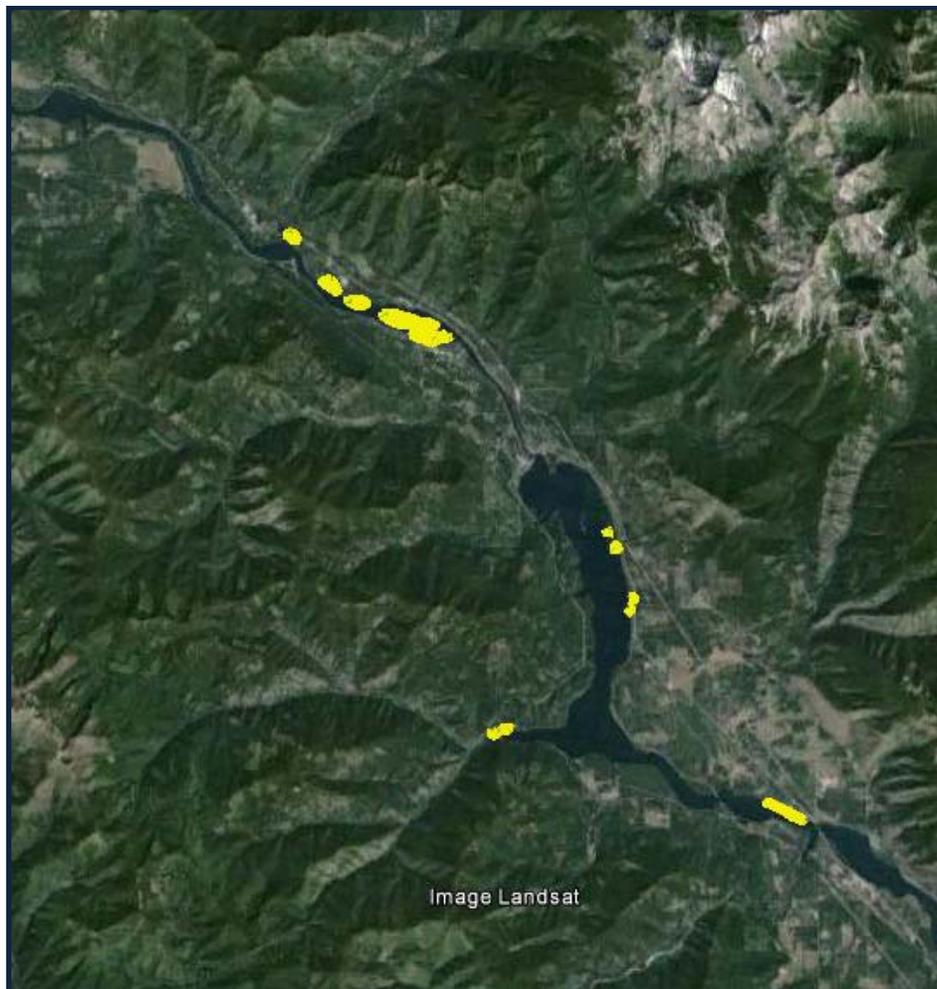


**CABINET GORGE & NOXON RAPIDS RESERVOIRS
SANDERS COUNTY, MONTANA
2014 AIS Aquatic Pesticide Application Report (APAR)**



Prepared By:

CLEAN LAKES INC.

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Coeur d'Alene, Idaho 83814

Prepared For:

Sanders County

1111 Main Street

Thompson Falls, MT 59873

October 2014

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.

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, 2014 AIS Aquatic Pesticide Application Plan (APAP)¹.

SCOPE OF WORK: The scope of work was for the application of aquatic herbicides, alone or in combination, for the control of Eurasian watermilfoil and Curlyleaf pondweed in up to 200 acres within pre identified areas of Cabinet Gorge & Noxon Rapids Reservoirs.

PRE-TREATMENT SURVEYS: On July 3, 2014 Kim Bergstrom, Pinnacle Research, provided CLI with the shapefiles of the treatment areas along with the “Guidance for Selective Control of Eurasian watermilfoil and Curlyleaf Pondweed Using Herbicides in Noxon Rapids and Cabinet Gorge Reservoirs, MT, 2014 (KD Getsinger, PhD, USAE Research and Development Center, March 20, 2014)² that were used to finalize priority treatment areas. On July 10, 2014, CLI Staff (Moorhouse), Celestine Duncan, and Jason Badger (Chair, Sanders County Aquatic Invasive Plants Task Force) surveyed the treatment plots designated for treatment on both reservoirs. Sanders County hired a third party consultant, Hansen Environmental, to perform the 2014 pre-treatment surveys.



¹ NOXON RAPIDS & CABINET GORGE RESERVOIRS SANDERS COUNTY, MONTANA, 2014 AIS Aquatic Pesticide Application Plan (APAP)

² “Guidance for Selective Control of Eurasian watermilfoil and Curlyleaf Pondweed Using Herbicides in Noxon Rapids and Cabinet Gorge Reservoirs, MT, 2014 (KD Getsinger, PhD, USAE Research and Development Center, 20 March 2014)

Hansen Environmental provided the “Preliminary Pre-treatment Assessment of Treatment Plots for Noxon and Cabinet Gorge Reservoirs 2014” on July 13, 2014 to support finalization of the treatment plan. On August 1, 2014 members of the Task Force along with Dr. Kurt Getsinger and Dr. John Madsen also surveyed the sites on both Cabinet Gorge Reservoir and Noxon Rapids Reservoir to review conditions.



SUMMARY OF ACRES TREATED: The final plan consisted of treating 181.4 acres in Cabinet Gorge Reservoir, and 18.6 acres in Noxon Rapids Reservoir, for a total of 200 acres. Based on the Pre Treatment Plot 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 that uses a three part naming system. A letter C or N designates the location, Cabinet Gorge or Noxon Rapids, respectively followed by numbers to designate the plot and the year the plot was identified for treatment. Therefore, a treatment area designated as C-2-14 is located in Cabinet Gorge Reservoir, is plot number 2, and was identified for treatment in 2014. A total acreage treatment cap of 200 acres encompassing both reservoirs prevented treatment of Plots C-6-14 and C-7-14

in Cabinet Gorge Reservoir. Plot C-1-14 through C-5-14 were treated. In Noxon Rapids Reservoir Plots N-1-14, N-2-14, and N-3-14 were not treated due to a lack of or low densities of EWM; Plot N-5-14 was converted from a diver dredge plot to an aquatic herbicide treatment plot; and Plot N-12-14 was created due to EWM growth along the Northshore community shoreline area.

TREATMENT SCHEDULE: The aquatic herbicide treatments were performed on August 18, 20, and 21, 2014. (See the Treatment Dates and Time-Table 1 below).

Table 1: Treatment Plots, Dates and Times

2014 Cabinet Gorge Reservoir Treated Plots								
Plot Number	Alternate Plot Name	Acreage	Mean Depth	Date	Start	Stop	Sky	Wind (mph)
Bed 1	C-1-14	70.5	5.10	8/20/2014	10:51	2:57	Pt Cloudy	3.7 E
Bed 2	C-2-14	60.6	5.00	8/18/2014	10:26	2:10	Clear	<1
Bed 3	C-3-14	21.7	6.50	8/18/2014	2:40	3:56	Clear	5.5 NW
Bed 4	C-4-14	19.5	6.00	8/20/2014	12:06	2:47	Pt Cloudy	2.4 N
Bed 5	C-5-14	9.0	5.70	8/20/2014	3:17	3:40	Pt Cloudy	<1
Total CG		181.4						
2014 Noxon Rapids Reservoir Treated Plots								
Plot Number	Alternate Plot Name	Acreage	Mean Depth	Date	Start	Stop	Sky	Wind
Bed 4	N-4-14	2.0	5.50	8/21/2014	10:00	10:14	Pt Cloudy	2.7 E
Bed 6	N-6-14	2.3	7.60	8/21/2014	10:22	10:30	Pt Cloudy	4 SE
Large Plots Total		4.3						
Bed 5	N-5-14	0.16	3.00	8/21/2014	11:45	11:50	Pt Cloudy	2 E
Bed 7	N-7-14	1.1	6.00	8/21/2014	10:45	10:52	Pt Cloudy	3.4 SW
Bed 8	N-8-14	0.5	8.00	8/21/2014	10:55	11:05	Pt Cloudy	<1
Bed 9	N-9-14	2.5	8.00	8/21/2014	11:10	11:20	Pt Cloudy	<1
Bed 10	N-10-14	0.6	8.00	8/21/2014	11:25	11:32	Pt Cloudy	<1
Bed 12	N-12-14	9.4	7.00	8/21/2014	9:47	10:11	Pt Cloudy	2.6 SE
Strip Plots Total		14.3						
Sub Total Noxon		18.6						
Total		200.0						

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 treatment tracks were automatically recorded via the LittLine vessel's GPS guidance system for the production of the



final treatment area maps to document the treatment areas.

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.

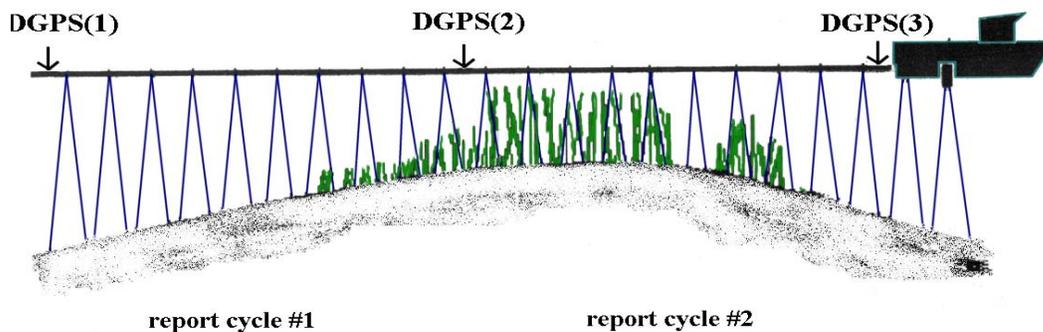
Impacts from currents, wind and wave action are reduced in deep water applications through the use of the LittLine® application system when compared to conventional subsurface applications. For the Noxon Rapids and Cabinet Gorge Reservoir applications, the application swath widths were approximately 50 foot, and the vessel speeds averaged 3 to 5 mph depending on water depths within the plots. The herbicide discharge in all of the plots was within the bottom portion of the water column. The

LittLine® hoses are electronically reeled in or reeled out based on the varying depths of the treatment Plots.

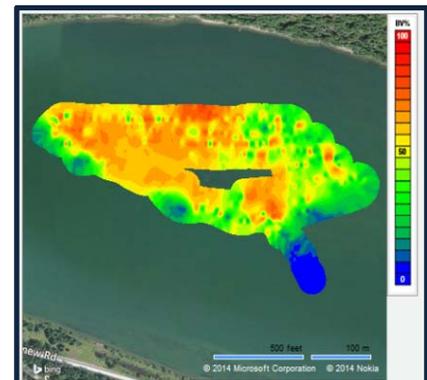


The LittLine system's computerized rate controllers regulate the aquatic herbicide applications through preset treatment rates. When the vessel speeds up and or slows down, the rate controllers adjust the herbicide application rate to match the preset rate in gallons of product per acre.

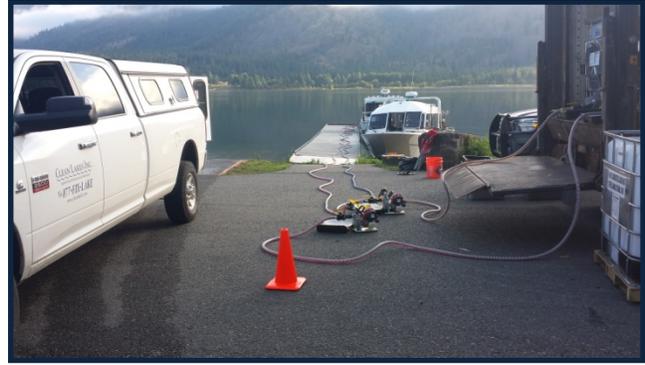
A Digital Echosounder System with a Structure Scan Module was used to record data of the submerged aquatic vegetation (SAV) profile in the control plots during treatment and during the post treatment survey. Data was collected in both the .SLG (traditional sonar on HDS line) and the .SL2 (multi-channel 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 ~ 6 Weeks Post Treatment. Data was collected to compare At Time of Treatment and ~ 6 Weeks Post Treatment SAV coverage, height in the water column, and bio-volume to support post-treatment efficacy evaluations. An example of SAV conditions at time of treatment for Plot C-3-14, Cabinet Gorge Reservoir, is pictured to the right.



AQUATIC HERBICIDES: CLI provided the aquatic herbicides for the project, and they were delivered by IEDS of Spokane, WA in recyclable totes (Aquathol K - 250 gallon, Triclopyr 3[®] - 250 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 Aquathol K[®] (liquid endothall) and Triclopyr 3[®] (liquid triclopyr) 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).

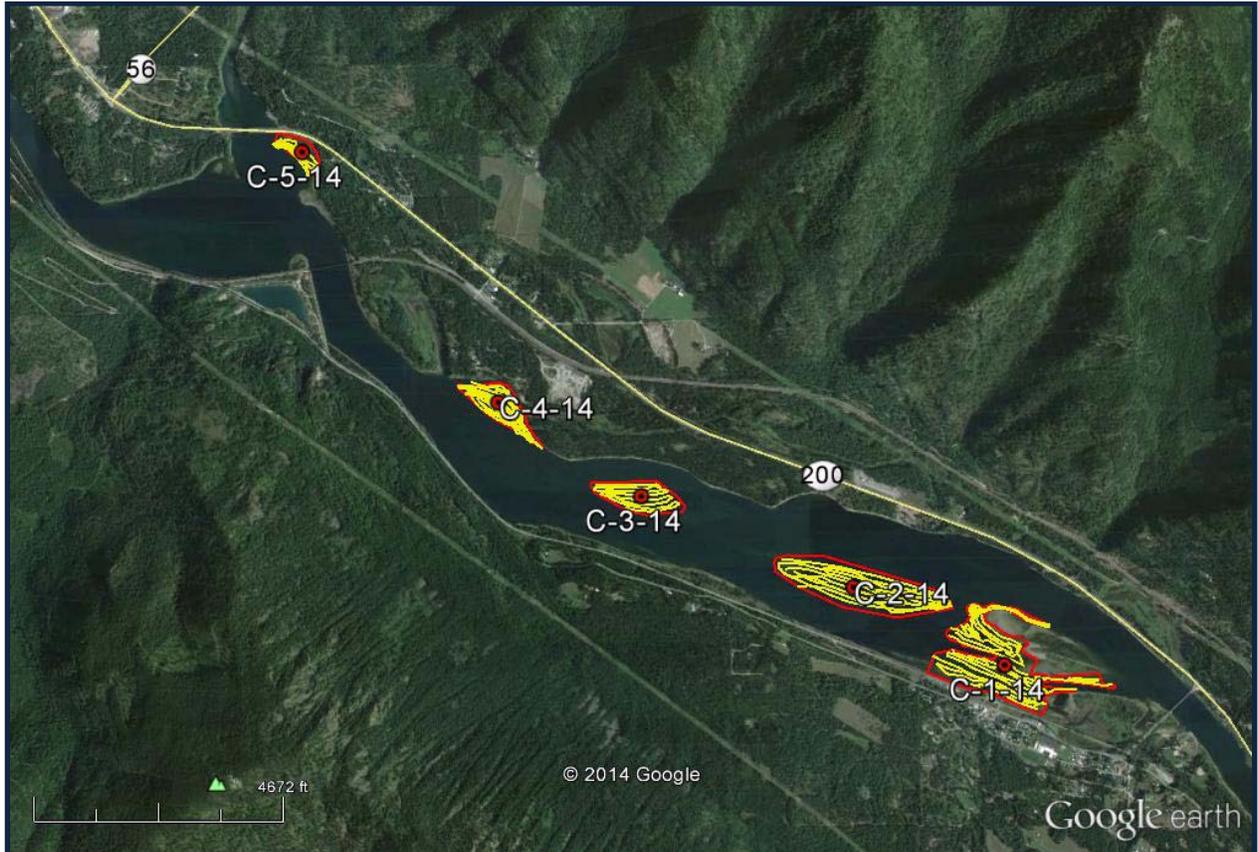
PERMIT COMPLIANCE: CLI supported the development of the Aquatic Pesticide Application Plan, and Sanders County provided the required permits and approvals for the herbicide treatments from the Montana Department of Environmental Quality. There were no adverse incidents to report.

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 hosts a webpage at <http://www.cleanlake.com/2014noxonrapidsais.html> to provide project related information to the public.

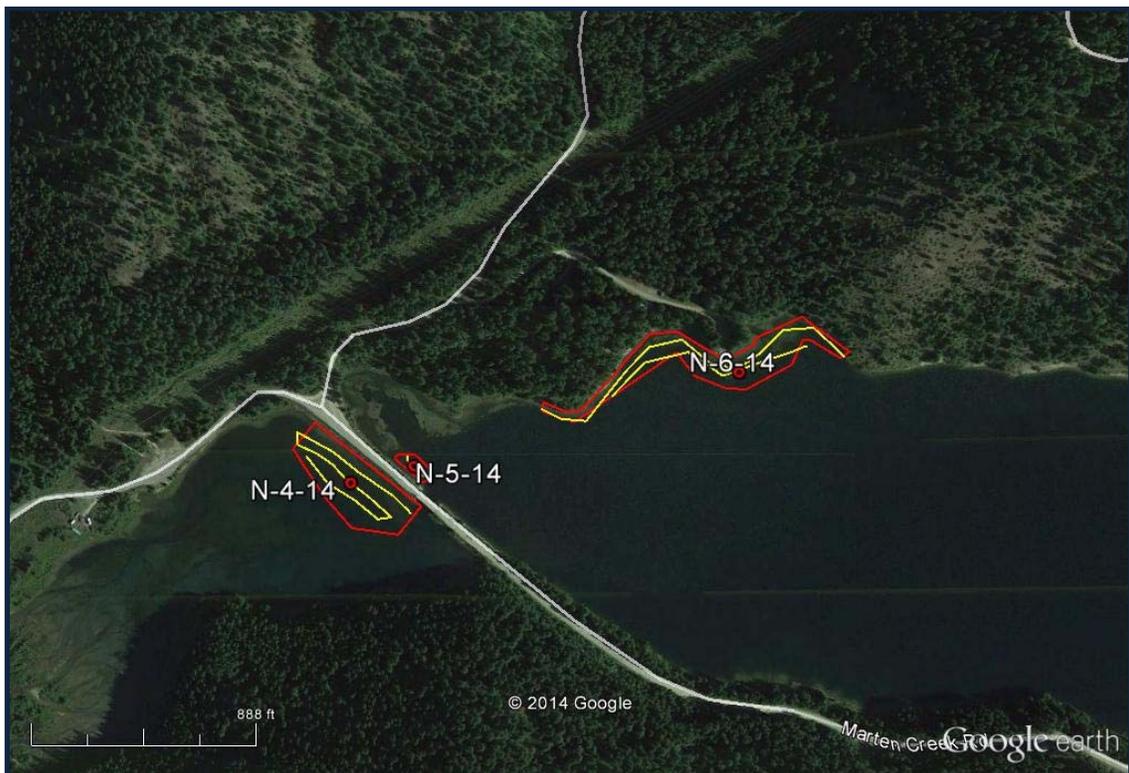
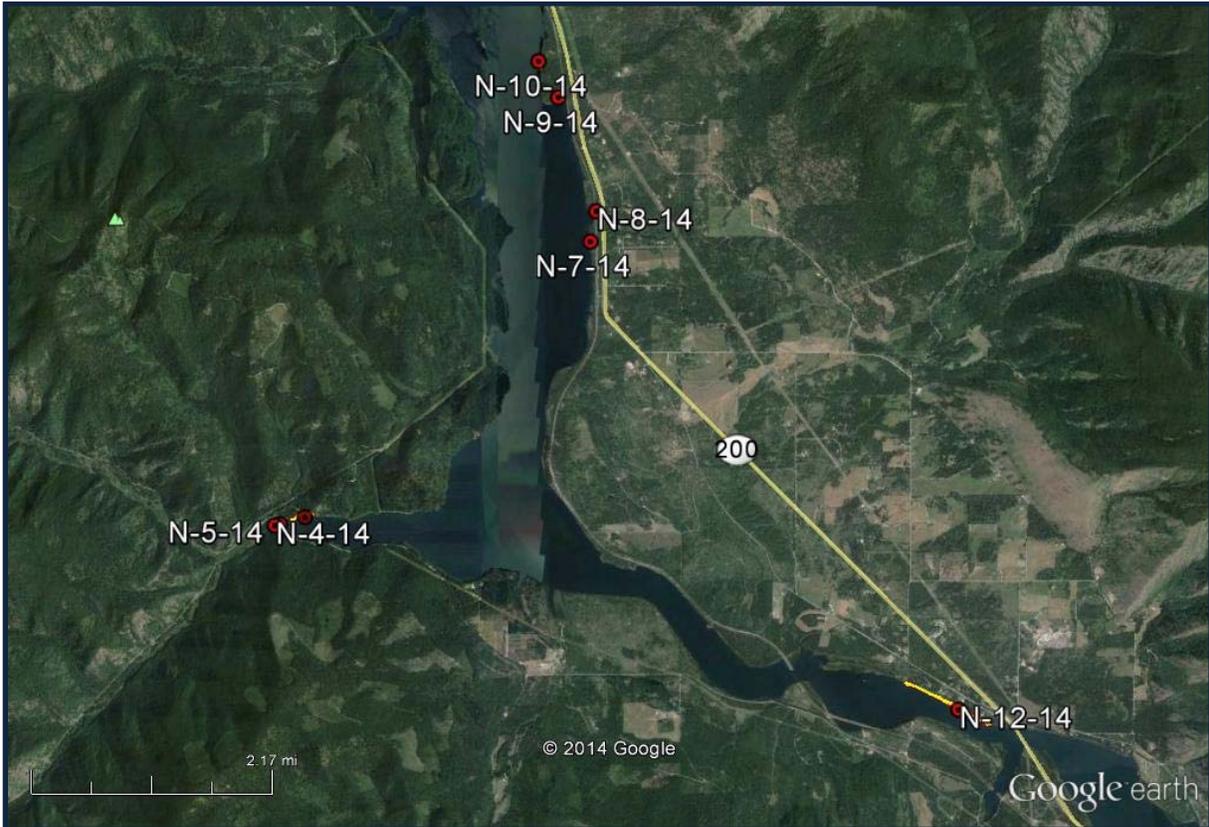
SERVICES PROVIDED BY THE SANDERS COUNTY: Sanders County provided the required permits, published legal notices in newspapers, provided notification to property owners, posting at public boat launch facilities, and provided the project area GIS shapefiles

through Kim Bergstrom (Pinnacle Research) that were used to generate the final 2014 Treatment Area Plots and Maps.

