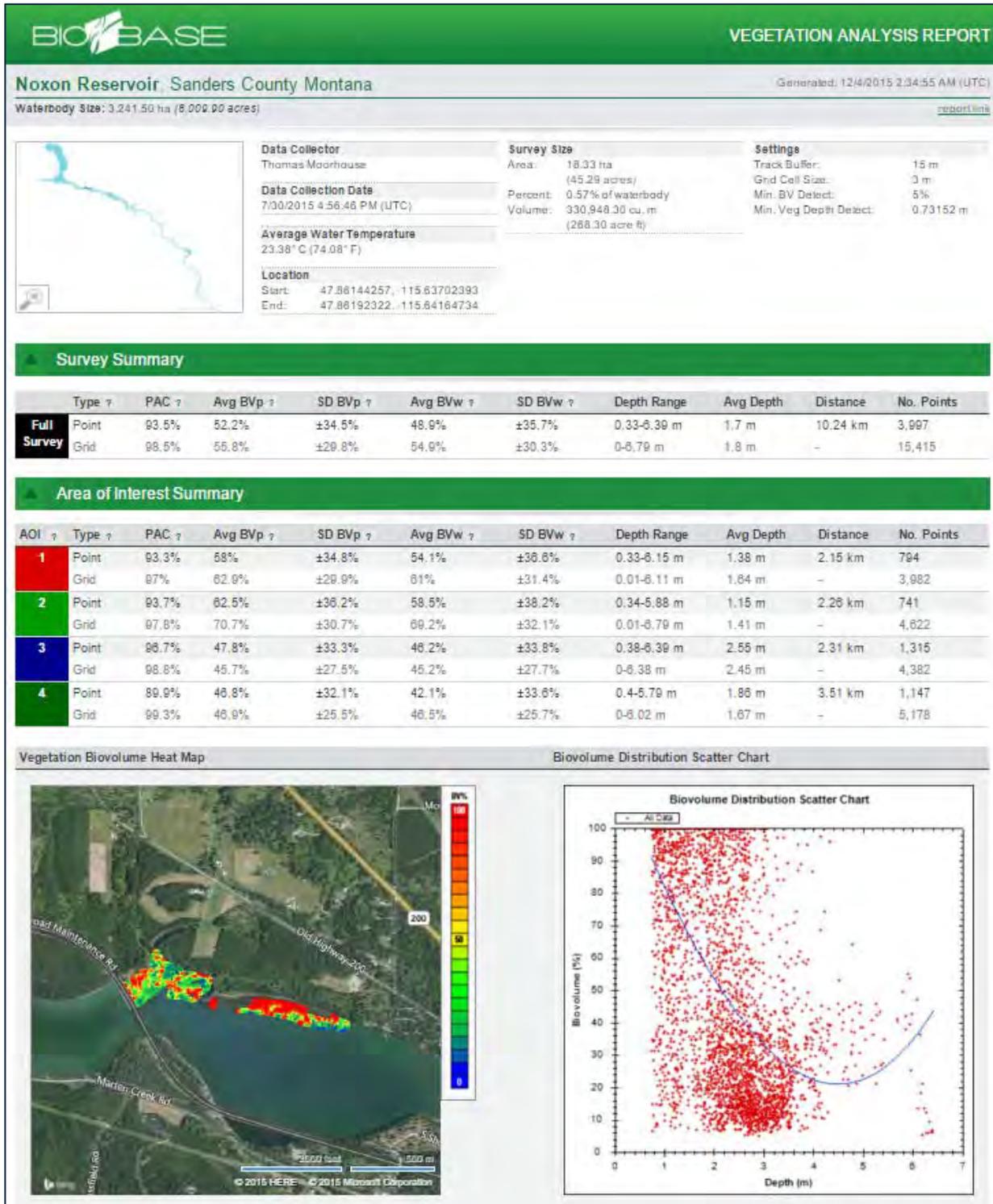
**Plot Nox-59: At Time of Treatment (July 30, 2015 Left),  
~ Six (6) Weeks Post (September 10, 2015 Right)**



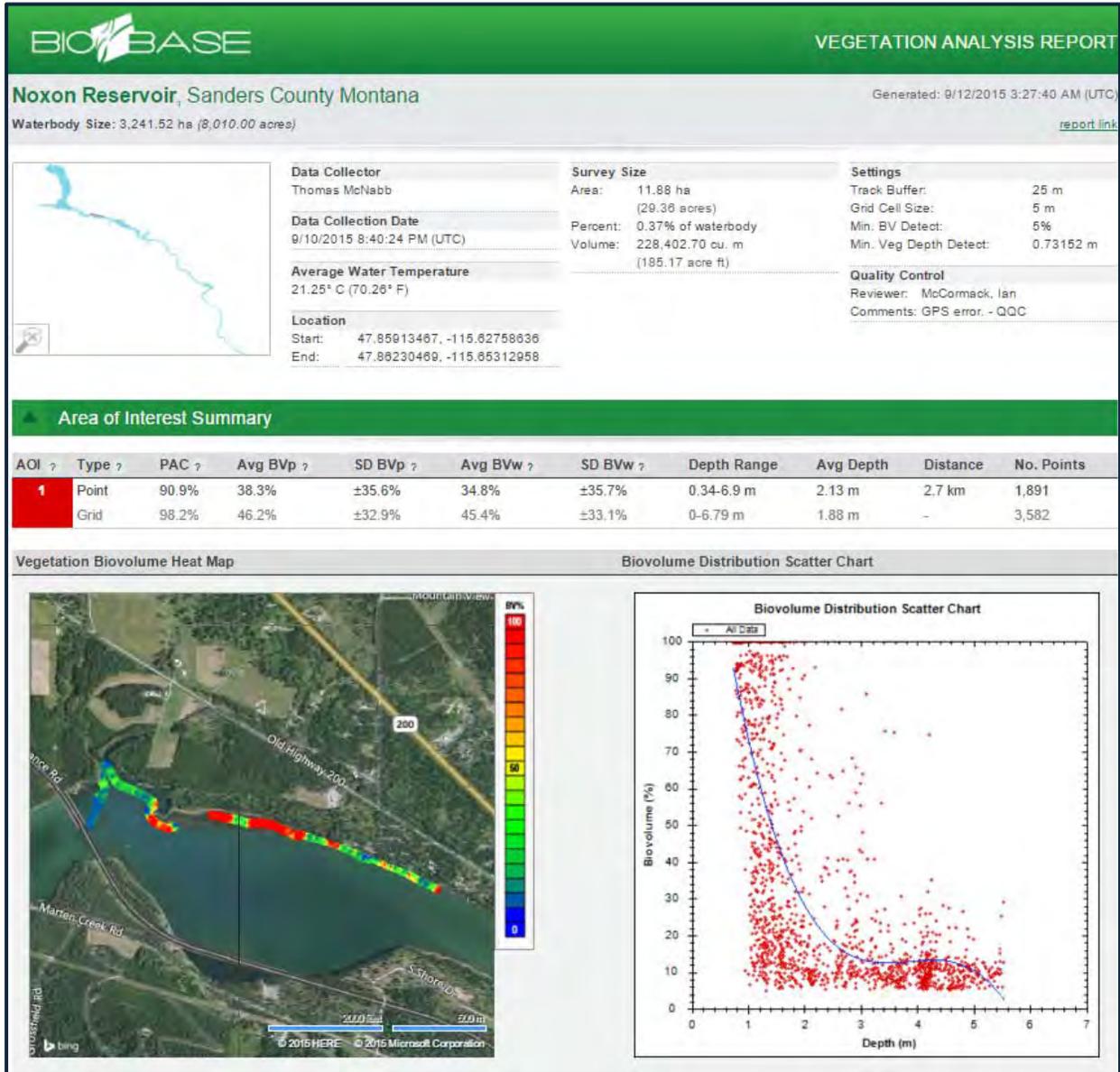
2015 Cabinet Gorge and Noxon Rapids Reservoir's AIS Treatment Plots: At Time of and ~ Six (6) Week Post Plot SAV % Cover and SAV BioVolume Data (Grid Data)									
Plot Number	SAV % Cover	SAV % Bio-Volume	Date Data Collected Pre Treatment	SAV % Cover	SAV % Bio-Volume	Date Data Collected-Post Treatment	SAV % BV Change	Post Treatment EWM Injury Rank	Herbicides Used
<b>Noxon Rapids</b>									
Nox-59	98.50	55.80	7/30/2015	98.20	46.2	9/10/2015	-17%	90% +/-	End/Tri

**Observations/Notes Nox-59:** Treated with 1.0 ppm triclopyr, 2 ppm endothall, control estimated at 90%. Shoreline strip portion of plot at 80% control while bay at west end at 95% control. Native plants present, chara, elodea and northern watermilfoil (NWM).

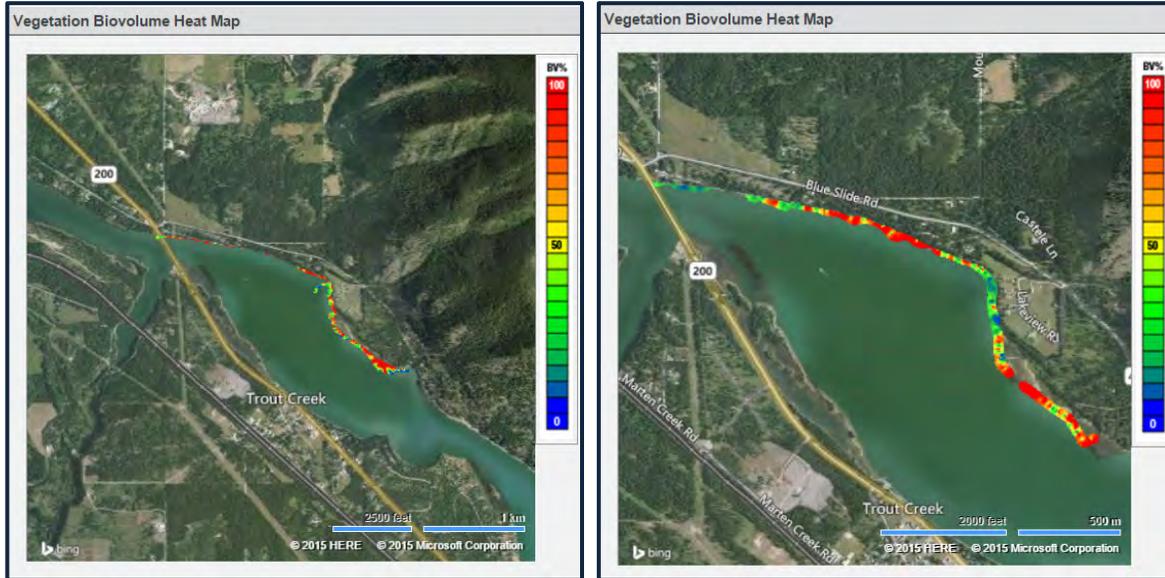
Plot Nox-59: At Time of Treatment (July 30, 2015)



Plot Nox-59: ~ Six (6) Weeks Post (September 10, 2015)



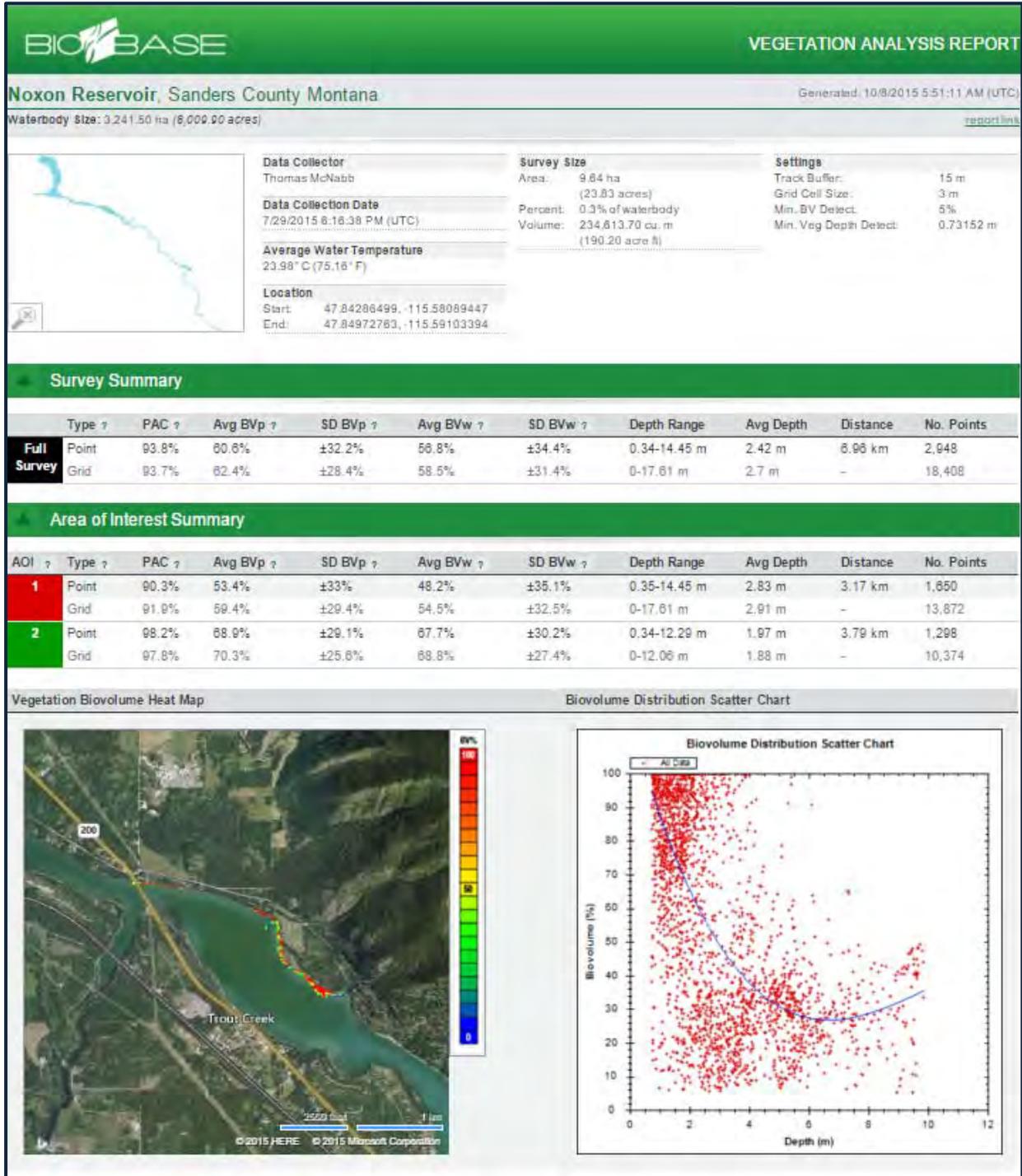
**Plot Nox-4: At Time of Treatment (July 29, 2015 Left),  
~ Six (6) Weeks Post (September 10, 2015 Right)**



