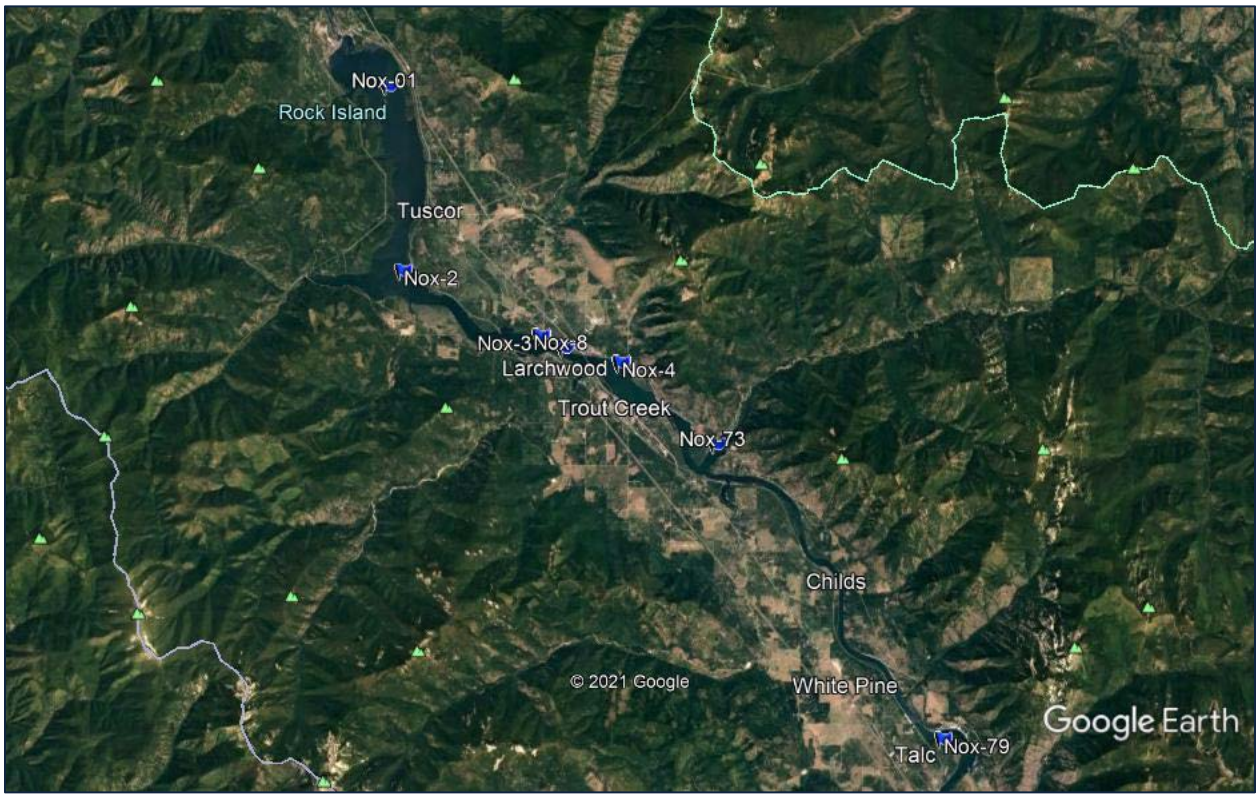
CLEAN LAKES INC.

NOXON RAPIDS RESERVOIR
SANDERS COUNTY, MONTANA

2021 Aquatic Invasive Species (AIS)
Aquatic Pesticide Application Report (APAR)



Prepared By:

CLEAN LAKES INC.

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P. O. Box 3548
Coeur d'Alene, Idaho 83814

Prepared For:
Sanders County
1111 Main Street
Thompson Falls, MT 59873

October 2021

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 Reservoir in August 2021. 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 Reservoir, Sanders County, Montana 2021 Aquatic Invasive Species Aquatic Pesticide Application Plan (APAP)[1].

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 a total of 63.96 acres within previously identified and demarcated areas of Noxon Rapids Reservoir.

PRE-TREATMENT SURVEYS: In July 2021 Craig McLane (Montana Fish, Wildlife and Parks (MTFWP)) carried out visual and point intercept surveys in areas where nuisance growths of aquatic invasive species (AIS) were identified in previous surveys. On July 20, 2021, CLI received the 2021 treatment GIS polygons and survey points from Kim McMahon. CLI developed a budgetary plan on July 22, 2021 with a final plan approved that day. A treatment day was established for the week of August 2, 2021.

SUMMARY OF ACRES TREATED: The final plan consisted of treating 63.96 acres of EWM and CLP in Noxon Rapids Reservoir. Treatment plots were identified through GIS shapefiles and treatment plans at the direction of the county.

TREATMENT SCHEDULE: The aquatic herbicide applications were performed on Wednesday, August 4, 2021, by CLI staff Thomas Moorhouse and Drew McNabb as outlined in Table 1 below:

[1] NOXON RAPIDS RESERVOIR, SANDERS COUNTY, MONTANA, 2021 AIS Aquatic Pesticide Application Plan (APAP)

Table 1: Treatment Plots, Dates and Times

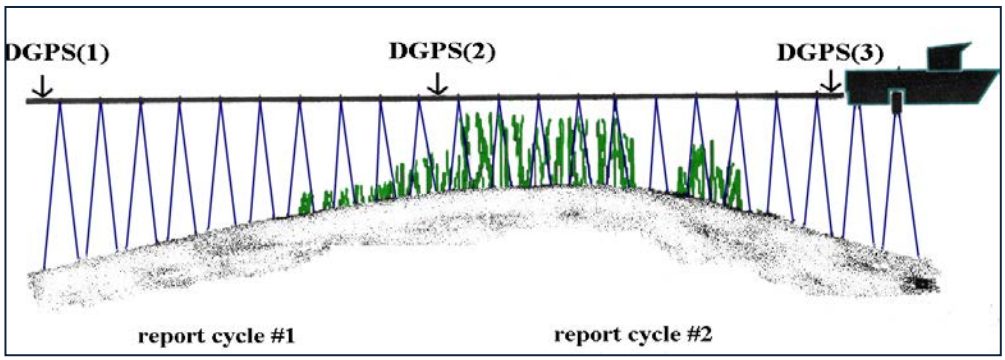
2021 Noxon Rapids Reservoir Treatment Plan									
Plot Number	Acreage (Ac)	Mean Depth (ft)	Date	Start	Stop	Wind (mph)	Wind from Direction	Sky	Water Temp (F)
NOX-03	1.34	8.4	8/4/2021	6:16 PM	6:26 PM	6	N	PC	80.80
NOX-73	0.51	5.4	8/4/2021	6:51 PM	6:55 PM	4	W	PC	79.90
NOX-79	1.00	6.6	8/4/2021	7:32 PM	7:35 PM	5	N	PC	81.20
Sub Total	2.85								
NOX-04	1.26	5.9	8/4/2021	5:26 PM	5:28 PM	0	0	Hazy	80.60
NOX-08	8.45	4.6	8/4/2021	5:38 PM	5:54 PM	0	0	Hazy	
Sub Total	9.71								
NOX-01	19.25	5.5	8/4/2021	10:25 AM	10:57 AM	0	0	Hazy	77.00
NOX-02	32.15	7.1	8/4/2021	12:52 PM	3:36 PM	4	N	Hazy	78.30
Sub Total	51.40								
Total	63.96								

EQUIPMENT USED: A CLI Littoral Zone Treatment vessel (LittLine®) was used to perform the aquatic herbicide applications on August 4, 2021. 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. CLI secured an Montana Aquatic Invasive Species Prevention Pass (AISPP) on August 3, 2021 (AISPP#201600**).** The application vessel was inspected on August 4, 2021 at the Clark Fork, Idaho Aquatic Invasive Species inspection station prior to entering Montana.

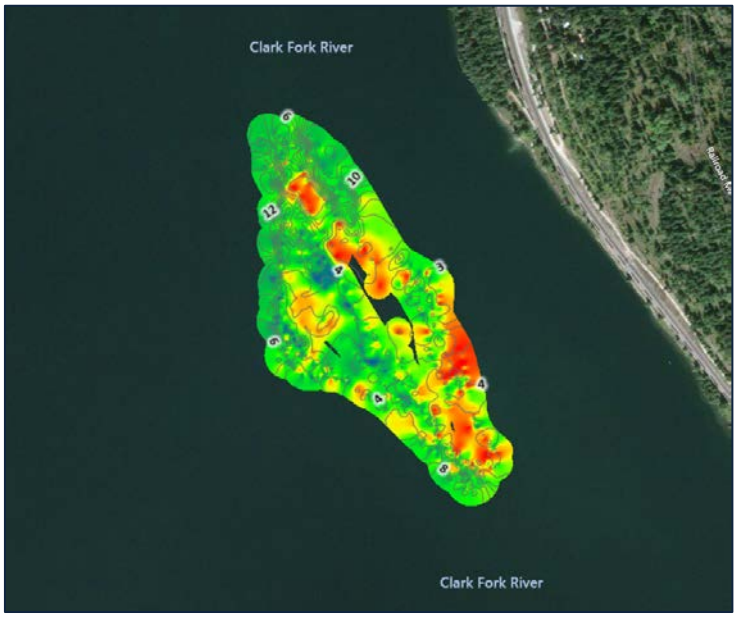
The AIS treatment area GIS shapefiles were loaded into the LittLine® computer system for vessel guidance and herbicide application data recording. The LittLine® can place herbicides at any depth within the water column (2 - 30 feet), as well as within the bottom 2 foot of the water column. Impacts from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

A Digital Echosounder System with a Structure Scan Module (Lowrance model) 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 4, 2021), and at six (6) Weeks Post Treatment (September 16, 2021). 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 Time of Treatment for Plot 2, Noxon Reservoir, is pictured above.



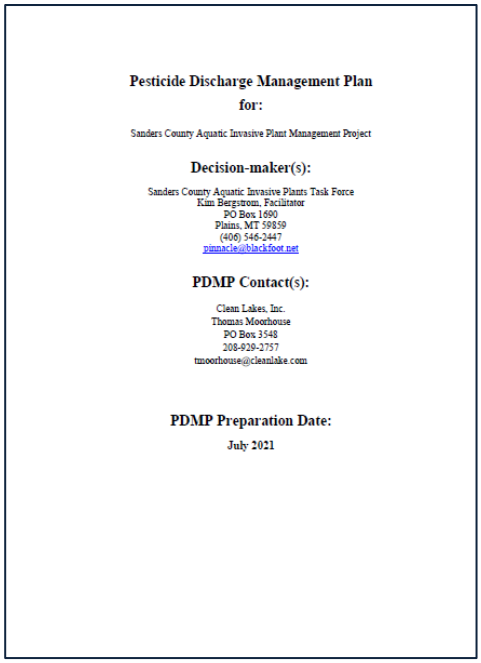
AQUATIC HERBICIDES CLI provided the aquatic herbicides for the project. CLI provided the required support equipment for material handling (herbicide transfer) as well as support vehicles for the vessels assigned to the project. The aquatic herbicides were applied to the specified areas of Noxon Rapids Reservoir 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 Aquatic Pesticide Application Plan (APAP), provided previously). Provided in Table 2 is the Treatment Site Data outlining treatment information for each plot.