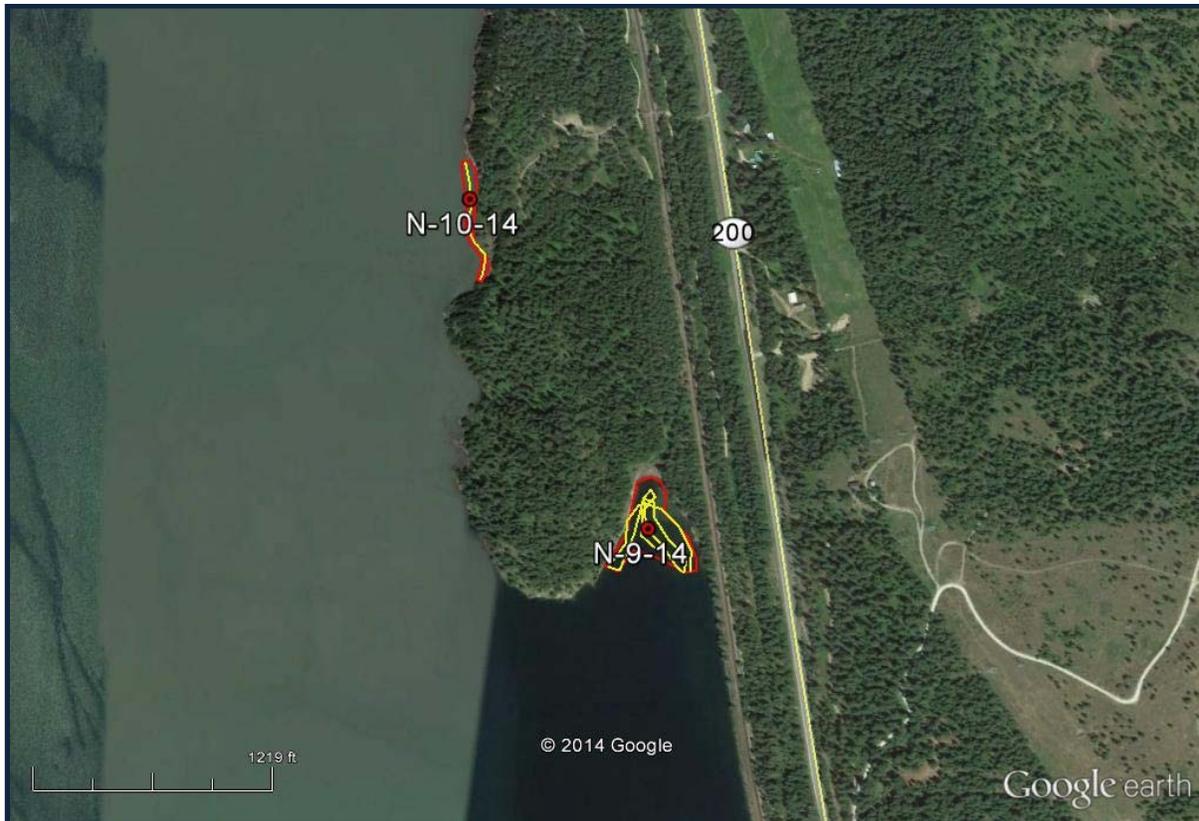
TREATMENT AREA PLOT MAPS
Cabinet Gorge Reservoir Treatment Map

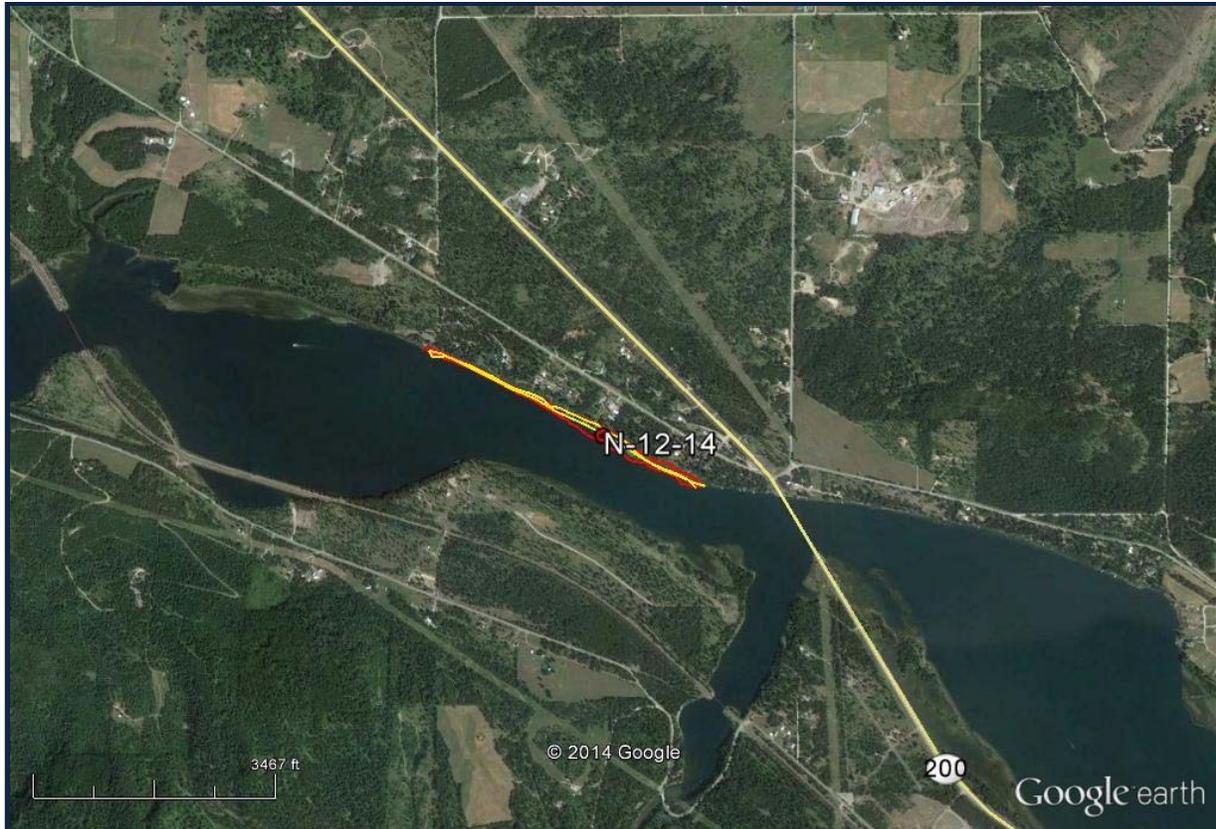


Noxon Rapids Reservoir Treatment Maps



CABINET GORGE & NOXON RAPIDS RESERVOIRS, SANDERS COUNTY, MONTANA
2014 AIS Aquatic Pesticide Application Report (APAR)





TREATMENT SITE DATA

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

2014 Cabinet Gorge Reservoir Treatment Plots				Triclopyr		Endothall	
Plot Number	Alternate Plot Name	Acreage	Mean Depth	Rate ppm	Qty Total Site (gal)	Rate ppm	Qty Total Site (gal)
Bed 1	C-1-14	70.5	5.10	1.00	325	2.0	460
Bed 2	C-2-14	60.6	5.00	1.00	274	2.0	388
Bed 3	C-3-14	21.7	6.50	1.00	128	2.0	181
Bed 4	C-4-14	19.5	6.00	1.00	106	2.0	150
Bed 5	C-5-14	9.0	5.70	1.00	46	2.0	66
Total		181.4			879.6		1244.0
2014 Noxon Rapids Reservoir Treatment Plots				Triclopyr		Endothall	
Plot Number	Alternate Plot Name	Acreage	Mean Depth	Rate ppm	Qty Total Site (gal)	Rate ppm	Qty Total Site (gal)
Bed 4	N-4-14	2.0	5.50	1.00	10	2.0	14
Bed 6	N-6-14	2.3	7.60	1.00	16	2.0	22
Large Plots Total		4.3			26		36
Bed 5	N-5-14	0.16	3.00	0.00	0	3.0	1
Bed 7	N-7-14	1.1	6.00	0.00	0	3.0	13
Bed 8	N-8-14	0.5	8.00	0.00	0	3.0	8
Bed 9	N-9-14	2.5	8.00	0.00	0	3.0	38
Bed 10	N-10-14	0.6	8.00	0.00	0	3.0	9
Bed 12	N-12-14	9.4	7.00	1.00	60	2.0	84
Strip Plots Total		14.3			59.5		153.1
Sub Total		18.6			85		190
Total		200.0			965		1434

Table 2 Notes:

- Acreage, average depth and acre feet values were adjusted in some of the Plots based on field conditions at the time of treatment.
- The 2014 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 in the Treatment Plots**

**2014 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)**

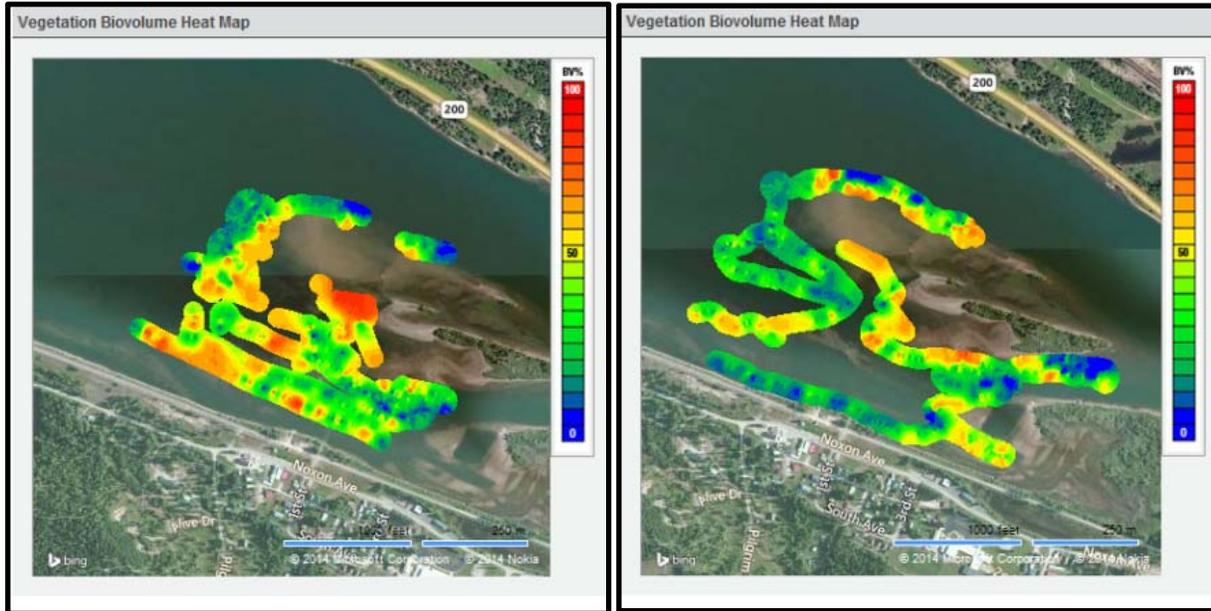
Plot Number	SAV Percent Cover	SAV Bio-Volume	Date Data Collected	SAV Percent Cover	SAV Bio-Volume	Date Data Collected-Post Treatment	SAV % BV Change	Post Treatment EWM Injury Rank	Herbicides Used
Cabinet Gorge									
C-1-14	98.50	44.20	8/20/2014	97.10	35.20	9/26/2014	-20%	75% +/-	End/Tri
C-2-14	99.10	54.20	8/18/2014	97.30	51.60	9/26/2014	-5%	50% +/-	End/Tri
C-3-14	96.90	50.70	8/18/2014	100.00	37.8	9/26/2014	-25%	70% +/-	End/Tri
C-4-14	92.40	36.60	7/10/2014	82.10	19.9	9/26/2014	-46%	95% +/-	End/Tri
C-5-14	94.20	74.90	7/10/2014	89.30	23.0	9/26/2014	-69%	95% +/-	End/Tri
Noxon Rapids									
N-4-14	100.00	55.50	8/21/2014	100.00	52.7	9/26/2014	-5%	50% +/-	End/Tri
N-5-14	86.80	33.70	8/21/2014	n/a	n/a	n/a	n/a	70% +/-	Endothall
N-6-14	84.00	45.70	8/21/2014	80.40	32.7	9/26/2014	-28%	55% +/-	End/Tri
N-7-14	91.00	35.40	8/21/2014	62.00	9.4	9/26/2014	-73%	95% +/-	Endothall
N-8-14	100.00	44.10	8/21/2014	100.00	33.5	9/26/2014	-24%	50% +/-	Endothall
N-9-14	92.60	42.90	8/21/2014	79.60	31.0	9/26/2014	-28%	65% +/-	Endothall
N-10-14	100.00	53.30	8/21/2014	67.40	13.3	9/26/2014	-75%	90% +/-	Endothall
N-12-14	94.30	36.90	8/21/2014	85.00	17.5	9/26/2014	-53%	85% +/-	End/Tri

Note: Herbicides used End/Tri = Combination of Endothall and Tricopyr.
Post Treatment Injury Rank is the observers (Moorhouse, McNabb) visual estimates of herbicide injury to EWM on September 26, 2014, approximately 6 weeks after treatment during a survey with Kim Bergstrom and Tanner Mitchell.

A 52 week Post Treatment Survey to determine efficacy will be performed in 2015. 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 C-1-14: At Time of Treatment (August 20, 2014 Left),
~ Six (6) Weeks Post (September 26, 2014 Right)**



2014 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 Percent Cover	SAV Bio-Volume	Date Data Collected	SAV Percent Cover	SAV Bio-Volume	Date Data Collected-Post Treatment	SAV % BV Change	Post Treatment EWM Injury Rank	Herbicides Used
Cabinet Gorge									
C-1-14	98.50	44.20	8/20/2014	97.10	35.20	9/26/2014	-20%	75% +/-	End/Tri

Observations/Notes C-1-14: Treated with 1.0 ppm triclopyr, 2 ppm endothall, control estimated at 75%. This Plot was reduced from 72.5 to 70.5 acres due to a sandbar on the upper end of the Plot with no vegetation present. East side of plot looks very good for control, Elodea and Sago abundant. Islands of EWM damaged looking amongst area of good control containing elodea and coontail. Longest finger of plot to north contains EWM with abundant filamentous algae. Some plants look healthier than other plants in that area. The level of control looks good for the challenging nature of the plot, shallow and very irregular shape. Observed black stems and leaves via visual observations and rake throws. Vast majority of plants look damaged with observed epinasty. At six (6) weeks post treatment, the herbicides could still be working through plants.

Plot C-1-14: At Time of Treatment (August 20, 2014)



VEGETATION ANALYSIS REPORT

Cabinet Gorge Reservoir, Sanders County Montana

Waterbody Size: 1,130.37 ha (2,793.20 acres) [report link](#)

Generated: 9/9/2014 3:49:37 AM (UTC)



Data Collector		Survey Size		Settings	
Thomas McNabb		Area:	25.52 ha (63.05 acres)	Track Buffer:	25 m
Data Collection Date		Percent:	2.26% of waterbody	Grid Cell Size:	5 m
8/20/2014 4:51:41 PM (UTC)		Volume:	460,529.80 cu. m (373.36 acre ft)	Min. BV Detect:	5%
Average Water Temperature				Min. Veg Depth Detect:	0.73152 m
21.08° C (69.94° F)					
Location					
Start:		47.99975586, -115.78450012			
End:		47.9998436, -115.78292847			

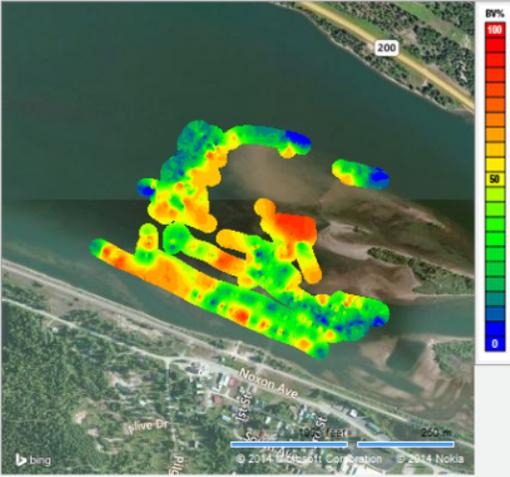
Survey Summary

Type ?	PAC ?	Avg BVp ?	SD BVp ?	Avg BVw ?	SD BVw ?	Depth Range	Avg Depth	Distance	No. Points	
Full Survey	Point	95.1%	37.8%	±23.5%	35.9%	±24.4%	0.76-4.44 m	1.65 m	9.66 km	3,004
	Grid	98.5%	44.2%	±19.6%	43.6%	±20.2%	0.4-4.85 m	1.75 m	-	6,806

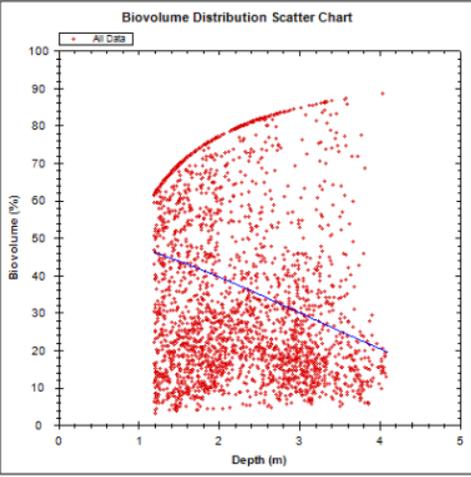
Area of Interest Summary

AOI ?	Type ?	PAC ?	Avg BVp ?	SD BVp ?	Avg BVw ?	SD BVw ?	Depth Range	Avg Depth	Distance	No. Points
1	Point	99.5%	59.6%	±19.3%	59.3%	±19.7%	0.76-3.08 m	1.14 m	1.67 km	212
	Grid	99.9%	58%	±15.3%	58%	±15.5%	0.7-4.26 m	1.26 m	-	1,576
2	Point	96.7%	41.5%	±22.1%	40.2%	±22.9%	0.8-4.05 m	1.63 m	2.83 km	823
	Grid	99.3%	42.3%	±17.7%	42%	±18%	0.44-4.26 m	1.68 m	-	3,097
3	Point	93.1%	38.7%	±23.9%	36%	±25.1%	0.77-4.43 m	1.81 m	2.51 km	1,066
	Grid	96.6%	47.6%	±21.4%	45.9%	±22.7%	0.59-4.85 m	1.7 m	-	2,239
4	Point	95%	27.8%	±20.3%	26.4%	±20.7%	0.76-4.44 m	1.99 m	2.65 km	903
	Grid	99.4%	37%	±18.4%	36.8%	±18.6%	0.4-4.26 m	1.92 m	-	2,538