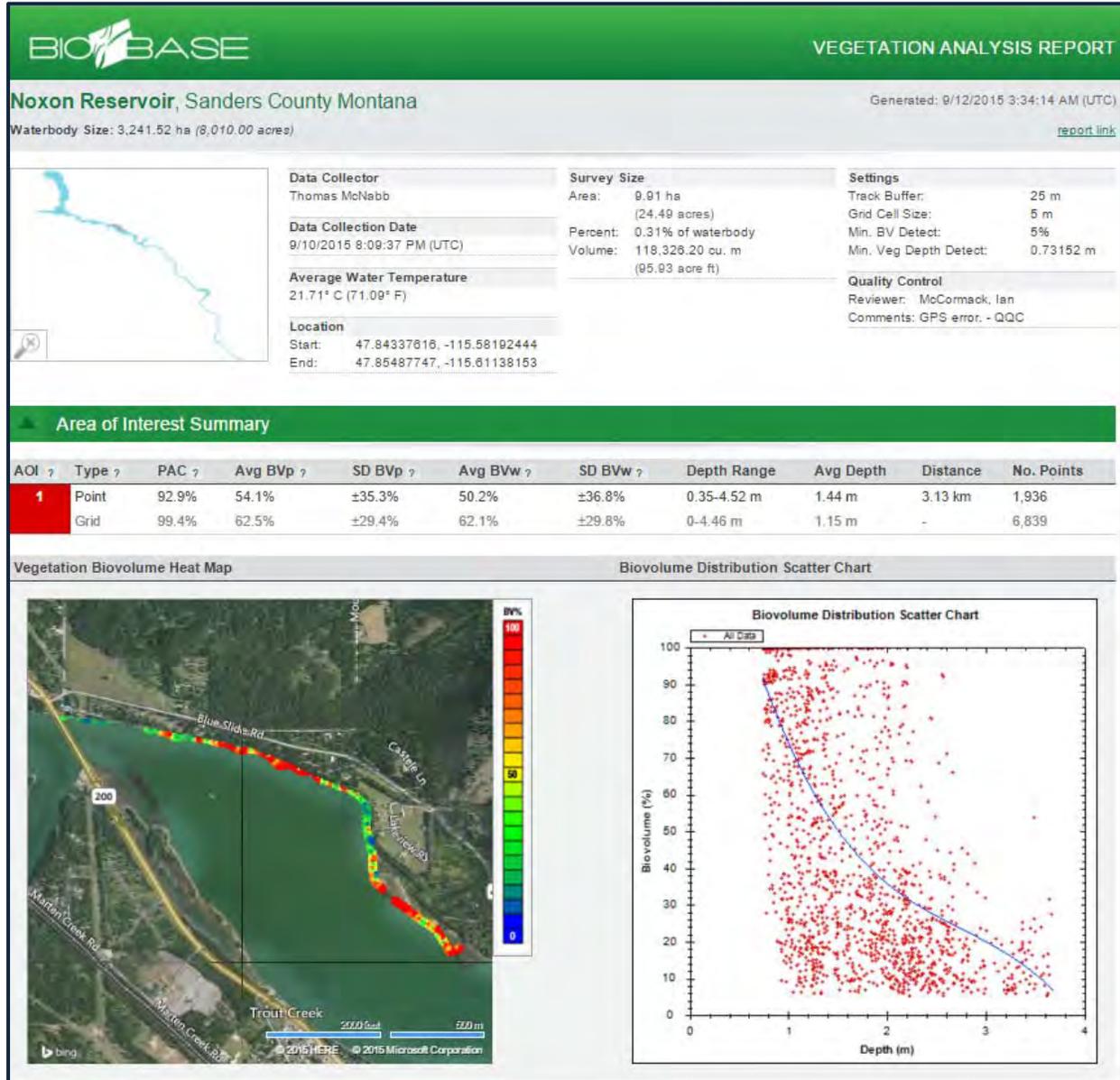
2015 Cabinet Gorge and Noxon Rapids Reservoir's AIS Treatment Plots: At Time of and ~ Six (6) Week Post Plot SAV % Cover and SAV BioVolume Data (Grid Data)									
Plot Number	SAV % Cover	SAV % Bio-Volume	Date Data Collected Pre Treatment	SAV % Cover	SAV % Bio-Volume	Date Data Collected-Post Treatment	SAV % BV Change	Post Treatment EWM Injury Rank	Herbicides Used
<b>Noxon Rapids</b>									
Nox-4	92.50	61.50	7/29/2015	99.40	62.5	9/10/2015	2%	70% +/-	End/Tri

**Observations/Notes Nox-4:** Treated with 1.0 ppm triclopyr, 2.0 ppm endothall, control estimated at 70%.

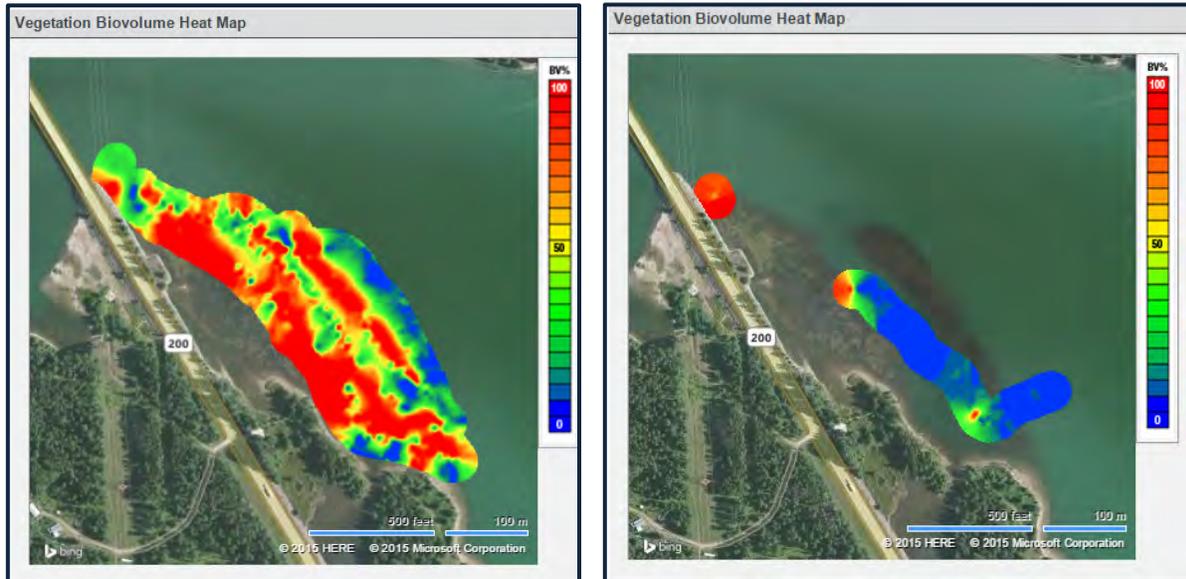
Plot Nox-4: At Time of Treatment (July 29, 2015)



Plot Nox-4: ~ Six (6) Weeks Post (September 10, 2015)



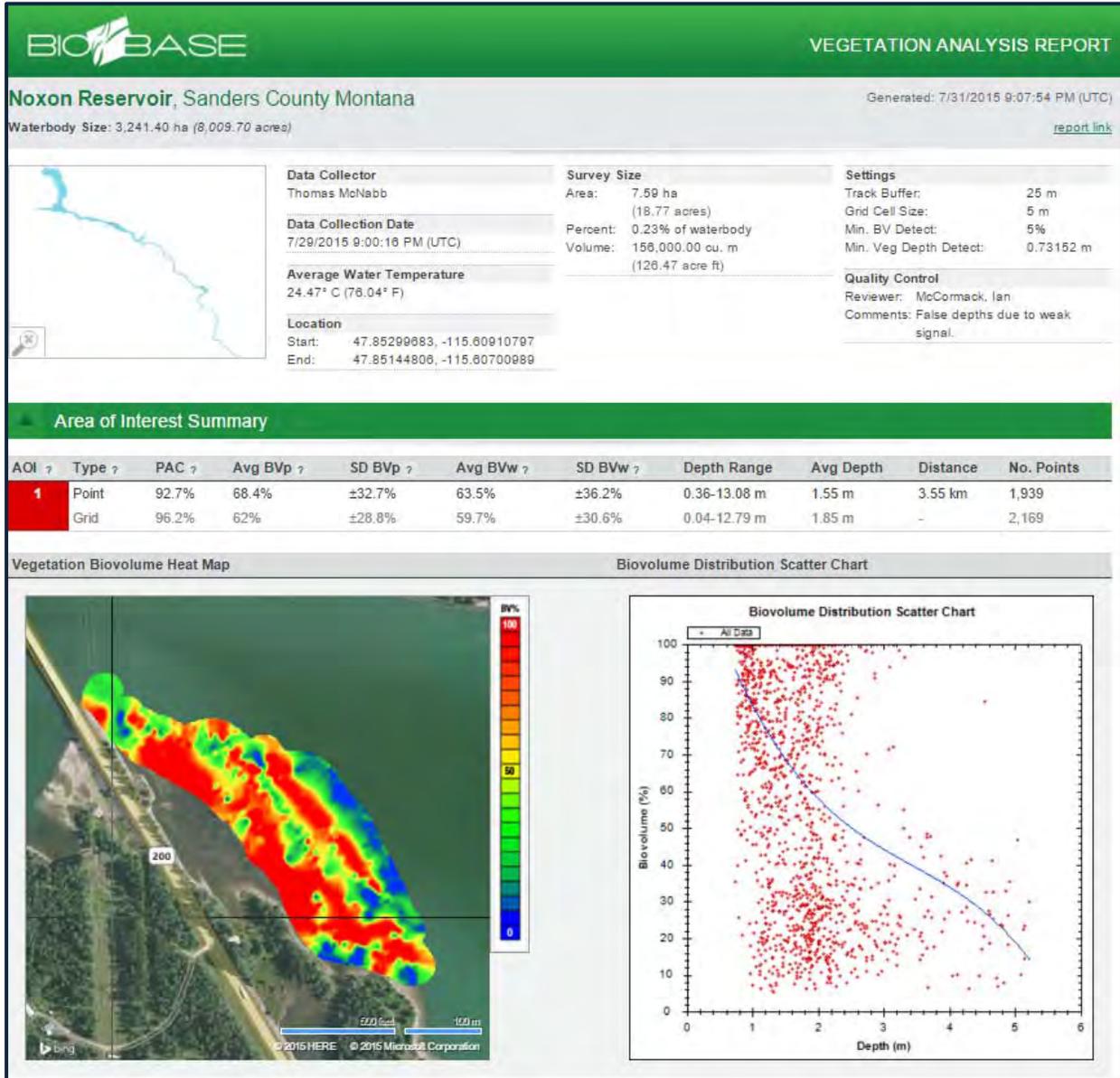
**Plot Nox-5: At Time of Treatment (July 29, 2015 Left),  
~ Six (6) Weeks Post (September 10, 2015 Right)**