TREATMENT SITE DATA

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

2021 Noxon Rapids Reservoir Treatment Plan					Littora (Diquat)			Aquathol K (Endothall)		
Plot Number	Acreage (Ac)	Mean Depth (ft)	Volume (AF)	Product	Rate ppm	Gal/Ac ft	Gal Total Site	Rate ppm	Gal/Ac ft	Gal Total Site
NOX-03	1.34	8.4	11.26	End/Diq	0.37	0.5	5.6	1.8	1.16	13.0
NOX-73	0.51	5.4	2.75	End/Diq	0.37	0.5	1.4	1.8	1.16	3.2
NOX-79	1.00	6.6	6.60	End/Diq	0.37	0.5	3.3	1.8	1.16	7.6
Sub Total	2.85						10.3			23.8
NOX-04	1.26	5.9	7.43	End/Diq	0.37	0.5	3.7	1.8	1.16	8.6
NOX-08	8.45	4.6	38.87	End/Diq	0.37	0.5	19.4	1.8	1.16	44.9
Sub Total	9.71						23.1			53.5
NOX-01	19.25	5.5	105.88	End/Diq	0.37	0.5	52.8	2.0	1.26	133.9
NOX-02	32.15	7.1	228.27	End/Diq	0.37	0.5	113.9	2.0	1.26	288.7
Sub Total	51.40						166.7			422.6
Total	63.96						200.1			499.9

PERMIT COMPLIANCE: CLI developed the Aquatic Pesticide Application Plan on August 2, 2021, as well as the Pesticide Discharge Management Plan (PDMP) required for the new NPDES Permit cycle. 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 2, 2021.



Pesticide Discharge Management Plan
for:

Sanders County Aquatic Invasive Plant Management Project

Decision-maker(s):

Sanders County Aquatic Invasive Plants Task Force
Kim Bergstrom, Facilitator
PO Box 1690
Plains, MT 59859
(406) 546-2447
pinnacle@blackfoot.net

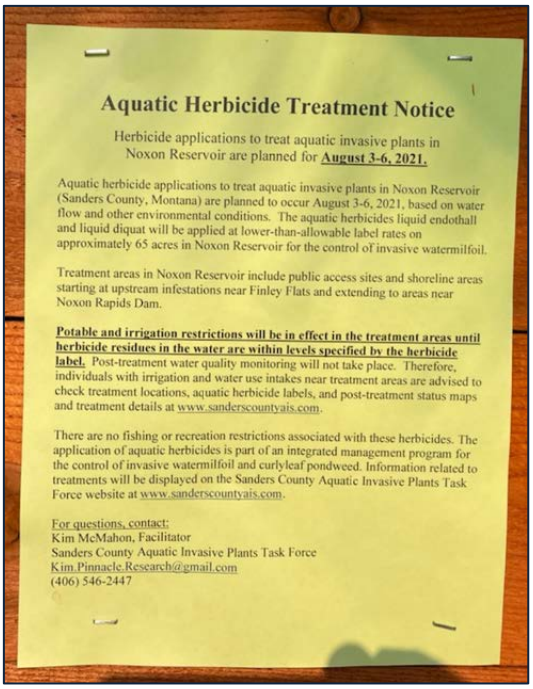
PDMP Contact(s):

Clean Lakes, Inc.
Thomas Moorhouse
PO Box 3548
208-929-2757
tmoorhouse@cleanlake.com

PDMP Preparation Date:
July 2021

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 2021 Pre-Treatment Surveys that were used to generate the final 2021 Treatment Plan.



Aquatic Herbicide Treatment Notice

Herbicide applications to treat aquatic invasive plants in Noxon Reservoir are planned for **August 3-6, 2021.**

Aquatic herbicide applications to treat aquatic invasive plants in Noxon Reservoir (Sanders County, Montana) are planned to occur August 3-6, 2021, based on water flow and other environmental conditions. The aquatic herbicides liquid endothall and liquid diquat will be applied at lower-than-allowable label rates on approximately 65 acres in Noxon Reservoir for the control of invasive watermilfoil.

Treatment areas in Noxon Reservoir include public access sites and shoreline areas starting at upstream infestations near Finley Flats and extending to areas near Noxon Rapids Dam.

Potable and irrigation restrictions will be in effect in the treatment areas until herbicide residues in the water are within levels specified by the herbicide label. Post-treatment water quality monitoring will not take place. Therefore, individuals with irrigation and water use intakes near treatment areas are advised to check treatment locations, aquatic herbicide labels, and post-treatment status maps and treatment details at www.sanderscountyais.com.

There are no fishing or recreation restrictions associated with these herbicides. The application of aquatic herbicides is part of an integrated management program for the control of invasive watermilfoil and curlyleaf pondweed. Information related to treatments will be displayed on the Sanders County Aquatic Invasive Plants Task Force website at www.sanderscountyais.com.

For questions, contact:
Kim McMahon, Facilitator
Sanders County Aquatic Invasive Plants Task Force
Kim.Pinnacle.Research@gmail.com
(406) 546-2447

POST TREATMENT SURVEY: The Post Treatment survey was carried out by CLI (Tom Moorhouse and Drew McNabb) at Noxon Rapids Reservoir on September 16, 2021, six weeks after treatment. Water temperature was approximately 68 F. Surveys were conducted through a combination of techniques, including visual estimates of injury/control, through rake tosses, and via the use of a Lowrance HDS-9 where depth allowed. Sonar logs were processed as described above. Table 3 provides information related to efficacy in each plot compared to At-Time of Treatment and Post Treatment Control. In Noxon Rapids Reservoir the change in SAV Biovolume (BV) shows a reduction range of 49% to 79%, while Post Treatment EWM Injury ranged from 80% to 100%.

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

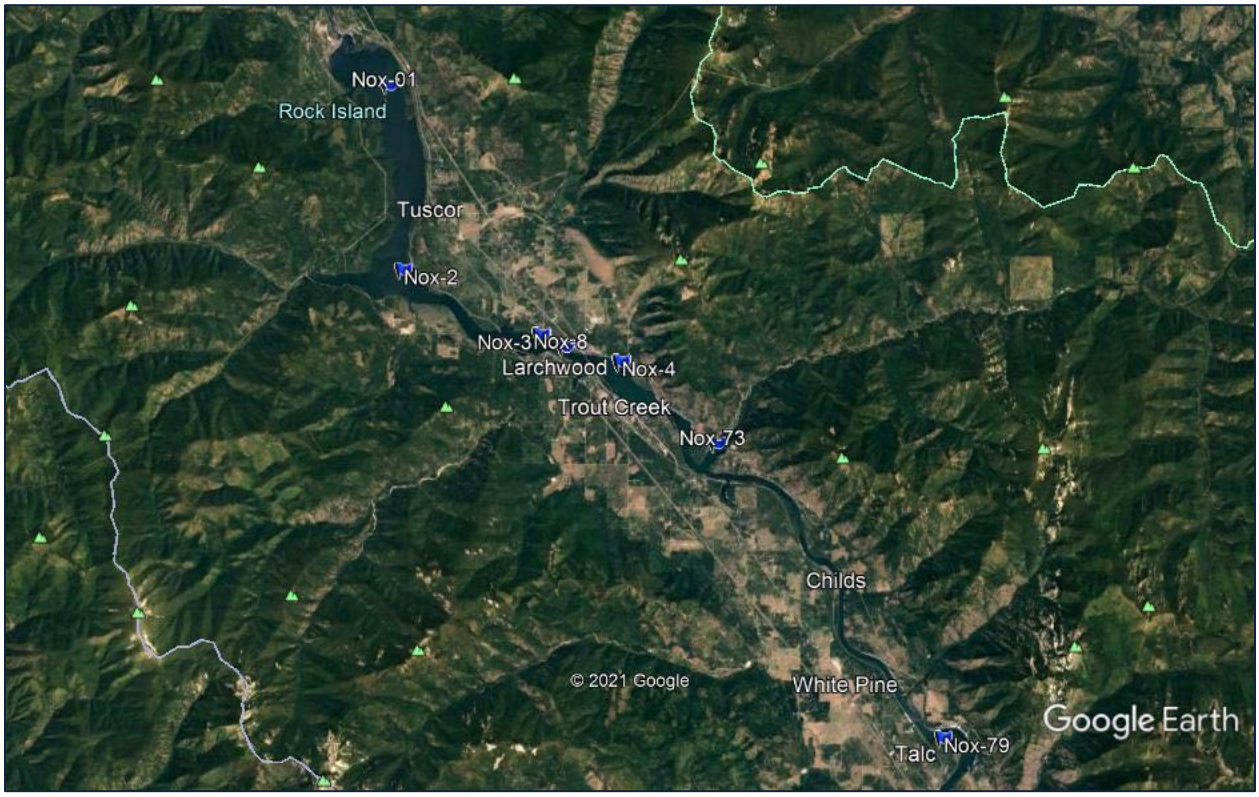
2021 Noxon Rapids Reservoir AIS Treatment Plots: At Time of and ~ Six (6) Week Post Plot SAV % Cover and SAV BioVolume Data (Grid Data)									
Plot Number	SAV % Cover	SAV % Bio-Volume	Date Data Collected Pre Treatment	SAV % Cover	SAV % Bio-Volume	Date Data Collected-Post Treatment	SAV % BV Change	Post Treatment EWM Injury Rank	Herbicides Used (Aquathol K/Tribune)
Noxon Rapids									
NOX-1	91.7	22.4	8/4/2021	70.3	9.3	9/16/2021	-58%	~100%	Endo/Diquat
NOX-2	99.9	38.1	8/4/2021	73.0	10.7	9/16/2021	-72%	~100%	Endo/Diquat
NOX-3	100.0	37.7	8/4/2021	99.1	15.1	9/16/2021	-60%	~98%	Endo/Diquat
NOX-4	100.0	39.8	8/4/2021	50.6	11.2	9/16/2021	-72%	~80%	Endo/Diquat
NOX-8	100.0	53.0	8/4/2021	94.7	27.2	9/16/2021	-49%	~95%	Endo/Diquat
NOX-73	100.0	30.1	8/4/2021	57.6	10.9	9/16/2021	-64%	~100%	Endo/Diquat
NOX-79	100.0	33.0	8/4/2021	39.1	6.8	9/16/2021	-79%	~100%	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 16, 2021, 6 weeks post treatment, were estimated during a survey as outlined above.

The observations contained in this report (see below) 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 change in Submerged Aquatic Vegetation (SAV) Percent Area Coverage, height in the water column, and bio-volume can result, and can be attributed to a recovery or increase in native vegetation in response to selectively controlling the target species.

TREATMENT AREA PLOT MAPS

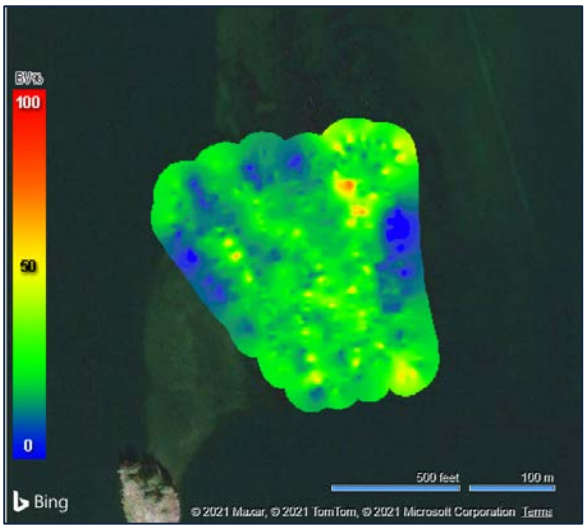
Overview of the 2021 Noxon Rapids Reservoir Treatment Plots (8/4/21)

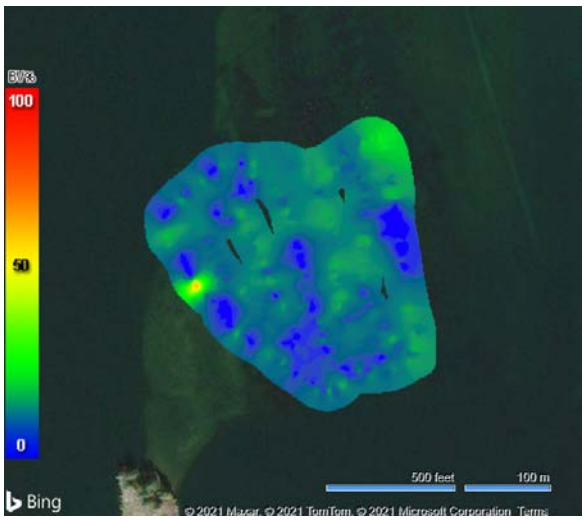


PRE AND POST TREATMENT SUBMERSED AQUATIC VEGETATION (SAV) DATA, SAV PERCENT COVER, AND BIO-VOLUME DATA SETS

NOXON RAPIDS RESERVOIR

Plot NOX-1: At Time of Treatment (August 4, 2021 Left), ~ Six (6) Weeks Post (September 16, 2021 Right)