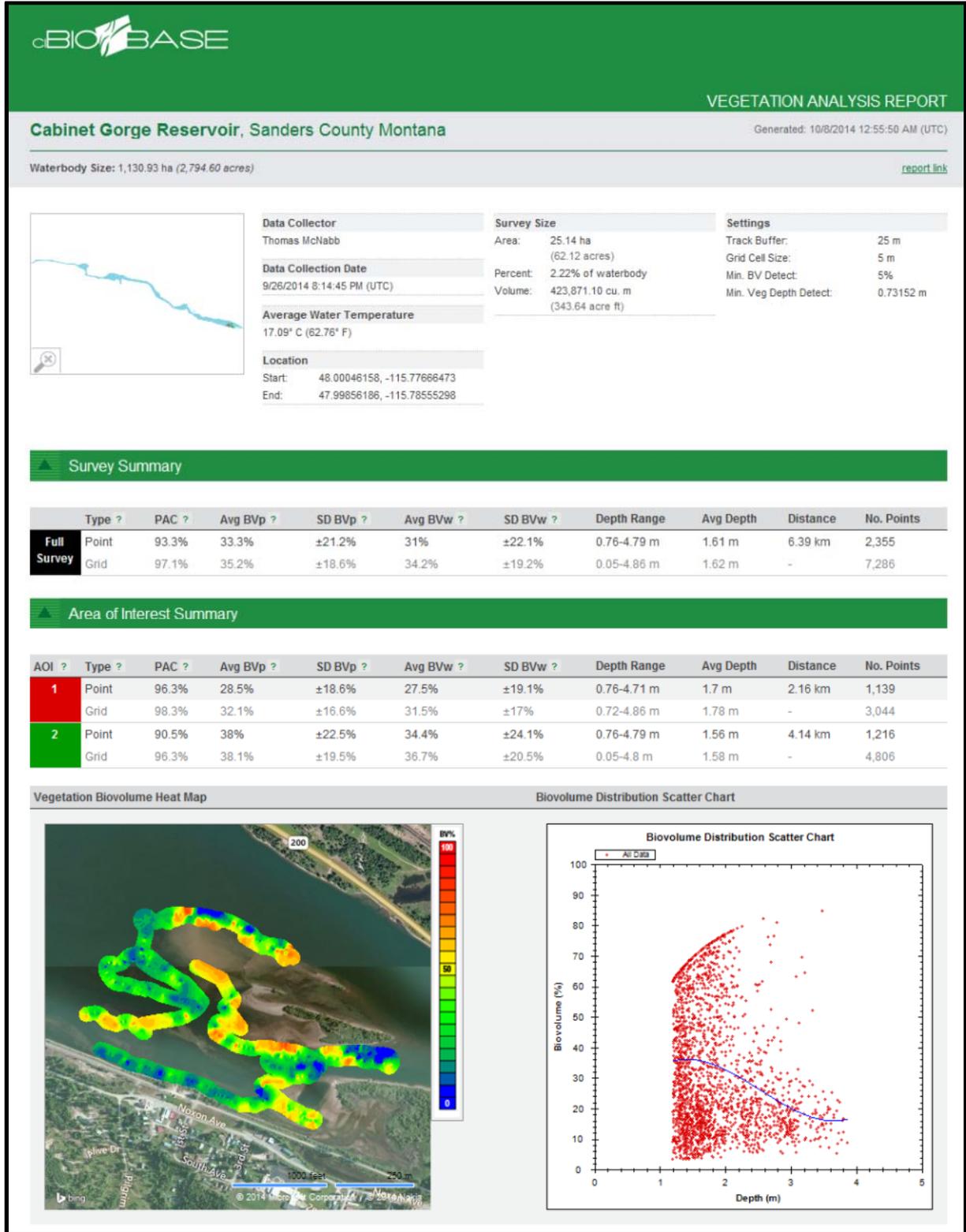
Vegetation Biovolume Heat Map



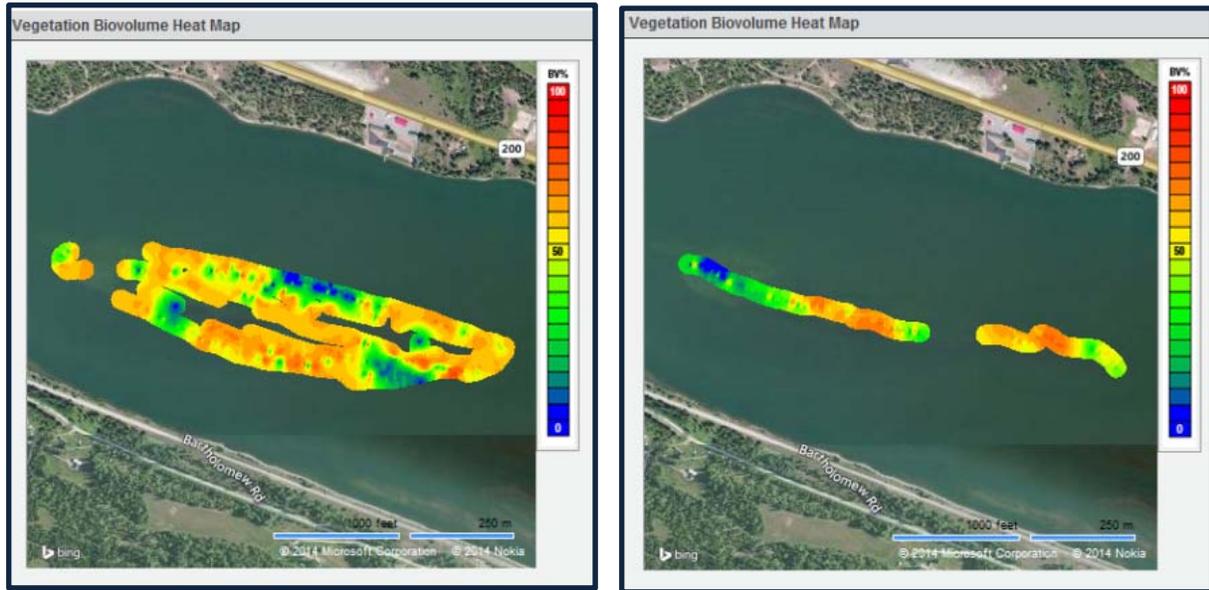
Biovolume Distribution Scatter Chart



Plot C-1-14: ~ Six (6) Weeks Post (September 26, 2014)



**Plot C-2-14: At Time of Treatment (August 18, 2014 Left),
~ Six (6) Weeks Post (September 26, 2014 Right)**



**2014 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 Percent Cover	SAV Bio-Volume	Date Data Collected	SAV Percent Cover	SAV Bio-Volume	Date Data Collected-Post Treatment	SAV % BV Change	Post Treatment EWM Injury Rank	Herbicides Used
Cabinet Gorge									
C-2-14	99.10	54.20	8/18/2014	97.30	51.60	9/26/2014	-5%	50% +/-	End/Tri

Observations/Notes C-2-14: Treated with 1.0 ppm triclopyr, 2.0 ppm endothall, control estimated at 50%. Upstream end of plot not showing much control, more control and damage downstream. Control at 50%, re-evaluate efficacy in 2015.

Plot C-2-14: At Time of Treatment (August 18, 2014)

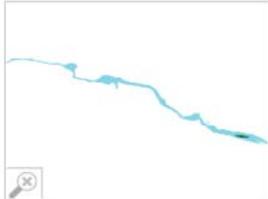


VEGETATION ANALYSIS REPORT

Cabinet Gorge Reservoir, Sanders County Montana

Waterbody Size: 1,130.37 ha (2,793.20 acres) [report link](#)

Generated: 9/9/2014 3:55:59 AM (UTC)



Data Collector	Thomas McNabb	Survey Size	Area: 22.80 ha (56.34 acres)	Settings	Track Buffer: 25 m Grid Cell Size: 5 m Min. BV Detect: 5% Min. Veg Depth Detect: 0.73152 m
Data Collection Date	8/18/2014 4:26:34 PM (UTC)	Percent	2.02% of waterbody	Volume	341,086.00 cu. m (276.52 acre ft)
Average Water Temperature	21.75° C (71.14° F)				
Location	Start: 48.00177002, -115.78900146 End: 48.00356674, -115.79901886				

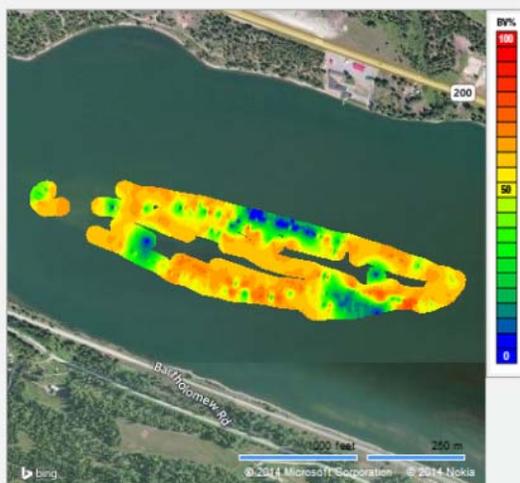
Survey Summary

	Type ?	PAC ?	Avg BVp ?	SD BVp ?	Avg BVw ?	SD BVw ?	Depth Range	Avg Depth	Distance	No. Points
Full Survey	Point	96.9%	55.2%	±19.9%	53.5%	±21.8%	0.76-4.53 m	1.39 m	8.72 km	2,469
	Grid	99.1%	54.2%	±15.4%	53.7%	±16.2%	0.69-4.41 m	1.41 m	-	5,913

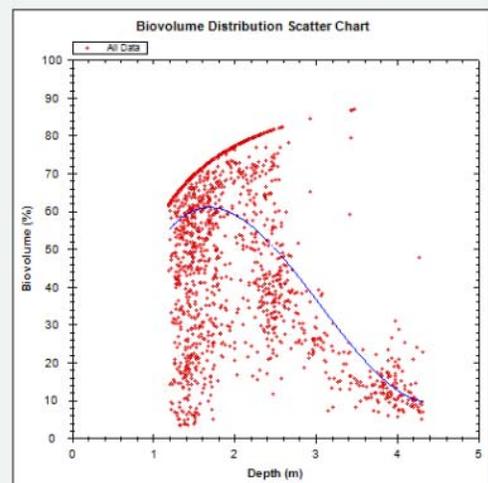
Area of Interest Summary

AOI ?	Type ?	PAC ?	Avg BVp ?	SD BVp ?	Avg BVw ?	SD BVw ?	Depth Range	Avg Depth	Distance	No. Points
1	Point	97.1%	60.4%	±14.1%	58.7%	±17.2%	0.76-3.31 m	1.28 m	1.51 km	490
	Grid	100%	58.5%	±10.7%	58.5%	±10.7%	0.73-4.41 m	1.31 m	-	2,022
2	Point	97.7%	58.2%	±19.9%	56.8%	±21.5%	0.77-4.53 m	1.57 m	1.59 km	824
	Grid	99.9%	56.3%	±13.7%	56.2%	±13.9%	0.69-4.41 m	1.4 m	-	2,311
3	Point	99.5%	49.2%	±21.7%	49%	±21.9%	0.76-4.4 m	1.34 m	1.88 km	444
	Grid	99.7%	54.1%	±17.7%	53.9%	±18%	0.72-4.34 m	1.56 m	-	1,768
4	Point	94.1%	51.9%	±20.5%	48.9%	±23.4%	0.76-4.09 m	1.4 m	3.46 km	711
	Grid	98.7%	52.7%	±16.2%	52.1%	±17.2%	0.72-4.41 m	1.46 m	-	3,893

Vegetation Biovolume Heat Map



Biovolume Distribution Scatter Chart



Plot C-2-14: ~ Six (6) Weeks Post (September 26, 2014)



VEGETATION ANALYSIS REPORT

Cabinet Gorge Reservoir, Sanders County Montana

Waterbody Size: 1,130.93 ha (2,794.60 acres) [report link](#)

Generated: 10/1/2014 10:31:59 PM (UTC)



Data Collector	Thomas McNabb	Survey Size	Area: 5.94 ha (14.67 acres)	Settings	Track Buffer: 25 m Grid Cell Size: 5 m Min. BV Detect: 5% Min. Veg Depth Detect: 0.73152 m
Data Collection Date	9/26/2014 9:25:40 PM (UTC)	Average Water Temperature	16.87° C (62.37° F)	Offset	0.4572 m No description
Location	Start: 48.0017128, -115.78514862 End: 48.00403595, -115.79943848	Percent	0.53% of waterbody	Quality Control	Reviewer: Cooper, Laura Status: Has Issues Thick vegetation may have caused inaccurate depths throughout this trip. Review data to ensure depth layer is accurate.
Volume	100,778.70 cu. m (81.70 acre ft)	SD BVp ?	±21.5%	SD BVw ?	±25.2%
Avg BVp ?	57.1%	Avg BVw ?	53.3%	Depth Range	0.77-2.32 m
SD BVp ?	±17.5%	SD BVw ?	±19.1%	Avg Depth	1.62 m
Avg BVp ?	51.6%	Avg BVw ?	50.2%	Distance	1.17 km
SD BVp ?	±17.5%	SD BVw ?	±19.1%	No. Points	1,116
Avg BVp ?	51.6%	Avg BVw ?	50.2%	Distance	-
SD BVp ?	±17.5%	SD BVw ?	±19.1%	No. Points	1,412

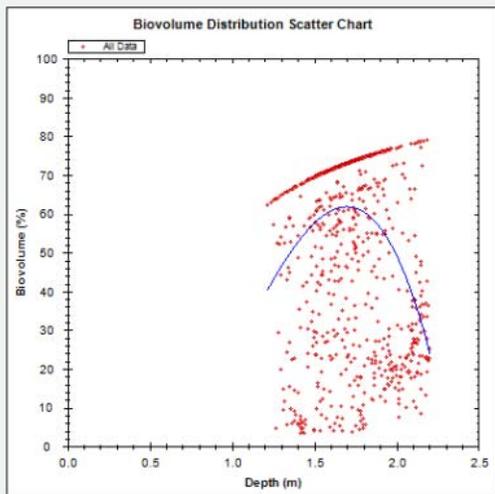
Area of Interest Summary

AOI ?	Type ?	PAC ?	Avg BVp ?	SD BVp ?	Avg BVw ?	SD BVw ?	Depth Range	Avg Depth	Distance	No. Points
1	Point	93.4%	57.1%	±21.5%	53.3%	±25.2%	0.77-2.32 m	1.62 m	1.17 km	1,116
	Grid	97.3%	51.6%	±17.5%	50.2%	±19.1%	0.9-2.23 m	1.58 m	-	1,412

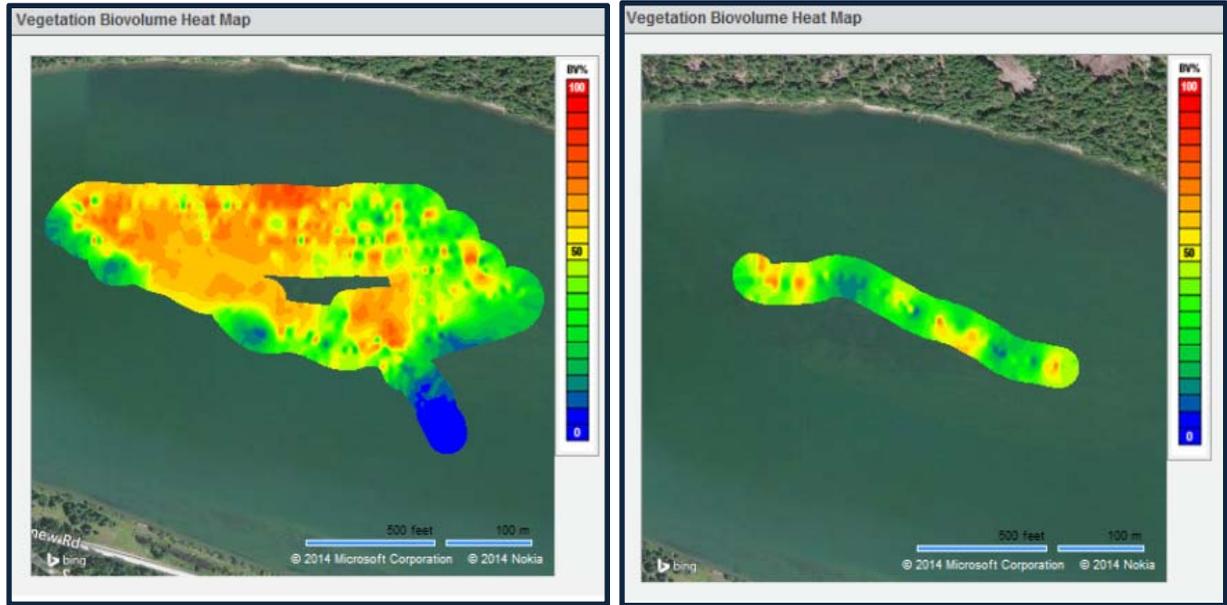
Vegetation Biovolume Heat Map



Biovolume Distribution Scatter Chart



**Plot C-3-14: At Time of Treatment (August 18, 2014 Left),
~ Six (6) Weeks Post (September 26, 2014 Right)**



2014 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 Percent Cover	SAV Bio-Volume	Date Data Collected	SAV Percent Cover	SAV Bio-Volume	Date Data Collected-Post Treatment	SAV % BV Change	Post Treatment EWM Injury Rank	Herbicides Used	
Cabinet Gorge										
C-3-14	96.90	50.70	8/18/2014	100.00	37.8	9/26/2014	-25%	70% +/-	End/Tri	

Observations/Notes C-3-14: Treated with 1.0 ppm triclopyr, 2.0 ppm endothall, control estimated at 70% +/- . Plot at downstream end looks more controlled than upstream.

Plot C-3-14: At Time of Treatment (August 18, 2014)



Plot C-3-14: ~ Six (6) Weeks Post (September 26, 2014)



VEGETATION ANALYSIS REPORT

Cabinet Gorge Reservoir, Sanders County Montana

Waterbody Size: 1,130.93 ha (2,794.60 acres) [report link](#)

Generated: 10/1/2014 10:31:28 PM (UTC)

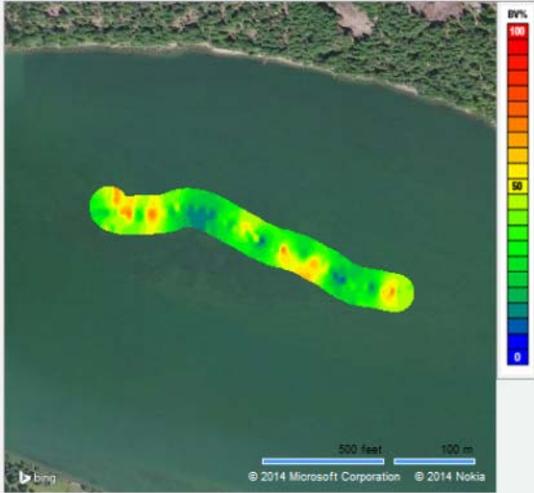


Data Collector	Survey Size	Settings
Thomas McNabb	Area: 2.31 ha (5.71 acres)	Track Buffer: 25 m
Data Collection Date 9/26/2014 9:38:45 PM (UTC)	Percent: 0.2% of waterbody	Grid Cell Size: 5 m
Average Water Temperature 16.81° C (62.26° F)	Volume: 42,827.70 cu. m (34.72 acre ft)	Min. BV Detect: 5%
Location		Min. Veg Depth Detect: 0.73152 m
Start: 48.00718307, -115.80866241		Offset 0.4572 m No description
End: 48.00825882, -115.81385803		Quality Control Reviewer: Cooper, Laura Status: Pass Passed.