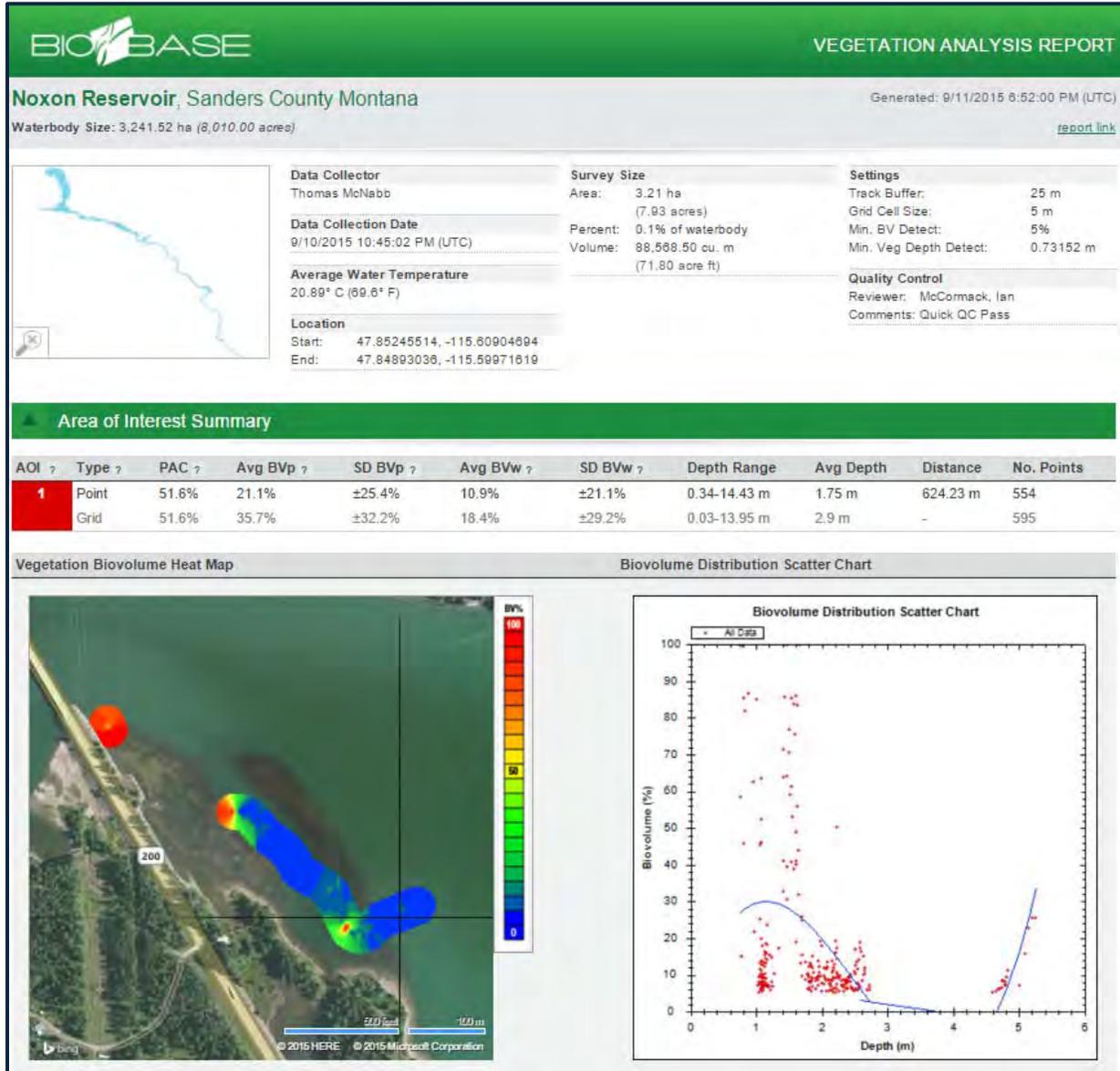
2015 Cabinet Gorge and Noxon Rapids Reservoir's AIS Treatment Plots: At Time of and ~ Six (6) Week Post Plot SAV % Cover and SAV BioVolume Data (Grid Data)									
Plot Number	SAV % Cover	SAV % Bio-Volume	Date Data Collected Pre Treatment	SAV % Cover	SAV % Bio-Volume	Date Data Collected-Post Treatment	SAV % BV Change	Post Treatment EWM Injury Rank	Herbicides Used
<b>Noxon Rapids</b>									
Nox-5	96.20	62.00	7/29/2015	51.60	35.7	9/10/2015	-42%	90% +/-	End/Tri

**Observations/Notes Nox 5:** Treated with 1.0 ppm triclopyr, 2.0 ppm endothall, control estimated at 90% +/-.

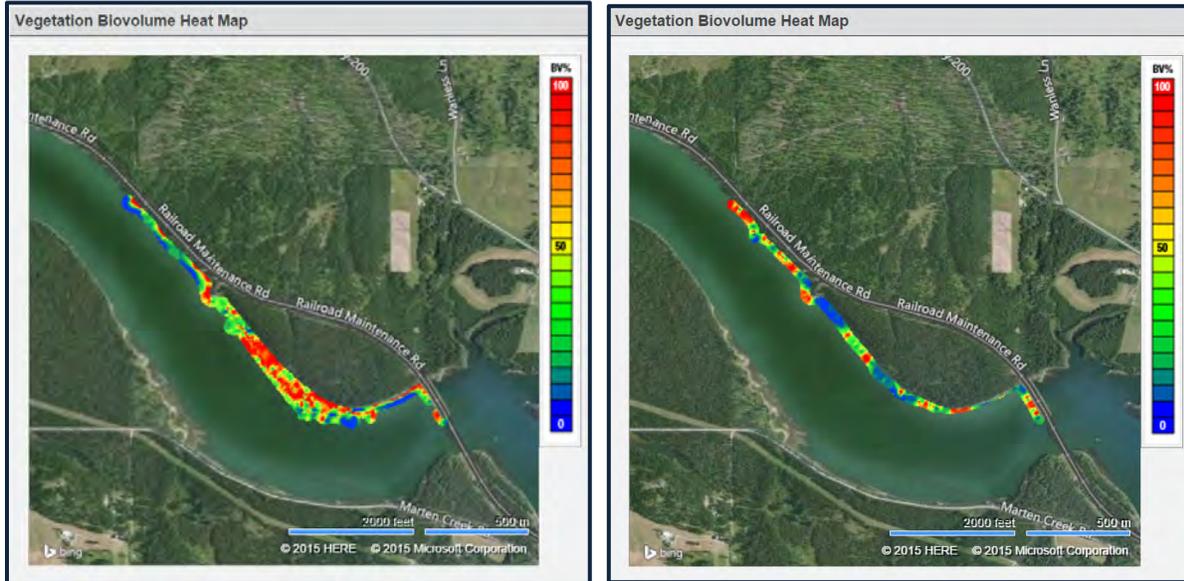
Plot Nox-5: At Time of Treatment (July 29, 2015)



Plot Nox-5: ~ Six (6) Weeks Post (September 10, 2015)



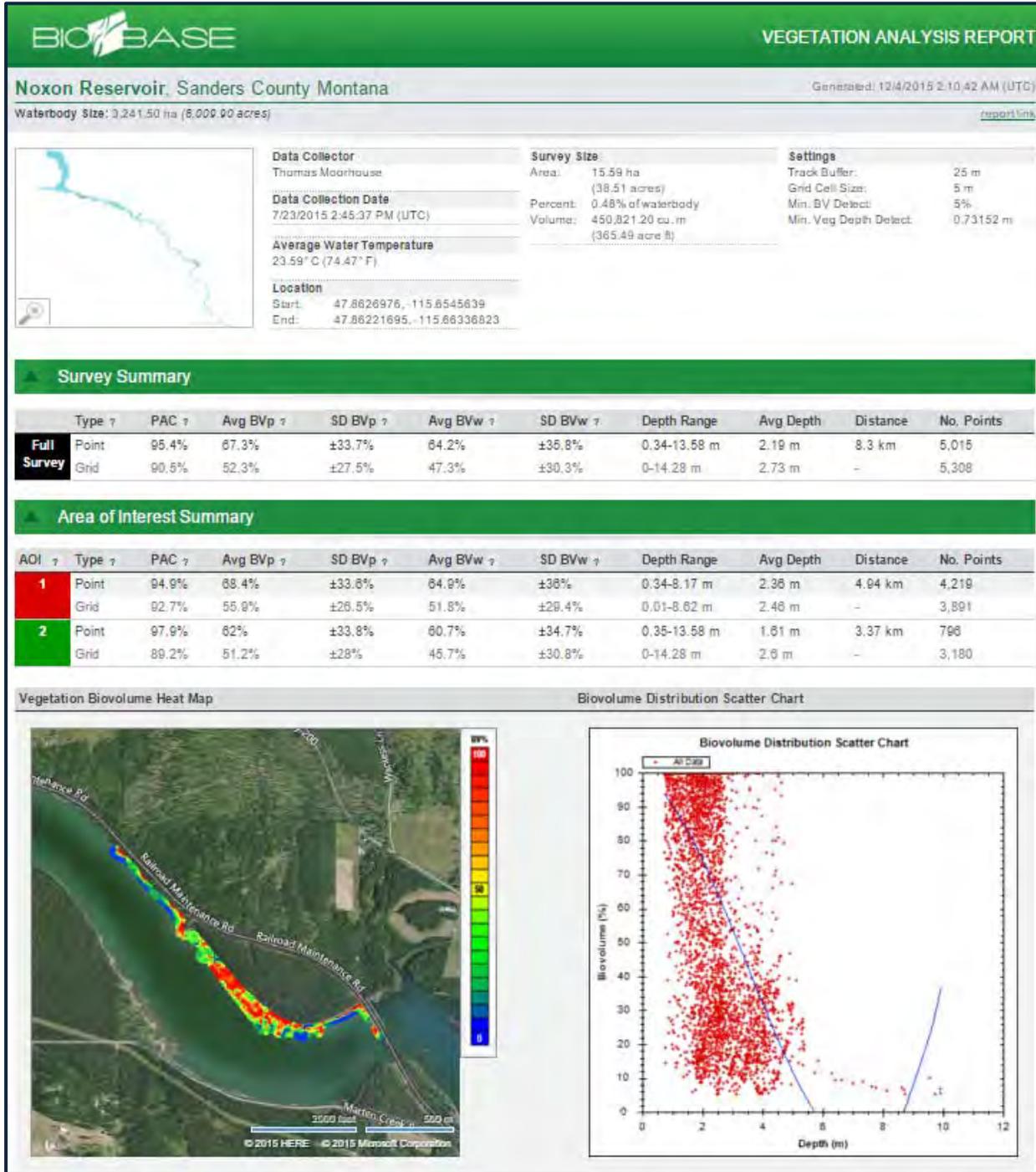
**Plot Nox-6: At Time of Treatment (July 23, 2015 Left),  
~ Six (6) Weeks Post (September 10, 2015 Right)**



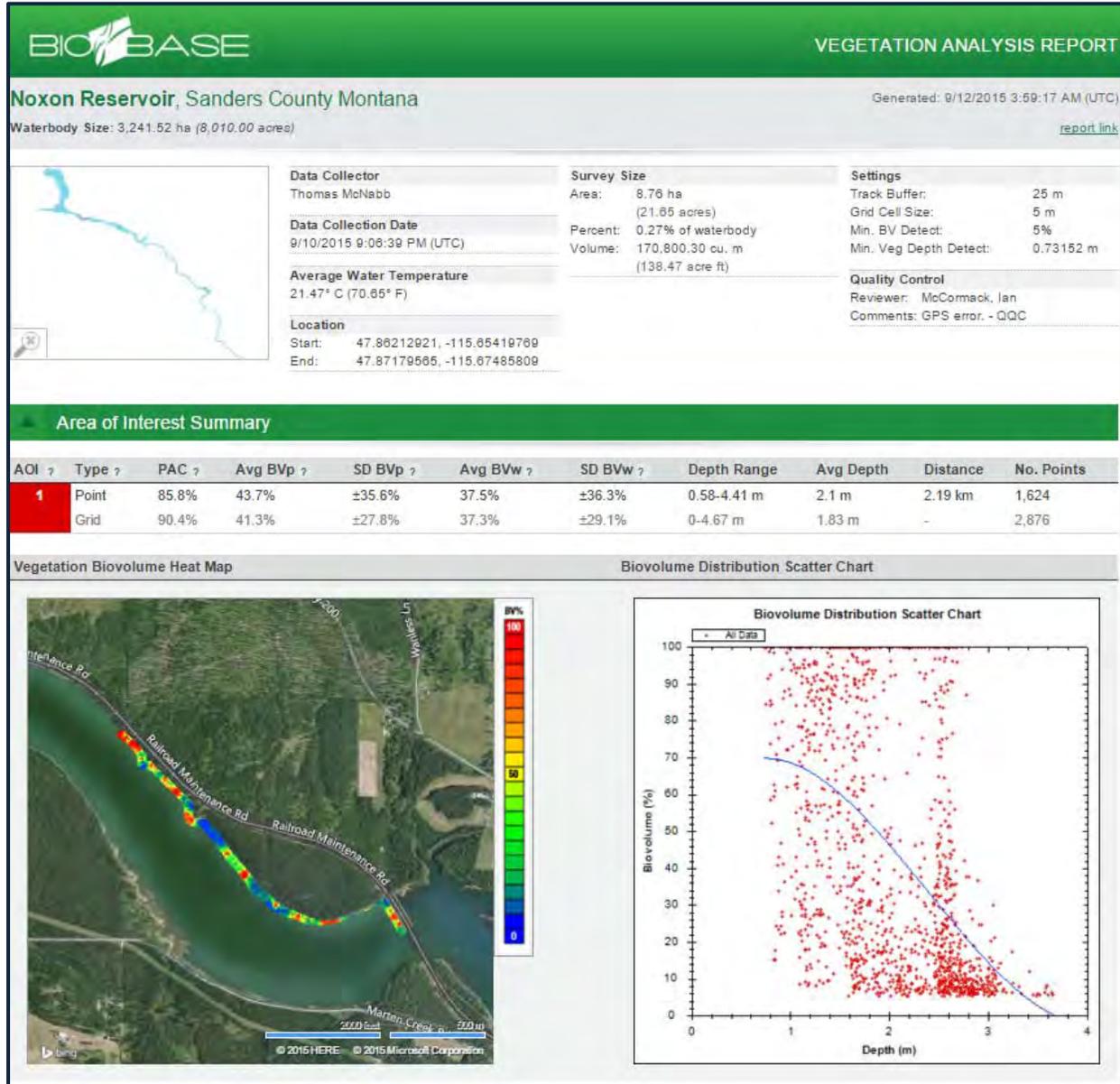
2015 Cabinet Gorge and Noxon Rapids Reservoir's AIS Treatment Plots: At Time of and ~ Six (6) Week Post Plot SAV % Cover and SAV BioVolume Data (Grid Data)									
Plot Number	SAV % Cover	SAV % Bio-Volume	Date Data Collected Pre Treatment	SAV % Cover	SAV % Bio-Volume	Date Data Collected-Post Treatment	SAV % BV Change	Post Treatment EWM Injury Rank	Herbicides Used
<b>Noxon Rapids</b>									
Nox-6	90.50	52.30	7/23/2015	90.40	41.3	9/10/2015	-21%	80% +/-	End/Tri

**Observations/Notes Nox-6:** Treated with 1.0 ppm triclopyr, 2.0 ppm endothall, good widespread control estimated at 80%. Larger blocky areas estimated 85% control, narrow shoreline strips estimated at 70% control.