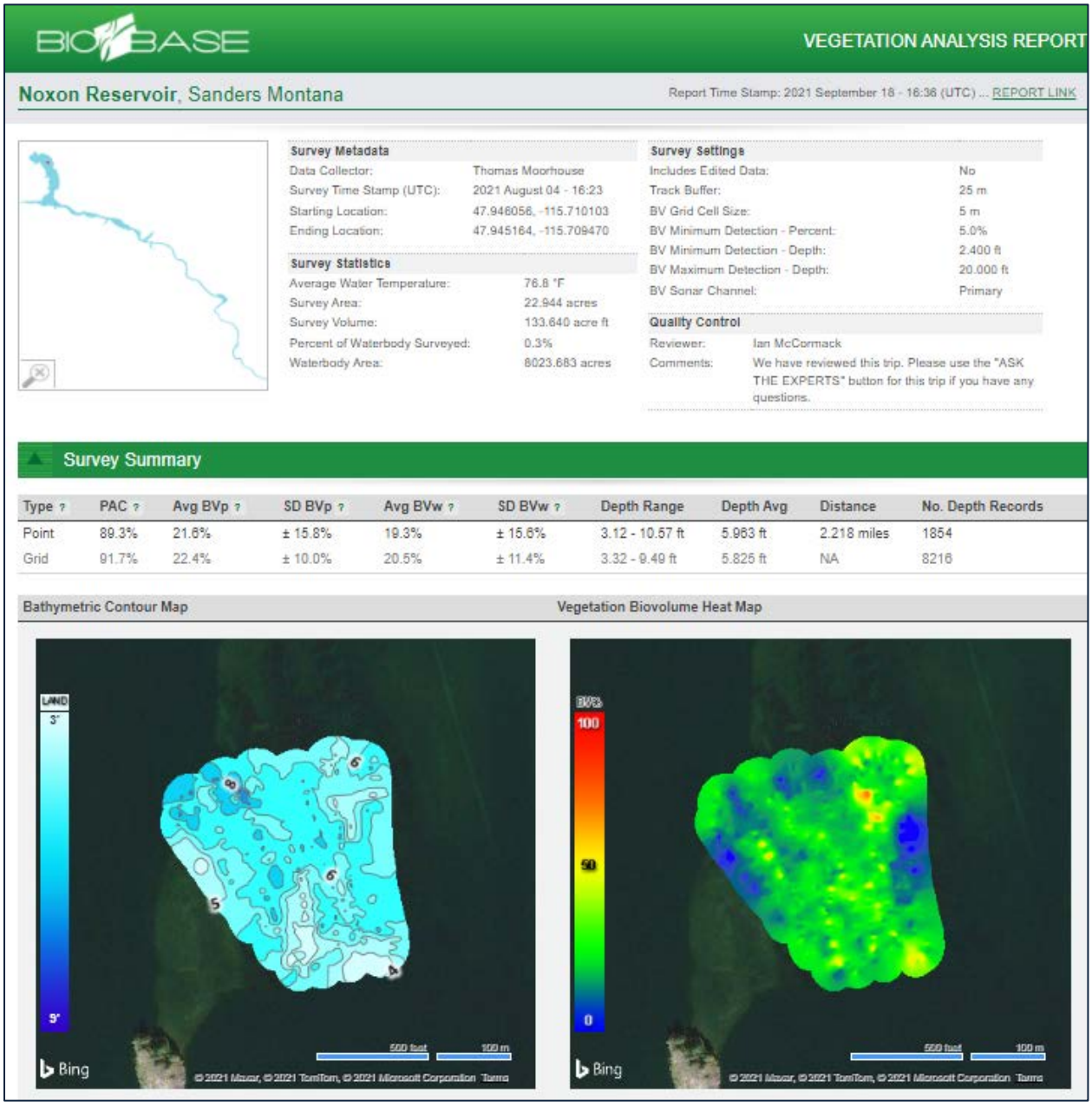




2021 Noxon Rapids Reservoir AIS Treatment Plots: At Time of and ~ Six (6) Week Post Plot SAV % Cover and SAV BioVolume Data (Grid Data)									
Plot Number	SAV % Cover	SAV % Bio-Volume	Date Data Collected Pre Treatment	SAV % Cover	SAV % Bio-Volume	Date Data Collected-Post Treatment	SAV % BV Change	Post Treatment EWM Injury Rank	Herbicides Used (Aquathol K/Tribune)
NOX-1	91.7	22.4	8/4/2021	70.3	9.3	9/16/2021	-58%	~100%	Endo/Diquat

Observations/Notes NOX-1: Treated with combination of endothall and diquat, control visually estimated at +/- 100%. Control excellent throughout plot. EWM and native vegetation observed on outside edges. Widespread Chara visible on bottom.

Plot NOX-1: At Time of Treatment (August 4, 2021)



Plot NOX-1: ~ Six (6) Weeks Post (September 16, 2021)

BIOBASE — VEGETATION ANALYSIS REPORT

Noxon Reservoir, Sanders Montana

Report Time Stamp: 2021 September 18 - 16:50 (UTC) ... REPORT LINK

Survey Metadata

Data Collector:	Thomas Moorhouse
Survey Time Stamp (UTC):	2021 September 16 - 18:26
Starting Location:	47.943969, -115.706247
Ending Location:	47.945502, -115.711272

Survey Statistics

Average Water Temperature:	68.0 °F
Survey Area:	22.376 acres
Survey Volume:	167.585 acre ft
Percent of Waterbody Surveyed:	0.3%
Waterbody Area:	8023.683 acres

Survey Settings

Includes Edited Data:	No
Track Buffer:	25 m
BV Grid Cell Size:	5 m
BV Minimum Detection - Percent:	5.0%
BV Minimum Detection - Depth:	2.400 ft
BV Maximum Detection - Depth:	20.000 ft
BV Sonar Channel:	Primary

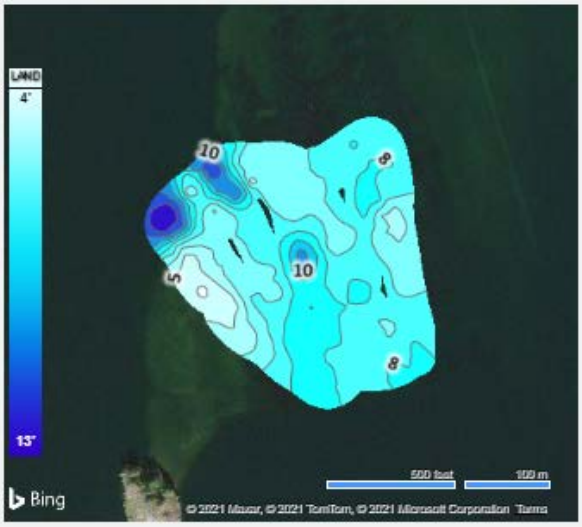
Quality Control

Reviewer:	Ray Valley
Comments:	We have reviewed this trip. Please use the "ASK THE EXPERTS" button for this trip if you have any questions.

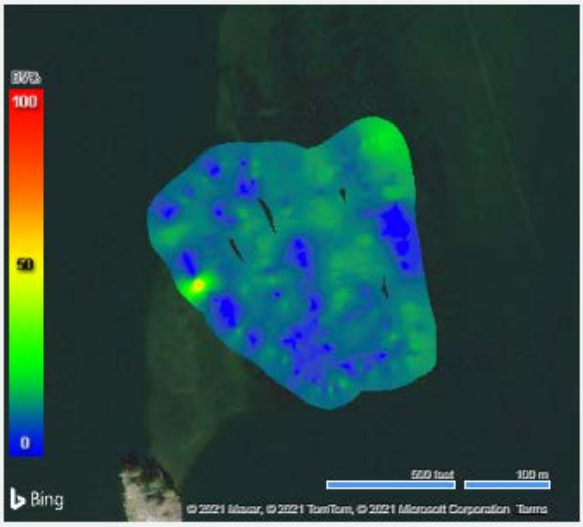
Survey Summary

Type	PAC	Avg BVp	SD BVp	Avg BVw	SD BVw	Depth Range	Depth Avg	Distance	No. Depth Records
Point	73.0%	9.7%	± 7.0%	7.0%	± 6.5%	3.45 - 13.09 ft	7.522 ft	1.125 miles	1083
Grid	70.3%	9.3%	± 4.5%	6.6%	± 5.7%	3.64 - 12.97 ft	7.489 ft	NA	8013

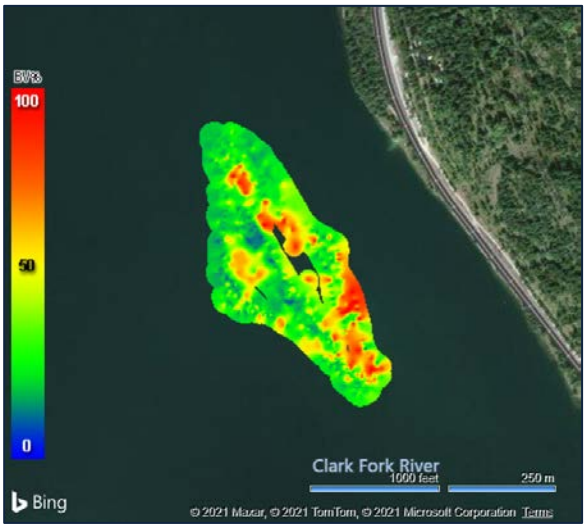
Bathymetric Contour Map

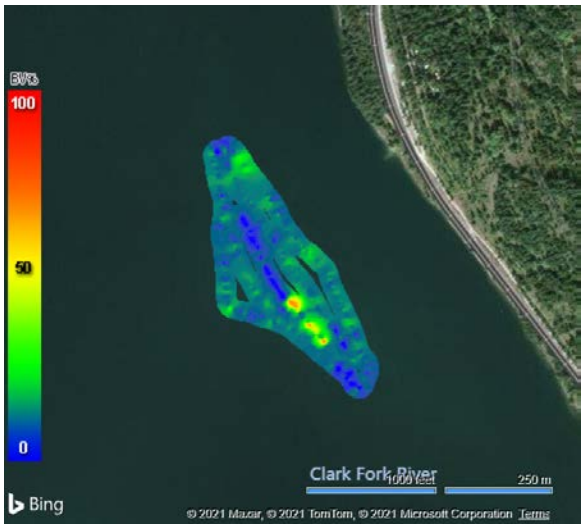


Vegetation Biovolume Heat Map



Plot NOX-2: At Time of Treatment (August 4, 2021 Left), ~ Six (6) Weeks Post (September 16, 2021 Right)





2021 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/Tribune)
NOX-2	99.9	38.1	8/4/2021	73.0	10.7	9/16/2021	-72%	~100%	Endo/Diquat

Observations/Notes NOX-2: Treated with combination of endothall and diquat, control visually estimated at +/- 100%. Control excellent throughout plot. Widespread Chara visible on bottom.