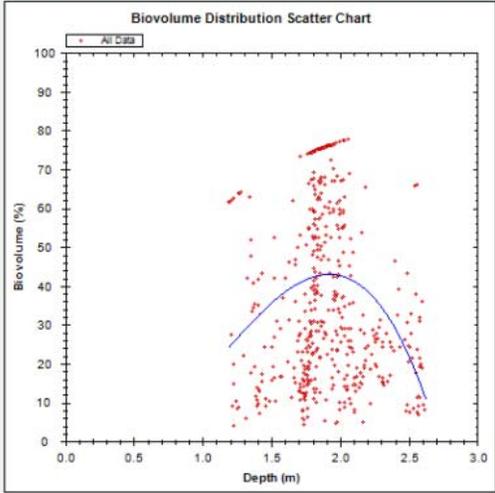
▲ **Area of Interest Summary**

AOI ?	Type ?	PAC ?	Avg BVp ?	SD BVp ?	Avg BVw ?	SD BVw ?	Depth Range	Avg Depth	Distance	No. Points
1	Point	96.6%	39.3%	±23.3%	37.9%	±24%	0.77-2.78 m	1.69 m	428.36 m	529
	Grid	100%	37.8%	±13.5%	37.8%	±13.5%	0.81-2.61 m	1.71 m	-	504

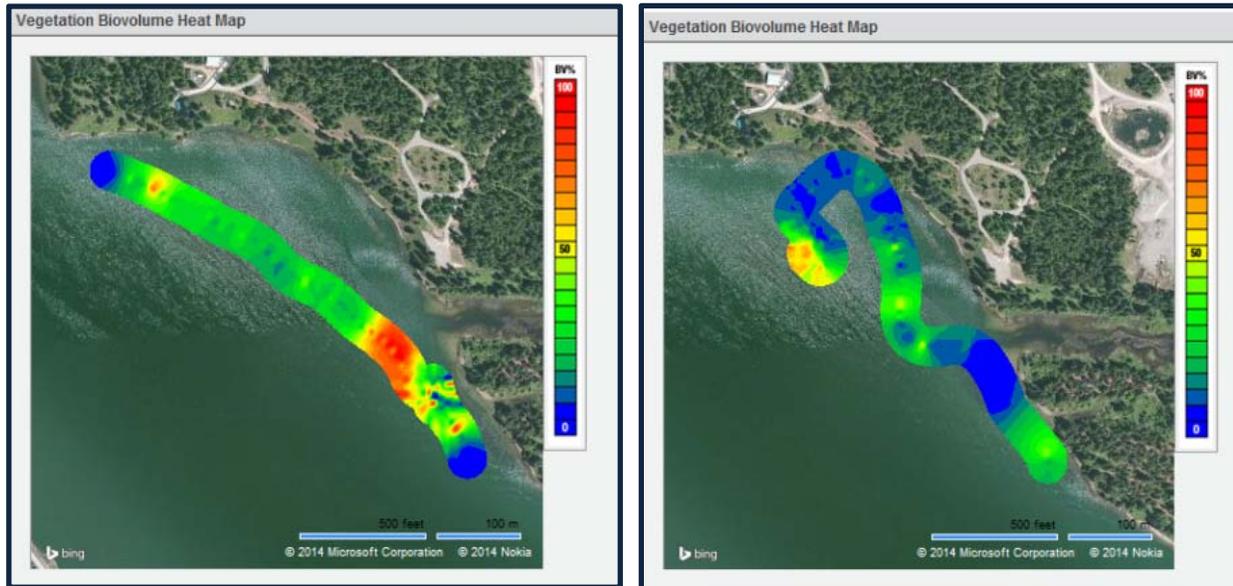
Vegetation Biovolume Heat Map



Biovolume Distribution Scatter Chart



**Plot C-4-14: Pre Treatment* (July 10, 2014 Left),
~ Six (6) Weeks Post (September 26, 2014 Right)**



**2014 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 Percent Cover	SAV Bio-Volume	Date Data Collected	SAV Percent Cover	SAV Bio-Volume	Date Data Collected-Post Treatment	SAV % BV Change	Post Treatment EWM Injury Rank	Herbicides Used
Cabinet Gorge									
C-4-14	92.40	36.60	7/10/2014	82.10	19.9	9/26/2014	-46%	95% +/-	End/Tri

*No At Time of Treatment Data Available, data used from 7/10/14 survey.

Observations/Notes C-4-14: Treated with 1.0 ppm triclopyr, 2.0 ppm endothall, good widespread control estimated at 95%.

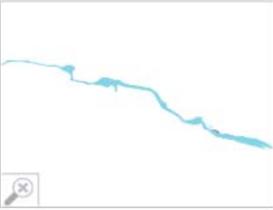
Plot C-4-14: Pre Treatment (July 10, 2014)

BIOBASE
VEGETATION ANALYSIS REPORT

Cabinet Gorge Reservoir, Sanders County Montana

Waterbody Size: 1,129.05 ha (2,789.90 acres) [report link](#)

Generated: 7/14/2014 4:58:01 PM (UTC)

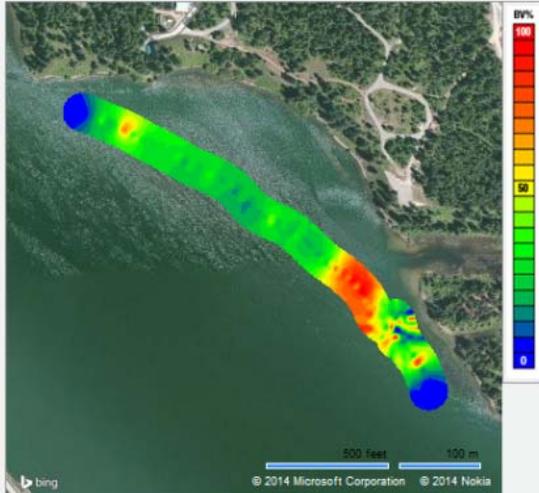


Data Collector	Thomas McNabb	Survey Size	Area: 3.22 ha (7.97 acres)	Settings	Track Buffer: 25 m
Data Collection Date	7/10/2014 8:33:40 PM (UTC)	Percent	0.29% of waterbody	Grid Cell Size	5 m
Average Water Temperature	19.67° C (67.41° F)	Volume	72,642.50 cu. m (58.89 acre ft)	Min. BV Detect	5%
Location	Start: 48.01104355, -115.82115936 End: 48.01428223, -115.82714844	Min. Veg Depth Detect	0.73152 m	Quality Control	Reviewer: Clifford, Patrick Status: Passed

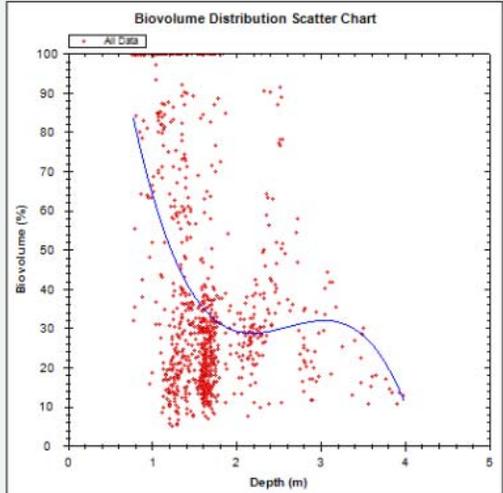
Area of Interest Summary

AOI ?	Type ?	PAC ?	Avg BVp ?	SD BVp ?	Avg BVw ?	SD BVw ?	Depth Range	Avg Depth	Distance	No. Points
1	Point	93.6%	40.1%	±29.5%	37.6%	±30.2%	0.77-7.4 m	1.83 m	658.71 m	1,007
	Grid	92.4%	36.6%	±20.6%	33.8%	±22%	0.48-7.38 m	2.08 m	-	867

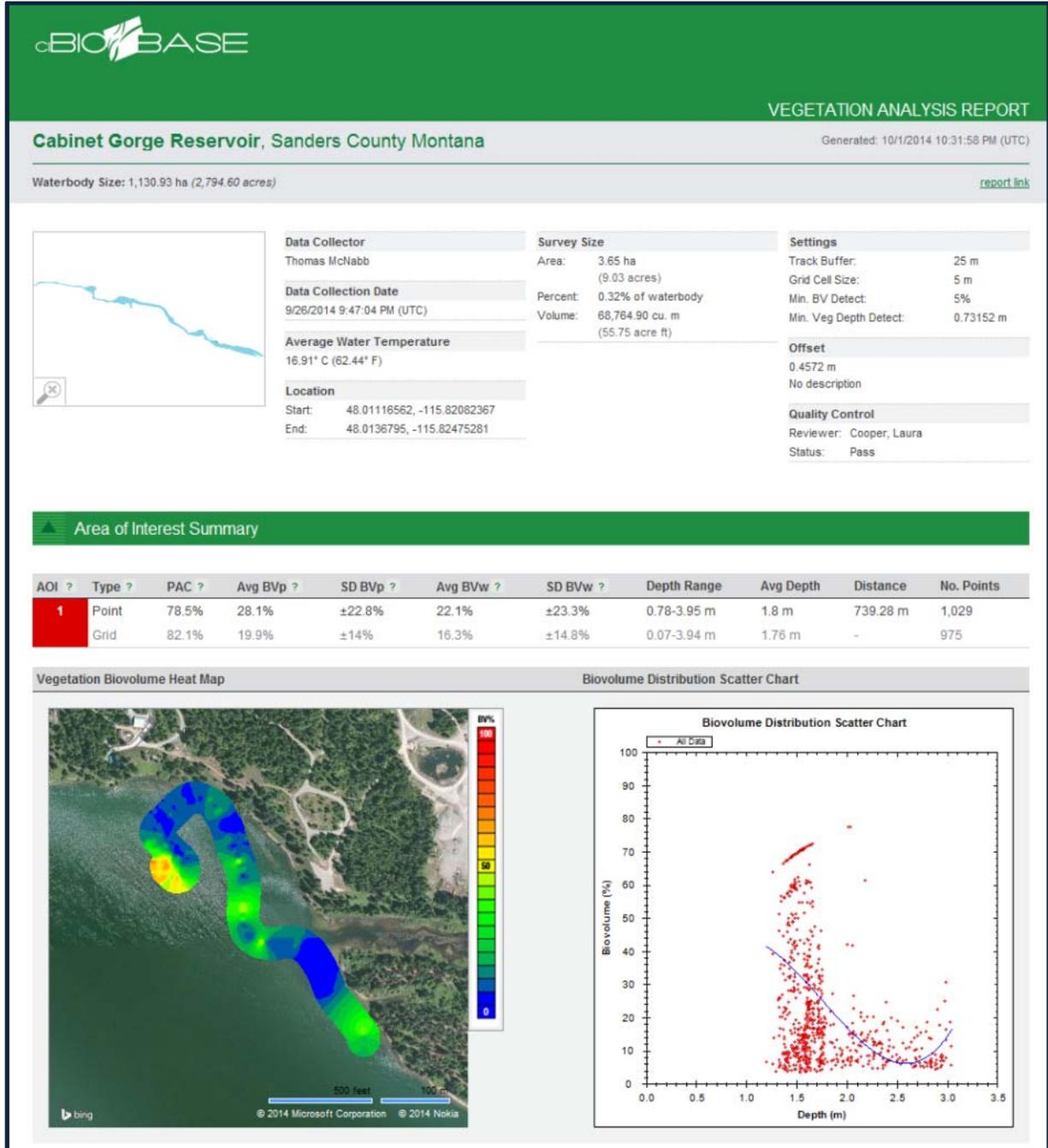
Vegetation Biovolume Heat Map



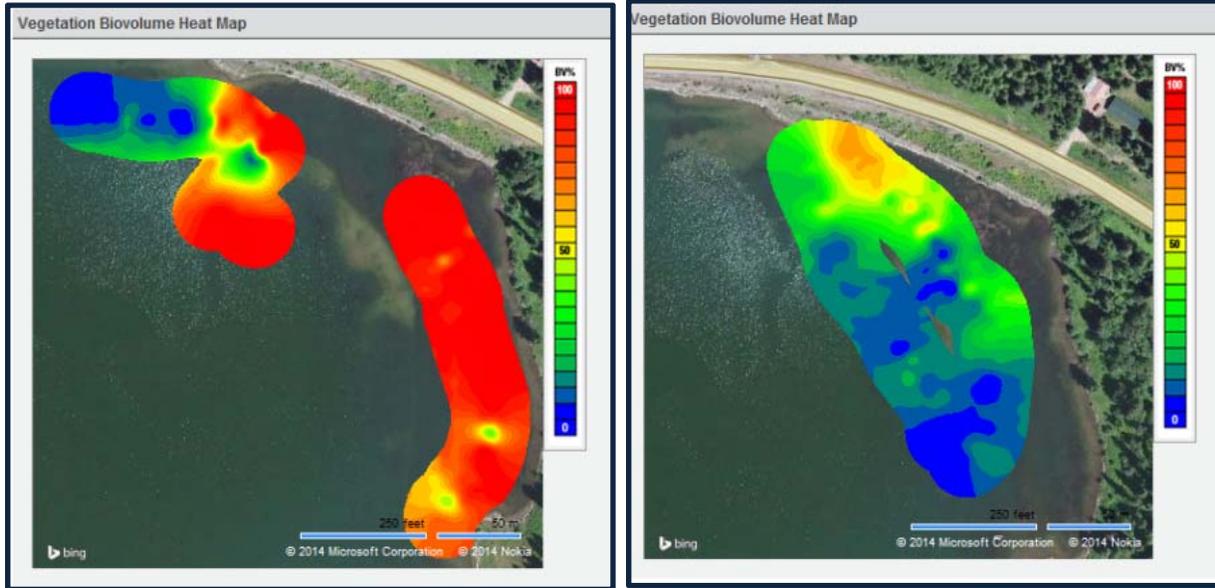
Biovolume Distribution Scatter Chart



Plot C-4-14: ~ Six (6) Weeks Post (September 26, 2014)



**Plot C-5-14: Pre Treatment* (July 10, 2014 Left),
~ Six (6) Weeks Post (September 26, 2014 Right)**

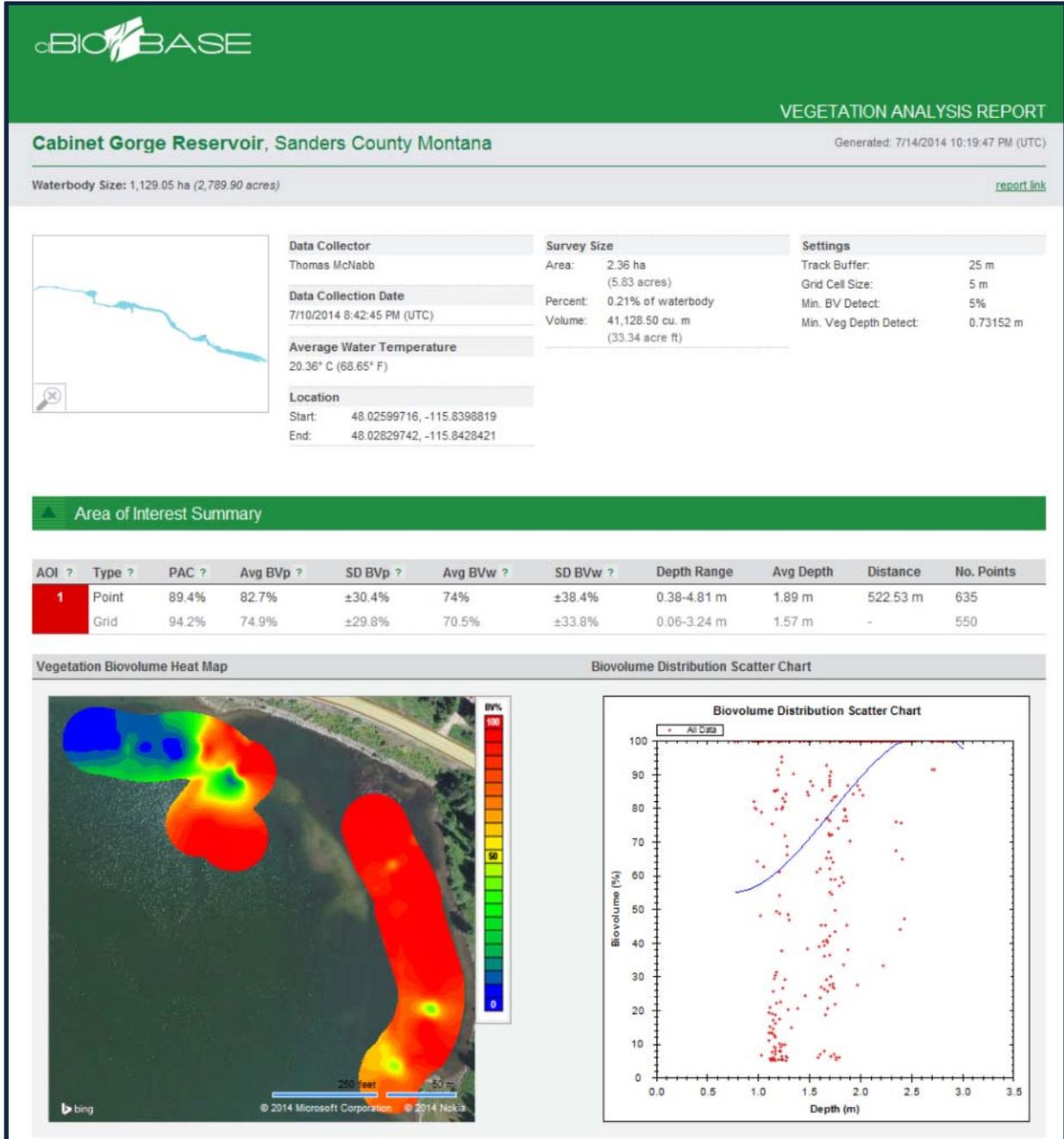


*No At Time of Treatment Data Available, data used from 7/10/14 survey.

2014 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 Percent Cover	SAV Bio-Volume	Date Data Collected	SAV Percent Cover	SAV Bio-Volume	Date Data Collected- Post Treatment	SAV % BV Change	Post Treatment EWM Injury Rank	Herbicides Used
Cabinet Gorge									
C-5-14	94.20	74.90	7/10/2014	89.30	23.0	9/26/2014	-69%	95% +/-	End/Tri

Observations/Notes C-5-14: Treated with 1.0 ppm triclopyr, 2.0 ppm endothall, good widespread control estimated at 95%.