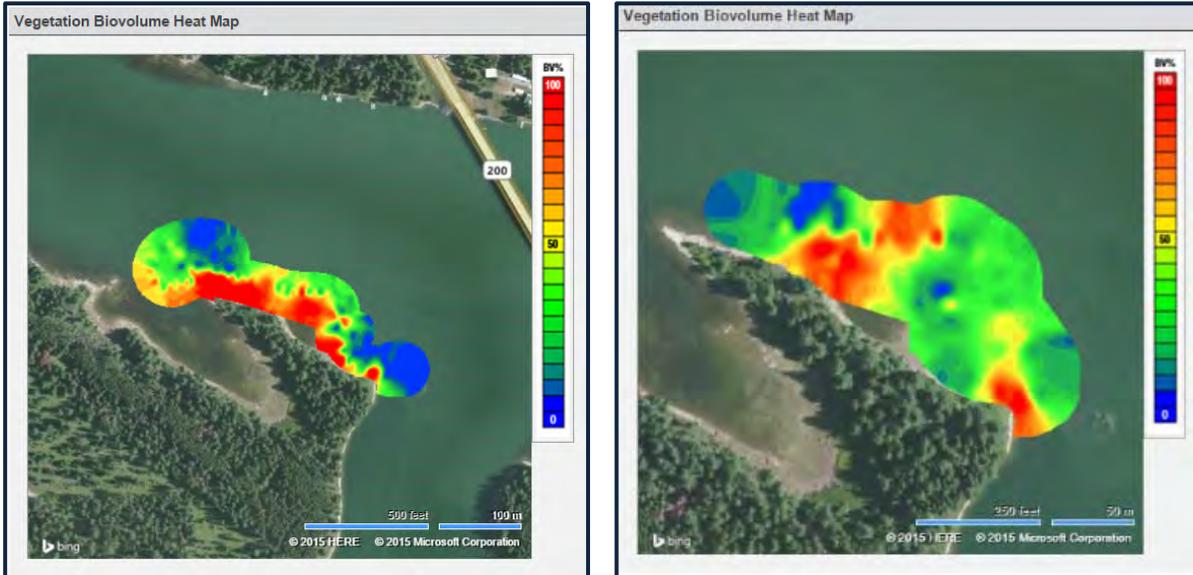
Plot Nox-6: Pre Treatment (July 23, 2015)



Plot Nox-6: ~ Six (6) Weeks Post (September 10, 2015)



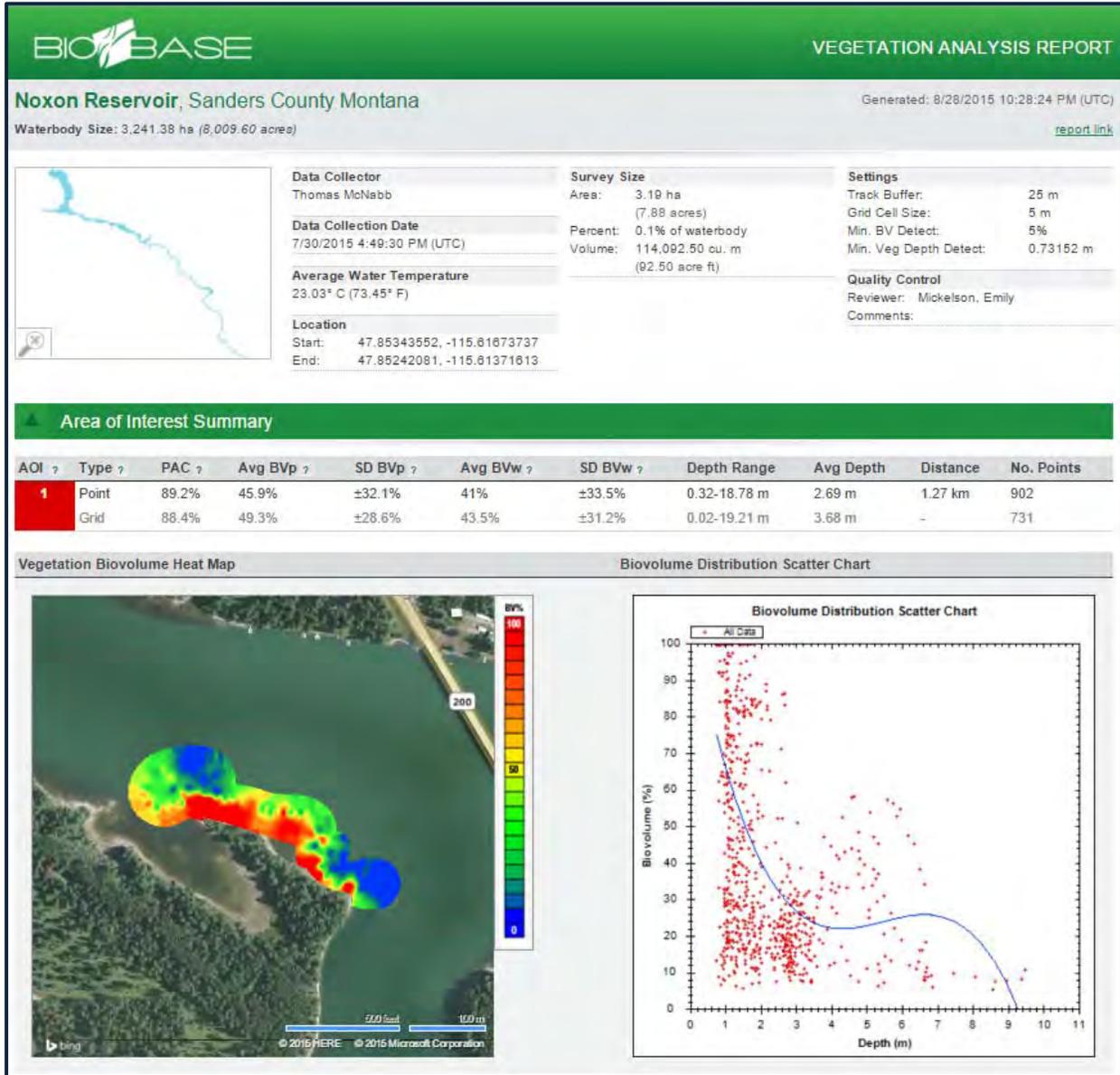
**Plot Nox-10: At Time of Treatment (July 30, 2015 Left),  
 ~ Six (6) Weeks Post (September 10, 2015 Right)**



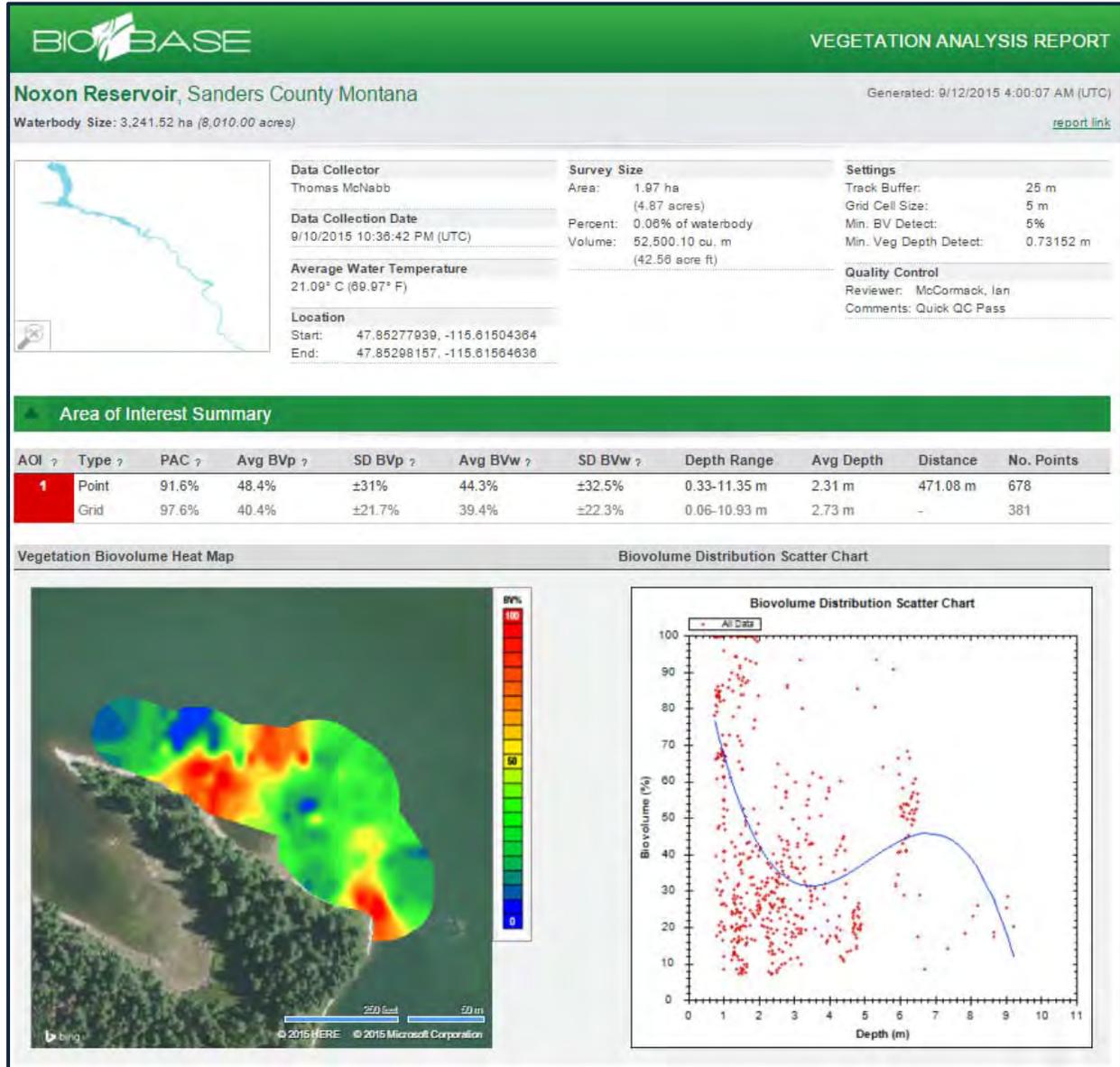
2015 Cabinet Gorge and Noxon Rapids Reservoir's AIS Treatment Plots: At Time of and ~ Six (6) Week Post Plot SAV % Cover and SAV BioVolume Data (Grid Data)									
Plot Number	SAV % Cover	SAV % Bio-Volume	Date Data Collected Pre Treatment	SAV % Cover	SAV % Bio-Volume	Date Data Collected-Post Treatment	SAV % BV Change	Post Treatment EWM Injury Rank	Herbicides Used
<b>Noxon Rapids</b>									
Nox-10	88.40	49.30	7/30/2015	97.60	40.4	9/10/2015	-18%	98% +/-	End/Tri

**Observations/Notes Nox-10:** Treated with 1.0 ppm triclopyr, 2.0 ppm endothall, good control estimated at 98%, a few EWM plants remaining at upstream end of plot.

