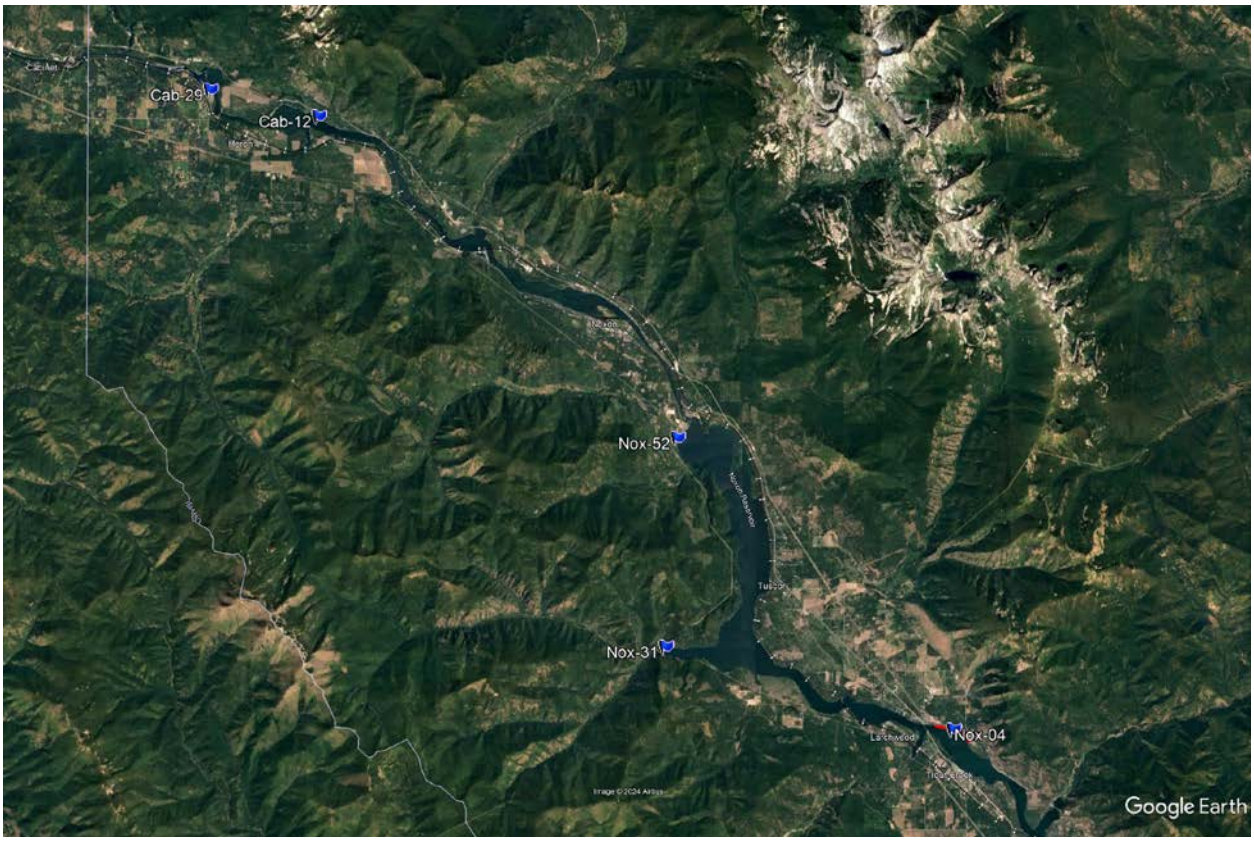
CLEAN LAKES INC.

NOXON RAPIDS AND CABINET GORGE RESERVOIRS
SANDERS COUNTY, MONTANA

2024 Aquatic Invasive Species (AIS)
Aquatic Pesticide Application Report (APAR)



Prepared By:

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Prepared For:
Sanders County
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August 2024

BACKGROUND INFORMATION: Clean Lakes, Inc. (CLI) was contracted by Sanders County, Montana to provide aquatic herbicide applications for the control of Aquatic Invasive Species (AIS) within discrete areas of Noxon Rapids and Cabinet Gorge Reservoirs in July 2024. 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 2024 Aquatic Invasive Species Aquatic Pesticide Application Plan (APAP)[1] prepared by CLI.

SCOPE OF WORK: The scope of work was for the application of aquatic herbicides for the control of Eurasian watermilfoil (EWM) in a total of 13.7 acres within previously identified and delineated areas of Noxon Rapids and Cabinet Gorge Reservoirs.

PRE-TREATMENT SURVEYS: In June 2024 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 June 25, 2024, CLI received the potential 2024 treatment GIS polygons and survey points from Kim McMahon as developed by Craig McLane (MTFWP). CLI developed a tentative budgetary plan on June 30, 2024 with a final plan approved on July 4, 2024 based on reviewing conditions prior to treatment. Due to lack of EWM visible on the day of treatment management areas NOX-03, NOX-08, and NOX-77 were dropped from the final treatment plan (See APAP). A treatment was scheduled for the week of July 8, with treatments ultimately carried out on July 8 and 9, 2024.

SUMMARY OF ACRES TREATED: The final plan consisted of treating 13.7 acres of EWM in Noxon Rapids and Cabinet Gorge Reservoirs. Treatment plots were identified through GIS shapefiles and treatment plans at the direction of the county. The aquatic herbicide ProcellaCOR® (florpyrauxifen) was used for treatment at all sites.

[1] NOXON RAPIDS RESERVOIR, SANDERS COUNTY, MONTANA, 2024 AIS Aquatic Pesticide Application Plan (APAP)

TREATMENT SCHEDULE: The aquatic herbicide applications were performed on July 8 and 9, 2024 by CLI staff Thomas Moorhouse and field support staff as outlined in Table 1 below:

Table 1: Treatment Plots, Dates and Times

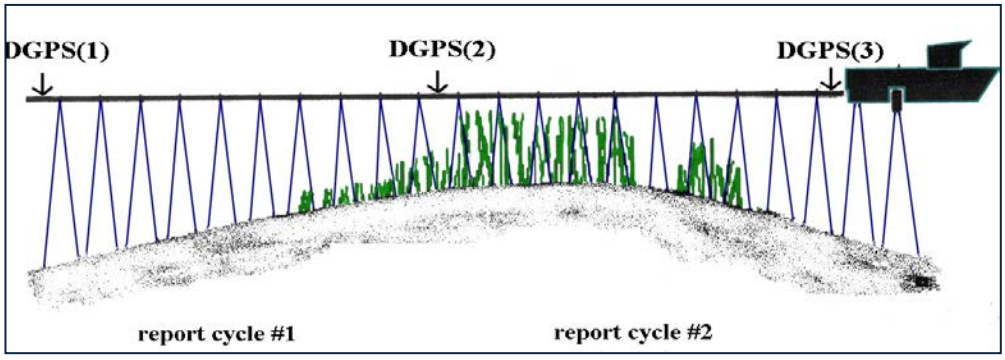
2024 Noxon Rapids and Cabinet Gorge					Application Data								
Plot #	Site Name	Acres	Sanders County Ave depth (ft)	Volume (ac ft)	Date	Start Time	Stop Time	Commodity Treated	Applicator	License #	Wind (MPH) & Direction	Weather	Water Temp (F)
Nox-04	Homes Opp TC	6.0	7.5	45.0	7/9/2024	10:35 AM	11:16 AM	N/A	T. Moorhouse	103230-12	none	Sunny	71
Nox-31	Marten Ck	3.1	9	27.9	7/9/2024	9:44 AM	9:58 AM	N/A	T. Moorhouse	103230-12	4.8 E	Sunny	72
Nox-52	South Shore Rec	2.3	11.4	26.2	7/9/2024	8:54 AM	9:05 AM	N/A	T. Moorhouse	103230-12	5.2 S	Sunny	70
Cab-12	Big Eddy Rec	1.6	4.1	6.6	7/8/2024	12:20 PM	12:31 PM	N/A	T. Moorhouse	103230-12	None	Sunny	71
Cab-29	Heron BL	0.7	3	2.1	7/8/2024	12:56pm	1:01pm	N/A	T. Moorhouse	103230-12	None	Sunny	71
Totals		13.7				;							
* Aquatic herbicide used recommended by Sanders County, Clean Lakes, Inc.													

EQUIPMENT USED: A CLI Littoral Zone Treatment vessel (LittLine®) was used to perform the aquatic herbicide applications on July 8 and 9, 2024. The herbicide applications were made to the lower portion of the water column to increase herbicide concentration and exposure time (CET) relationships for the control of the target species. The application vessel was inspected on July 8, 2024 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® GPS 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.

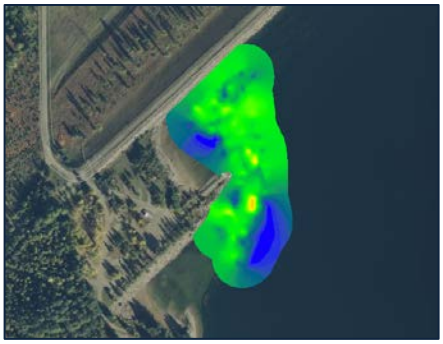
The LittLine system's computerized rate controllers regulate the aquatic herbicide applications through preset treatment rates.

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 (July 8, 2024 in Cabinet Gorge Reservoir and July 9, 2024 in Noxon Rapids Reservoir), and at five (5) Weeks Post Treatment (August 12, 2024). Data was collected to compare At Time of Treatment and five (5) Week Post Treatment for 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 NOX 52, Noxon Rapids Reservoir, is pictured at right.



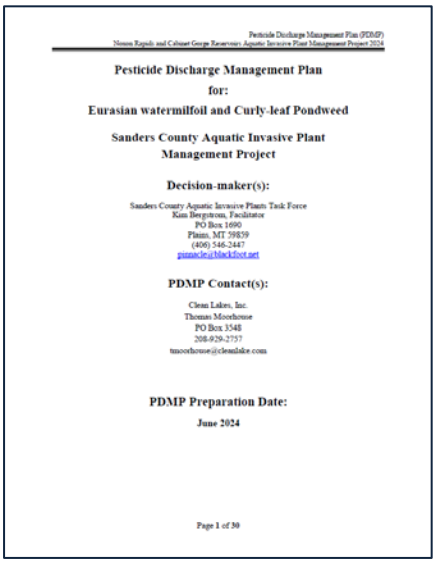
AQUATIC HERBICIDES CLI provided the aquatic herbicides for the project. CLI provided the required support equipment for material handling (herbicide transfer) as well as support vehicles for the vessels assigned to the project. The aquatic herbicides were applied to the specified areas of Noxon Rapids and Cabinet Gorge Reservoirs for the control of Eurasian watermilfoil, 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. Kim McMahon (Pinnacle Research) was on site the day of treatment.

TREATMENT SITE DATA

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

2024 Noxon Rapids and Cabinet Gorge Reservoirs								
Plot #	Site Name	Reservoir	Acres	Sanders County Ave depth (ft)	Volume (ac ft)	USEPA Reg. # 67690-80 ProcellaCOR Rate (PDU)	ProcellaCOR Qty (PDU)	ProcellaCOR Qty (Gal)
Nox-04	Homes Opp TC	Noxon	6.0	7.5	45.0	5.95	268	6.63
Nox-31	Marten Ck	Noxon	3.1	9	27.9	5	140	3.45
Nox-52	South Shore Rec	Noxon	2.3	11.4	26.2	5	131	3.25
Cab-12	Big Eddy Rec	Cabinet	1.6	4.1	6.6	5	33	0.81
Cab-29	Heron BL	Cabinet	0.7	3	2.1	5	11	0.26
Totals			13.7				582	14.4
* Aquatic herbicide used recommended by Sanders County, Clean Lakes, Inc.								

PERMIT COMPLIANCE: CLI developed the Aquatic Pesticide Application Plan on July 6, 2024, as well as the Pesticide Discharge Management Plan (PDMP- June 24, 2024) 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 July 8, 2024.


Pesticide Discharge Management Plan (PDMP)
Noxon Rapids and Cabinet Gorge Reservoirs Aquatic Invasive Plant Management Project 2024

Pesticide Discharge Management Plan
for:
Eurasian watermilfoil and Curly-leaf Pondweed

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:
June 2024

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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 2024 Pre-Treatment Surveys that were used to generate the final 2024 Treatment Plan.

POST TREATMENT SURVEY: The Post Treatment survey was carried out by Kim McMahon, Sean Moran (Avista) and CLI (Tom Moorhouse, Tom McNabb, Tom Benney) on a vessel provided by CLI at Noxon Rapids Reservoir on August 13, 2024, approximately five weeks after treatment. Cabinet Gorge Reservoir was surveyed by CLI staff (Moorhouse, Benney) on August 12, 2024.

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), as measured through sonar surveys, shows a

reduction range of 29% to 83%, while Post Treatment EWM Injury ranged from 85 to 100%. Post EWM Injury was determined through visual observation from the survey boat and by throwing a weed rake randomly within the management area. In Cabinet Gorge Reservoir the change in SAV Biovolume (BV) shows a gain of 8% to a reduction range of 31%, while Post Treatment EWM Injury was greater than 98%.