Plot C-5-14: Pre Treatment (July 10, 2014)



Plot C-5-14: ~ Six (6) Weeks Post (September 26, 2014)



VEGETATION ANALYSIS REPORT

Cabinet Gorge Reservoir, Sanders County Montana

Waterbody Size: 1,130.93 ha (2,794.60 acres) [report link](#)

Generated: 10/1/2014 10:30:52 PM (UTC)

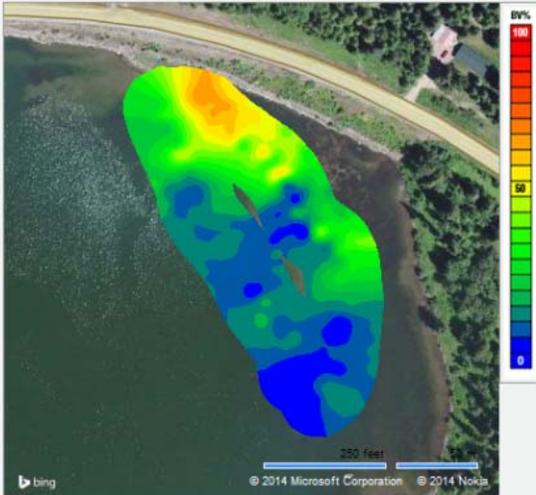


Data Collector	Survey Size	Settings
Thomas McNabb	Area: 2.27 ha (5.61 acres)	Track Buffer: 25 m Grid Cell Size: 5 m
Data Collection Date	Percent: 0.2% of waterbody Volume: 39,103.00 cu. m (31.70 acre ft)	Min. BV Detect: 5% Min. Veg Depth Detect: 0.73152 m
9/26/2014 9:59:26 PM (UTC)		
Average Water Temperature		Offset
17.2° C (62.97° F)		0.4572 m No description
Location		Quality Control
Start: 48.02661133, -115.84014893 End: 48.02674103, -115.84033203		Reviewer: Cooper, Laura Status: Pass

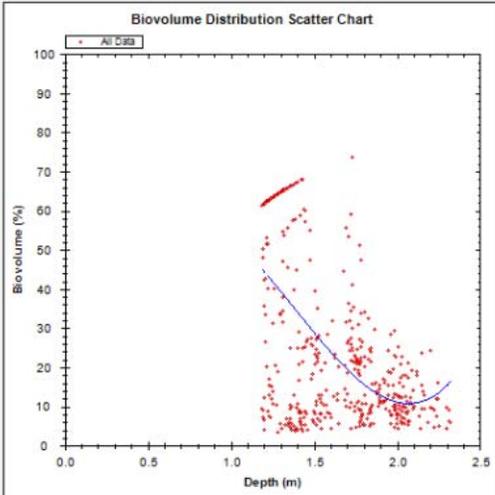
Area of Interest Summary

AOI ?	Type ?	PAC ?	Avg BVp ?	SD BVp ?	Avg BVw ?	SD BVw ?	Depth Range	Avg Depth	Distance	No. Points
1	Point	81.9%	26.6%	±21.3%	21.8%	±21.8%	0.79-3.21 m	1.53 m	492.32 m	520
	Grid	89.3%	23%	±16.7%	20.6%	±17.3%	0.08-2.65 m	1.57 m	-	475

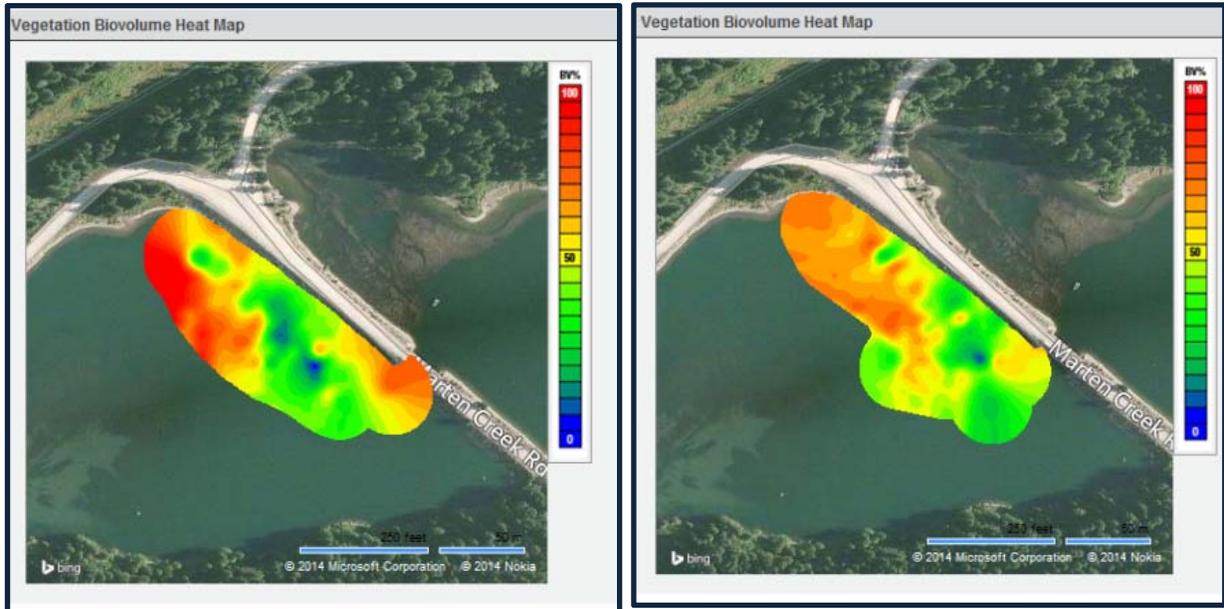
Vegetation Biovolume Heat Map



Biovolume Distribution Scatter Chart



Plot N-4-14: At Time of Treatment (August 21, 2014 Left),
 ~ Six (6) Weeks Post (September 26, 2014 Right)



2014 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 Percent Cover	SAV Bio-Volume	Date Data Collected	SAV Percent Cover	SAV Bio-Volume	Date Data Collected- Post Treatment	SAV % BV Change	Post Treatment EWM Injury Rank	Herbicides Used
Noxon Rapids									
N-4-14	100.00	55.50	8/21/2014	100.00	52.7	9/26/2014	-5%	50% +/-	End/Tri

Observations/Notes N-4-14: Treated with 1.0 ppm triclopyr, 2.0 ppm endothall, estimated at 50% control. Part of plot looks good, other parts of plot not so good and dominated by EWM. Plants have short stubby kind of growth. Part of plot mixed with Sago pondweed and Elodea. Reevaluate efficacy in 2015.

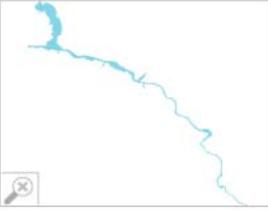
Plot N-4-14: At Time of Treatment (August 21, 2014)

BIOBASE
VEGETATION ANALYSIS REPORT

Noxon Reservoir, Sanders County Montana

Waterbody Size: 3,241.36 ha (8,009.60 acres) [report link](#)

Generated: 9/8/2014 10:04:45 PM (UTC)

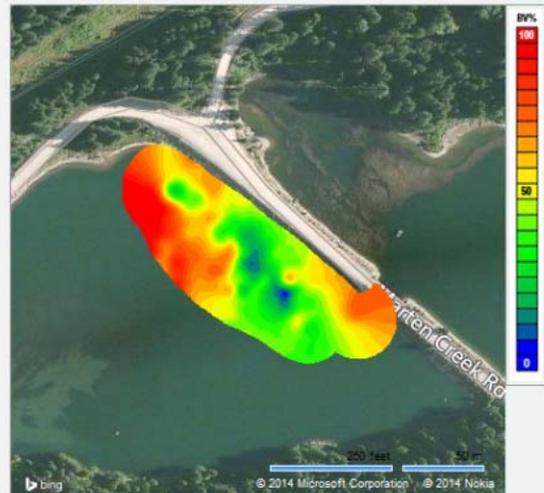


Data Collector	Survey Size	Settings
Thomas McNabb	Area: 1.26 ha (3.10 acres)	Track Buffer: 25 m
Data Collection Date	Percent: 0.04% of waterbody	Grid Cell Size: 5 m
8/21/2014 4:07:39 PM (UTC)	Volume: 19,503.20 cu. m (15.81 acre ft)	Min. BV Detect: 5%
Average Water Temperature		Min. Veg Depth Detect: 0.73152 m
22.13° C (71.84° F)		Offset
Location		0.4572 m
Start: 47.88029099, -115.75004578		No description
End: 47.88051987, -115.75069427		Quality Control
		Reviewer: Cooper, Laura
		Status: Pass
		Thoroughly review trips. Shallow water with dense vegetation is a difficult environment for acoustic mapping.

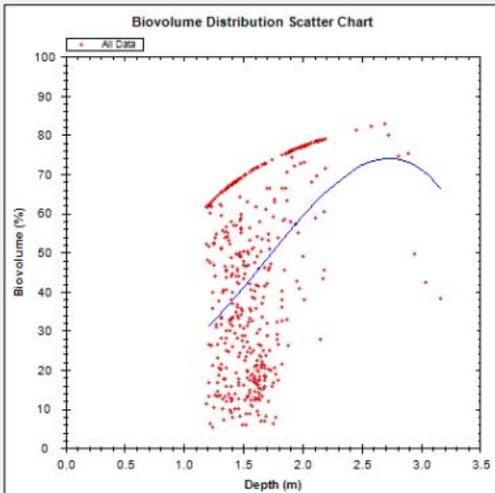
Area of Interest Summary

AOI ?	Type ?	PAC ?	Avg BVp ?	SD BVp ?	Avg BVw ?	SD BVw ?	Depth Range	Avg Depth	Distance	No. Points
1	Point	99.2%	45.4%	±23.4%	45%	±23.7%	0.78-4.06 m	1.44 m	549.04 m	501
	Grid	100%	55.5%	±21.3%	55.5%	±21.3%	0.04-3.64 m	1.4 m	-	273

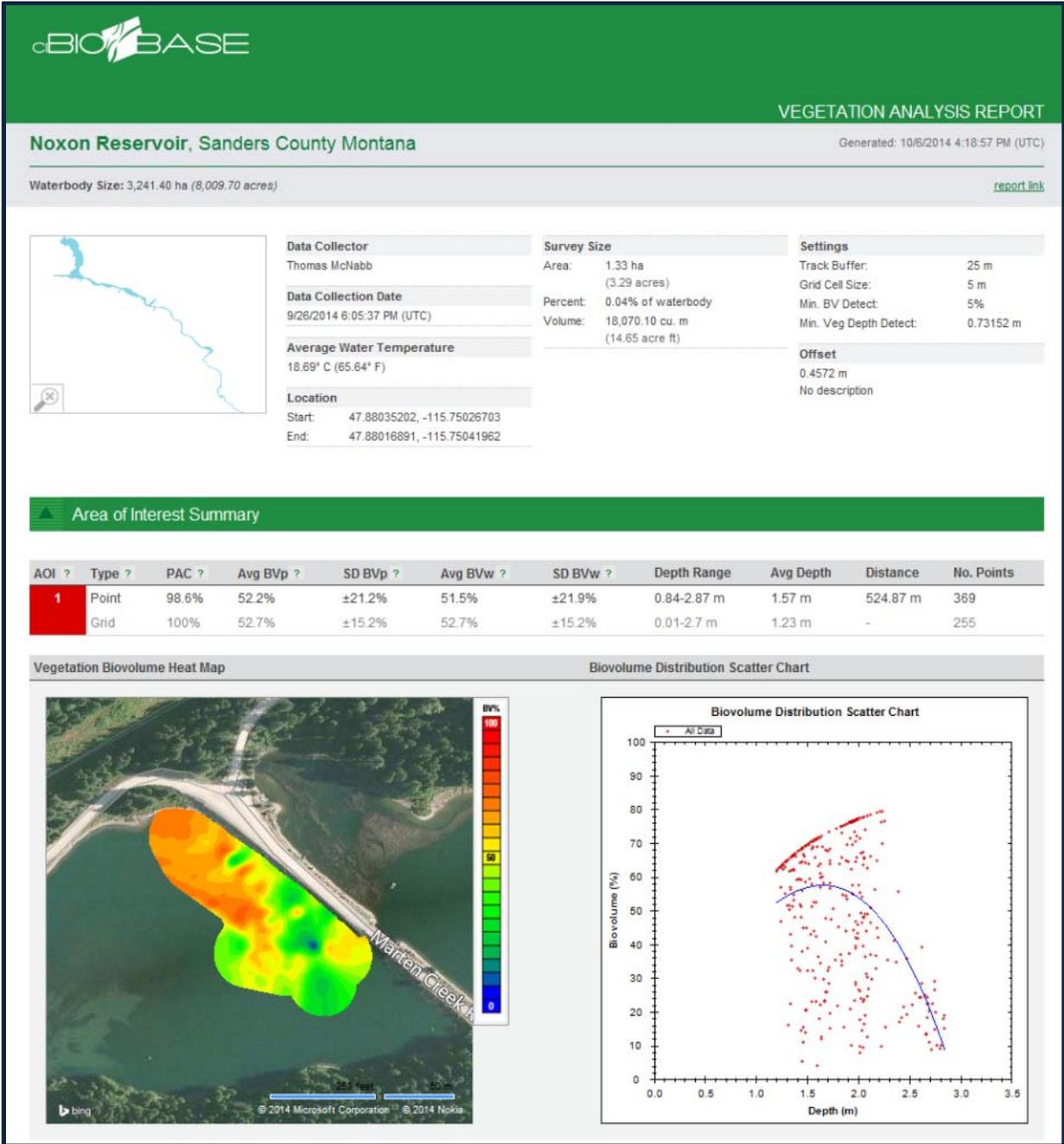
Vegetation Biovolume Heat Map



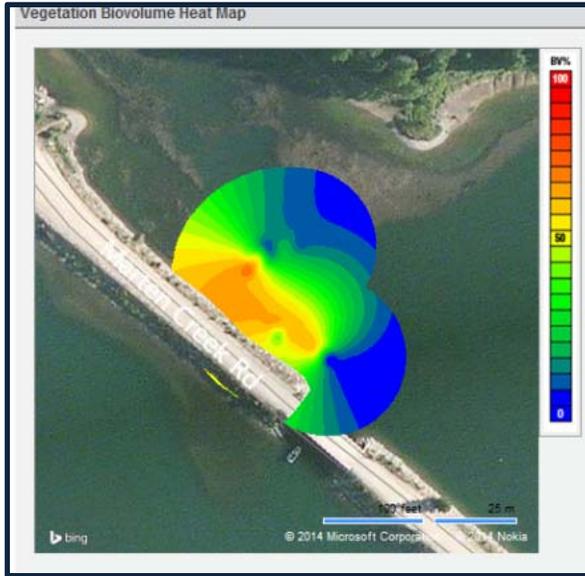
Biovolume Distribution Scatter Chart



Plot N-4-14: ~ Six (6) Weeks Post (September 26, 2014)



**Plot N-5-14: At Time of Treatment (August 21, 2014 Left),
~ Six (6) Weeks Post (September 26, 2014 Right)**

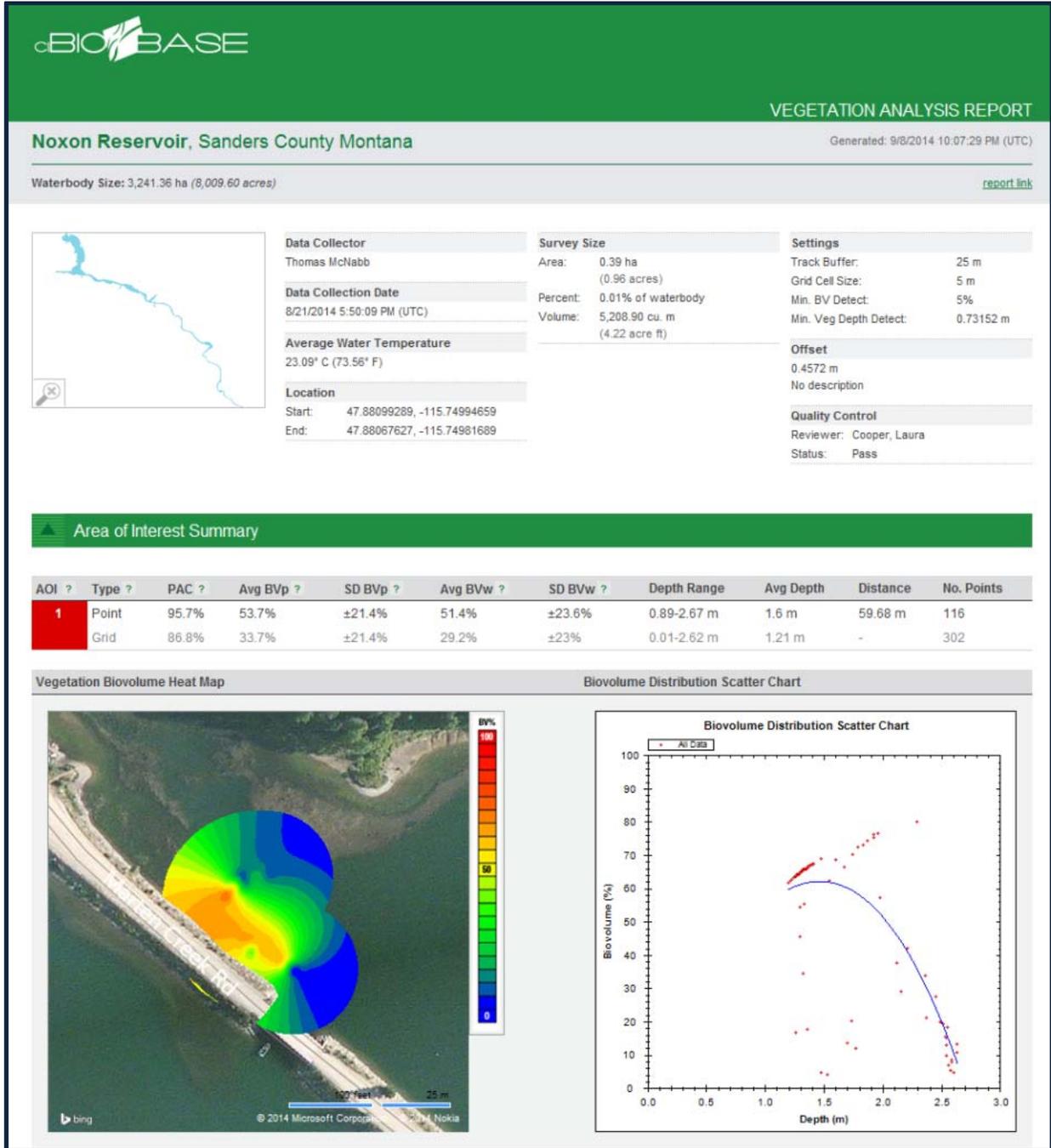


**No ~ Six (6) Weeks Post Treatment
Data Available**

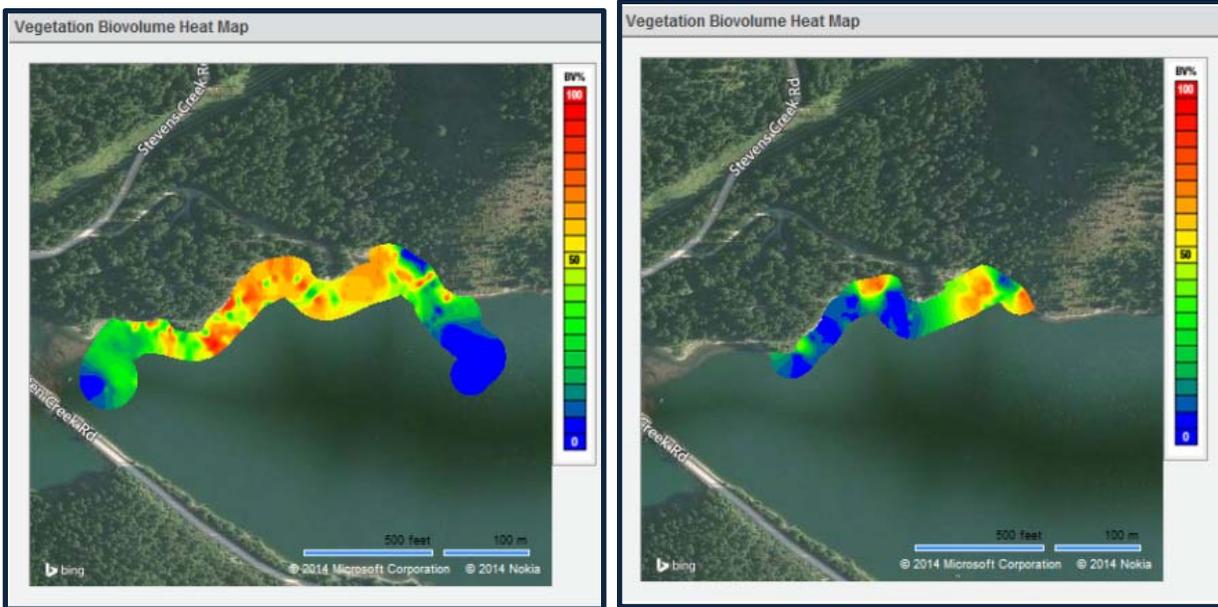
2014 Cabinet Gorge and Noxon Rapids Reservoir's AIS Treatment Plots: At Time of and ~ Six (6) Week Post Plot SAV % Cover and SAV BioVolume Data (Grid Data)									
Plot Number	SAV Percent Cover	SAV Bio-Volume	Date Data Collected	SAV Percent Cover	SAV Bio-Volume	Date Data Collected-Post Treatment	SAV % BV Change	Post Treatment EWM Injury Rank	Herbicides Used
Noxon Rapids									
N-5-14	86.80	33.70	8/21/2014	n/a	n/a	n/a	n/a	70% +/-	Endothall

Observations/Notes N-5-14: Treated with 3.0 ppm endothall, control estimated at 70%. Mixed results, some dead EWM, some sickly impacted EWM on surface.