Plot NOX-2: At Time of Treatment (August 4, 2021)

BIOBASE — VEGETATION ANALYSIS REPORT

Noxon Reservoir, Sanders Montana — Report Time Stamp: 2021 September 21 - 22:44 (UTC) ... REPORT LINK

Survey Metadata

Data Collector:	Thomas Moorhouse
Survey Time Stamp (UTC):	2021 August 04 - 18:51
Starting Location:	47.880350, -115.699105
Ending Location:	47.864858, -115.704138

Survey Statistics

Average Water Temperature:	79.4 °F
Survey Area:	41.096 acres
Survey Volume:	211.301 acre ft
Percent of Waterbody Surveyed:	0.5%
Waterbody Area:	8023.683 acres

Survey Settings

Includes Edited Data:	No
Track Buffer:	25 m
BV Grid Cell Size:	5 m
BV Minimum Detection - Percent:	5.0%
BV Minimum Detection - Depth:	2.400 ft
BV Maximum Detection - Depth:	20.000 ft
BV Sonar Channel:	NA

Survey Summary

Type	PAC	Avg BVp	SD BVp	Avg BVw	SD BVw	Depth Range	Depth Avg	Distance	No. Depth Records
Point	93.5%	34.7%	± 26.4%	32.4%	± 26.3%	1.63 - 13.76 ft	5.451 ft	4.931 miles	3149
Grid	99.9%	38.1%	± 18.3%	38.0%	± 18.3%	1.80 - 13.43 ft	5.142 ft	NA	14682

Bathymetric Contour Map — Vegetation Biovolume Heat Map

Plot NOX-2: ~ Six (6) Weeks Post (September 16, 2021)

BIOBASE — VEGETATION ANALYSIS REPORT

Noxon Reservoir, Sanders Montana — Report Time Stamp: 2021 September 18 - 16:59 (UTC) ... REPORT LINK

Survey Metadata

Data Collector:	Thomas Moorhouse
Survey Time Stamp (UTC):	2021 September 16 - 16:50
Starting Location:	47.885406, -115.704047
Ending Location:	47.881765, -115.702004

Survey Statistics

Average Water Temperature:	68.5 °F
Survey Area:	31.266 acres
Survey Volume:	305.430 acre ft
Percent of Waterbody Surveyed:	0.4%
Waterbody Area:	8023.683 acres

Survey Settings

Includes Edited Data:	No
Track Buffer:	25 m
BV Grid Cell Size:	5 m
BV Minimum Detection - Percent:	5.0%
BV Minimum Detection - Depth:	2.400 ft
BV Maximum Detection - Depth:	20.000 ft
BV Sonar Channel:	Primary

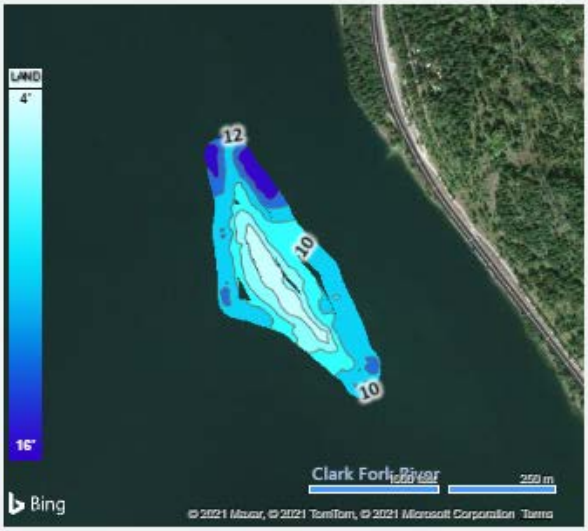
Quality Control

Reviewer:	Ray Valley
Comments:	We have reviewed this trip. Please use the "ASK THE EXPERTS" button for this trip if you have any questions.

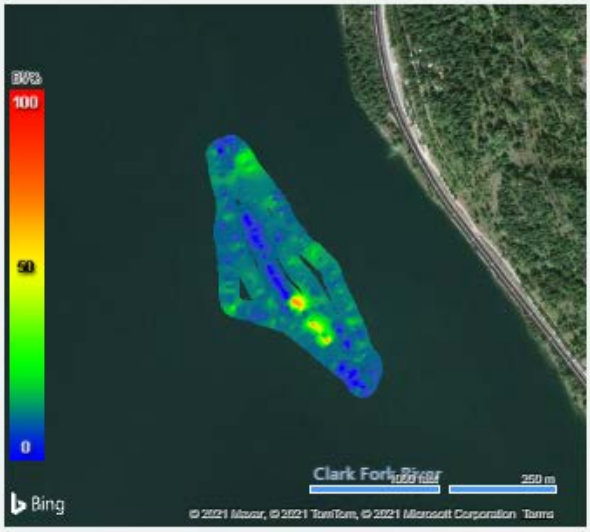
Survey Summary

Type	PAC	Avg BVp	SD BVp	Avg BVw	SD BVw	Depth Range	Depth Avg	Distance	No. Depth Records
Point	72.0%	12.1%	± 12.8%	8.7%	± 12.4%	3.82 - 16.04 ft	9.731 ft	1.484 miles	1149
Grid	73.0%	10.7%	± 8.0%	7.8%	± 8.3%	4.02 - 15.91 ft	9.769 ft	NA	11170

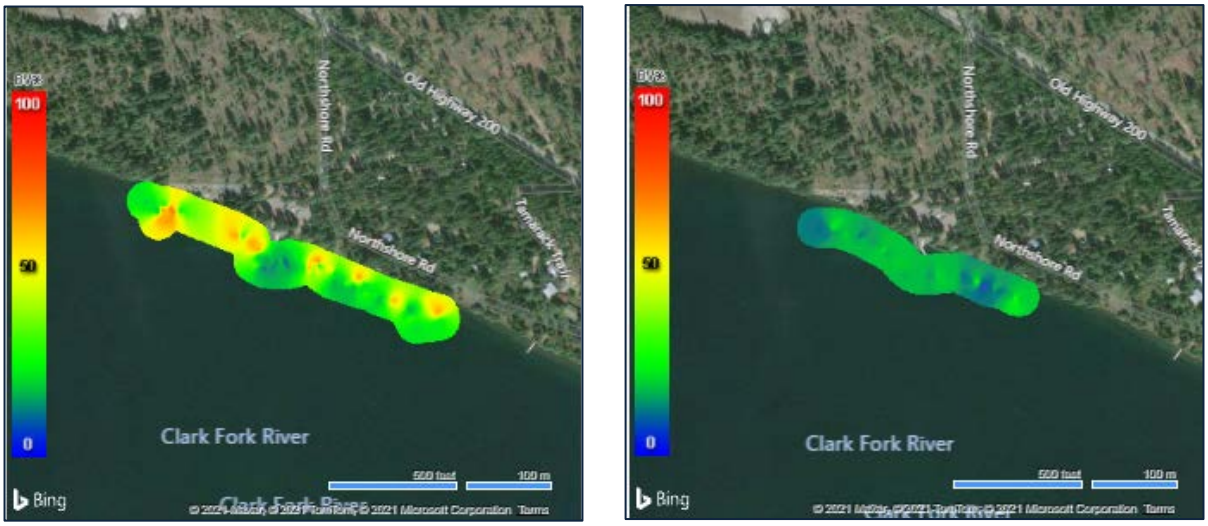
Bathymetric Contour Map



Vegetation Biovolume Heat Map



Plot NOX-3: At Time of Treatment (August 4, 2021 Left), ~ Six (6) Weeks Post (September 16, 2021 Right)



2021 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/Tribune)
NOX-3	100.0	37.7	8/4/2021	99.1	15.1	9/16/2021	-60%	~98%	Endo/Diquat

Observations/Notes NOX-03: Treated with combination of endothall and diquat, control visually estimated at +/- 98%. Control excellent, Coontail present in plot, dead EWM stems on rake toss.

Plot NOX-3: At Time of Treatment (August 11, 2020)

BIOBASE — VEGETATION ANALYSIS REPORT

Noxon Reservoir, Sanders Montana

Report Time Stamp: 2021 September 18 - 16:26 (UTC) ... REPORT LINK

Survey Metadata

Data Collector:	Thomas Moorhouse
Survey Time Stamp (UTC):	2021 August 05 - 00:17
Starting Location:	47.860255, -115.630990
Ending Location:	47.861179, -115.634701

Survey Statistics

Average Water Temperature:	80.7 °F
Survey Area:	6.334 acres
Survey Volume:	28.621 acre ft
Percent of Waterbody Surveyed:	0.1%
Waterbody Area:	8023.683 acres

Survey Settings

Includes Edited Data:	No
Track Buffer:	25 m
BV Grid Cell Size:	5 m
BV Minimum Detection - Percent:	5.0%
BV Minimum Detection - Depth:	2.400 ft
BV Maximum Detection - Depth:	20.000 ft
BV Sonar Channel:	Primary

Quality Control

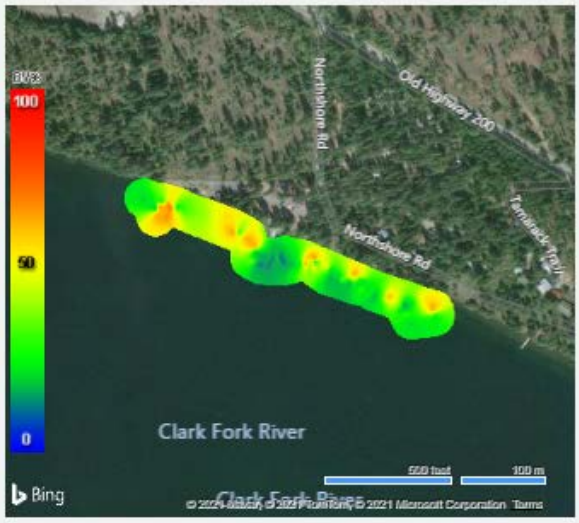
Reviewer:	Ian McCormack
Comments:	We have reviewed this trip. Please use the "ASK THE EXPERTS" button for this trip if you have any questions.

Survey Summary

Type	PAC	Avg BVp	SD BVp	Avg BVw	SD BVw	Depth Range	Depth Avg	Distance	No. Depth Records
Point	95.9%	30.4%	± 22.5%	29.1%	± 22.5%	3.15 - 17.46 ft	5.655 ft	0.581 miles	383
Grid	100%	37.7%	± 12.9%	37.7%	± 12.9%	0.32 - 15.30 ft	4.519 ft	NA	2261

Bathymetric Contour Map

Vegetation Biovolume Heat Map



Plot NOX-3: ~ Six (6) Weeks Post (September 16, 2021)

BIOBASE — VEGETATION ANALYSIS REPORT

Noxon Reservoir, Sanders Montana — Report Time Stamp: 2021 September 16 - 17:03 (UTC) ... REPORT LINK

Survey Metadata

Data Collector:	Thomas Moorhouse
Survey Time Stamp (UTC):	2021 September 16 - 19:16
Starting Location:	47.860953, -115.634279
Ending Location:	47.860190, -115.630925

Survey Statistics

Average Water Temperature:	68.4 °F
Survey Area:	3.855 acres
Survey Volume:	25.484 acre ft
Percent of Waterbody Surveyed:	0.0%
Waterbody Area:	8023.683 acres

Survey Settings

Includes Edited Data:	No
Track Buffer:	25 m
BV Grid Cell Size:	5 m
BV Minimum Detection - Percent:	5.0%
BV Minimum Detection - Depth:	2.400 ft
BV Maximum Detection - Depth:	20.000 ft
BV Sonar Channel:	Primary

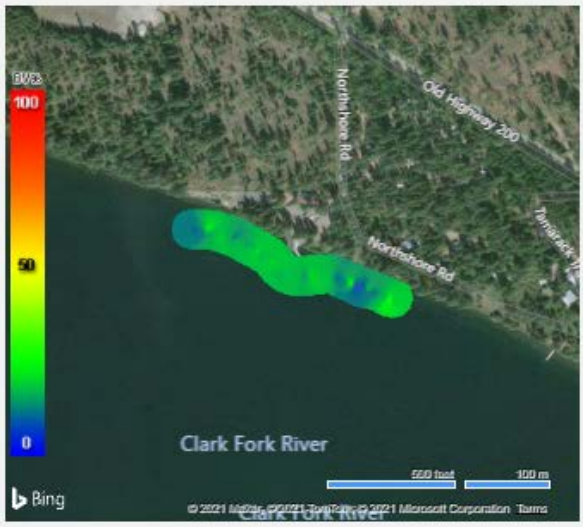
Quality Control

Reviewer:	Ray Valley
Comments:	We have reviewed this trip. Please use the "ASK THE EXPERTS" button for this trip if you have any questions.