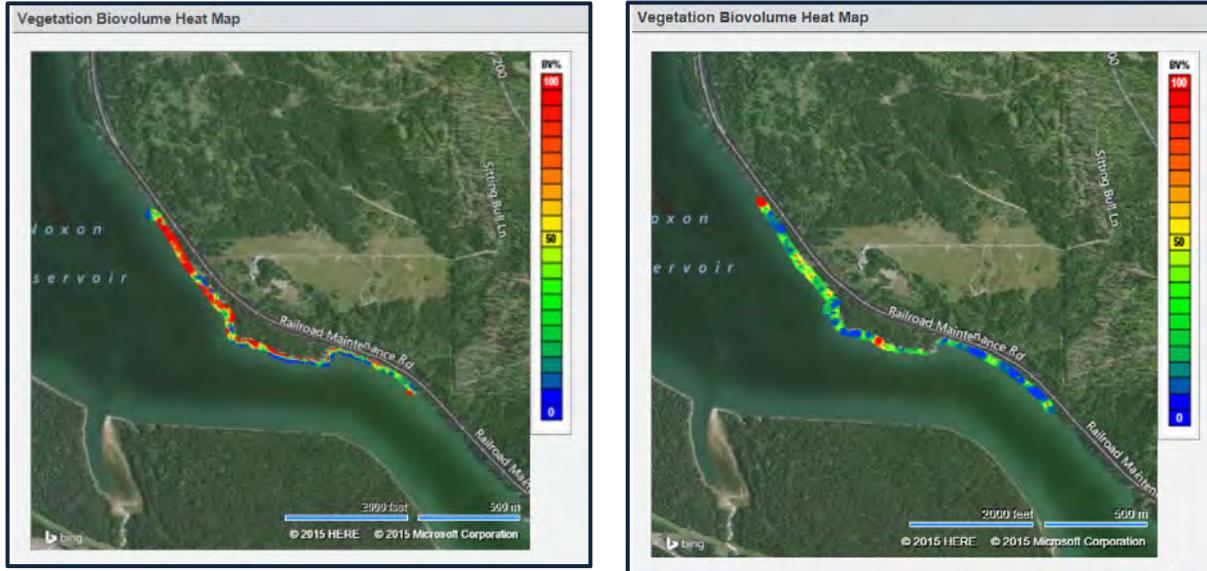
Plot Nox-10: Pre Treatment (July 30, 2015)



Plot Nox 10: ~ Six (6) Weeks Post (September 10, 2015)



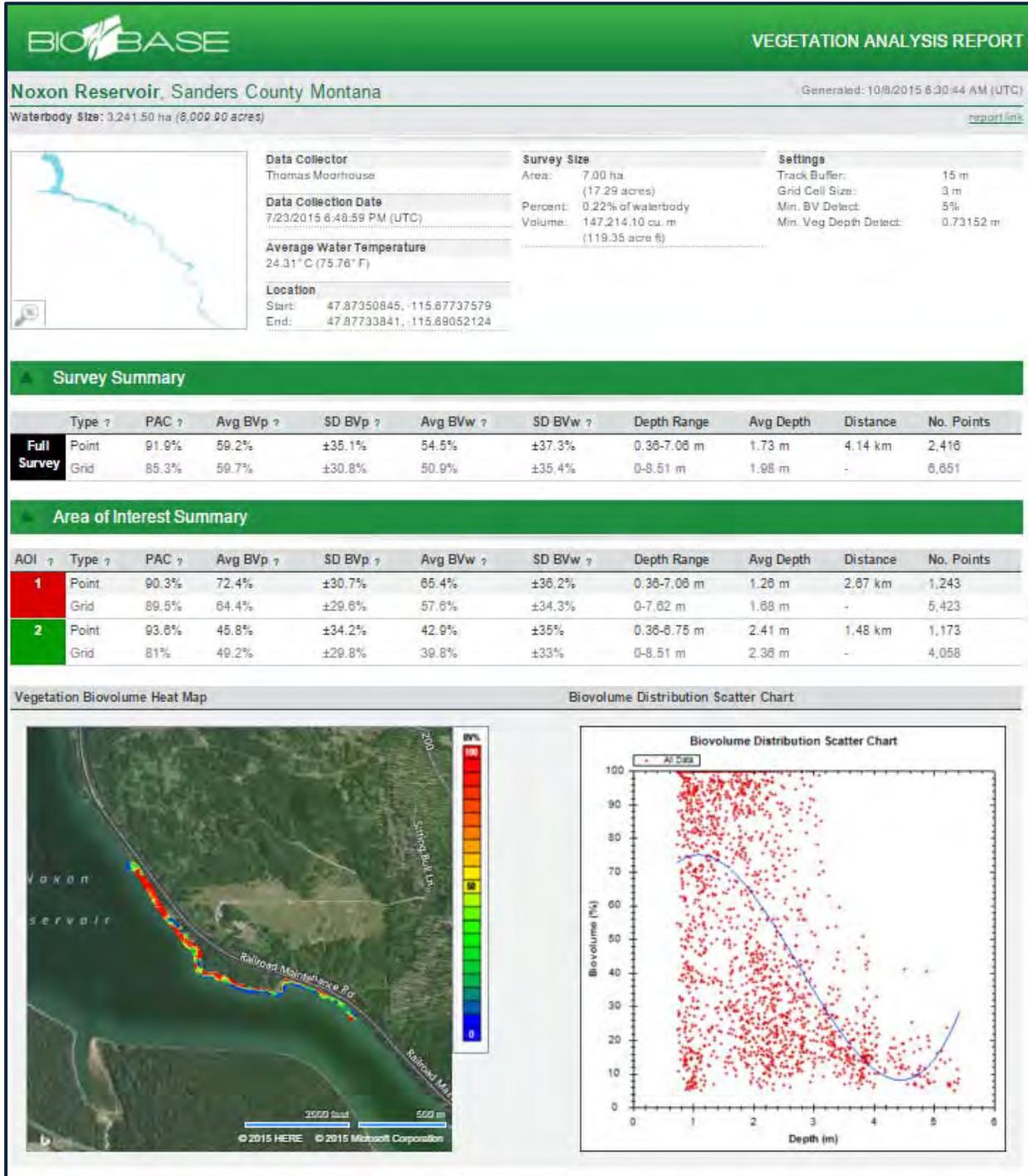
Plot Nox-25: At Time of Treatment (July 23, 2015 Left),  
 ~ Six (6) Weeks Post (September 10, 2015 Right)



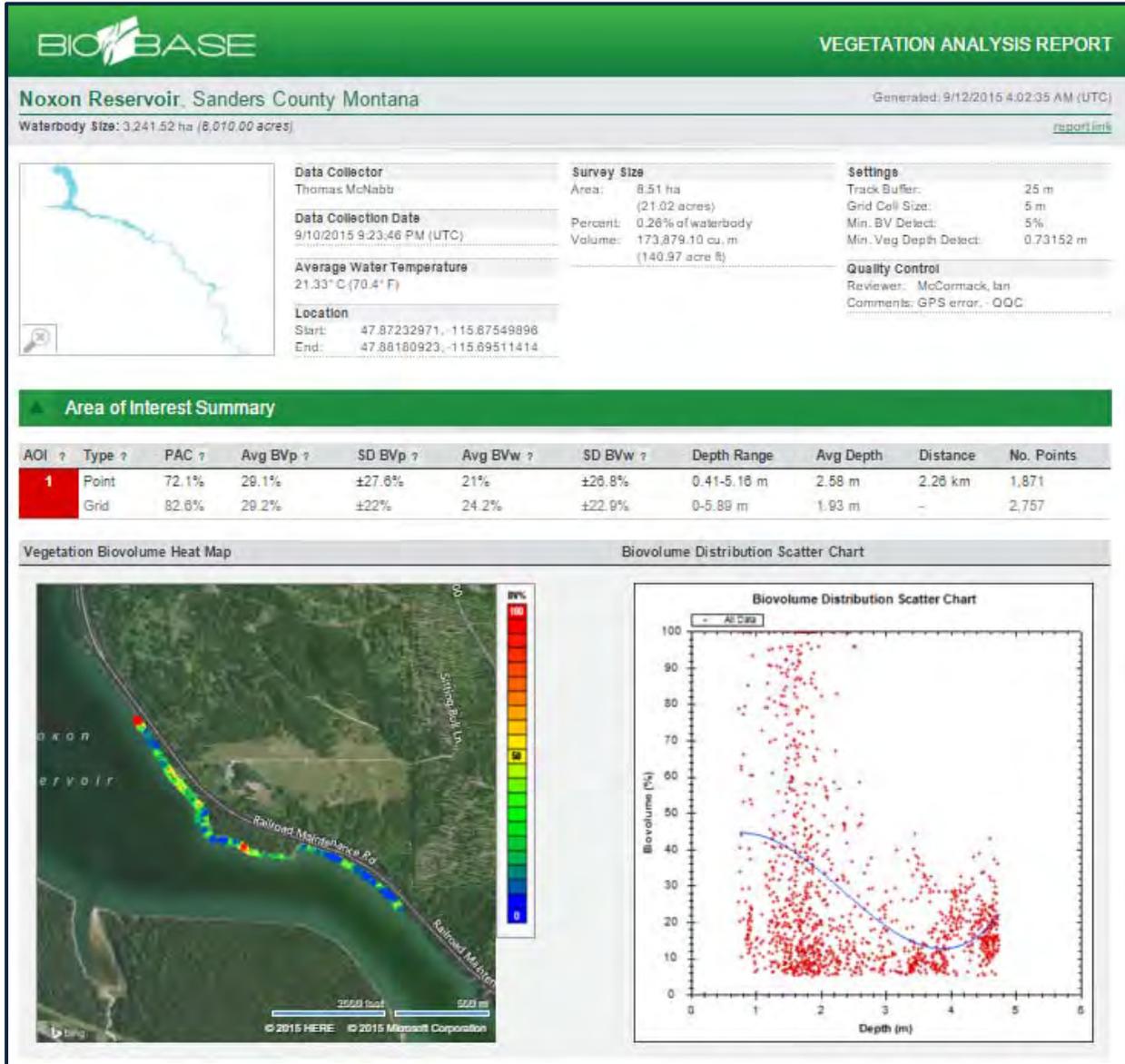
2015 Cabinet Gorge and Noxon Rapids Reservoir's AIS Treatment Plots: At Time of and ~ Six (6) Week Post Plot SAV % Cover and SAV BioVolume Data (Grid Data)									
Plot Number	SAV % Cover	SAV % Bio-Volume	Date Data Collected Pre Treatment	SAV % Cover	SAV % Bio-Volume	Date Data Collected-Post Treatment	SAV % BV Change	Post Treatment EWM Injury Rank	Herbicides Used
<b>Noxon Rapids</b>									
Nox-25	85.30	59.70	7/23/2015	82.60	29.2	9/10/2015	-51%	75% +/-	End

**Observations/Notes Nox-25:** Treated with 3.0 ppm endothall, estimated at 75% control. 70% control along narrow strips, wider strip areas >80% control.

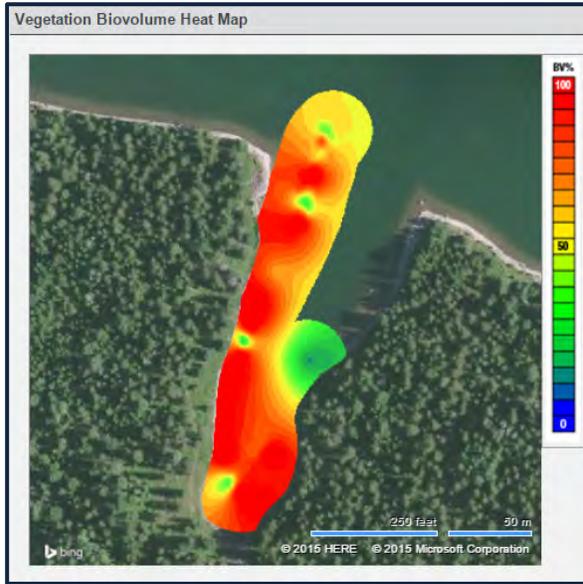
Plot Nox-25: At Time of Treatment (July 23, 2015)



Plot Nox-25: ~ Six (6) Weeks Post (September 10, 2015)