Plot N-5-14: At Time of Treatment (August 21, 2014)



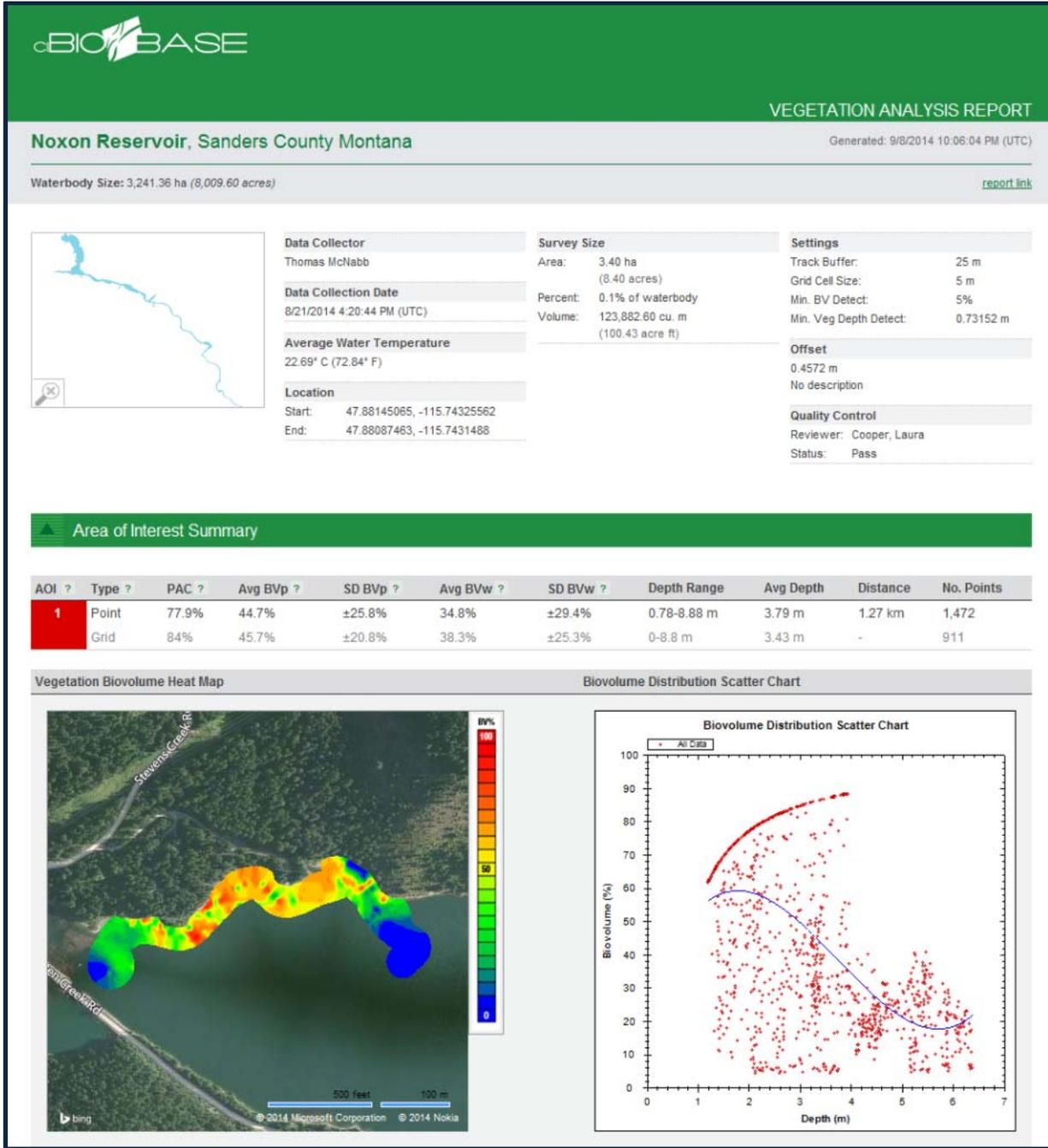
**Plot N-6-14: At Time of Treatment (August 21, 2014 Left),
~ Six (6) weeks Post (September 26, 2014 Right)**



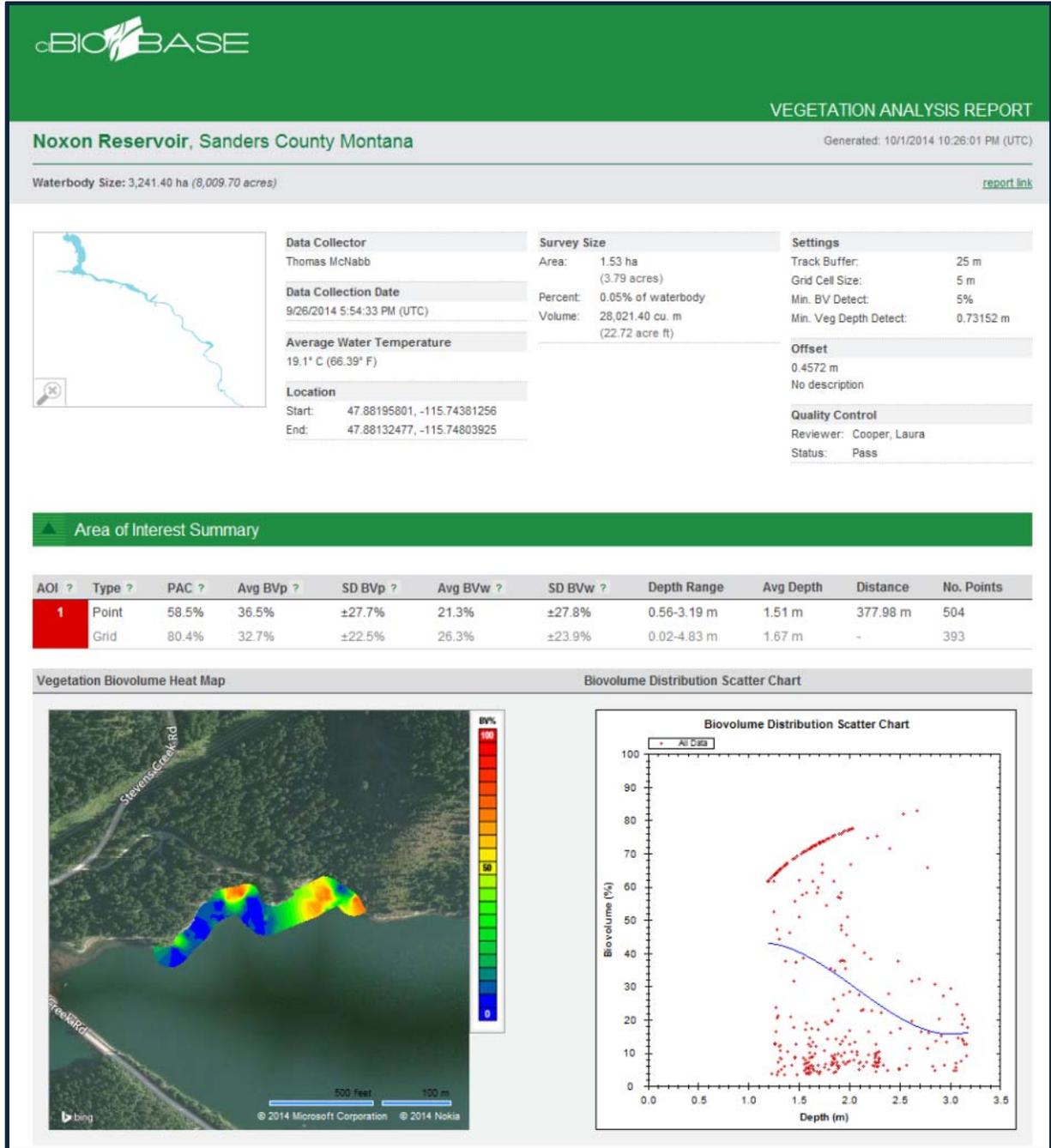
2014 Cabinet Gorge and Noxon Rapids Reservoir's AIS Treatment Plots: At Time of and ~ Six (6) Week Post Plot SAV % Cover and SAV BioVolume Data (Grid Data)									
Plot Number	SAV Percent Cover	SAV Bio-Volume	Date Data Collected	SAV Percent Cover	SAV Bio-Volume	Date Data Collected-Post Treatment	SAV % BV Change	Post Treatment EWM Injury Rank	Herbicides Used
Noxon Rapids									
N-6-14	84.00	45.70	8/21/2014	80.40	32.7	9/26/2014	-28%	55% +/-	End/Tri

Observations/Notes N-6-14: Treated with 1.0 ppm triclopyr, 2.0 ppm endothall, control estimated at 55%. Some topped out EWM, damaged, but roots growing from nodes, has been treated several times over the years, lots of buttercup, plants look weak, some EWM looks beat up. West end of plot looks better in terms of control, plants in the middle of plot don't seem to get impacted from the control efforts. Reevaluate efficacy in 2015.

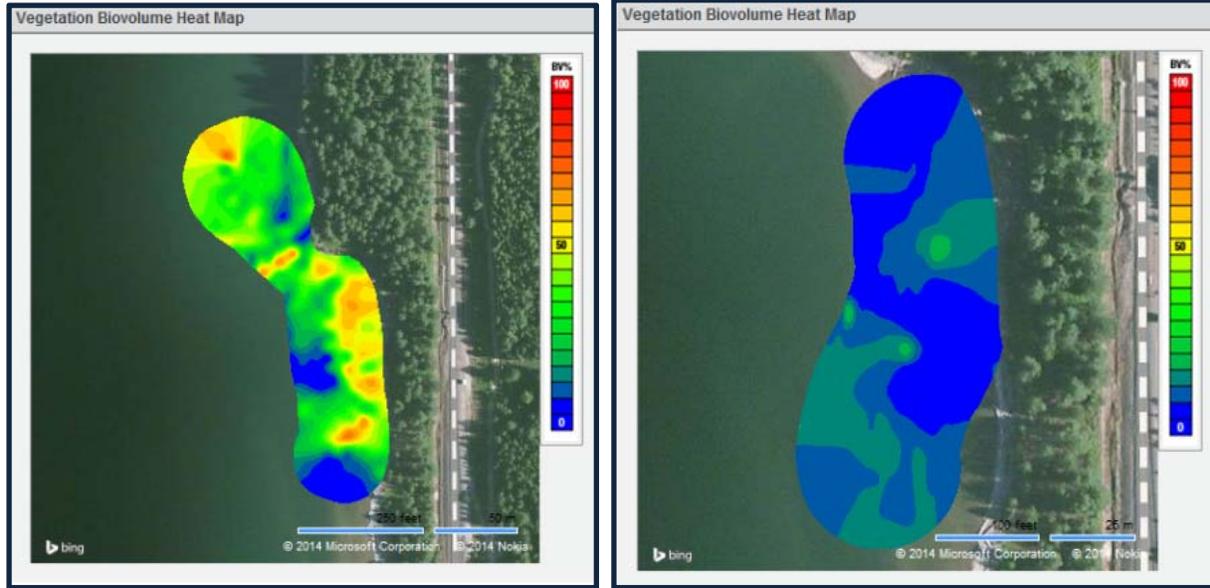
Plot N-6-14: At Time of Treatment (August 21, 2014)



Plot N-6-14: ~ Six (6) Weeks Post (September 26, 2014)



**Plot N-7-14: At Time of Treatment (August 21, 2014 Left),
~ Six (6) Weeks Post (September 26, 2014 Right)**



2014 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 Percent Cover	SAV Bio-Volume	Date Data Collected	SAV Percent Cover	SAV Bio-Volume	Date Data Collected-Post Treatment	SAV % BV Change	Post Treatment EWM Injury Rank	Herbicides Used	
Noxon Rapids										
N-7-14	91.00	35.40	8/21/2014	62.00	9.4	9/26/2014	-73%	95% +/-	Endothall	

Observations/Notes N-7-14: Treated with 3.0 ppm endothall, control estimated at 95%. Dead Flowering Rush (FR) lying on bottom.

Plot N-7-14: At Time of Treatment (August 21, 2014)

cBIOBASE
VEGETATION ANALYSIS REPORT

Noxon Reservoir, Sanders County Montana

Waterbody Size: 3,241.36 ha (8,009.60 acres) [report link](#)

Generated: 9/8/2014 10:05:32 PM (UTC)

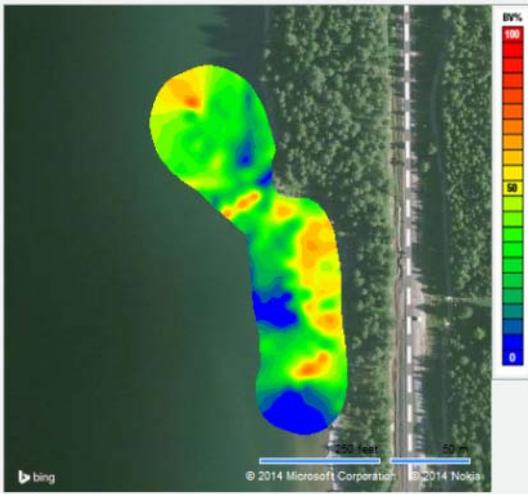


Data Collector		Survey Size		Settings	
Thomas McNabb		Area: 1.47 ha (3.83 acres)		Track Buffer: 25 m	
Data Collection Date		Percent: 0.05% of waterbody		Grid Cell Size: 5 m	
8/21/2014 4:46:33 PM (UTC)		Volume: 30,707.20 cu. m (24.89 acre ft)		Min. BV Detect: 5%	
Average Water Temperature				Min. Veg Depth Detect: 0.73152 m	
22.76° C (72.97° F)					
Location				Offset	
Start: 47.91617203, -115.69121552				0.4572 m	
End: 47.91685104, -115.69155121				No description	
				Quality Control	
				Reviewer: Cooper, Laura	
				Status: Pass	

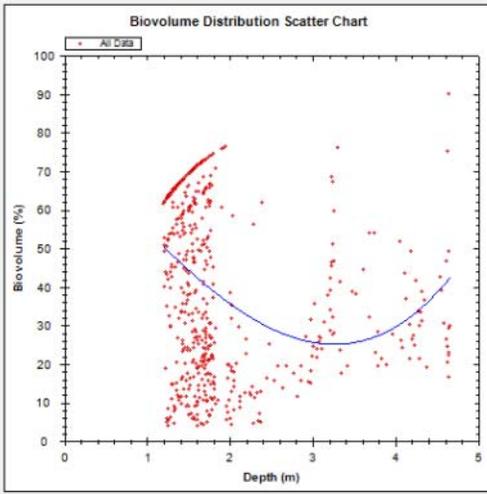
▲ Area of Interest Summary

AOI ?	Type ?	PAC ?	Avg BVp ?	SD BVp ?	Avg BVw ?	SD BVw ?	Depth Range	Avg Depth	Distance	No. Points
1	Point	92.9%	42%	±22.1%	39.1%	±23.9%	0.77-4.75 m	1.73 m	547.46 m	621
	Grid	91%	35.4%	±16.4%	32.2%	±18.6%	0.04-4.74 m	1.95 m	-	365

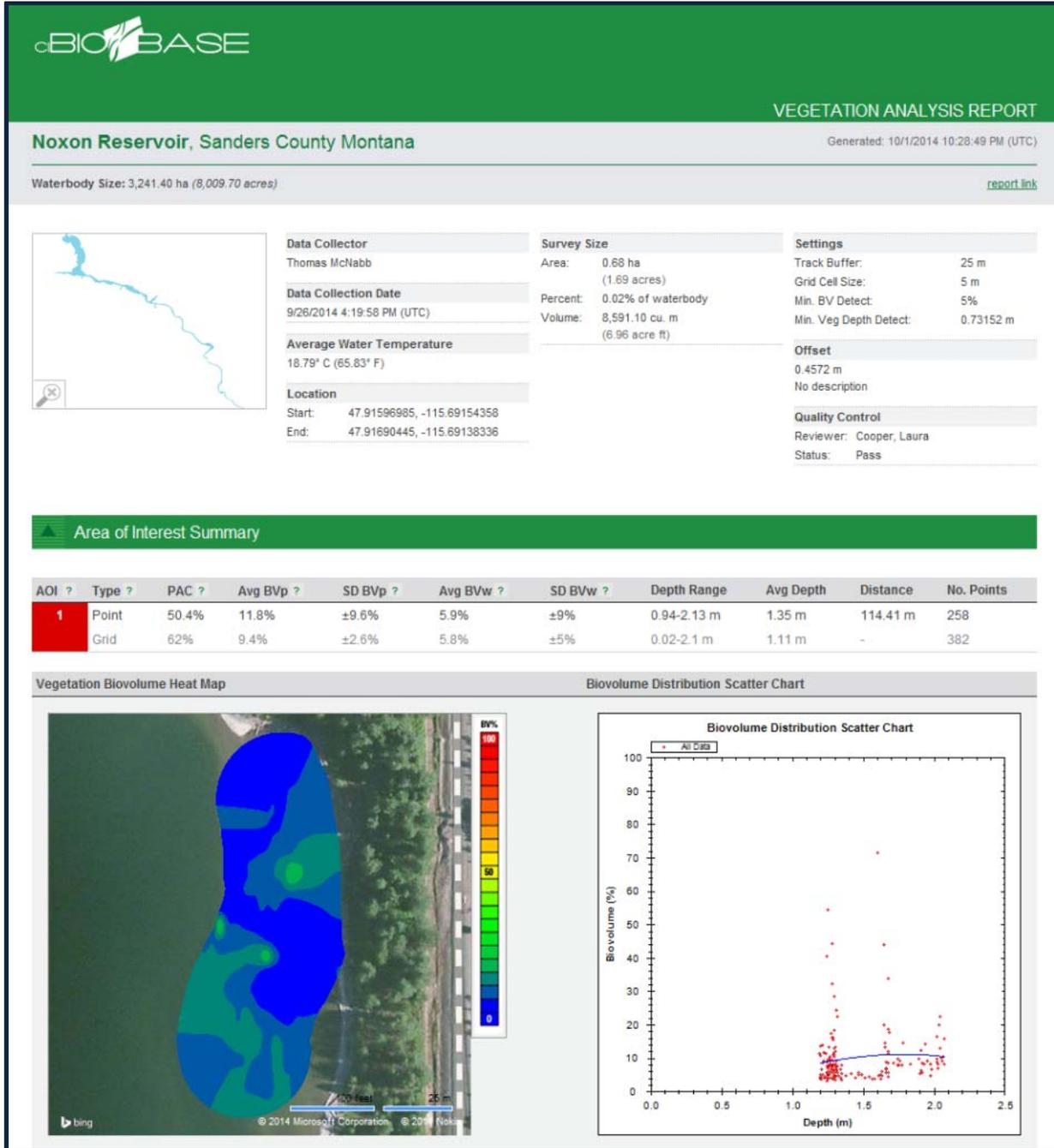
Vegetation Biovolume Heat Map



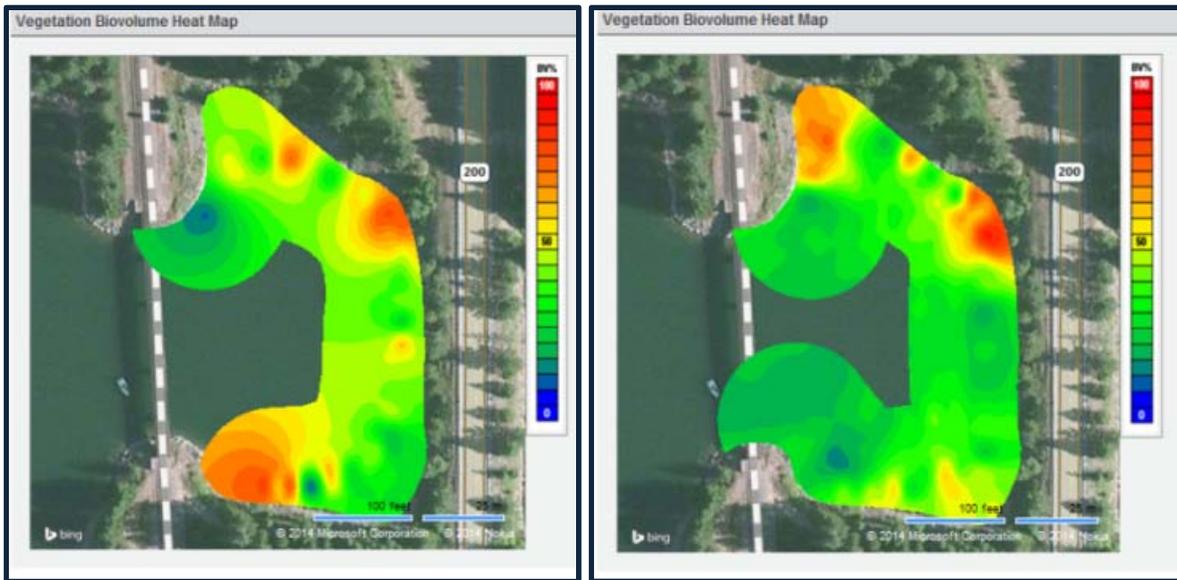
Biovolume Distribution Scatter Chart



Plot N-7-14: ~ Six (6) Weeks Post (September 26, 2014)