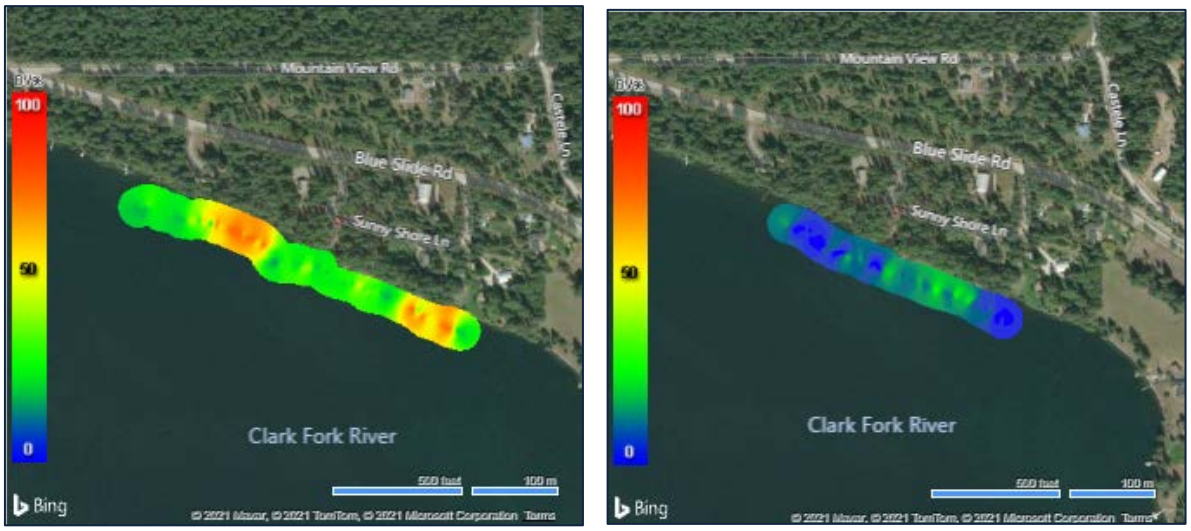
Survey Summary

Type	PAC	Avg BVp	SD BVp	Avg BVw	SD BVw	Depth Range	Depth Avg	Distance	No. Depth Records
Point	89.0%	16.2%	± 9.4%	14.5%	± 9.2%	5.93 - 12.88 ft	8.642 ft	0.090 miles	230
Grid	99.1%	15.1%	± 4.3%	15.0%	± 4.5%	0.59 - 12.54 ft	6.611 ft	NA	1376

Bathymetric Contour Map — Vegetation Biovolume Heat Map



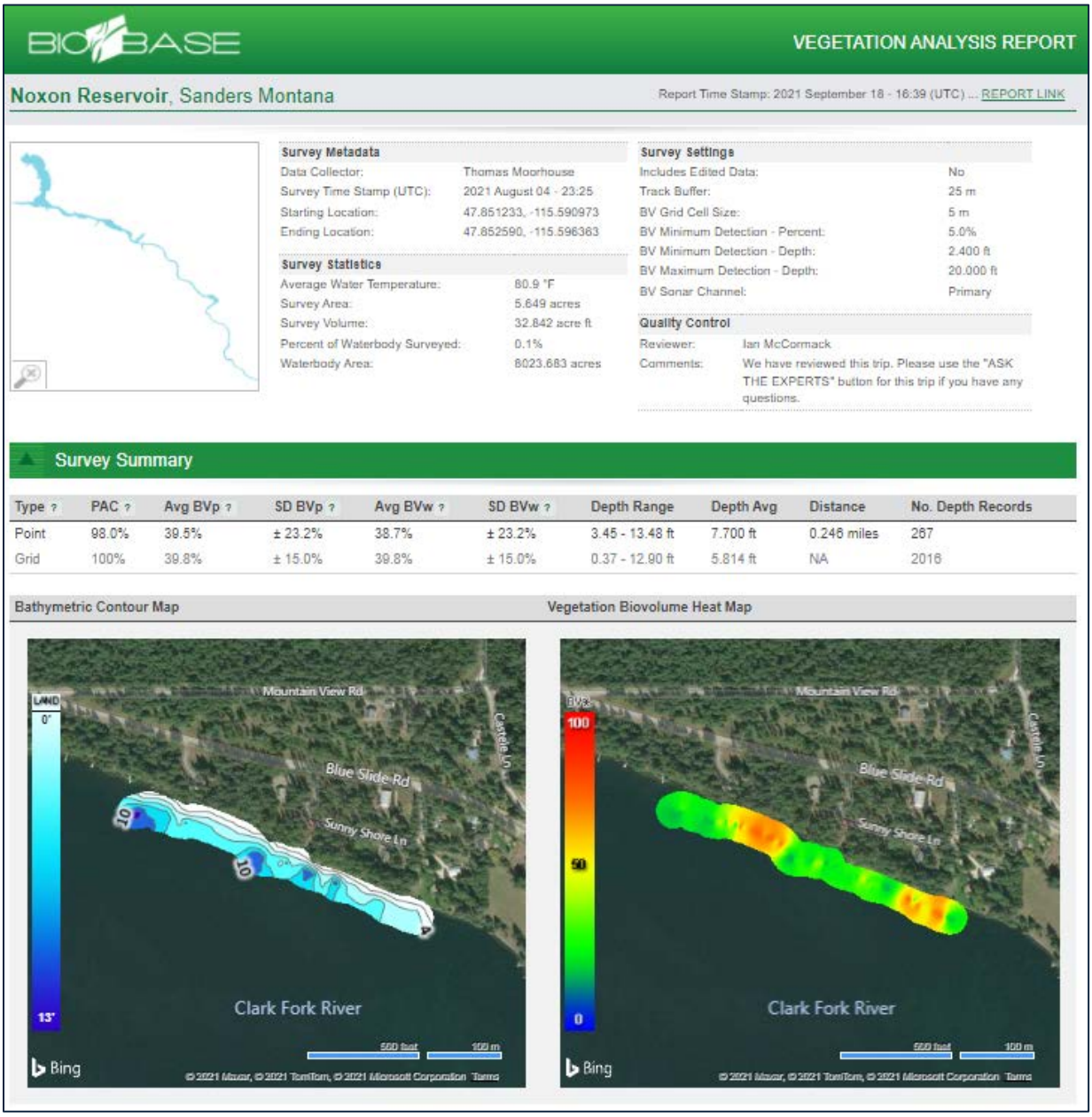
Plot NOX-4: At Time of Treatment (August 4, 2021 Left), ~ Six (6) Weeks Post (September 16, 2021 Right)



2021 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/Tribune)
NOX-4	100.0	39.8	8/4/2021	50.6	11.2	9/16/2021	-72%	~80%	Endo/Diquat

Observations/Notes NOX-4: Treated with combination of endothall and diquat, control visually estimated at +/- 80%. Control good, Coontail present making visual estimation difficult do to similarities in appearance to EWM. Plot should be made wider in future.

Plot NOX-4: At Time of Treatment (August 4, 2021)



BIOBASE — VEGETATION ANALYSIS REPORT

Noxon Reservoir, Sanders Montana

Report Time Stamp: 2021 September 18 - 16:39 (UTC) ... REPORT LINK

Survey Metadata

Data Collector:	Thomas Moorhouse
Survey Time Stamp (UTC):	2021 August 04 - 23:25
Starting Location:	47.851233, -115.590973
Ending Location:	47.852590, -115.596363

Survey Statistics

Average Water Temperature:	80.9 °F
Survey Area:	5.649 acres
Survey Volume:	32.842 acre ft
Percent of Waterbody Surveyed:	0.1%
Waterbody Area:	8023.683 acres

Survey Settings

Includes Edited Data:	No
Track Buffer:	25 m
BV Grid Cell Size:	5 m
BV Minimum Detection - Percent:	5.0%
BV Minimum Detection - Depth:	2.400 ft
BV Maximum Detection - Depth:	20.000 ft
BV Sonar Channel:	Primary

Quality Control

Reviewer:	Ian McCormack
Comments:	We have reviewed this trip. Please use the "ASK THE EXPERTS" button for this trip if you have any questions.

Survey Summary

Type	PAC	Avg BVp	SD BVp	Avg BVw	SD BVw	Depth Range	Depth Avg	Distance	No. Depth Records
Point	98.0%	39.5%	± 23.2%	38.7%	± 23.2%	3.45 - 13.48 ft	7.700 ft	0.246 miles	267
Grid	100%	39.8%	± 15.0%	39.8%	± 15.0%	0.37 - 12.90 ft	5.814 ft	NA	2016

Bathymetric Contour Map

Vegetation Biovolume Heat Map

Plot NOX-4: ~ Six (6) Weeks Post (September 16, 2021)

BIOBASE — VEGETATION ANALYSIS REPORT

Noxon Reservoir, Sanders Montana

Report Time Stamp: 2021 September 18 - 17:07 (UTC) ... REPORT LINK

Survey Metadata

Data Collector:	Thomas Moorhouse
Survey Time Stamp (UTC):	2021 September 16 - 19:38
Starting Location:	47.852305, -115.594791
Ending Location:	47.851242, -115.591213

Survey Statistics

Average Water Temperature:	68.4 °F
Survey Area:	3.990 acres
Survey Volume:	27.201 acre ft
Percent of Waterbody Surveyed:	0.0%
Waterbody Area:	8023.683 acres

Survey Settings

Includes Edited Data:	No
Track Buffer:	25 m
BV Grid Cell Size:	5 m
BV Minimum Detection - Percent:	5.0%
BV Minimum Detection - Depth:	2.400 ft
BV Maximum Detection - Depth:	20.000 ft
BV Sonar Channel:	Primary

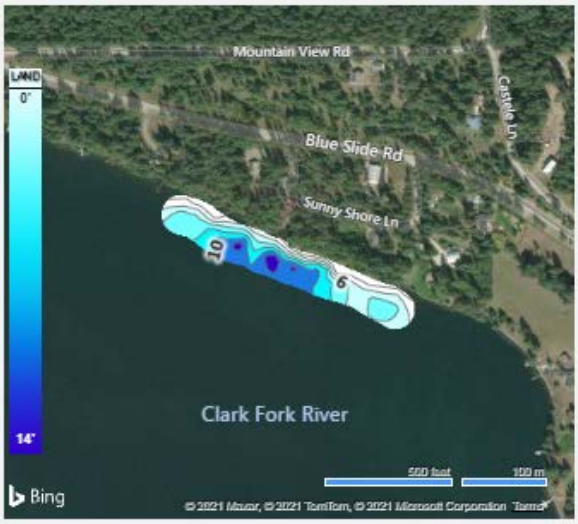
Quality Control

Reviewer:	Ray Valley
Comments:	We have reviewed this trip. Please use the "ASK THE EXPERTS" button for this trip if you have any questions.