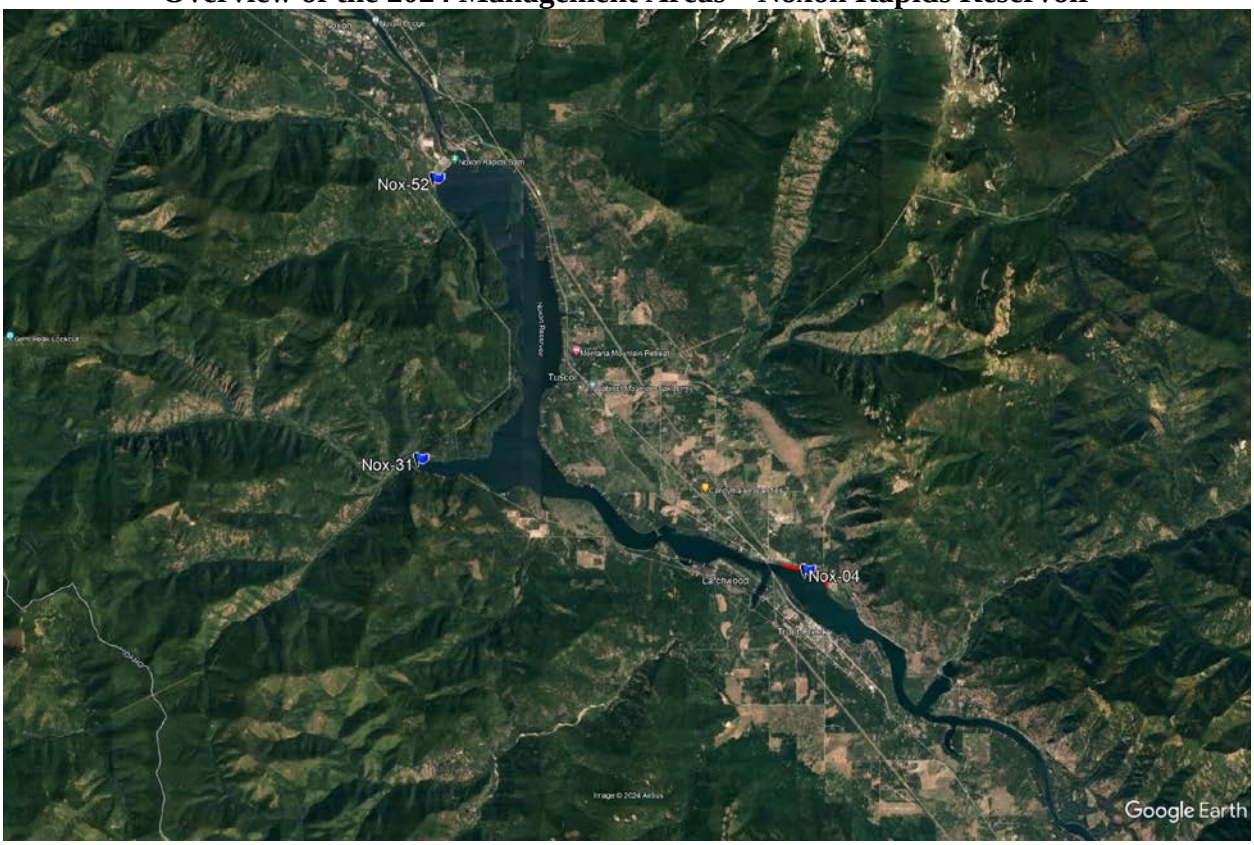
Table 3: Plot Percent Submersed Aquatic Vegetation (SAV) Cover and SAV Bio-Volume Present At Time of Application and Five (5) Weeks Post Treatment

2024 Noxon Rapids Reservoir AIS Treatment Plots: At Time of and ~ Five (5) Week Post Plot SAV % Cover and SAV BioVolume Data (Grid Data)									
Plot Number	Date Data Collected Pre Treatment	SAV % Cover	SAV % Bio-Volume	Date Data Collected-Post Treatment	SAV % Cover	SAV % Bio-Volume	SAV % BV Change	Post Treatment EWM Injury Rank	Herbicides Used (ProcellaCOR)
Noxon Rapids									
Nox-04	7/9/2024	97.5	28.9	8/13/2024	99.9	20.6	-29%	85-90%	ProcellaCOR
Nox-31	7/9/2024	100.0	84.2	8/13/2024	89.2	14.3	-83%	100%	ProcellaCOR
Nox-52	7/9/2024	82.9	21.1	8/13/2024	97.7	13.6	-36%	100%	ProcellaCOR
2024 Cabinet Gorge Reservoir AIS Treatment Plots: At Time of and ~ Five (5) Week Post Plot SAV % Cover and SAV BioVolume Data (Grid Data)									
Plot Number	Date Data Collected Pre Treatment	SAV % Cover	SAV % Bio-Volume	Date Data Collected-Post Treatment	SAV % Cover	SAV % Bio-Volume	SAV % BV Change	Post Treatment EWM Injury Rank	Herbicides Used (Littora or Tribune and Flumigard)
Cabinet Gorge Reservoir									
Cab-12	7/8/2024	89.6	18.2	8/12/2024	97.8	19.7	8%	98%	ProcellaCOR
Cab-29	7/8/2024	77.8	22.7	8/12/2024	81.1	15.7	-31%	98%	ProcellaCOR

The observations contained in this report (see below) are general five (5) 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 many times be attributed to a recovery or increase in native vegetation in response to selectively controlling the target species.

TREATMENT AREA PLOT MAPS

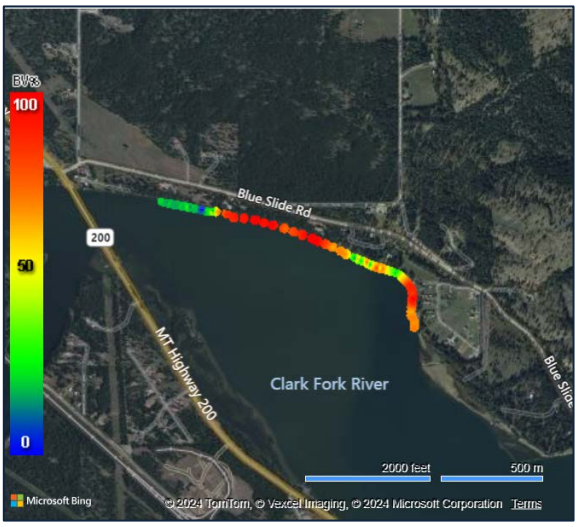
Overview of the 2024 Management Areas – Noxon Rapids Reservoir