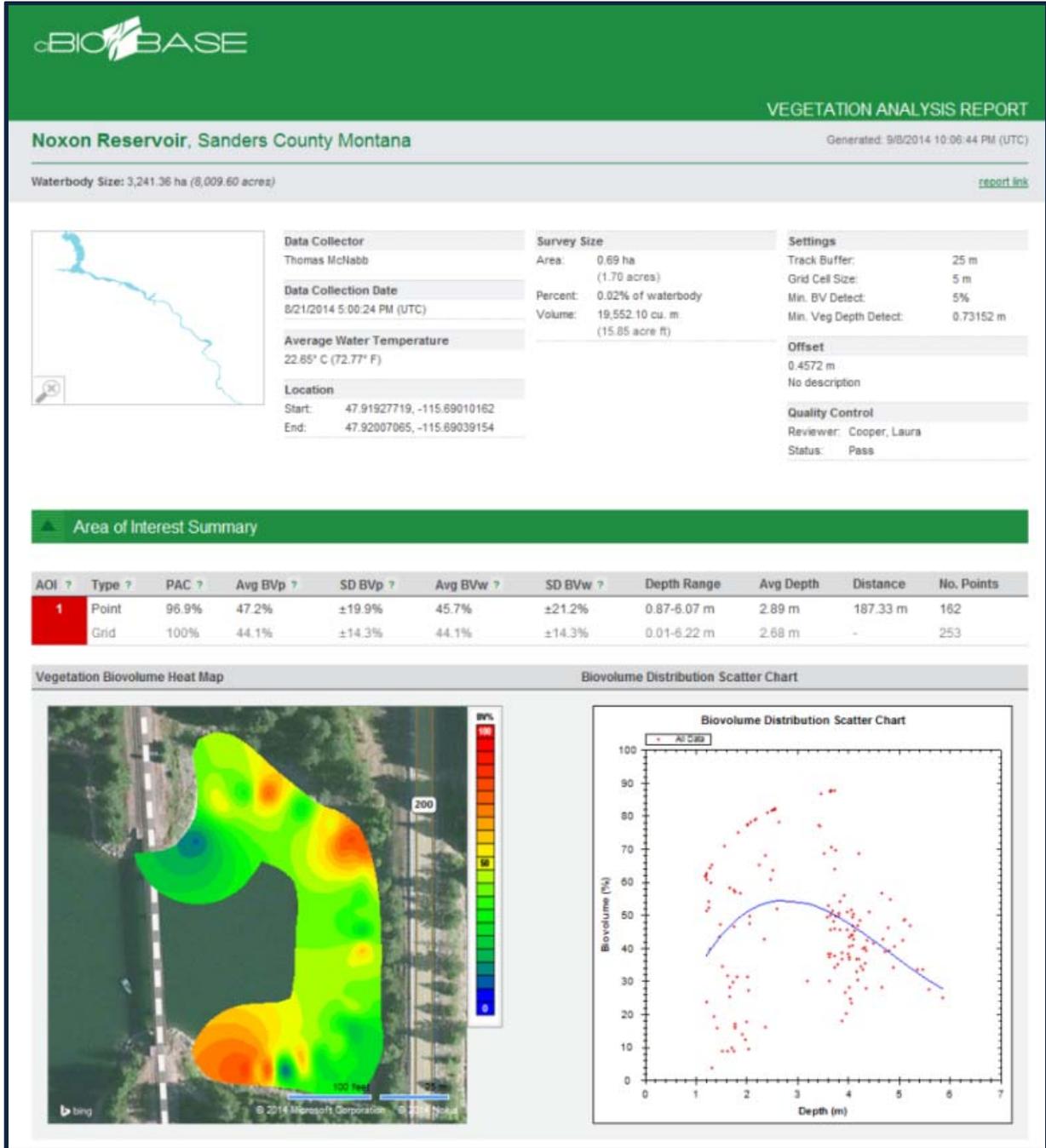
**Plot N-8-14: At Time of Treatment (August 21, 2014 Left),
~ Six (6) Weeks Post (September 26, 2014 Right)**



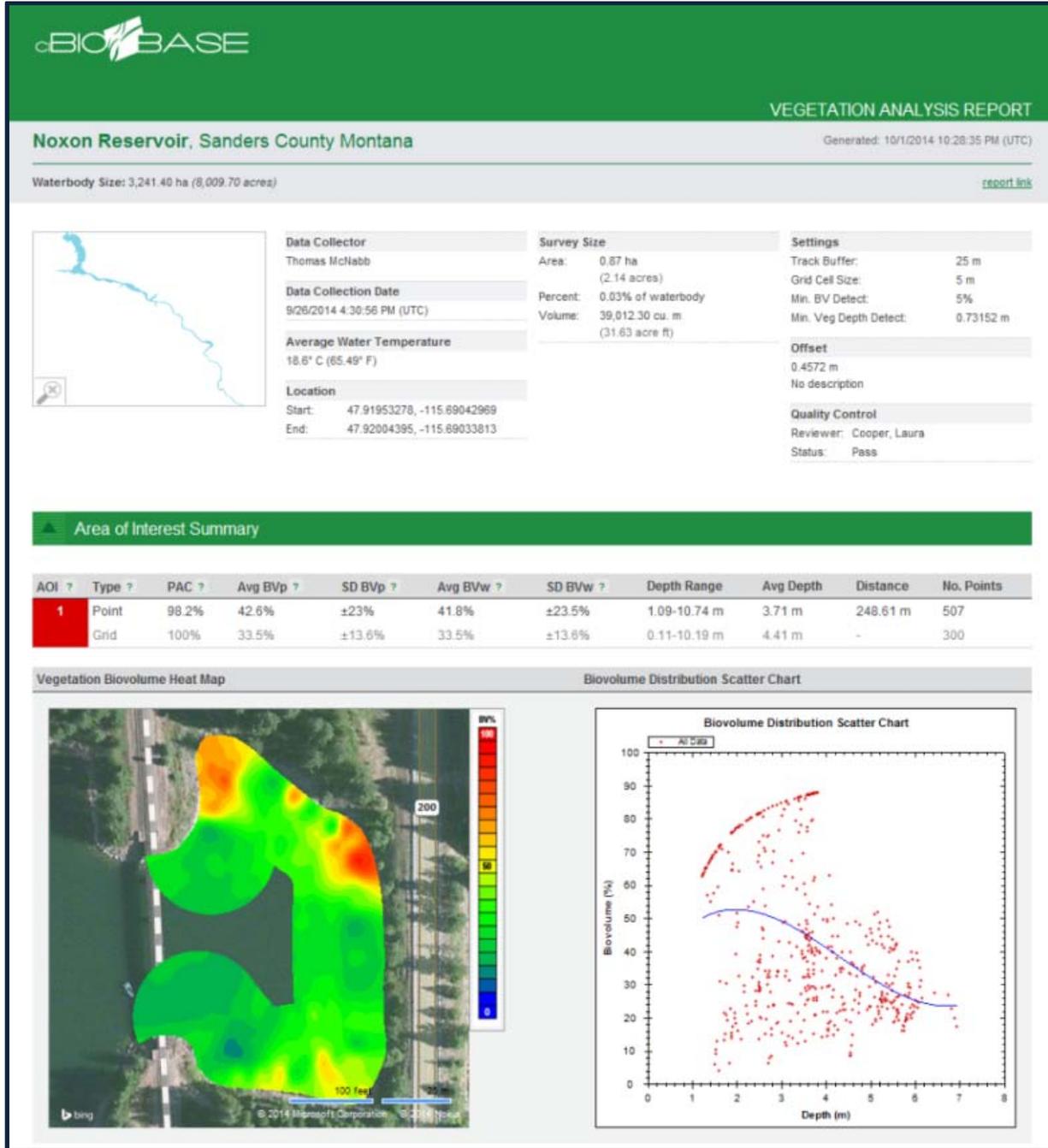
2014 Cabinet Gorge and Noxon Rapids Reservoir's AIS Treatment Plots: At Time of and ~ Six (6) Week Post Plot SAV % Cover and SAV BioVolume Data (Grid Data)										
Plot Number	SAV Percent Cover	SAV Bio-Volume	Date Data Collected	SAV Percent Cover	SAV Bio-Volume	Date Data Collected-Post Treatment	SAV % BV Change	Post Treatment EWM Injury Rank	Herbicides Used	
Noxon Rapids										
N-8-14	100.00	44.10	8/21/2014	100.00	33.5	9/26/2014	-24%	50% +/-	Endothall	

Observations/Notes N-8-14: Treated with 3.0 ppm endothall, control estimated at 50%. EWM mixed with native milfoil. EWM topped and flowering in corners of plot.

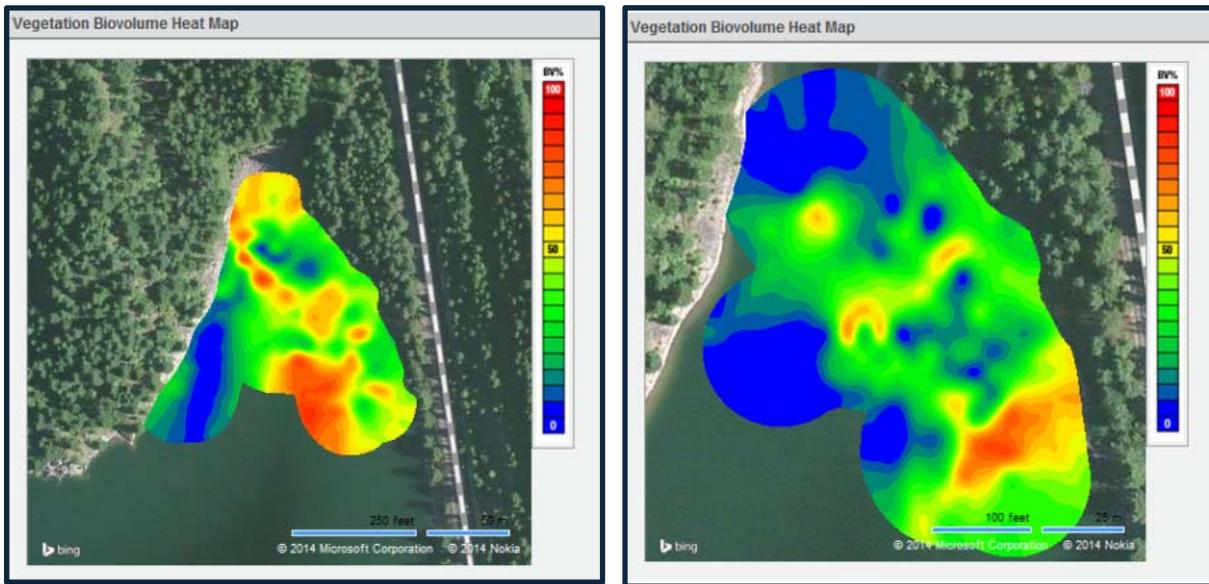
Plot N-8-14: At Time of Treatment (August 21, 2014)



Plot N-8-14: ~ Six (6) Weeks Post (September 26, 2014)



**Plot N-9-14: At Time of Treatment (August 21, 2014 Left),
~ Six (6) Weeks Post (September 26, 2014 Right)**



2014 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 Percent Cover	SAV Bio-Volume	Date Data Collected	SAV Percent Cover	SAV Bio-Volume	Date Data Collected-Post Treatment	SAV % BV Change	Post Treatment EWM Injury Rank	Herbicides Used
Noxon Rapids									
N-9-14	92.60	42.90	8/21/2014	79.60	31.0	9/26/2014	-28%	65% +/-	Endothall

Observations/Notes N-9-14: Treated with 3.0 ppm endothall, control estimated at 65%. Plants in various degrees of control in some spots. Plot also has native milfoil present.

Plot N-9-14: At Time of Treatment (August 21, 2014)

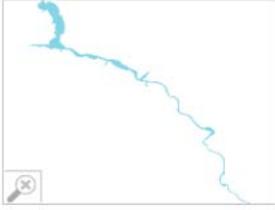


VEGETATION ANALYSIS REPORT

Noxon Reservoir, Sanders County Montana

Waterbody Size: 3,241.36 ha (8,009.60 acres) [report link](#)

Generated: 9/8/2014 10:08:30 PM (UTC)

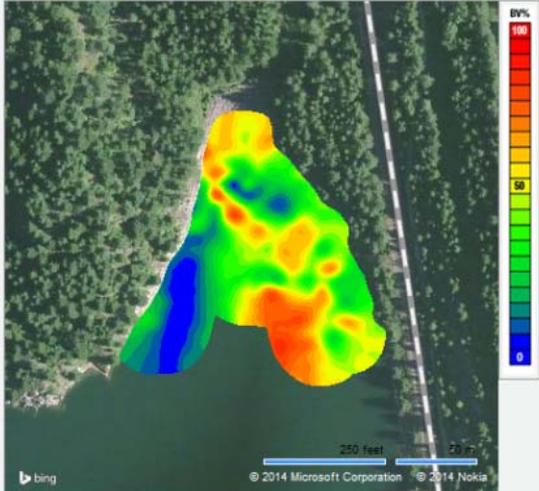


Data Collector	Survey Size	Settings
Thomas McNabb	Area: 1.68 ha (4.15 acres)	Track Buffer: 25 m Grid Cell Size: 5 m
Data Collection Date	Percent: 0.05% of waterbody	Min. BV Detect: 5%
8/21/2014 5:10:04 PM (UTC)	Volume: 57,955.40 cu. m (46.99 acre ft)	Min. Veg Depth Detect: 0.73152 m
Average Water Temperature	Offset	
22.75° C (72.95° F)	0.4572 m No description	
Location	Quality Control	
Start: 47.93416595, -115.69655609	Reviewer: Cooper, Laura	
End: 47.93444824, -115.697052	Status: Pass	

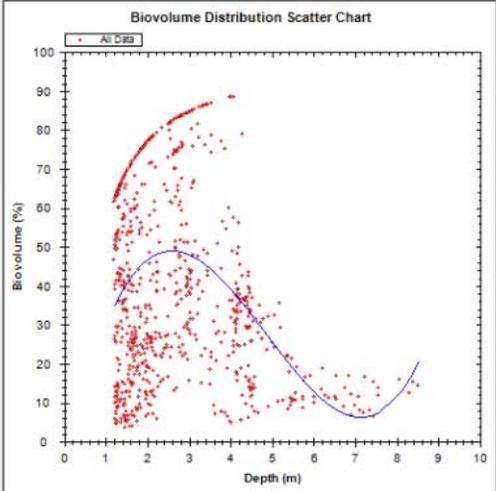
Area of Interest Summary

AOI ?	Type ?	PAC ?	Avg BVp ?	SD BVp ?	Avg BVw ?	SD BVw ?	Depth Range	Avg Depth	Distance	No. Points
1	Point	88%	40.7%	±24.1%	35.8%	±26.2%	0.9-14.23 m	3.02 m	870.03 m	851
	Grid	92.6%	42.9%	±20.8%	39.7%	±22.9%	0.02-13.37 m	3.29 m	-	326

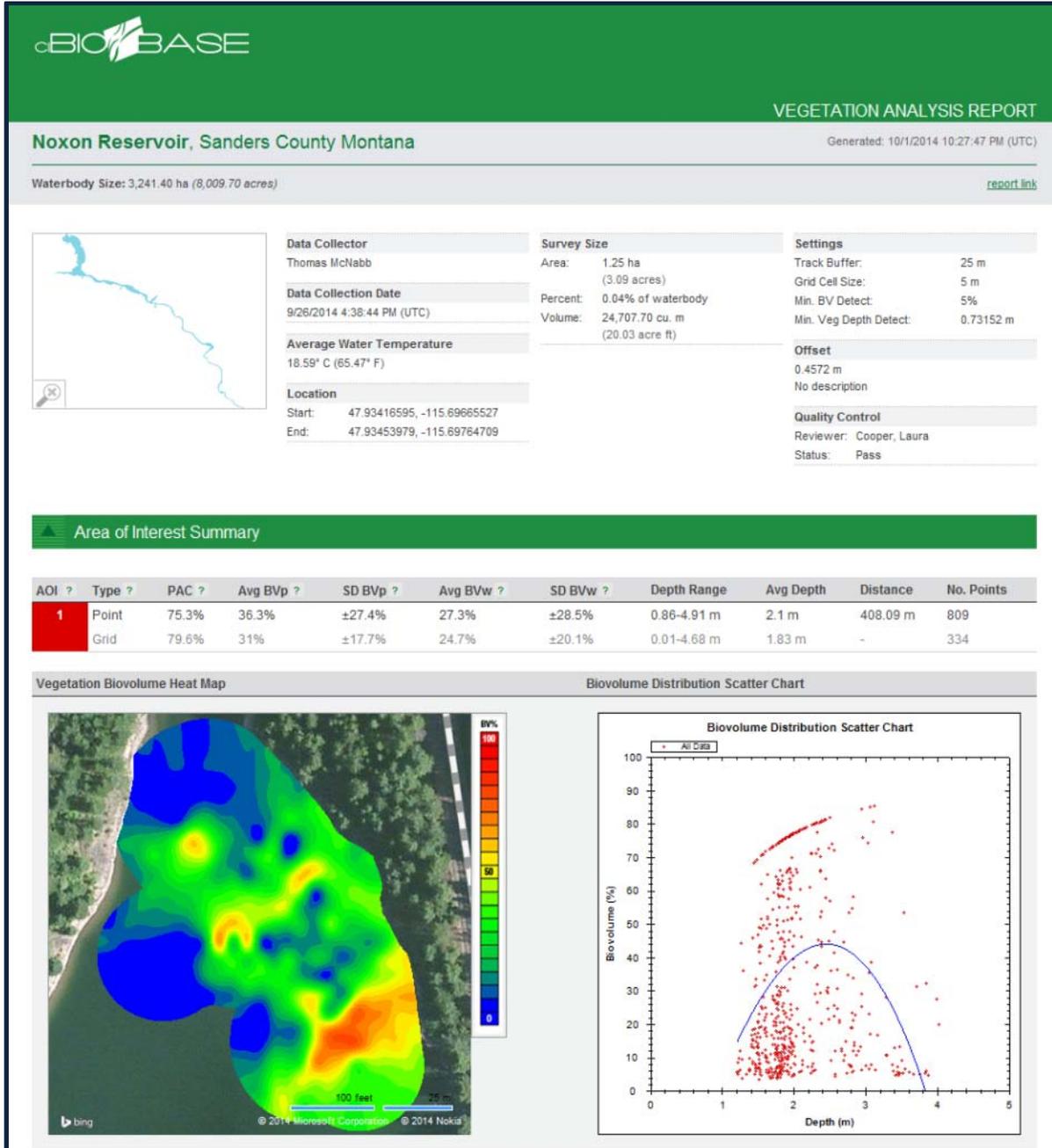
Vegetation Biovolume Heat Map



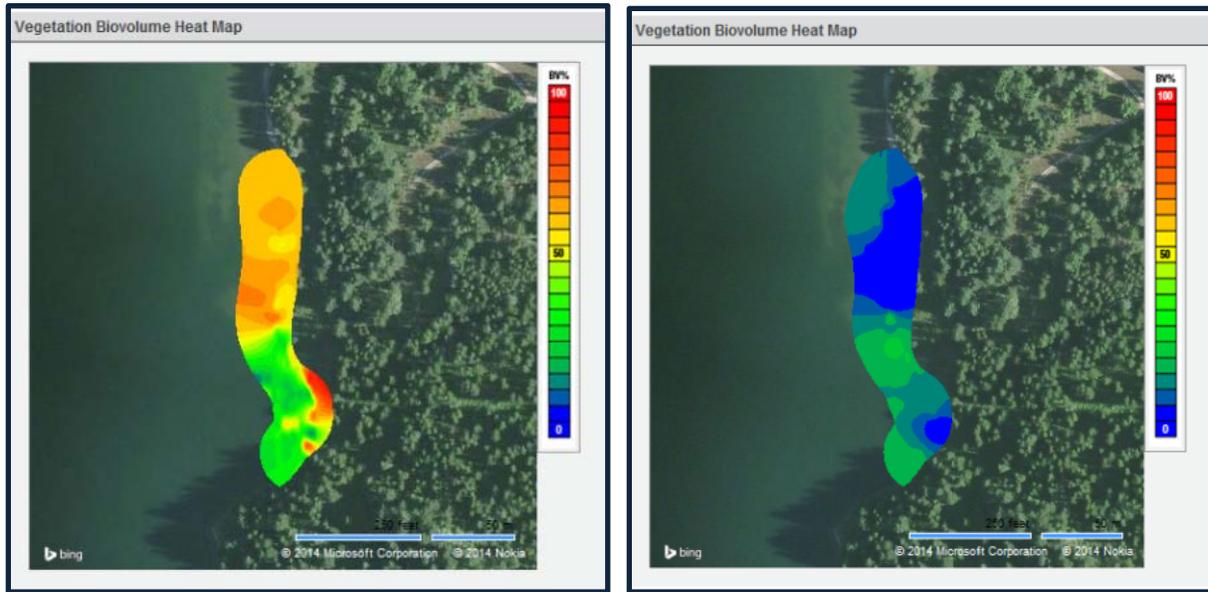
Biovolume Distribution Scatter Chart



Plot N-9-14: ~ Six (6) Weeks Post (September 26, 2014)



**Plot N-10-14: At Time of Treatment (August 21, 2014 Left),
~Six (6) Weeks Post (September 26, 2014 Right)**



2014 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 Percent Cover	SAV Bio-Volume	Date Data Collected	SAV Percent Cover	SAV Bio-Volume	Date Data Collected-Post Treatment	SAV % BV Change	Post Treatment EWM Injury Rank	Herbicides Used
Noxon Rapids									
N-10-14	100.00	53.30	8/21/2014	67.40	13.3	9/26/2014	-75%	90% +/-	Endothall

Observations/Notes N-10-14: Treated with 3.0 ppm endothall, control estimated at 90%+. EWM well controlled, Flowering Rush didn't take as big a hit in this plot as other plots, but in deeper water it is impacted or dead.