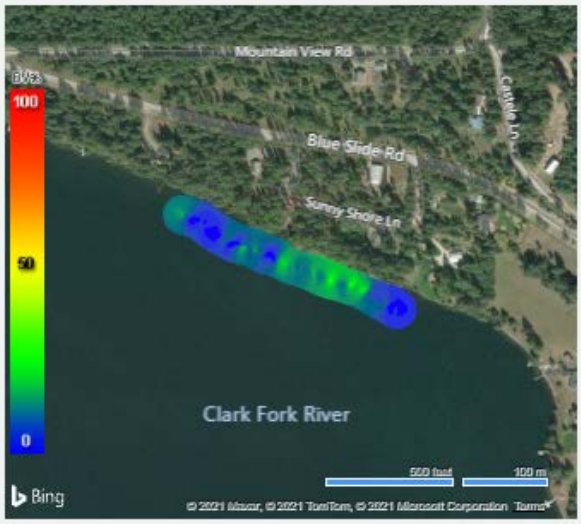
Survey Summary

Type	PAC	Avg BVp	SD BVp	Avg BVw	SD BVw	Depth Range	Depth Avg	Distance	No. Depth Records
Point	52.1%	15.4%	± 15.4%	8.0%	± 13.5%	4.45 - 13.86 ft	9.022 ft	0.163 miles	271
Grid	50.6%	11.2%	± 4.9%	5.7%	± 6.6%	0.44 - 13.51 ft	6.817 ft	NA	1424

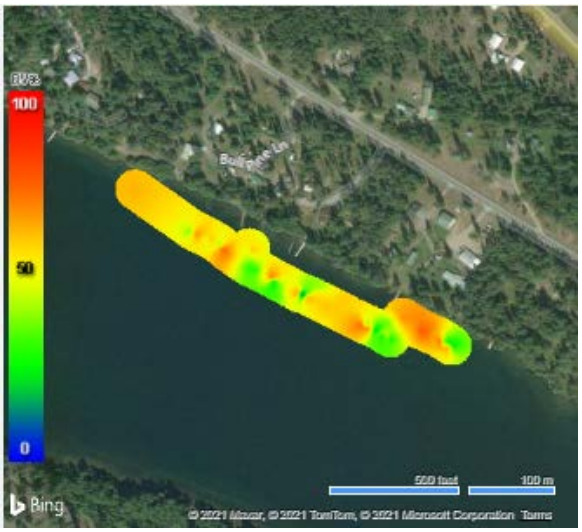
Bathymetric Contour Map

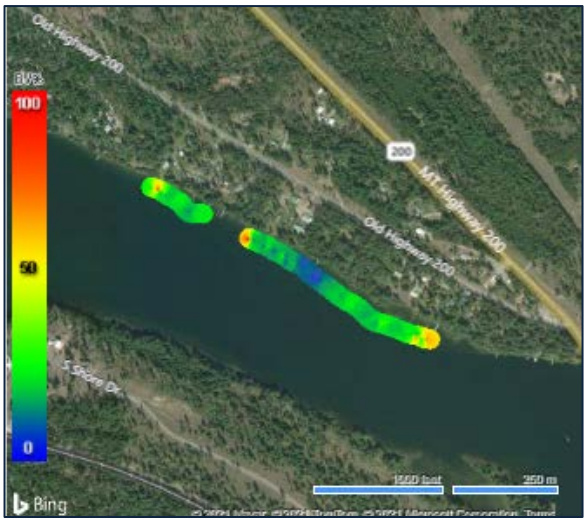


Vegetation Biovolume Heat Map



Plot NOX-8: At Time of Treatment (August 4, 2021 Left), ~ Six (6) Weeks Post (September 16, 2021 Right)

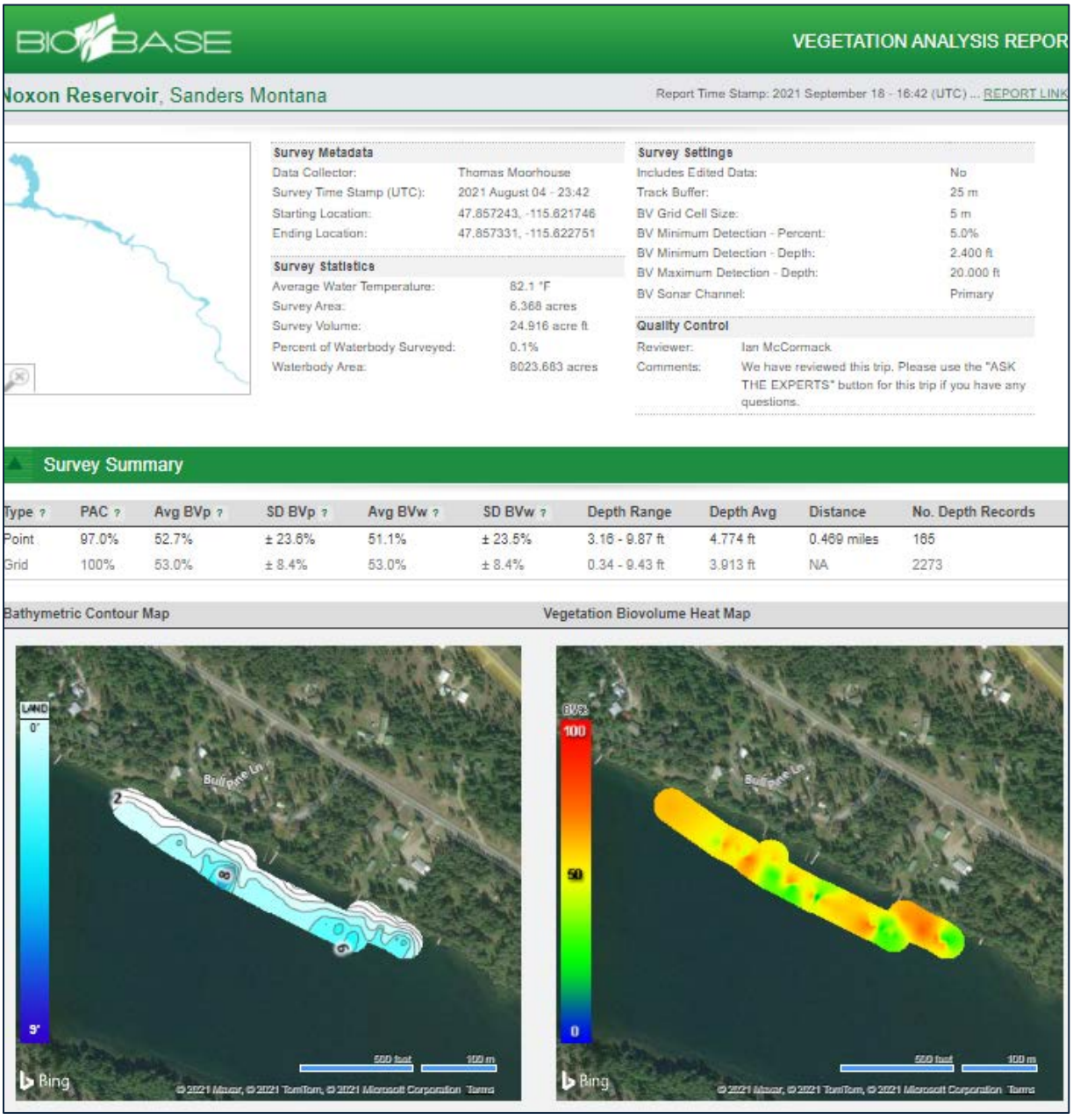




2021 Noxon Rapids Reservoir AIS Treatment Plots: At Time of and ~ Six (6) Week Post Plot SAV % Cover and SAV BioVolume Data (Grid Data)									
Plot Number	SAV % Cover	SAV % Bio-Volume	Date Data Collected Pre Treatment	SAV % Cover	SAV % Bio-Volume	Date Data Collected-Post Treatment	SAV % BV Change	Post Treatment EWM Injury Rank	Herbicides Used (Aquathol K/Tribune)
NOX-8	100.0	53.0	8/4/2021	94.7	27.2	9/16/2021	-49%	~95%	Endo/Diquat

Observations/Notes NOX-8: Treated with combination of endothall and diquat, control visually estimated at +/-95 % control. No plants visible at or near surface in plot. Rake toss consisted of Coontail and dead EWM. Some EWM observed outside the plot closer to the bank.

Plot NOX-8: At Time of Treatment (August 4, 2021)



BIOBASE — VEGETATION ANALYSIS REPOR

Noxon Reservoir, Sanders Montana — Report Time Stamp: 2021 September 18 - 16:42 (UTC) ... REPORT LINK

Survey Metadata

Data Collector:	Thomas Moorhouse
Survey Time Stamp (UTC):	2021 August 04 - 23:42
Starting Location:	47.857243, -115.621746
Ending Location:	47.857331, -115.622751

Survey Statistics

Average Water Temperature:	82.1 °F
Survey Area:	6.368 acres
Survey Volume:	24.916 acre ft
Percent of Waterbody Surveyed:	0.1%
Waterbody Area:	8023.683 acres

Survey Settings

Includes Edited Data:	No
Track Buffer:	25 m
BV Grid Cell Size:	5 m
BV Minimum Detection - Percent:	5.0%
BV Minimum Detection - Depth:	2.400 ft
BV Maximum Detection - Depth:	20.000 ft
BV Sonar Channel:	Primary

Quality Control

Reviewer:	Ian McCormack
Comments:	We have reviewed this trip. Please use the "ASK THE EXPERTS" button for this trip if you have any questions.

Survey Summary

Type	PAC	Avg BVp	SD BVp	Avg BVw	SD BVw	Depth Range	Depth Avg	Distance	No. Depth Records
Point	97.0%	52.7%	± 23.6%	51.1%	± 23.5%	3.16 - 9.87 ft	4.774 ft	0.469 miles	165
Grid	100%	53.0%	± 8.4%	53.0%	± 8.4%	0.34 - 9.43 ft	3.913 ft	NA	2273

Bathymetric Contour Map — Vegetation Biovolume Heat Map

Plot NOX-8: ~ Six (6) Weeks Post (September 16, 2021)

BIOBASE — VEGETATION ANALYSIS REPORT

Noxon Reservoir, Sanders Montana

Report Time Stamp: 2021 September 17 - 18:01 (UTC) ... REPORT LINK

Survey Metadata

Data Collector:	Thomas Moorhouse
Survey Time Stamp (UTC):	2021 September 16 - 19:23
Starting Location:	47.858892, -115.626560
Ending Location:	47.855389, -115.617013

Survey Statistics

Average Water Temperature:	68.7 °F
Survey Area:	10.732 acres
Survey Volume:	29.376 acre ft
Percent of Waterbody Surveyed:	0.1%
Waterbody Area:	8023.683 acres

Survey Settings

Includes Edited Data:	No
Track Buffer:	25 m
BV Grid Cell Size:	5 m
BV Minimum Detection - Percent:	5.0%
BV Minimum Detection - Depth:	2.400 ft
BV Maximum Detection - Depth:	20.000 ft
BV Sonar Channel:	Primary

Quality Control

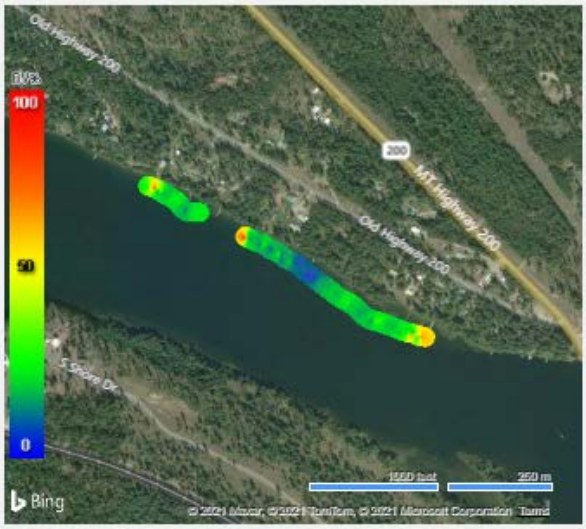
Reviewer:	Valley, Ray
Comments:	We have reviewed this trip. Please use the "ASK THE EXPERTS" button for this trip if you have any questions.