**Plot Nox-56: At Time of Treatment (July 30, 2015 Left),  
~ Six (6) Weeks Post (September 10, 2015 Right)**

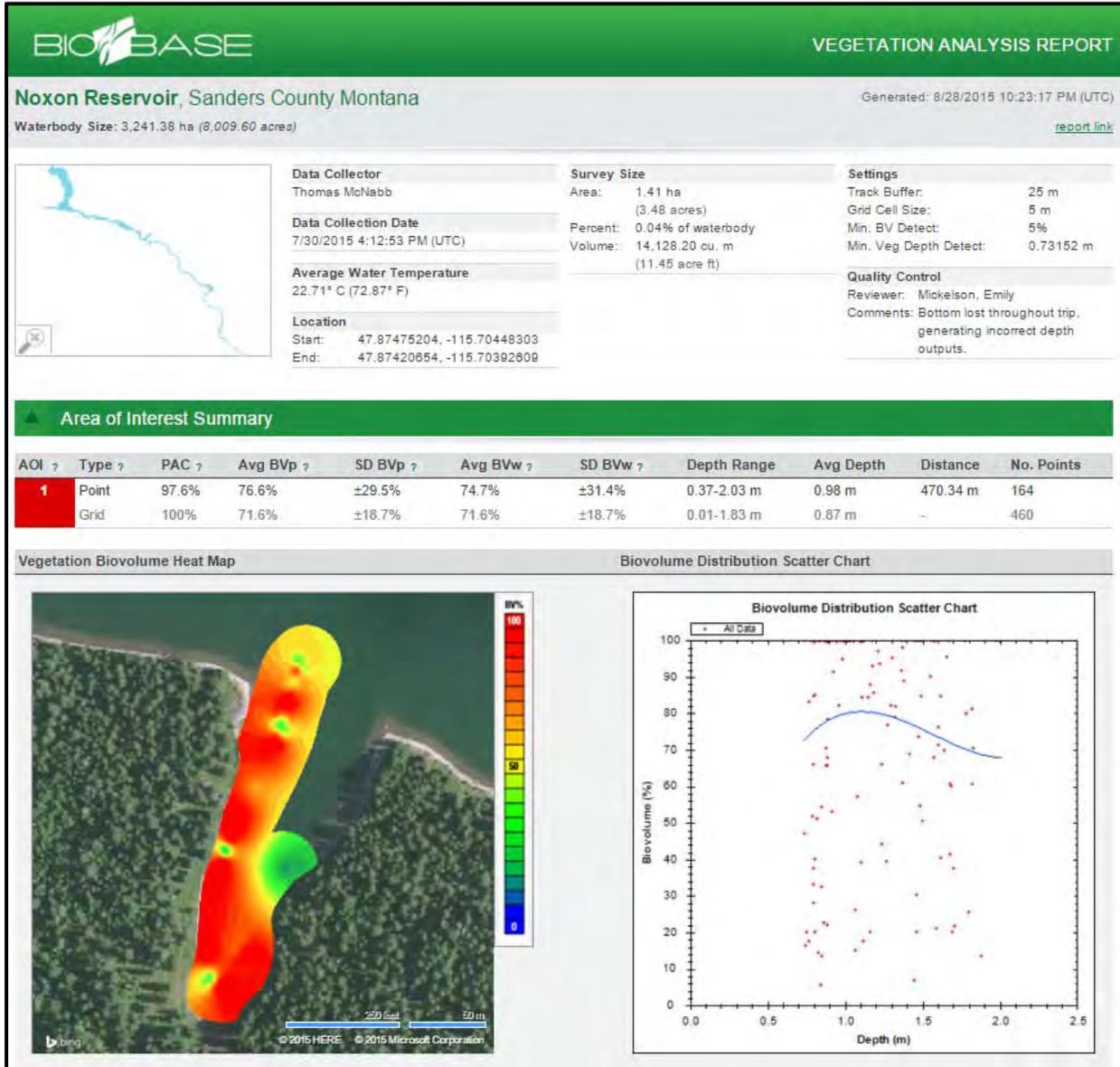


**No ~ Six (6) Weeks Post Treatment  
Data Available**

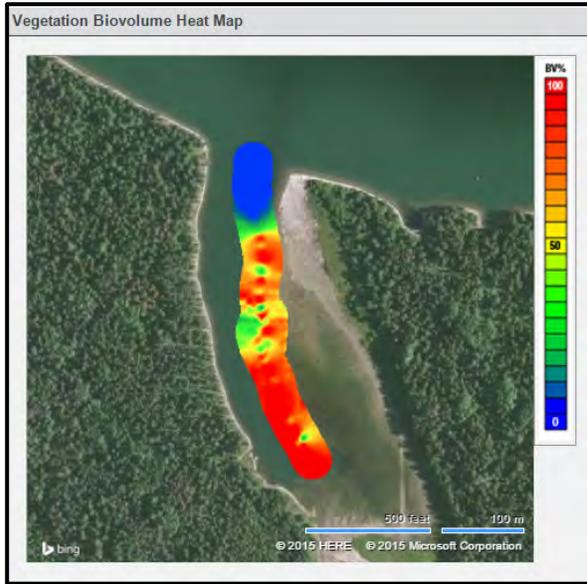
2015 Cabinet Gorge and Noxon Rapids Reservoir's AIS Treatment Plots: At Time of and ~ Six (6) Week Post Plot SAV % Cover and SAV BioVolume Data (Grid Data)									
Plot Number	SAV % Cover	SAV % Bio-Volume	Date Data Collected Pre Treatment	SAV % Cover	SAV % Bio-Volume	Date Data Collected-Post Treatment	SAV % BV Change	Post Treatment EWM Injury Rank	Herbicides Used
<b>Noxon Rapids</b>									
Nox-56	100.00	71.60	7/30/2015	n/a	n/a	n/a	n/a	85% +/-	End/Tri

**Observations/Notes Nox-56:** Treated with 1.0 ppm triclopyr, 2.0 ppm endothall, estimated at 85% control.

Plot Nox-56: At Time of Treatment (July 30, 2015)



**Plot Nox-57: At Time of Treatment (July 30, 2015 Left),  
~ Six (6) weeks Post (September 10, 2015 Right)**

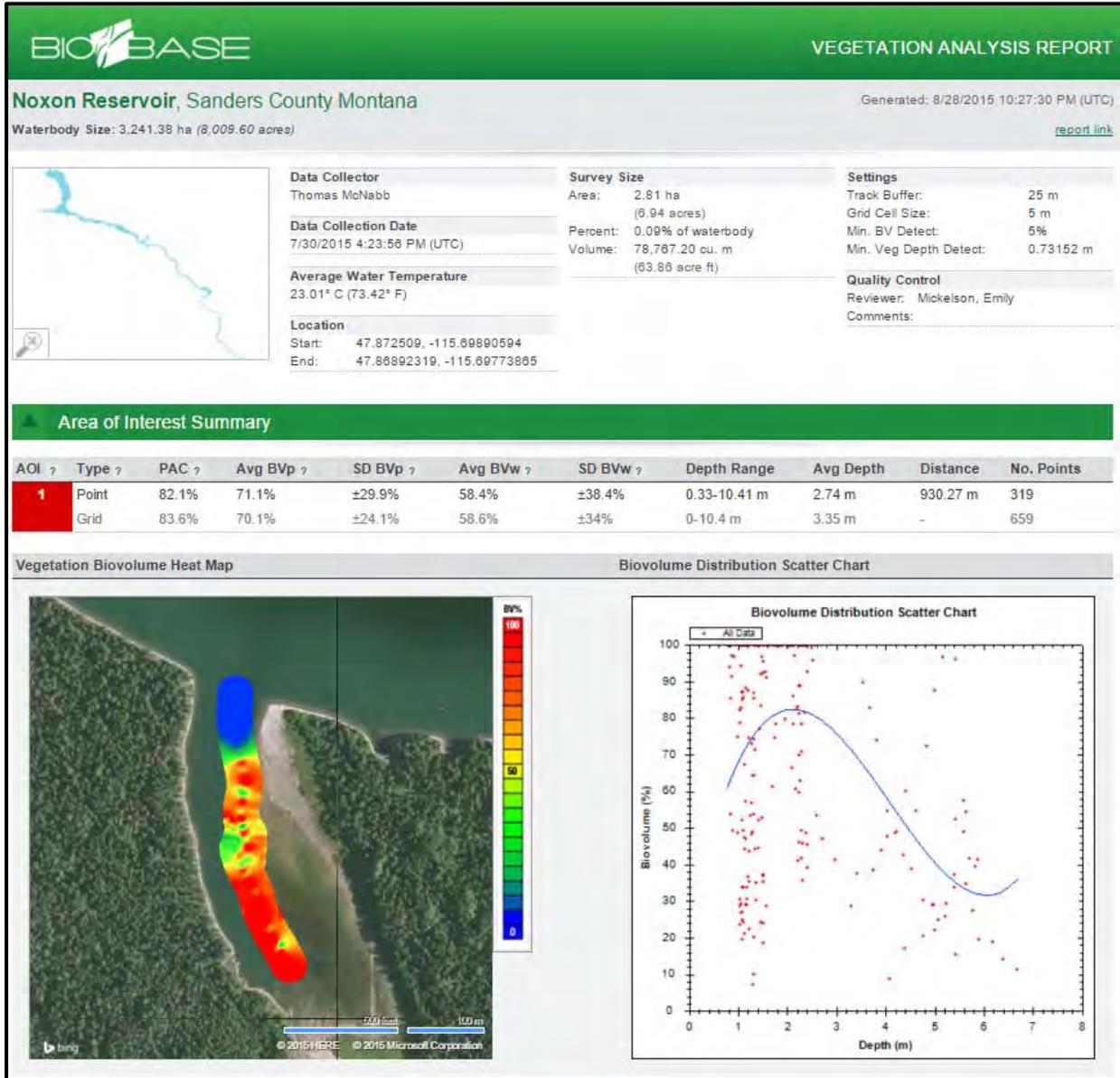


**No ~ Six (6) Weeks Post Treatment  
Data Available**

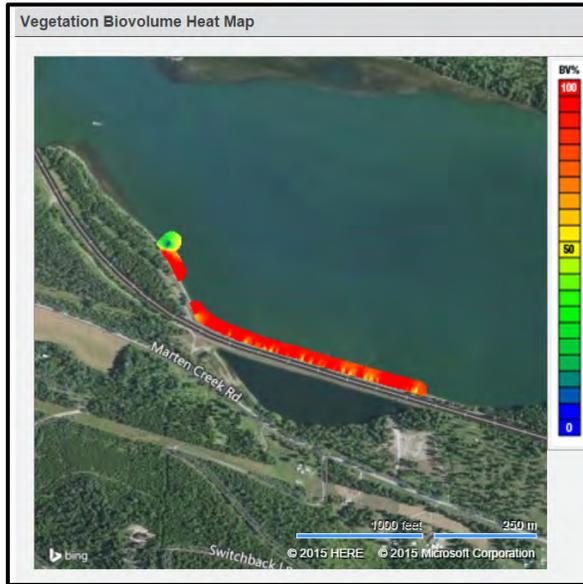
2015 Cabinet Gorge and Noxon Rapids Reservoir's AIS Treatment Plots: At Time of and ~ Six (6) Week Post Plot SAV % Cover and SAV BioVolume Data (Grid Data)									
Plot Number	SAV % Cover	SAV % Bio-Volume	Date Data Collected Pre Treatment	SAV % Cover	SAV % Bio-Volume	Date Data Collected-Post Treatment	SAV % BV Change	Post Treatment EWM Injury Rank	Herbicides Used
<b>Noxon Rapids</b>									
Nox-57	83.60	70.10	7/30/2015	n/a	n/a	n/a	n/a	98% +/-	End/Tri

**Observations/Notes Nox-57:** Treated with 1.0 ppm triclopyr, 2.0 ppm endothall, control estimated at 98%.

Plot Nox-57: At Time of Treatment (July 30, 2015)