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

NOXON RAPIDS RESERVOIR

Plot NOX-04: At Time of Treatment (July 9, 2024 – Left), ~ Five (5) Weeks Post (August 13, 2024 - Right)



2024 Noxon Rapids Reservoir AIS Treatment Plots: At Time of and ~ Five (5) Week Post Plot SAV % Cover and SAV BioVolume Data (Grid Data)									
Plot Number	Date Data Collected Pre Treatment	SAV % Cover	SAV % Bio-Volume	Date Data Collected-Post Treatment	SAV % Cover	SAV % Bio-Volume	SAV % BV Change	Post Treatment EWM Injury Rank	Herbicides Used (ProcellaCOR)
Noxon Rapids									
Nox-04	7/9/2024	97.5	28.9	8/13/2024	99.9	20.6	-29%	85-90%	ProcellaCOR

Observations/Notes NOX-04: Treated with florpyrauxifen, control visually estimated at +/- 85 to 90%. Control excellent throughout plot. Downstream part of management area had more spotty EWM visible than upstream part of management area. Elodea, Coontail, Richardson Pondweed, Buttercup present. No rake toss, no images available.

Plot NOX-04: At Time of Treatment (July 9, 2024)

BIOBASE — VEGETATION ANALYSIS REPORT

Noxon Reservoir, Sanders Montana

Report Time Stamp: 2024 August 16 - 16:36 (UTC) ... REPORT LINK

Survey Metadata

Data Collector:	Tom Moorhouse
Survey Time Stamp (UTC):	2024 July 09 - 16:35
Starting Location:	47.854242, -115.605709
Ending Location:	47.848584, -115.588754
Distance	0.753 miles

Survey Statistics

Average Water Temperature:	70.7 °F
Survey Area:	8.910 acres
Survey Volume:	31.955 acre ft
Percent of Waterbody Surveyed:	0.1%
Waterbody Area:	8026.264 acres

Survey Settings

Includes Edited Data:	Yes
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

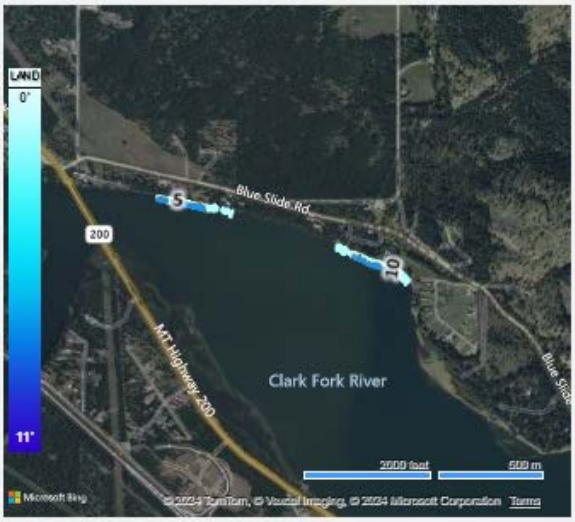
Quality Control

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	No. Depth Records
Point	82.5%	28.9%	± 22.7%	23.9%	± 22.1%	2.92 - 12.10 ft	6.881 ft	242
Grid	97.5%	45.5%	± 23.9%	44.3%	± 24.6%	0.29 - 10.63 ft	3.586 ft	3180

Bathymetric Contour Map



Vegetation Biovolume Heat Map

Plot NOX-04: ~ Five (5) Weeks Post (August 13, 2024)

BIOBASE — VEGETATION ANALYSIS REPORT

Noxon Reservoir, Sanders Montana

Report Time Stamp: 2024 August 16 - 18:10 (UTC) ... REPORT LINK

Survey Metadata	
Data Collector:	Tom Moorhouse
Survey Time Stamp (UTC):	2024 August 13 - 16:47
Starting Location:	47.854202, -115.605636
Ending Location:	47.848432, -115.588652
Distance	0.926 miles

Survey Statistics	
Average Water Temperature:	75.1 °F
Survey Area:	19.744 acres
Survey Volume:	127.675 acre ft
Percent of Waterbody Surveyed:	0.2%
Waterbody Area:	8026.264 acres

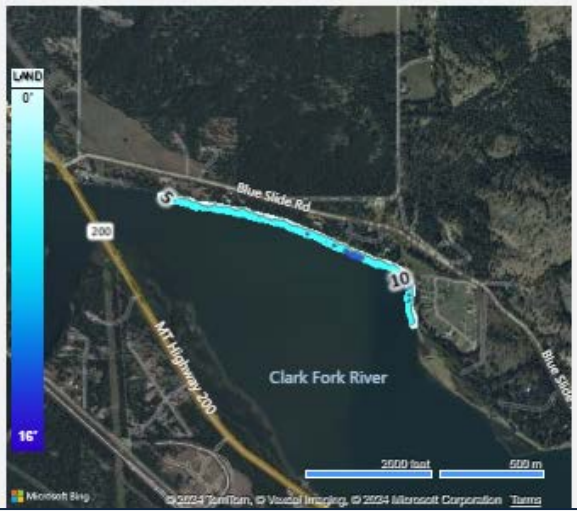
Survey Settings	
Includes Edited Data:	No
Track Buffer:	25 m
BV Grid Cell Size:	5 m
BV Minimum Detection - Percent:	5.0%
BV Minimum Detection - Depth:	2.400 ft
BV Maximum Detection - Depth:	20.000 ft
BV Sonar Channel:	Primary