Survey Summary

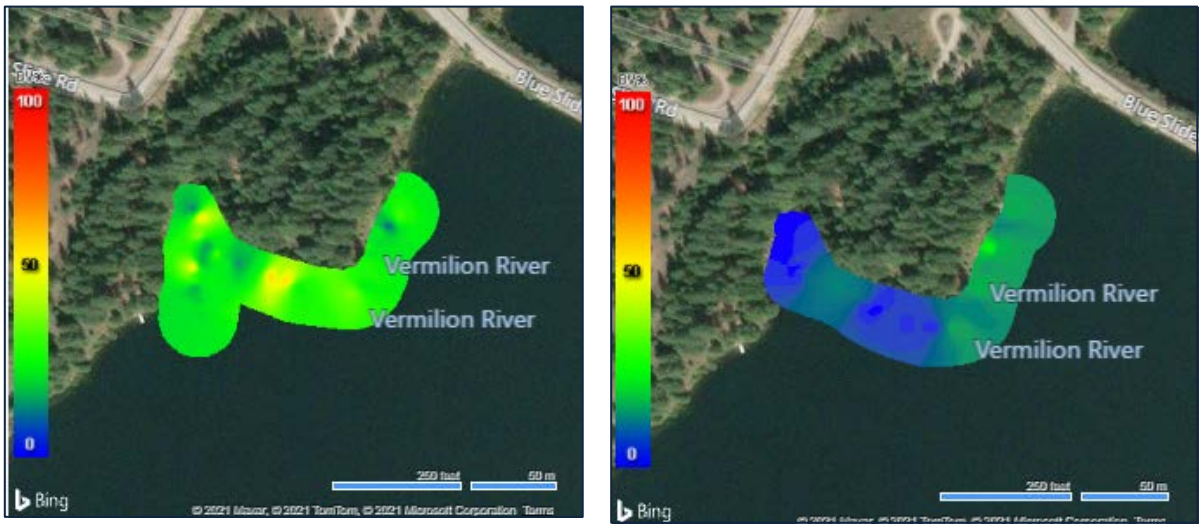
Type	PAC	Avg BVp	SD BVp	Avg BVw	SD BVw	Depth Range	Depth Avg	Distance	No. Depth Records
Point	89.7%	23.0%	± 19.5%	20.6%	± 19.4%	1.65 - 5.95 ft	3.324 ft	0.502 miles	651
Grid	94.7%	27.2%	± 14.1%	25.7%	± 15.0%	0.17 - 5.84 ft	2.737 ft	NA	3830

Bathymetric Contour Map

Vegetation Biovolume Heat Map



Plot NOX-73: At Time of Treatment (August 4, 2021 Left), ~ Six (6) Weeks Post (September 16, 2021 Right)



2021 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/Tribune)
NOX-73	100.0	30.1	8/4/2021	57.6	10.9	9/16/2021	-64%	~100%	Endo/Diquat

Observations/Notes NOX-73: Treated with combination of endothall and diquat, control visually estimated at +/- 100 % control. No plants visible at or near surface in plot. Rake toss consisted of one Coontail plant.

Plot NOX-73: At Time of Treatment (August 4, 2021)

BIOBASE — VEGETATION ANALYSIS REPORT

Noxon Reservoir, Sanders Montana

Report Time Stamp: 2021 September 18 - 16:44 (UTC) ... REPORT LINK

Survey Metadata

Data Collector:	Thomas Moorhouse
Survey Time Stamp (UTC):	2021 August 05 - 00:51
Starting Location:	47.824824, -115.544436
Ending Location:	47.824229, -115.546100

Survey Statistics

Average Water Temperature:	79.7 °F
Survey Area:	2.519 acres
Survey Volume:	15.272 acre ft
Percent of Waterbody Surveyed:	0.0%
Waterbody Area:	8023.683 acres

Survey Settings

Includes Edited Data:	No
Track Buffer:	25 m
BV Grid Cell Size:	5 m
BV Minimum Detection - Percent:	5.0%
BV Minimum Detection - Depth:	2.400 ft
BV Maximum Detection - Depth:	20.000 ft
BV Sonar Channel:	Primary

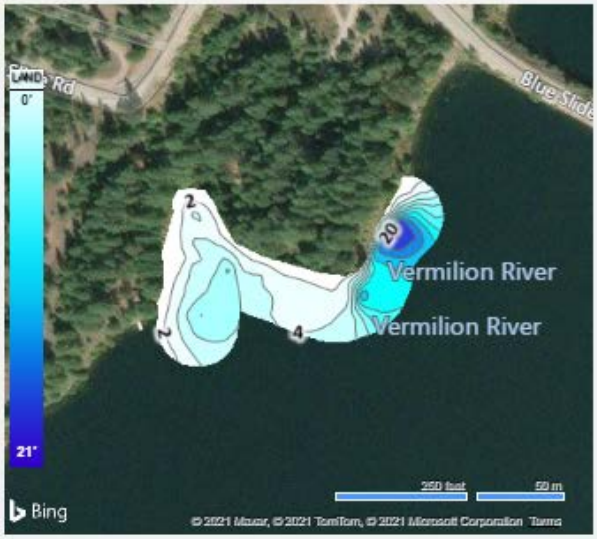
Quality Control

Reviewer:	Ian McCormack
Comments:	We have reviewed this trip. Please use the "ASK THE EXPERTS" button for this trip if you have any questions.

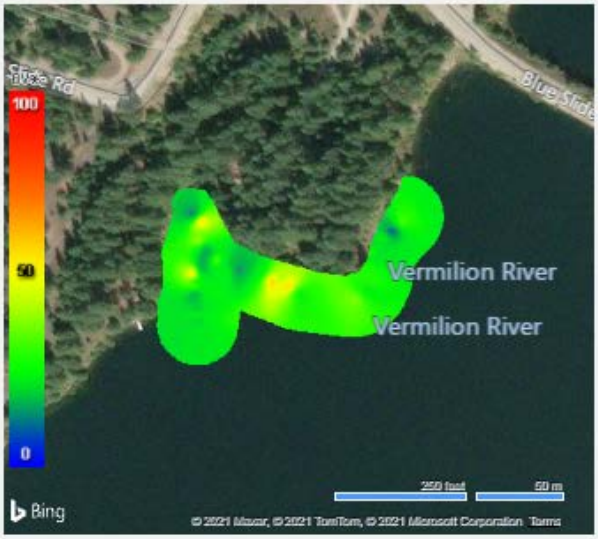
Survey Summary

Type	PAC	Avg BVp	SD BVp	Avg BVw	SD BVw	Depth Range	Depth Avg	Distance	No. Depth Records
Point	86.3%	30.2%	± 19.8%	26.0%	± 19.3%	2.95 - 22.00 ft	7.720 ft	0.092 miles	181
Grid	100%	30.1%	± 7.2%	30.1%	± 7.2%	0.30 - 21.24 ft	6.063 ft	NA	898

Bathymetric Contour Map



Vegetation Biovolume Heat Map



Plot NOX-73 ~ Six (6) Weeks Post (September 16, 2021)

BIOBASE — VEGETATION ANALYSIS REPORT

Noxon Reservoir, Sanders Montana — Report Time Stamp: 2021 September 18 - 17:09 (UTC) ... REPORT LINK

Survey Metadata

Data Collector:	Thomas Moorhouse
Survey Time Stamp (UTC):	2021 September 16 - 19:55
Starting Location:	47.824960, -115.544346
Ending Location:	47.824757, -115.546151

Survey Statistics

Average Water Temperature:	67.6 °F
Survey Area:	2.240 acres
Survey Volume:	18.517 acre ft
Percent of Waterbody Surveyed:	0.0%
Waterbody Area:	8023.683 acres

Survey Settings

Includes Edited Data:	No
Track Buffer:	25 m
BV Grid Cell Size:	5 m
BV Minimum Detection - Percent:	5.0%
BV Minimum Detection - Depth:	2.400 ft
BV Maximum Detection - Depth:	20.000 ft
BV Sonar Channel:	Primary

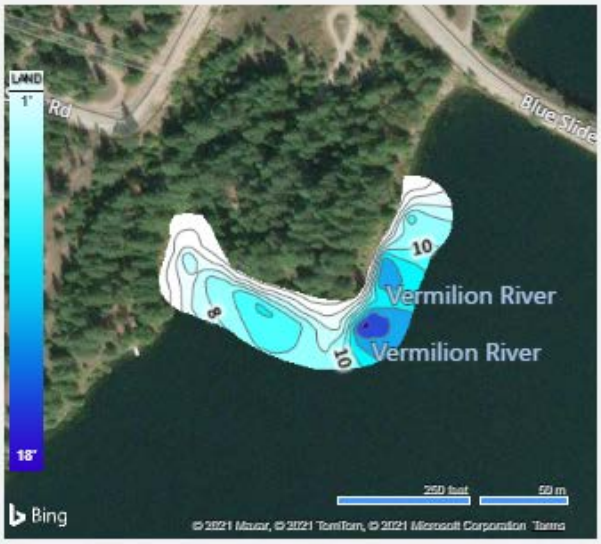
Quality Control

Reviewer:	Ray Valley
Comments:	We have reviewed this trip. Please use the "ASK THE EXPERTS" button for this trip if you have any questions.

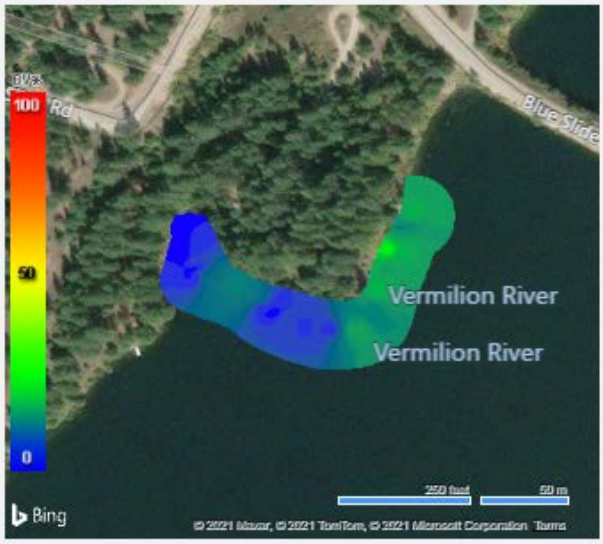
Survey Summary

Type	PAC	Avg BVp	SD BVp	Avg BVw	SD BVw	Depth Range	Depth Avg	Distance	No. Depth Records
Point	75.7%	10.4%	± 7.3%	7.9%	± 6.8%	5.40 - 19.56 ft	10.952 ft	0.057 miles	181
Grid	57.6%	10.9%	± 3.2%	6.3%	± 5.9%	0.54 - 18.42 ft	8.268 ft	NA	798

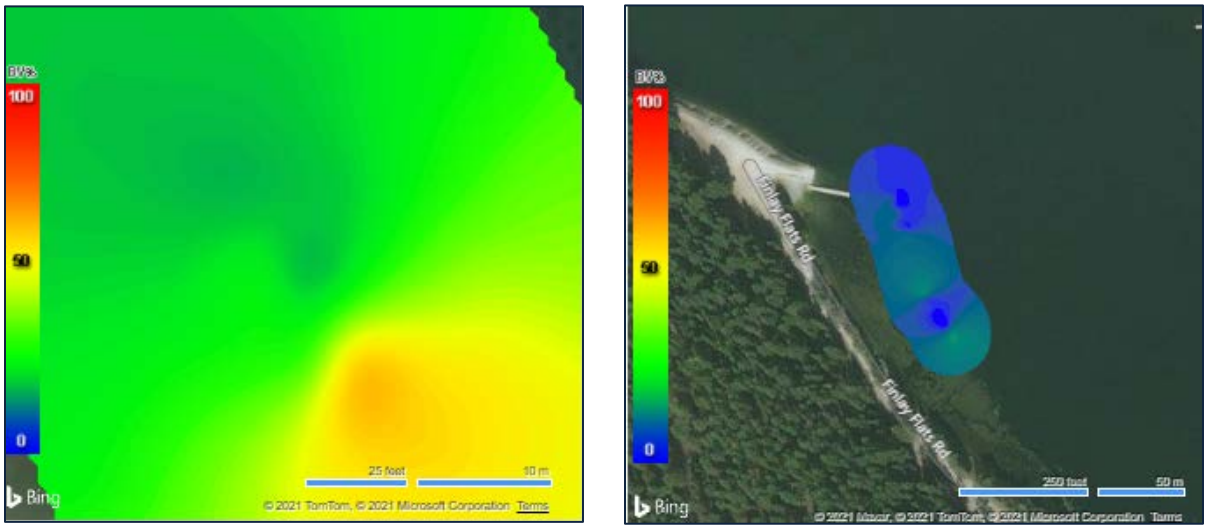
Bathymetric Contour Map



Vegetation Biovolume Heat Map



Plot NOX-79: At Time of Treatment (August 4, 2021 Left), ~ Six (6) Weeks Post (September 16, 2021 Right)



2021 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/Tribune)
NOX-79	100.0	33.0	8/4/2021	39.1	6.8	9/16/2021	-79%	~100%	Endo/Diquat

Observations/Notes NOX-79: Treated with combination of endothall and diquat, control visually estimated at 100 % control. No plants visible in in plot. Chara visible on bottom.