**Plot Nox-58: At Time of Treatment (July 30, 2015 Left),  
~ Six (6) Weeks Post (September 10, 2015 Right)**

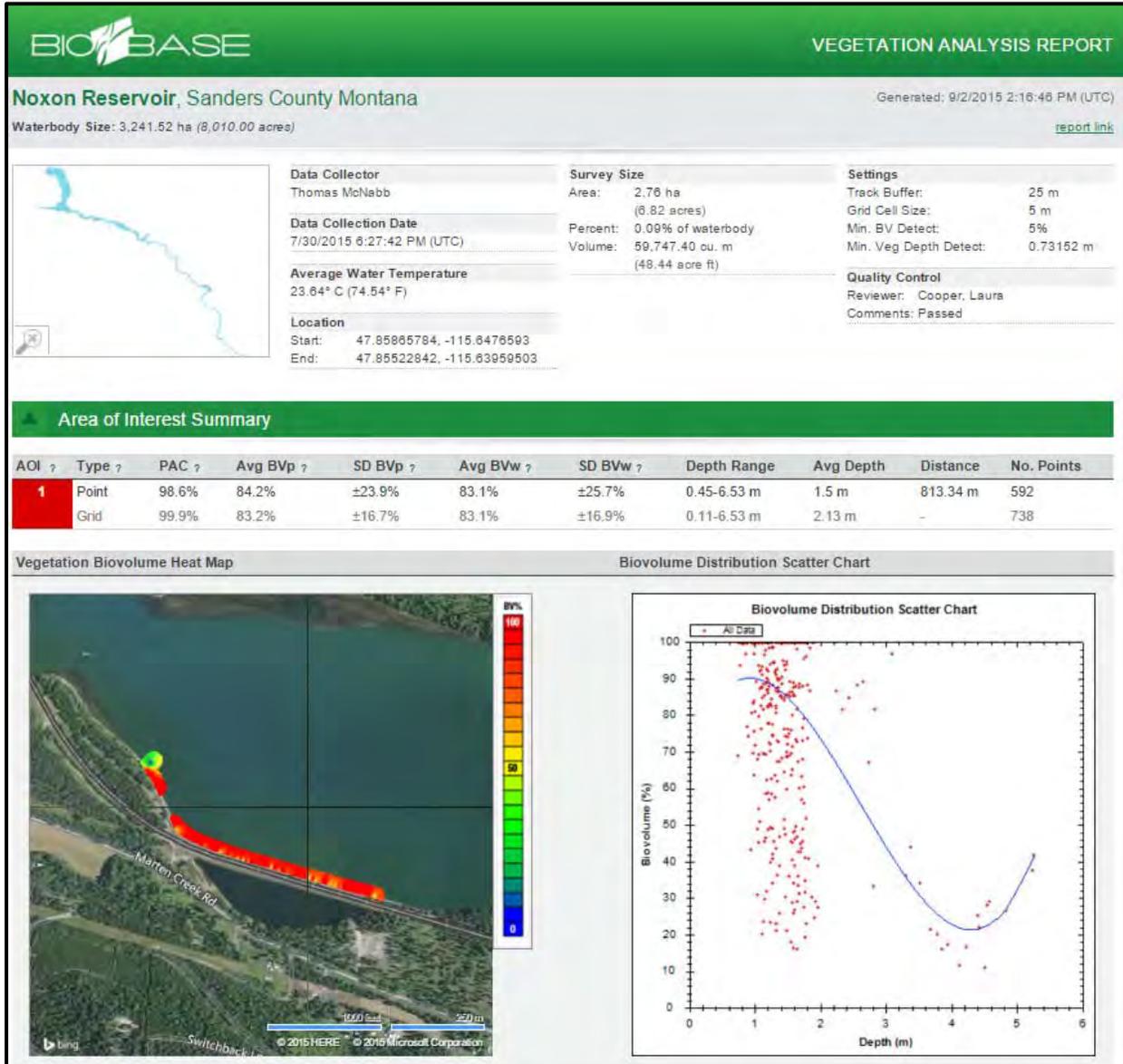


**No ~ Six (6) Weeks Post Treatment  
Data Available**

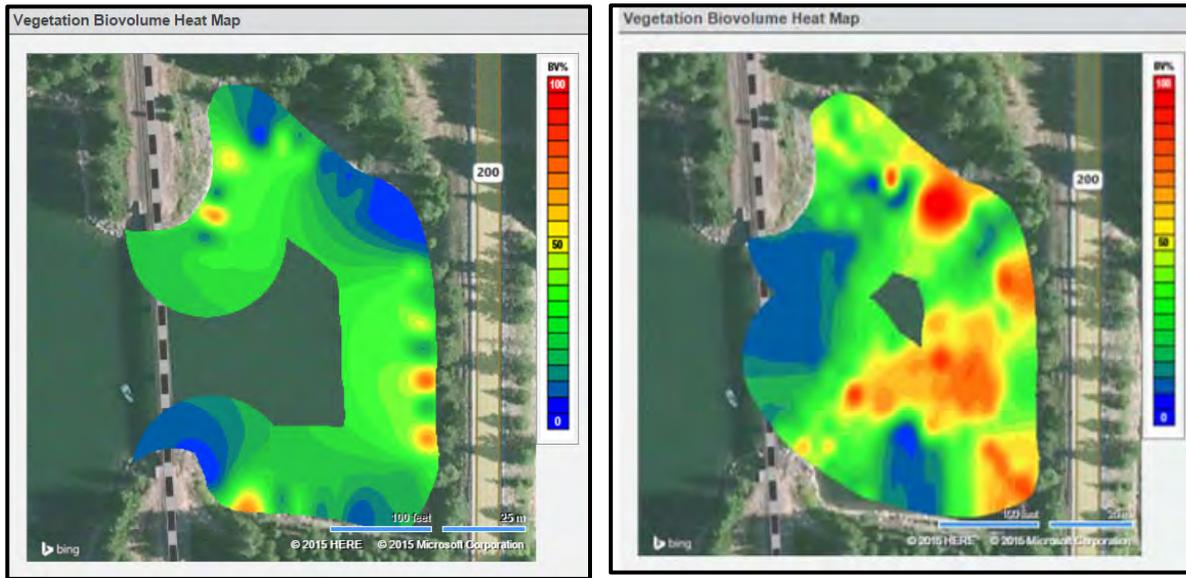
2015 Cabinet Gorge and Noxon Rapids Reservoir's AIS Treatment Plots: At Time of and ~ Six (6) Week Post Plot SAV % Cover and SAV BioVolume Data (Grid Data)									
Plot Number	SAV % Cover	SAV % Bio-Volume	Date Data Collected Pre Treatment	SAV % Cover	SAV % Bio-Volume	Date Data Collected-Post Treatment	SAV % BV Change	Post Treatment EWM Injury Rank	Herbicides Used
<b>Noxon Rapids</b>									
Nox-58	99.90	83.20	7/30/2015	n/a	n/a	n/a	n/a	75% +/-	End/Tri

**Observations/Notes Nox-58:** Treated with 1.0 ppm triclopyr, 2.0 ppm endothall, control estimated at 75%. A higher level of EWM control was achieved at the downstream end of plot.

Plot 58: At Time of Treatment (July 30, 2015)



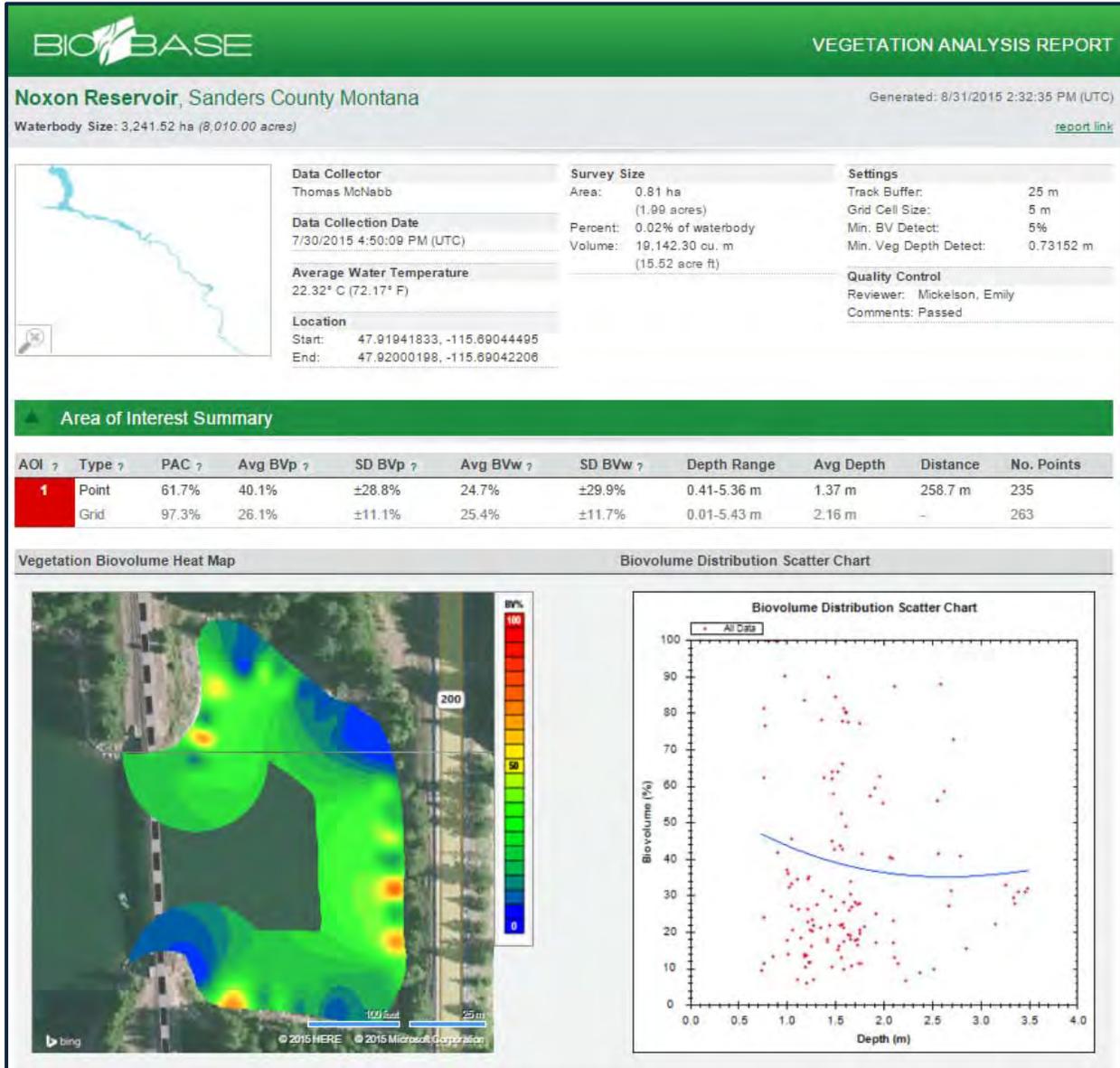
**Plot Nox-8: At Time of Treatment (July 30, 2015 Left),  
~ Six (6) Weeks Post (September 10, 2015 Right)**



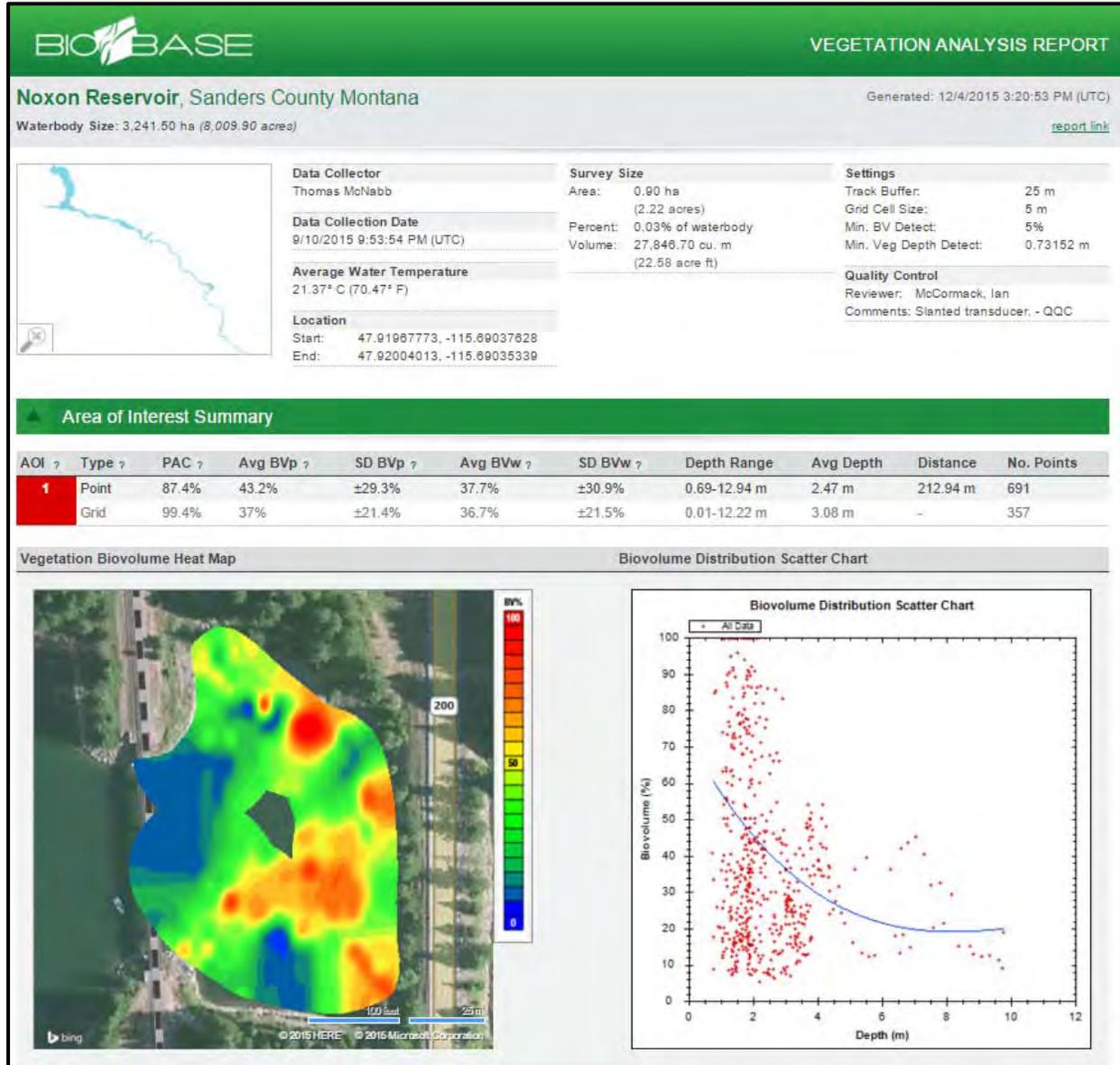
2015 Cabinet Gorge and Noxon Rapids Reservoir's AIS Treatment Plots: At Time of and ~ Six (6) Week Post Plot SAV % Cover and SAV BioVolume Data (Grid Data)									
Plot Number	SAV % Cover	SAV % Bio-Volume	Date Data Collected Pre Treatment	SAV % Cover	SAV % Bio-Volume	Date Data Collected-Post Treatment	SAV % BV Change	Post Treatment EWM Injury Rank	Herbicides Used
<b>Noxon Rapids</b>									
Nox-8	97.30	26.10	7/30/2015	99.40	37.00	9/10/2015	42%	55% +/-	End/Tri

**Observations/Notes Nox-8:** Treated with 1.0 ppm triclopyr, 2.0 ppm endothall, control estimated at 55%. Narrow band of EWM, control spotty.

Plot Nox-8: At Time of Treatment (July 30, 2015)

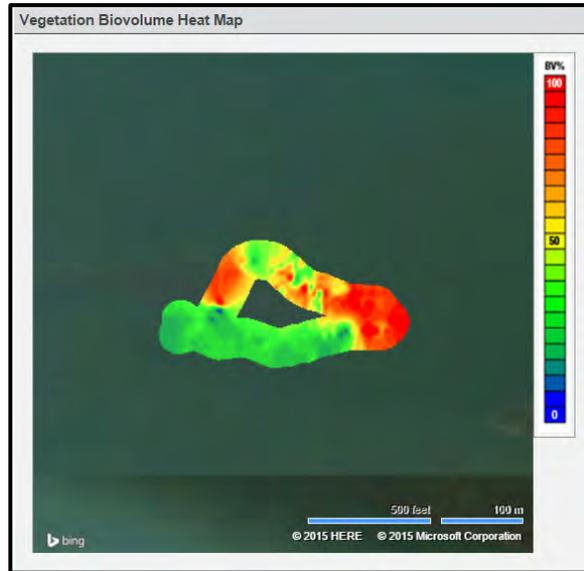


Plot Nox-8: ~ Six (6) Weeks Post (September 10, 2015)