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

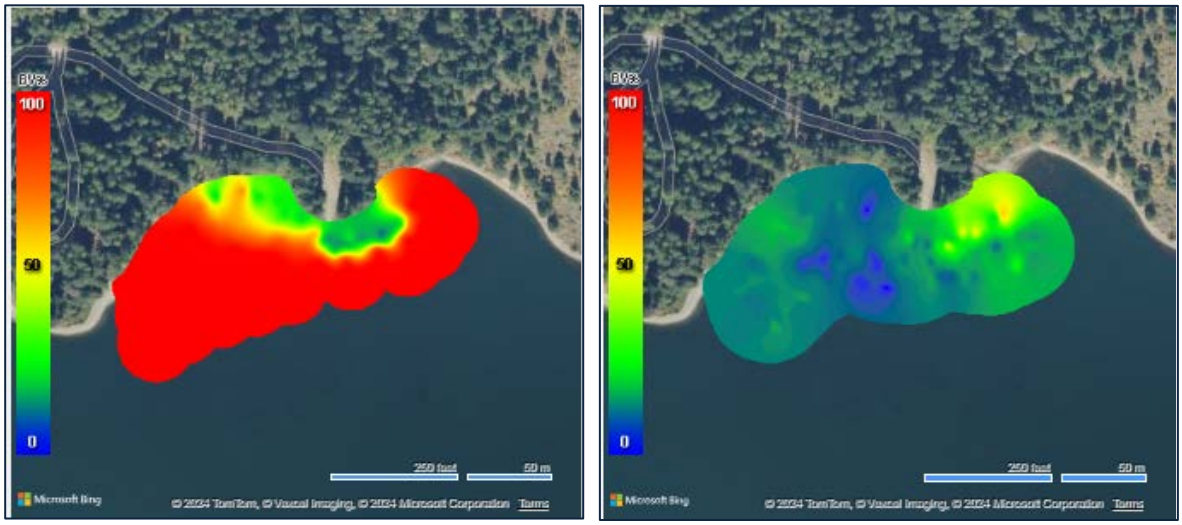
Type	PAC	Avg BVp	SD BVp	Avg BVw	SD BVw	Depth Range	Depth Avg	No. Depth Records
Point	95.2%	20.6%	± 14.8%	19.6%	± 14.8%	3.45 - 16.78 ft	8.414 ft	1120
Grid	99.9%	20.9%	± 7.8%	20.9%	± 7.9%	0.35 - 15.79 ft	6.466 ft	7046

Bathymetric Contour Map



Vegetation Biovolume Heat Map

Plot NOX-31: At Time of Treatment (July 9, 2024 – Left), ~ Five (5) Weeks Post (August 13, 2024 - Right)



2024 Noxon Rapids Reservoir AIS Treatment Plots: At Time of and ~ Five (5) Week Post Plot SAV % Cover and SAV BioVolume Data (Grid Data)									
Plot Number	Date Data Collected Pre Treatment	SAV % Cover	SAV % Bio-Volume	Date Data Collected-Post Treatment	SAV % Cover	SAV % Bio-Volume	SAV % BV Change	Post Treatment EWM Injury Rank	Herbicides Used (ProcellaCOR)
Noxon Rapids									
Nox-31	7/9/2024	100.0	84.2	8/13/2024	89.2	14.3	-83%	100%	ProcellaCOR

Observations/Notes NOX-31: Treated with florpyrauxifen, control visually estimated at 100%. Control excellent throughout plot. Elodea, Richardson Pondweed, and dead EWM stems on rake toss.

Plot NOX-31: At Time of Treatment (July 9, 2024)

BIOBASE — VEGETATION ANALYSIS REPOR

Noxon Reservoir, Sanders Montana

Report Time Stamp: 2024 August 16 - 18:28 (UTC) ... REPORT LINK

Survey Metadata	
Data Collector:	Tom Moorhouse
Survey Time Stamp (UTC):	2024 July 09 - 15:43
Starting Location:	47.881955, -115.744903
Ending Location:	47.881804, -115.746262
Distance	0.042 miles

Survey Statistics	
Average Water Temperature:	72.4 °F
Survey Area:	4.416 acres
Survey Volume:	14.392 acre ft
Percent of Waterbody Surveyed:	0.1%
Waterbody Area:	8026.264 acres

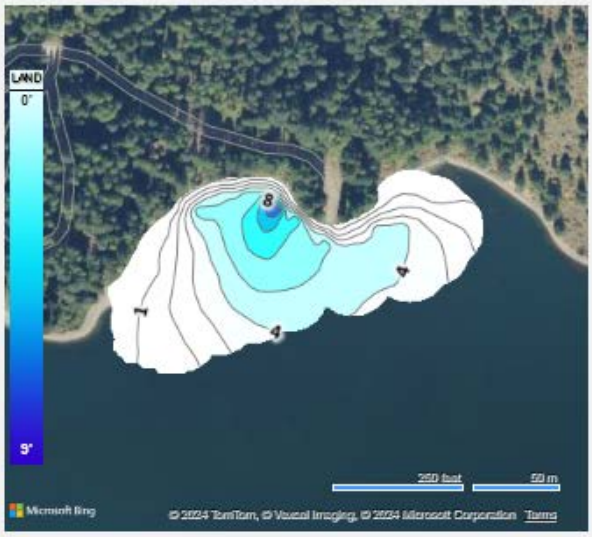
Survey Settings	
Includes Edited Data:	Yes
Track Buffer:	25 m
BV Grid Cell Size:	5 m
BV Minimum Detection - Percent:	5.0%
BV Minimum Detection - Depth:	2.400 ft
BV Maximum Detection - Depth:	20.000 ft
BV Sonar Channel:	Primary

Quality Control	
Reviewer:	Ian McCormack
Comments:	False bathymetry due to inconsistent bottom tracking

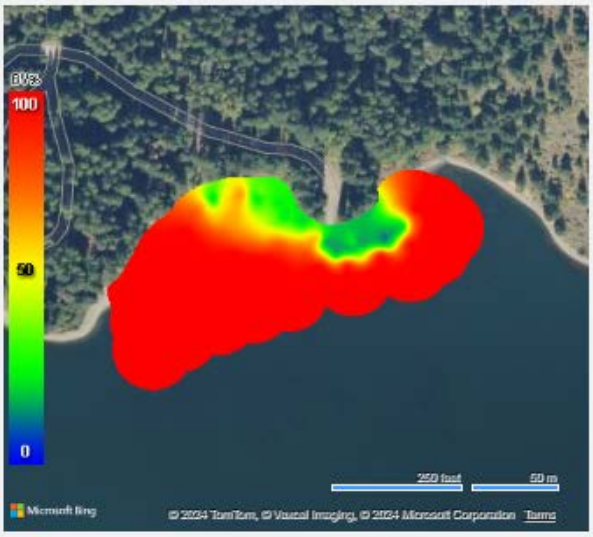
Survey Summary

Type	PAC	Avg BVp	SD BVp	Avg BVw	SD BVw	Depth Range	Depth Avg	No. Depth Records
Point	94.7%	24.5%	± 20.5%	23.2%	± 20.5%	4.00 - 9.93 ft	5.497 ft	96
Grid	100%	84.2%	± 24.8%	84.2%	± 24.8%	0.40 - 9.10 ft	3.259 ft	1577

Bathymetric Contour Map



Vegetation Biovolume Heat Map



Plot NOX-31: ~ Five (5) Weeks Post (August 13, 2024)