Plot NOX-79: At Time of Treatment (August 4, 2021)

BIOBASE — VEGETATION ANALYSIS REPORT

Noxon Reservoir, Sanders Montana — Report Time Stamp: 2021 September 18 - 16:45 (UTC) ... REPORT LINK

Survey Metadata	
Data Collector:	Thomas Moorhouse
Survey Time Stamp (UTC):	2021 August 05 - 01:32
Starting Location:	47.724945, -115.431232
Ending Location:	47.724784, -115.431124

Survey Statistics	
Average Water Temperature:	80.4 °F
Survey Area:	0.728 acres
Survey Volume:	2.414 acre ft
Percent of Waterbody Surveyed:	0.0%
Waterbody Area:	8023.683 acres

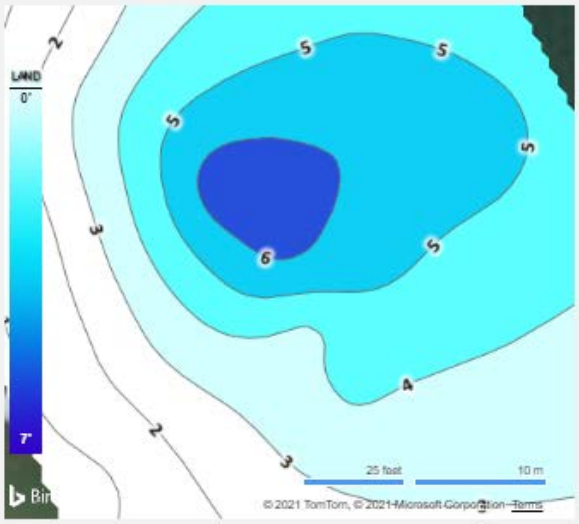
Survey Settings	
Includes Edited Data:	No
Track Buffer:	25 m
BV Grid Cell Size:	5 m
BV Minimum Detection - Percent:	5.0%
BV Minimum Detection - Depth:	2.400 ft
BV Maximum Detection - Depth:	20.000 ft
BV Sonar Channel:	Primary

Quality Control	
Reviewer:	Ian McCormack
Comments:	We have reviewed this trip. Please use the "ASK THE EXPERTS" button for this trip if you have any questions.

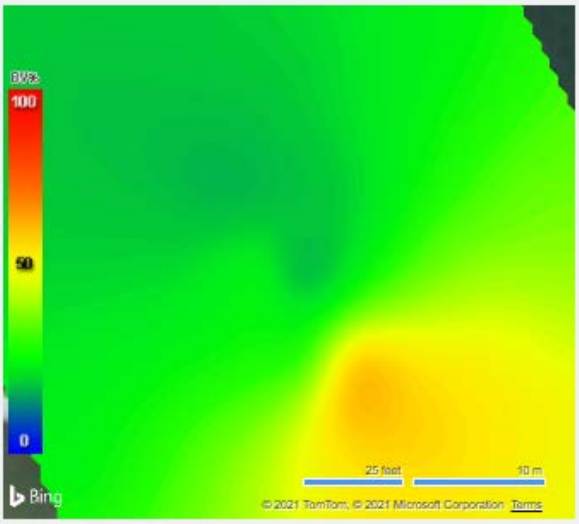
Survey Summary

Type	PAC	Avg BVp	SD BVp	Avg BVw	SD BVw	Depth Range	Depth Avg	Distance	No. Depth Records
Point	100%	28.3%	± 20.4%	28.3%	± 20.4%	3.40 - 7.41 ft	5.420 ft	0.012 miles	17
Grid	100%	33.0%	± 12.8%	33.0%	± 12.8%	0.38 - 6.65 ft	3.318 ft	NA	258

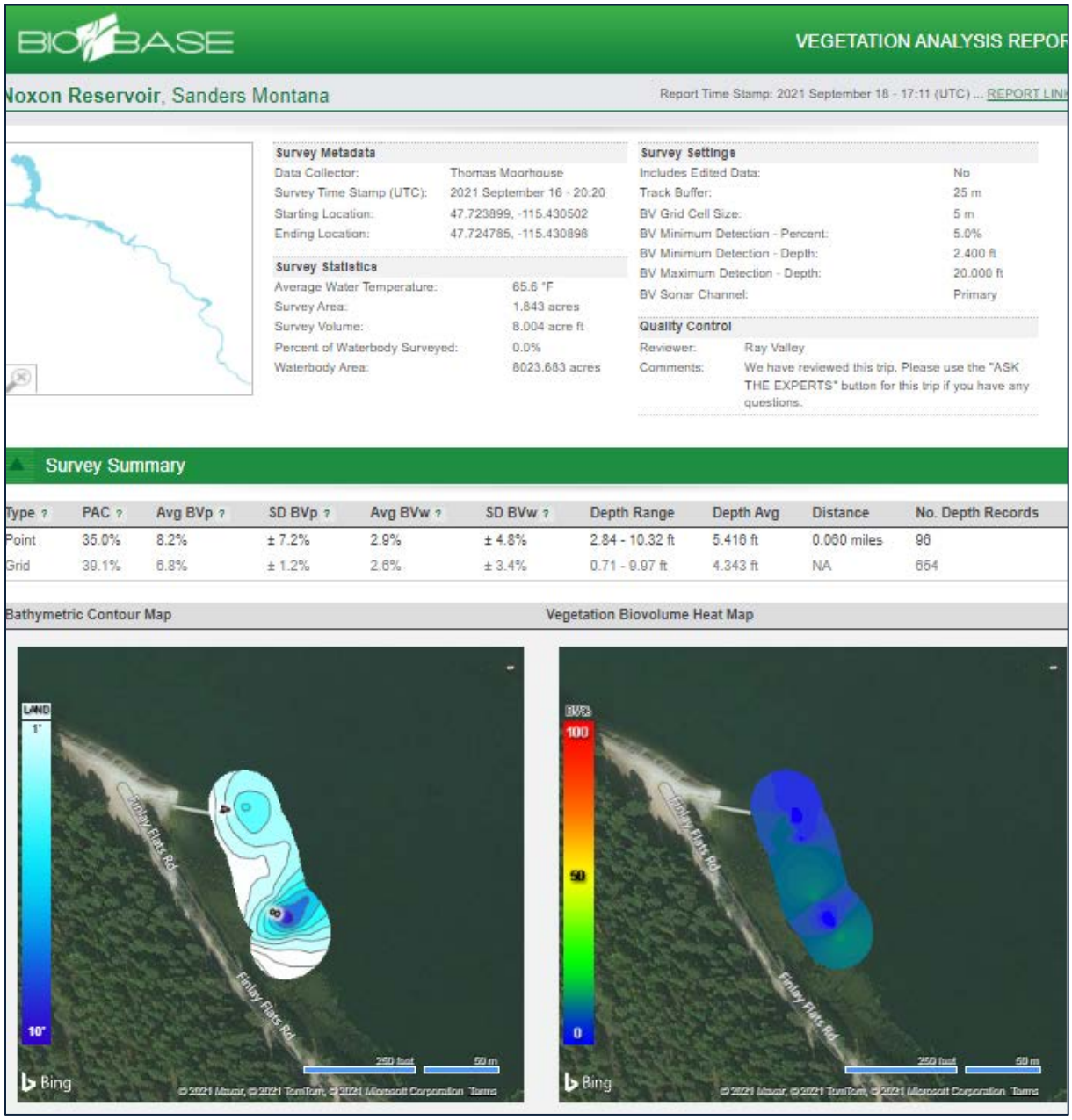
Bathymetric Contour Map



Vegetation Biovolume Heat Map



Plot NOX-79~ Six (6) Weeks Post (September 16, 2021)



BIOBASE — VEGETATION ANALYSIS REPOR

Noxon Reservoir, Sanders Montana — Report Time Stamp: 2021 September 18 - 17:11 (UTC) ... REPORT LIN

Survey Metadata

Data Collector:	Thomas Moorhouse
Survey Time Stamp (UTC):	2021 September 16 - 20:20
Starting Location:	47.723899, -115.430502
Ending Location:	47.724785, -115.430898

Survey Statistics

Average Water Temperature:	65.6 °F
Survey Area:	1.843 acres
Survey Volume:	8.004 acre ft
Percent of Waterbody Surveyed:	0.0%
Waterbody Area:	8023.683 acres

Survey Settings

Includes Edited Data:	No
Track Buffer:	25 m
BV Grid Cell Size:	5 m
BV Minimum Detection - Percent:	5.0%
BV Minimum Detection - Depth:	2.400 ft
BV Maximum Detection - Depth:	20.000 ft
BV Sonar Channel:	Primary

Quality Control

Reviewer:	Ray Valley
Comments:	We have reviewed this trip. Please use the "ASK THE EXPERTS" button for this trip if you have any questions.

Survey Summary

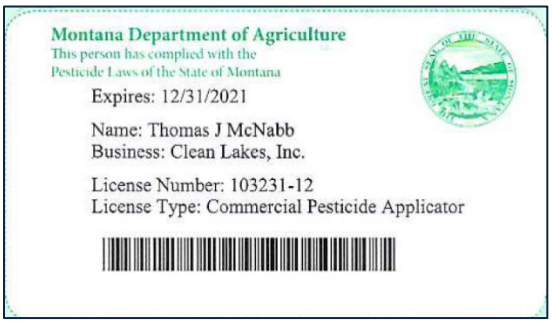
Type	PAC	Avg BVp	SD BVp	Avg BVw	SD BVw	Depth Range	Depth Avg	Distance	No. Depth Records
Point	35.0%	8.2%	± 7.2%	2.9%	± 4.8%	2.84 - 10.32 ft	5.416 ft	0.060 miles	98
Grid	39.1%	6.8%	± 1.2%	2.6%	± 3.4%	0.71 - 9.97 ft	4.343 ft	NA	654

Bathymetric Contour Map — Vegetation Biovolume Heat Map

CLEAN LAKES INC.

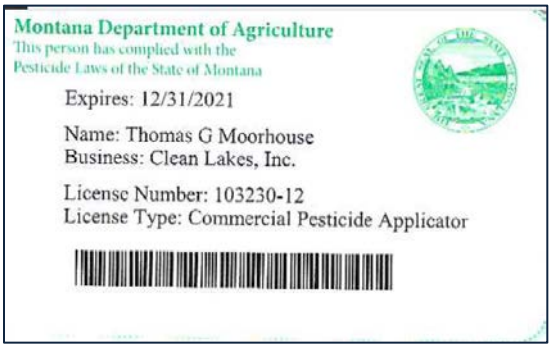
LIST OF PROJECT PERSONNEL

PROJECT DIRECTOR:


Montana Department of Agriculture
This person has complied with the
Pesticide Laws of the State of Montana
Expires: 12/31/2021
Name: Thomas J McNabb
Business: Clean Lakes, Inc.
License Number: 103231-12
License Type: Commercial Pesticide Applicator

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

PROJECT MANAGER


Montana Department of Agriculture
This person has complied with the
Pesticide Laws of the State of Montana
Expires: 12/31/2021
Name: Thomas G Moorhouse
Business: Clean Lakes, Inc.
License Number: 103230-12
License Type: Commercial Pesticide Applicator

Thomas G. Moorhouse
Montana Licensed Applicator
Applicators License No. 103230-12
Cell Phone: 208-929-2757
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SITE SAFETY AND HEALTH OFFICER: Thomas G. Moorhouse
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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: Drew McNabb

TASK FORCE COORDINATOR Kim McMahon Bergstrom
Phone: 406-546-2447
Email: pinnacle@blackfoot.net

END OF AQUATIC PESTICIDE APPLICATION REPORT