**Plot Cab-2: At Time of Treatment (July 22, 2015 Left),  
~ Six (6) Weeks Post (September 10, 2015 Right)**

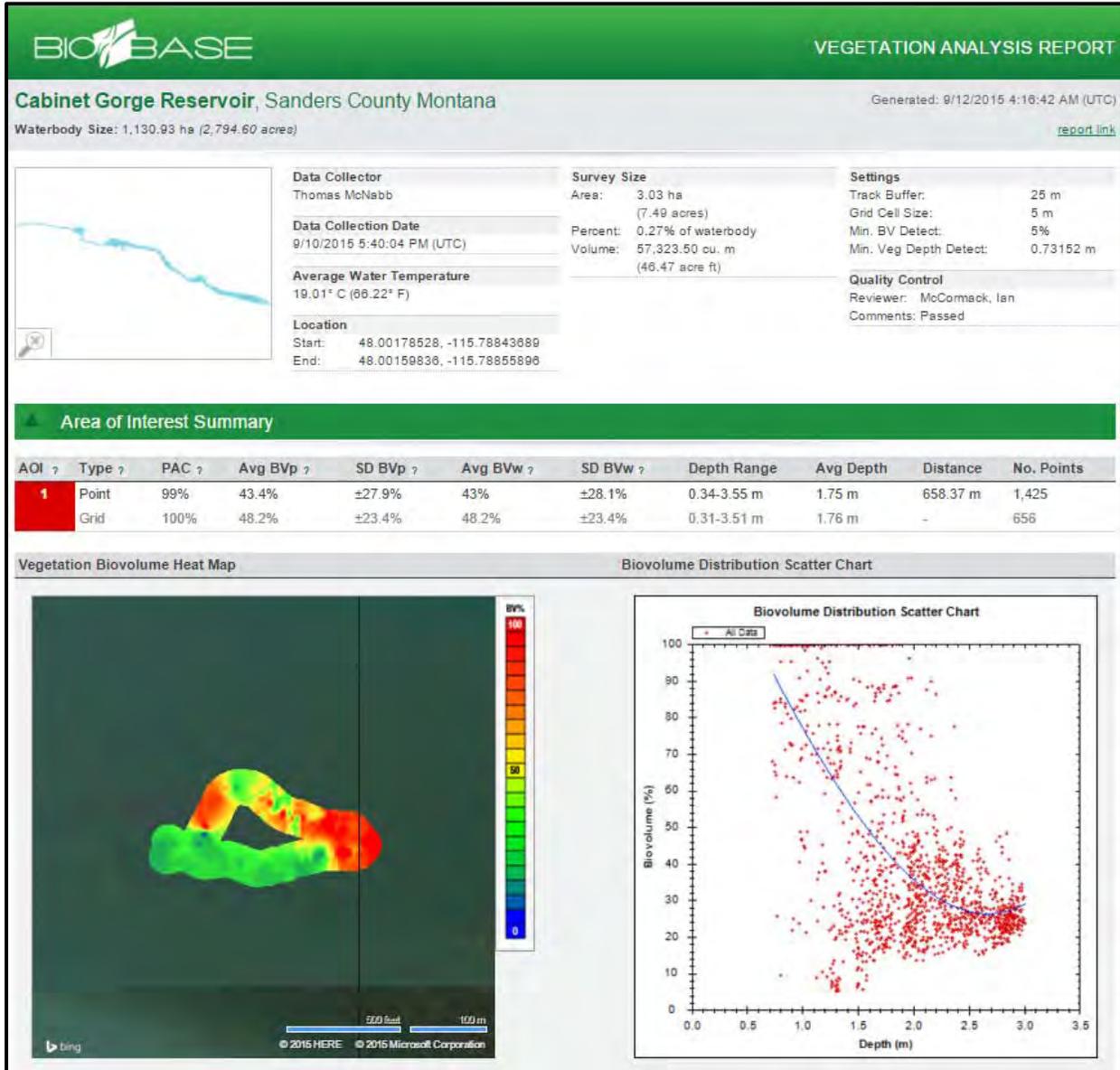
**No At Time of Treatment  
Data Available**



2015 Cabinet Gorge and Noxon Rapids Reservoir's 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
<b>Cabinet Gorge</b>									
Cab-2	n/a	n/a	n/a	100.00	48.20	9/10/2015	n/a	88% +/-	Diquat

**Observations/Notes Cab 2:** Treated with 0.37 ppm diquat, control estimated at 88%. Plot looked good, abundant Coontail and other plants visible.

Plot Cab 2: ~ Six (6) Weeks Post (September 10, 2015)



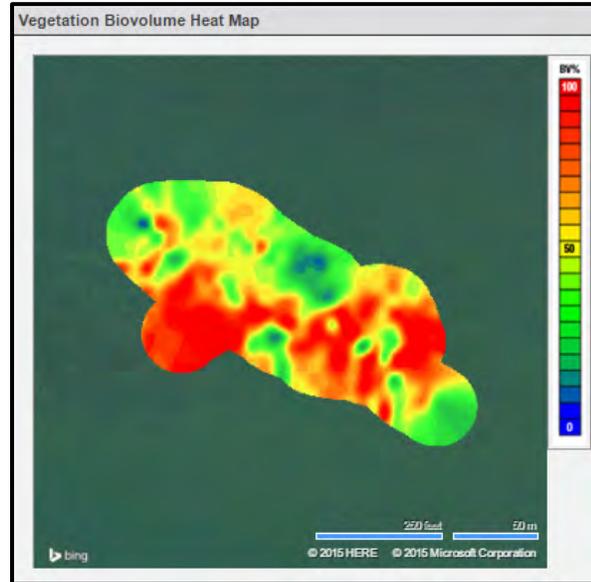
**Plot Cab 2: ~ Three (3) Month Post Treatment (October 21, 2015)**



On October 31, 2015, three month post treatment, Moorhouse, Getsinger and Mitchell revisited Cab-2 and found the plot had largely recovered from the diquat treatment per the picture above.

**Plot Cab 3: At Time of Treatment (July 22, 2015 Left),  
~ Six (6) Weeks Post (September 10, 2015 Right)**

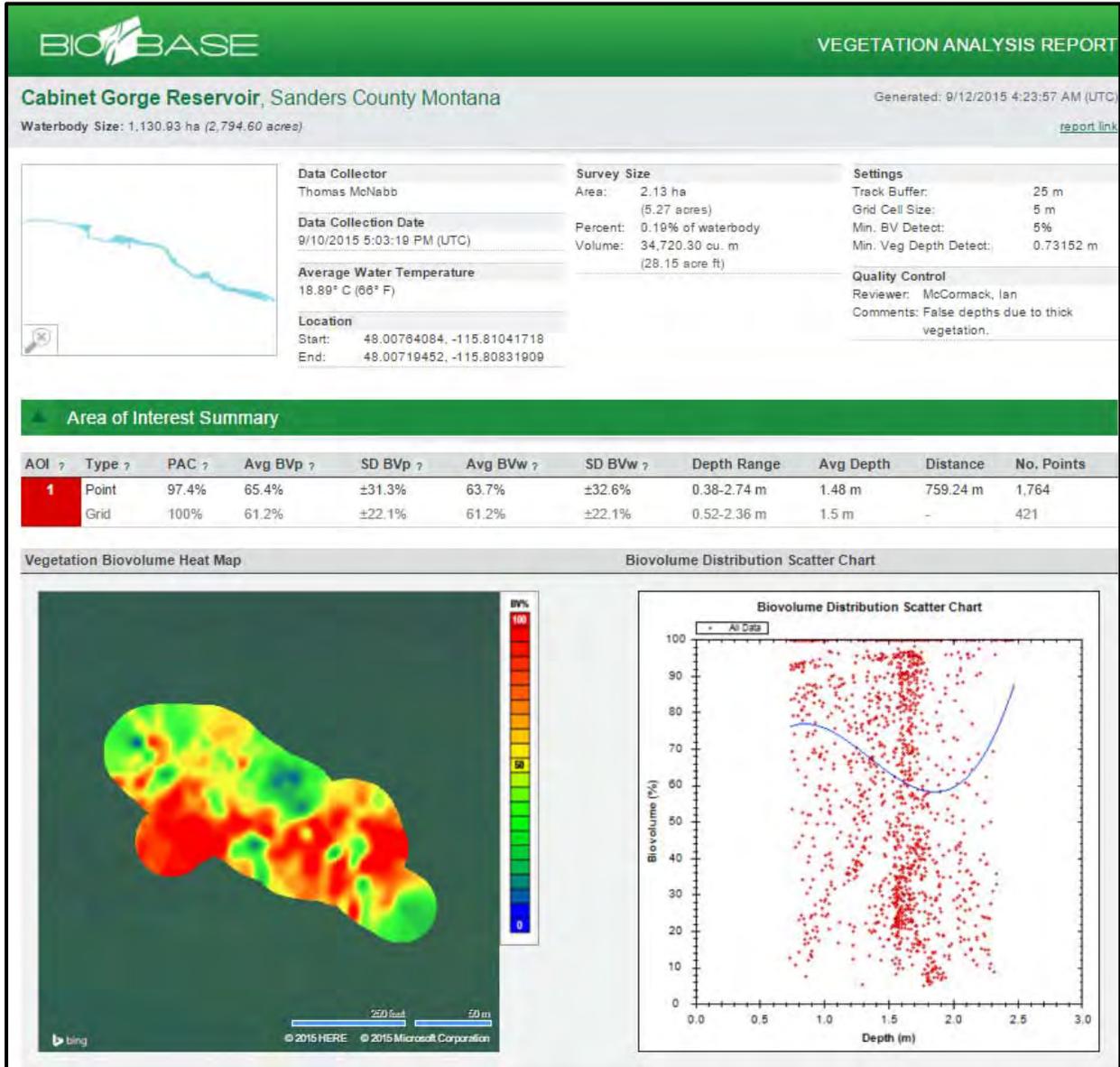
**No At Time of Treatment  
Data Available**

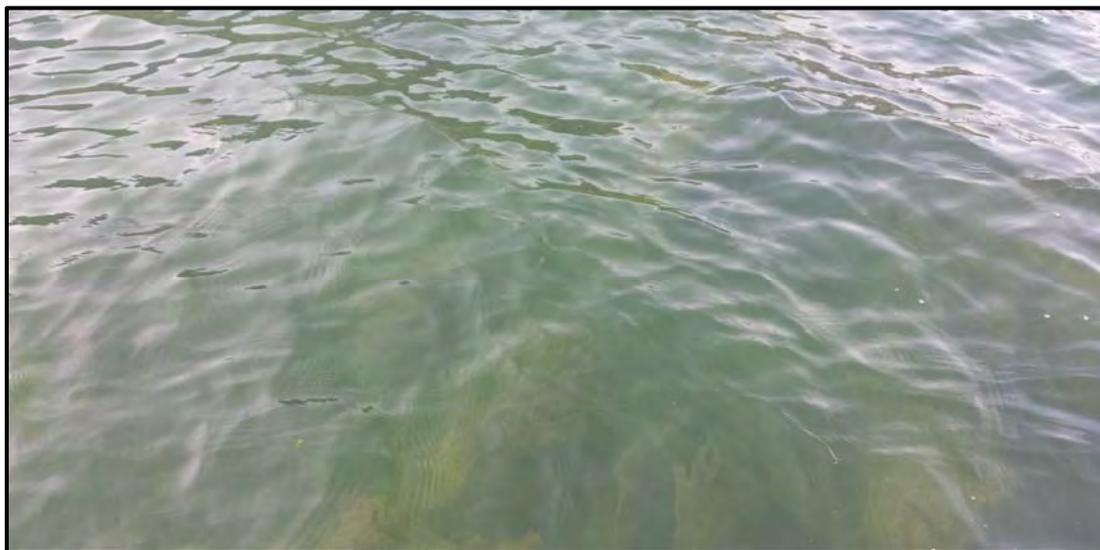


2015 Cabinet Gorge and Noxon Rapids Reservoir's AIS Treatment Plots: At Time of and ~ Six (6) Week Post Plot SAV % Cover and SAV BioVolume Data (Grid Data)									
Plot Number	SAV % Cover	SAV % Bio-Volume	Date Data Collected Pre Treatment	SAV % Cover	SAV % Bio-Volume	Date Data Collected-Post Treatment	SAV % BV Change	Post Treatment EWM Injury Rank	Herbicides Used
<b>Cabinet Gorge</b>									
Cab-3	n/a	n/a	n/a	100.00	61.20	9/10/2015	n/a	85% +/-	Diquat

**Observations/Notes Cab-3:** Treated with 0.37 ppm diquat, control estimated at 88%. Plot looked good, abundant Coontail and elodea and NWM present.

Plot Cab 3: ~ Six (6) Weeks Post (September 10, 2015)

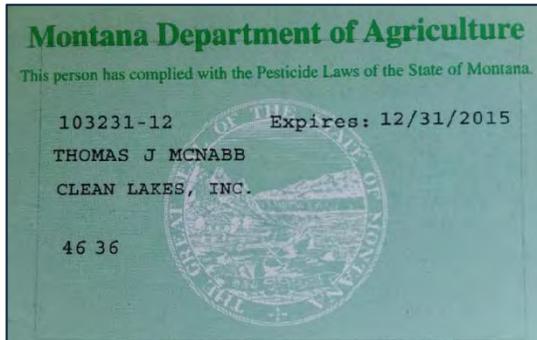




On October 31, 2015, three month post treatment, Moorhouse, Getsinger and Mitchell revisited Cab-3 and found the plot partially recovered from the diquat treatment per the picture above. EWM appeared less dense but water flows were causing the plants to lean over making observations challenging.

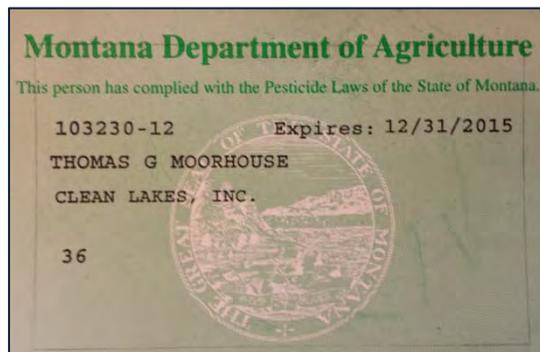
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**END OF AQUATIC PESTICIDE APPLICATION REPORT**