BIOBASE — VEGETATION ANALYSIS REPORT

Noxon Reservoir, Sanders Montana

Report Time Stamp: 2024 August 16 - 18:08 (UTC) ... REPORT LINK

Survey Metadata

Data Collector:	Tom Moorhouse
Survey Time Stamp (UTC):	2024 August 13 - 16:13
Starting Location:	47.861929, -115.744866
Ending Location:	47.861570, -115.746971
Distance	0.241 miles

Survey Statistics

Average Water Temperature:	75.0 °F
Survey Area:	4.705 acres
Survey Volume:	38.071 acre ft
Percent of Waterbody Surveyed:	0.1%
Waterbody Area:	8026.264 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

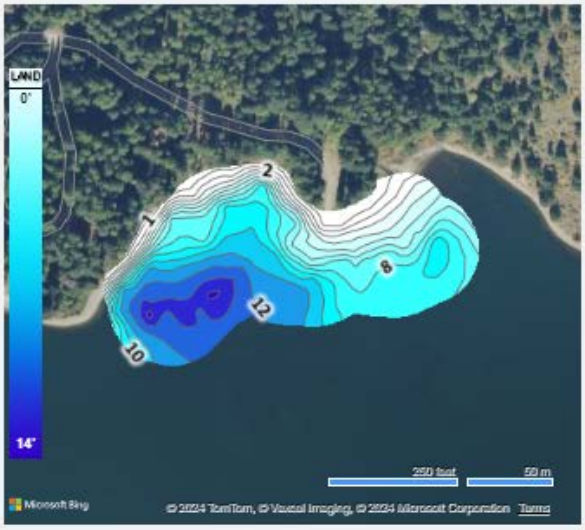
Quality Control

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

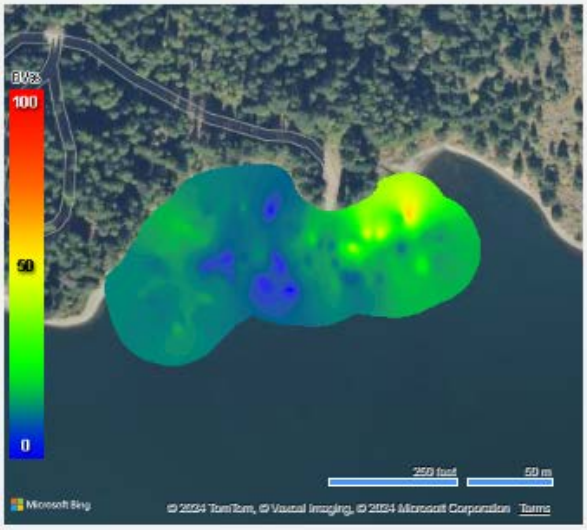
Survey Summary

Type	PAC	Avg BVp	SD BVp	Avg BVw	SD BVw	Depth Range	Depth Avg	No. Depth Records
Point	85.2%	12.1%	± 9.9%	10.4%	± 9.8%	3.38 - 14.59 ft	9.298 ft	572
Grid	89.2%	14.3%	± 10.2%	12.8%	± 10.6%	0.34 - 14.14 ft	8.092 ft	1681

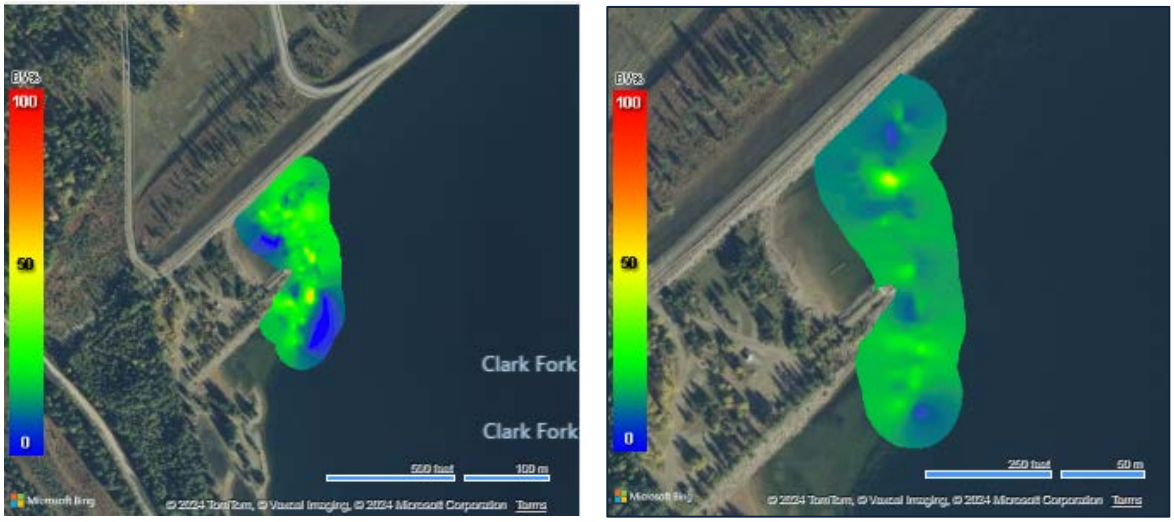
Bathymetric Contour Map



Vegetation Biovolume Heat Map



Plot NOX-52: At Time of Treatment (July 9, 2024 – Left), ~ Five (5) Weeks Post (August 13, 2024 - Right)



2024 Noxon Rapids Reservoir AIS Treatment Plots: At Time of and ~ Five (5) Week Post Plot SAV % Cover and SAV BioVolume Data (Grid Data)									
Plot Number	Date Data Collected Pre Treatment	SAV % Cover	SAV % Bio-Volume	Date Data Collected-Post Treatment	SAV % Cover	SAV % Bio-Volume	SAV % BV Change	Post Treatment EWM Injury Rank	Herbicides Used (ProcellaCOR)
Noxon Rapids									
Nox-52	7/9/2024	82.9	21.1	8/13/2024	97.7	13.6	-36%	100%	ProcellaCOR

Observations/Notes NOX-52: Treated with florpyrauxifen, control visually estimated at 100%. Control excellent throughout plot. Elodea, Chara, and dead EWM stems on rake toss.