Plot N-10-14: At Time of Treatment (August 21, 2014)

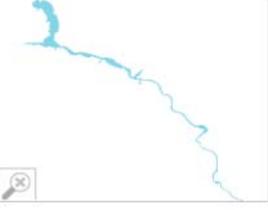


VEGETATION ANALYSIS REPORT

Noxon Reservoir, Sanders County Montana

Waterbody Size: 3,241.36 ha (8,009.60 acres) [report link](#)

Generated: 9/8/2014 10:07:16 PM (UTC)

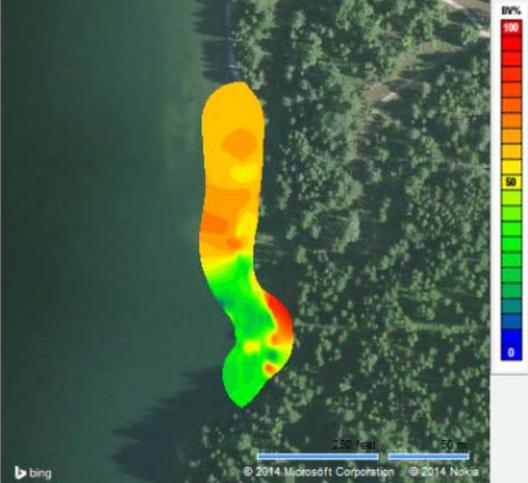


Data Collector	Survey Size	Settings
Thomas McNabb	Area: 0.83 ha (2.05 acres)	Track Buffer: 25 m
Data Collection Date	Percent: 0.03% of waterbody	Grid Cell Size: 5 m
8/21/2014 5:23:55 PM (UTC)	Volume: 13,815.90 cu. m (11.20 acre ft)	Min. BV Detect: 5%
Average Water Temperature		Min. Veg Depth Detect: 0.73152 m
22.8° C (73.04° F)		Offset
Location		0.4572 m
Start: 47.93818665, -115.70102692		No description
End: 47.93989182, -115.70132446		Quality Control
		Reviewer: Cooper, Laura
		Status: Pass

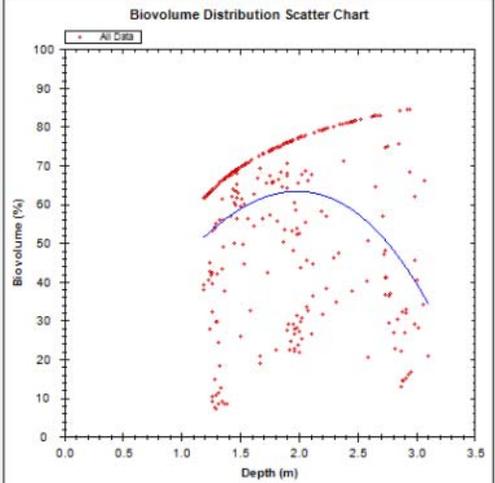
Area of Interest Summary

AOI ?	Type ?	PAC ?	Avg BVp ?	SD BVp ?	Avg BVw ?	SD BVw ?	Depth Range	Avg Depth	Distance	No. Points
1	Point	99.2%	57.3%	±19.9%	56.8%	±20.5%	0.87-3.38 m	1.72 m	205.59 m	362
	Grid	100%	53.3%	±16.3%	53.3%	±16.3%	0.02-3.53 m	1.59 m	-	403

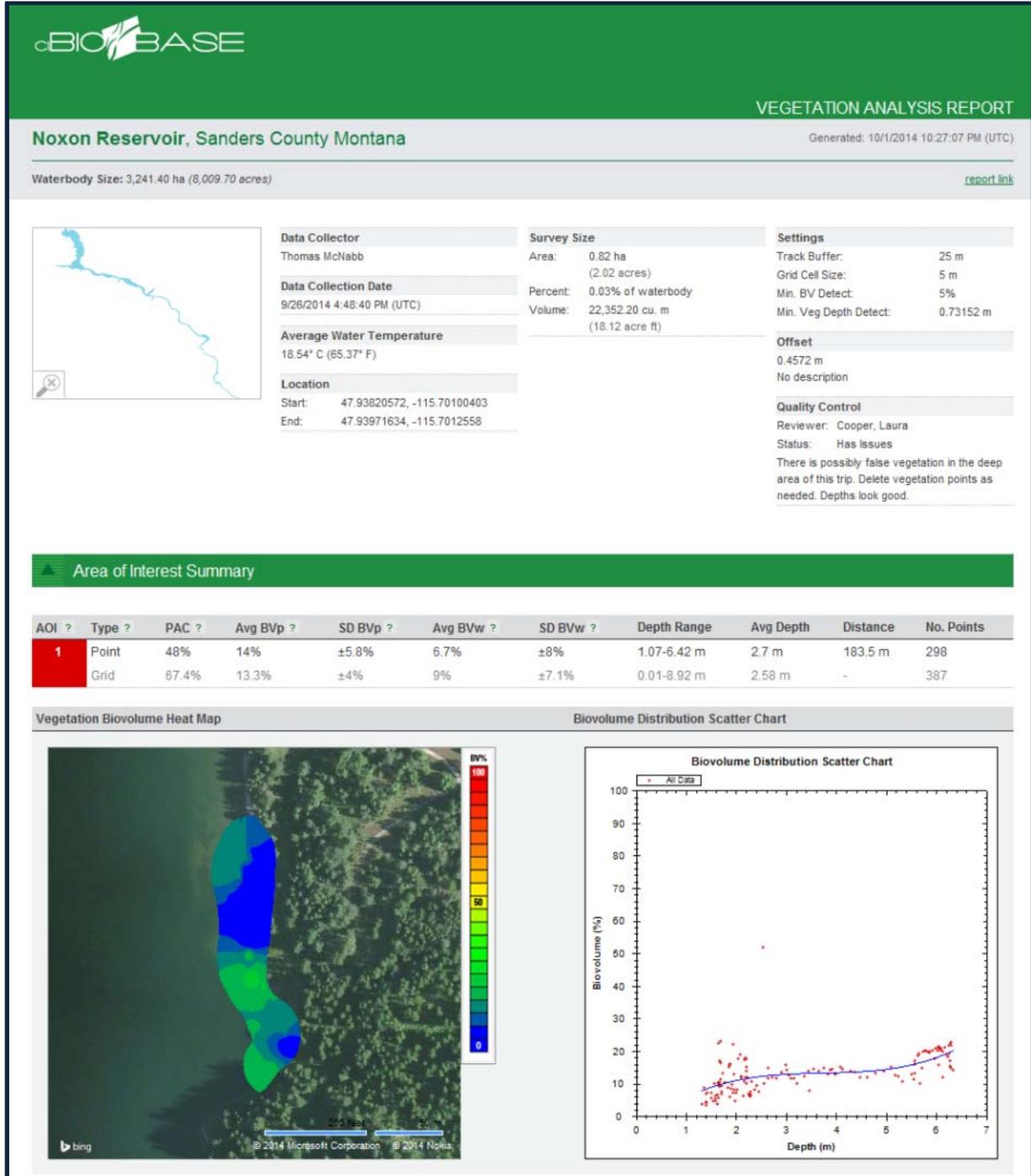
Vegetation Biovolume Heat Map



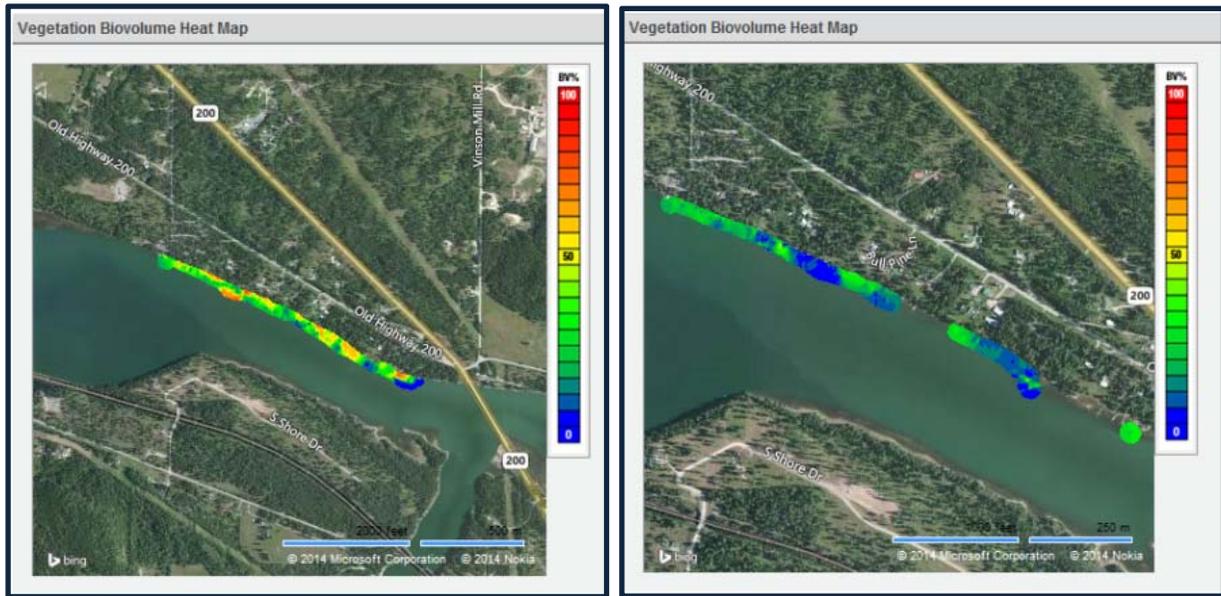
Biovolume Distribution Scatter Chart



Plot N-10-14: ~ Six (6) Weeks Post (September 26, 2014)



**Plot N-12-14: At Time of Treatment (August 21, 2014 Left),
~ Six (6) Weeks Post (September 26, 2014 Right)**



2014 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 Percent Cover	SAV Bio-Volume	Date Data Collected	SAV Percent Cover	SAV Bio-Volume	Date Data Collected-Post Treatment	SAV % BV Change	Post Treatment EWM Injury Rank	Herbicides Used
Noxon Rapids									
N-12-14	94.30	36.90	8/21/2014	85.00	17.5	9/26/2014	-53%	85% +/-	End/Tri

Observations/Notes N-12-14: Treated with 1.0 ppm triclopyr, 2.0 ppm endothall, control estimated at 85%. Narrow band of EWM remains along shore side of plot, native milfoil present, deeper side of plot contains elodea and coontail.

Plot N-12-14: At Time of Treatment (August 21, 2014)

cBIOBASE
VEGETATION ANALYSIS REPORT

Noxon Reservoir, Sanders County Montana

Waterbody Size: 3,241.40 ha (8,009.70 acres) [report link](#)

Generated: 10/8/2014 1:09:38 AM (UTC)

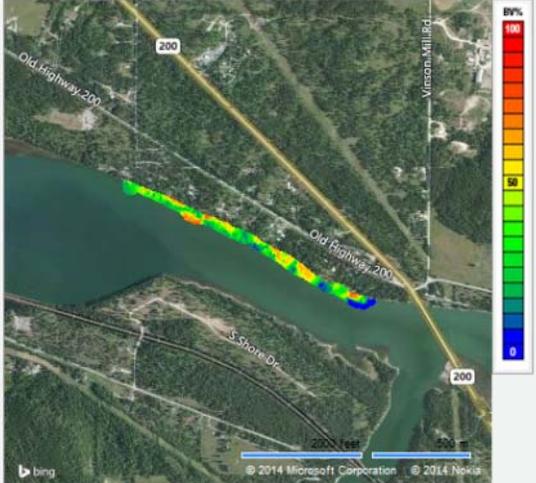


Data Collector	Survey Size	Settings
Thomas McNabb	Area: 8.81 ha (21.76 acres)	Track Buffer: 25 m
Data Collection Date	Percent: 0.27% of waterbody	Grid Cell Size: 5 m
8/21/2014 3:46:12 PM (UTC)	Volume: 233,409.70 cu. m (189.23 acre ft)	Min. BV Detect: 5%
Average Water Temperature		Min. Veg Depth Detect: 0.73152 m
22.56° C (72.6° F)		Offset
Location		0.4572 m
Start: 47.85503387, -115.61535645		No description
End: 47.85480881, -115.61546326		Quality Control
		Reviewer: Clifford, Patrick
		Status: Has Issues
		Several different problems exist with this sonar log, GPS error, transducer hit bottom or debris, dramatic speed changes that generated false depths. Recommend not using these outputs for merging or analysis.

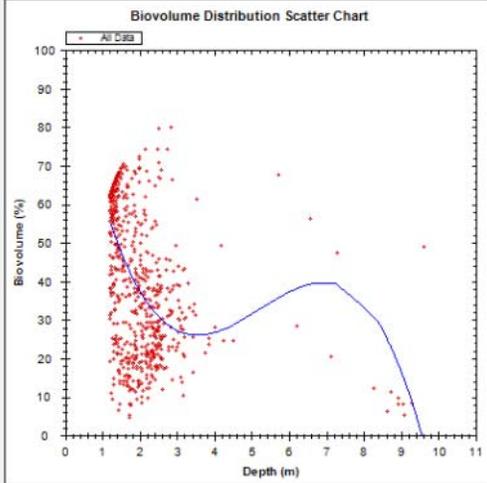
Area of Interest Summary

AOI ?	Type ?	PAC ?	Avg BVp ?	SD BVp ?	Avg BVw ?	SD BVw ?	Depth Range	Avg Depth	Distance	No. Points
1	Point	91.3%	41.8%	±19.4%	38.2%	±21.9%	0.84-21.83 m	2.35 m	3.06 km	826
	Grid	94.3%	36.9%	±17.6%	34.8%	±19.1%	0.01-21.11 m	2.42 m	-	2,794

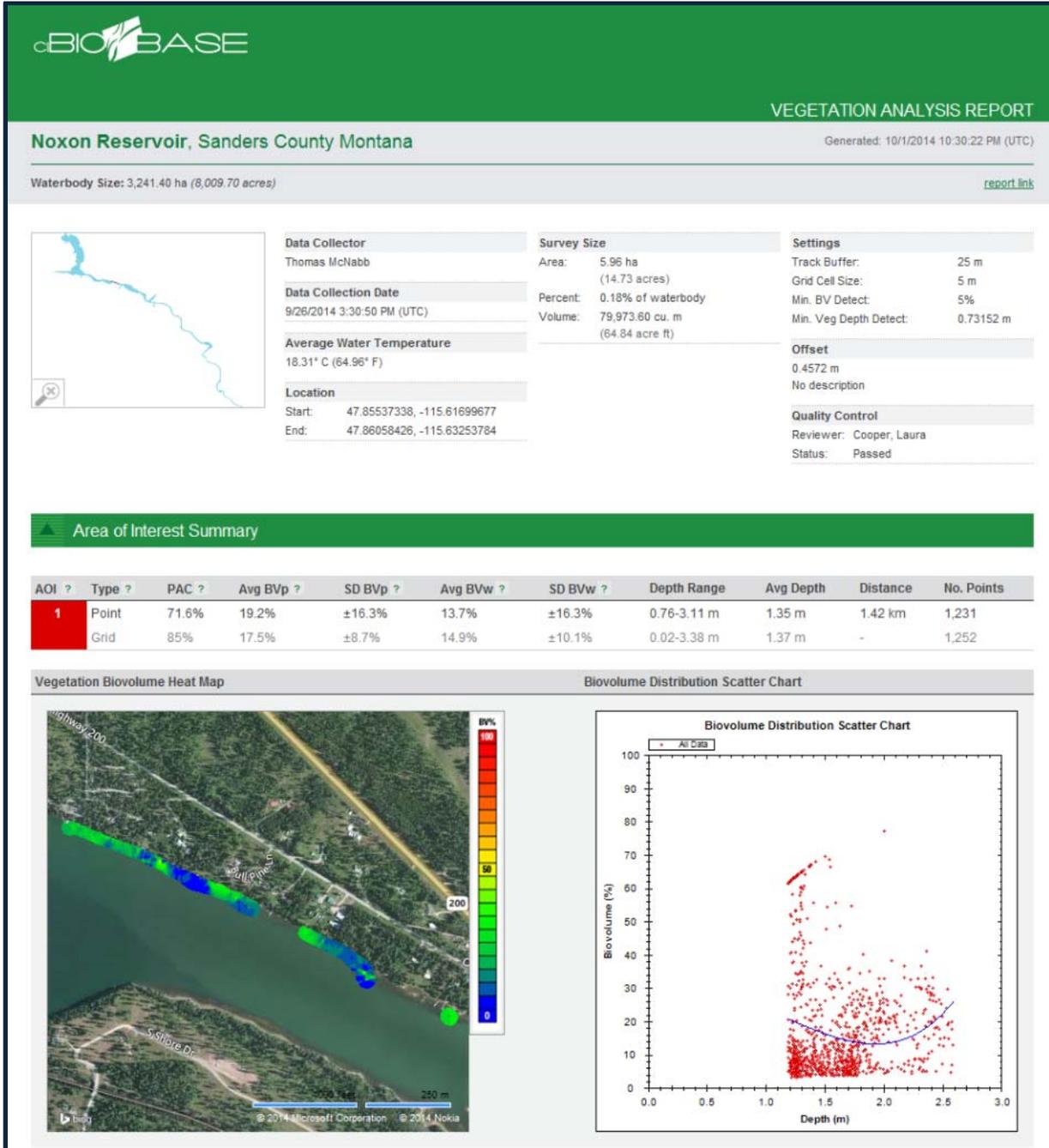
Vegetation Biovolume Heat Map



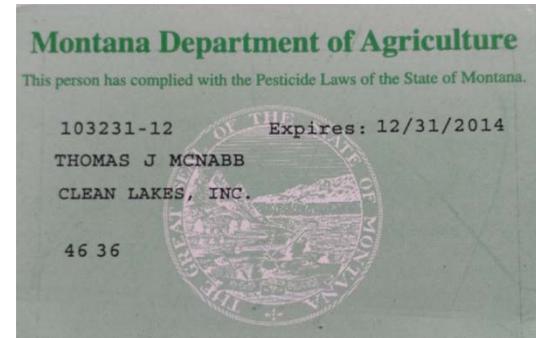
Biovolume Distribution Scatter Chart



Plot N-12-14: ~ Six (6) Weeks Post (September 26, 2014)

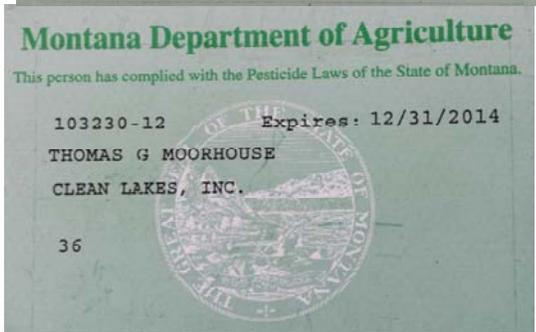


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Moose observed on Noxon Rapids Reservoir during July 10, 2014 survey
(photo courtesy of Celestine Duncan)

END OF AQUATIC PESTICIDE APPLICATION REPORT