Plot NOX-52: At Time of Treatment (July 9, 2024)

BIOBASE — VEGETATION ANALYSIS REPORT

Noxon Reservoir, Sanders Montana

Report Time Stamp: 2024 July 31 - 09:31 (UTC) ... REPORT LINK

Survey Metadata

Data Collector:	Tom Moorhouse
Survey Time Stamp (UTC):	2024 July 09 - 14:53
Starting Location:	47.955168, -115.740013
Ending Location:	47.954362, -115.739488
Distance	0.527 miles

Survey Statistics

Average Water Temperature:	70.3 °F
Survey Area:	5.515 acres
Survey Volume:	61.980 acre ft
Percent of Waterbody Surveyed:	0.1%
Waterbody Area:	8026.264 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

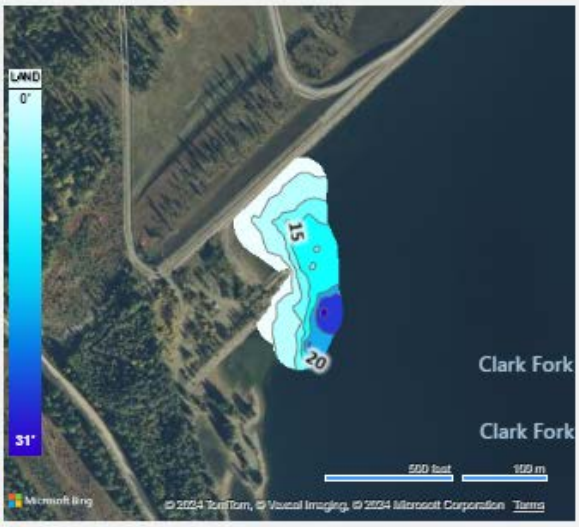
Quality Control

Reviewer:	Ian McCormack
Comments:	Inconsistent bottom tracking due to dense vegetation

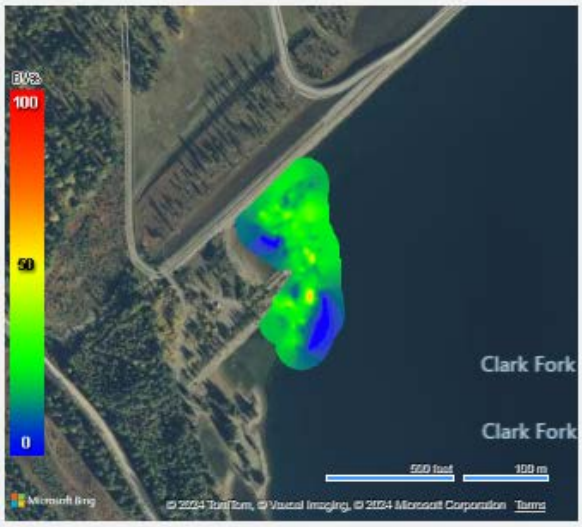
Survey Summary

Type	PAC	Avg BVp	SD BVp	Avg BVw	SD BVw	Depth Range	Depth Avg	No. Depth Records
Point	82.4%	23.5%	± 15.6%	19.4%	± 15.1%	3.68 - 32.45 ft	12.811 ft	812
Grid	82.9%	21.1%	± 8.6%	17.5%	± 11.2%	0.38 - 31.43 ft	11.239 ft	1976

Bathymetric Contour Map



Vegetation Biovolume Heat Map



Plot NOX-52: ~ Five (5) Weeks Post (August 13, 2024)

BIOBASE — VEGETATION ANALYSIS REPORT

Noxon Reservoir, Sanders Montana

Report Time Stamp: 2024 August 16 - 18:09 (UTC) ... REPORT LINK

Survey Metadata

Data Collector:	Tom Moorhouse
Survey Time Stamp (UTC):	2024 August 13 - 15:34
Starting Location:	47.954219, -115.739473
Ending Location:	47.954274, -115.739577
Distance	0.228 miles

Survey Statistics

Average Water Temperature:	74.8 °F
Survey Area:	3.505 acres
Survey Volume:	32.736 acre ft
Percent of Waterbody Surveyed:	0.0%
Waterbody Area:	8026.264 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

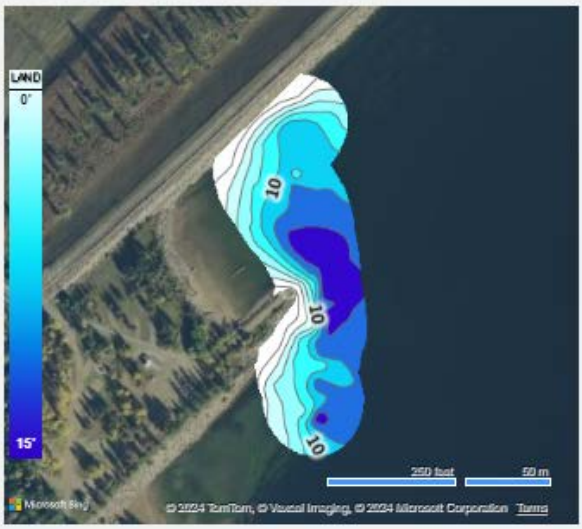
Quality Control

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

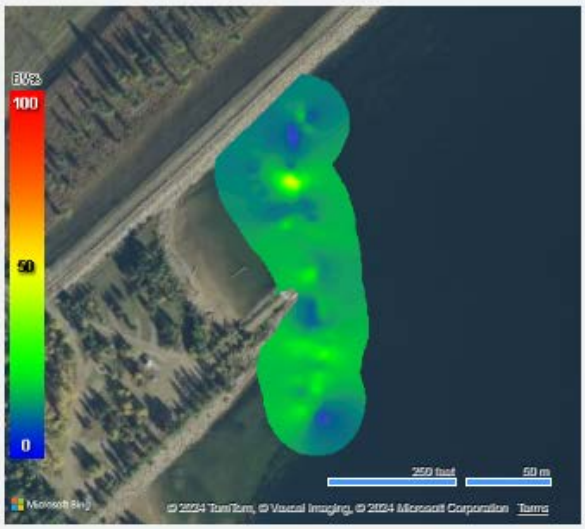
Survey Summary

Type	PAC	Avg BVp	SD BVp	Avg BVw	SD BVw	Depth Range	Depth Avg	No. Depth Records
Point	89.3%	14.9%	± 10.1%	13.3%	± 10.0%	4.09 - 16.00 ft	11.186 ft	391
Grid	97.7%	13.6%	± 5.2%	13.3%	± 5.5%	0.41 - 15.39 ft	9.341 ft	1256

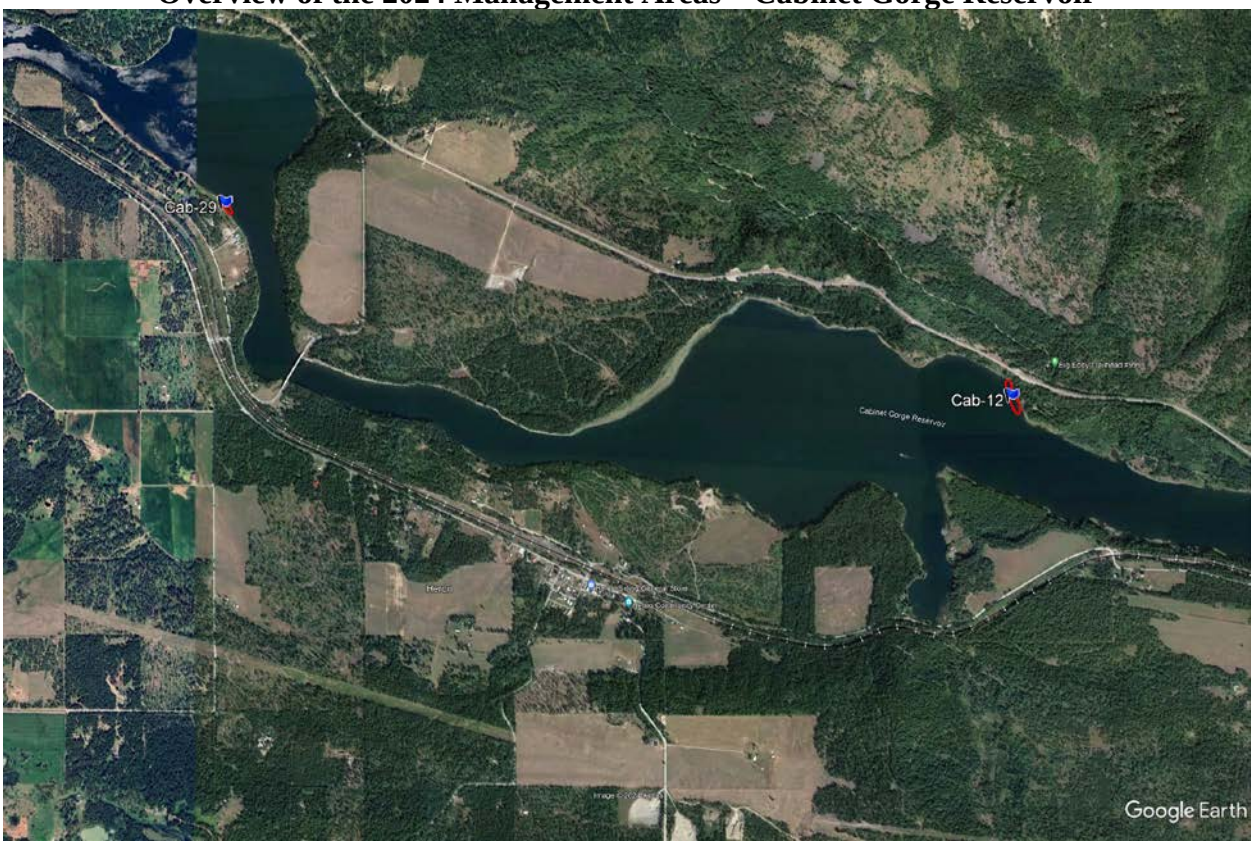
Bathymetric Contour Map



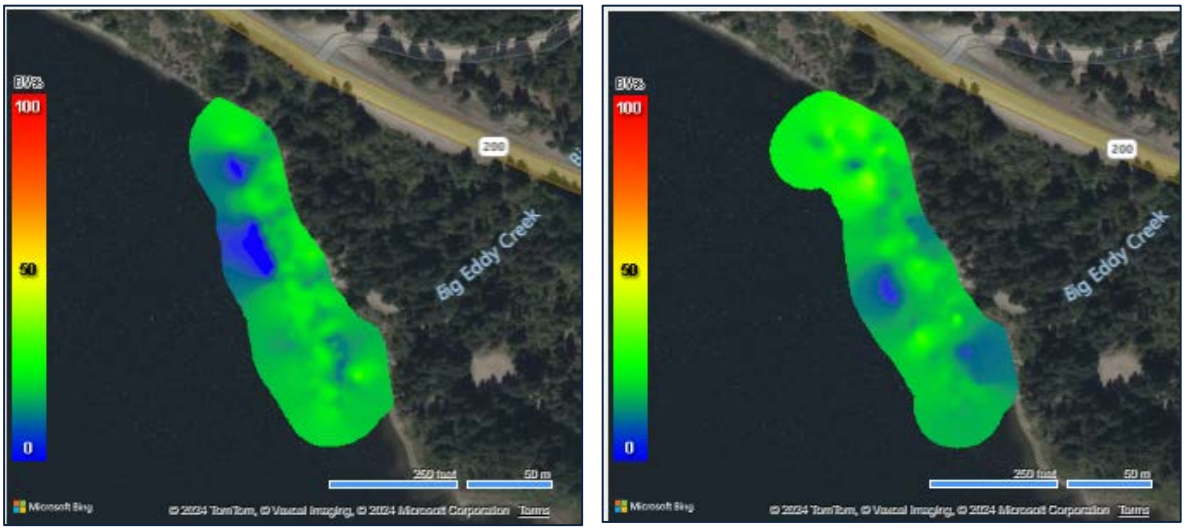
Vegetation Biovolume Heat Map



Overview of the 2024 Management Areas – Cabinet Gorge Reservoir



Plot CAB-12: At Time of Treatment (July 8, 2024 – Left),
~ Five (5) Weeks Post (August 12, 2024 - Right)



Plot Number	Date Data Collected Pre Treatment	SAV % Cover	SAV % Bio-Volume	Date Data Collected-Post Treatment	SAV % Cover	SAV % Bio-Volume	SAV % BV Change	Post Treatment EWM Injury Rank	Herbicides Used (ProcellaCOR)
Cabinet Gorge Reservoir									
Cab-12	7/8/2024	89.6	18.2	8/12/2024	97.8	19.7	8%	98%	ProcellaCOR

Observations/Notes CAB-12: Treated with florpyrauxifen, control visually estimated at 98% control. Control excellent throughout plot, some EWM in shallows near shore. Coontail, Elodea dominant.

Plot CAB-05: At Time of Treatment (July 8, 2024)

BIOBASE — VEGETATION ANALYSIS REPORT

Cabinet Gorge Reservoir, Sanders Montana

Report Time Stamp: 2024 July 12 - 17:26 (UTC) ... REPORT LINK

Survey Metadata

Data Collector:	Tom Moorhouse
Survey Time Stamp (UTC):	2024 July 08 - 18:19
Starting Location:	48.066621, -115.927012
Ending Location:	48.066529, -115.927241
Distance	0.376 miles

Survey Statistics

Average Water Temperature:	69.7 °F
Survey Area:	3.231 acres
Survey Volume:	34.891 acre ft
Percent of Waterbody Surveyed:	0.1%
Waterbody Area:	3004.952 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

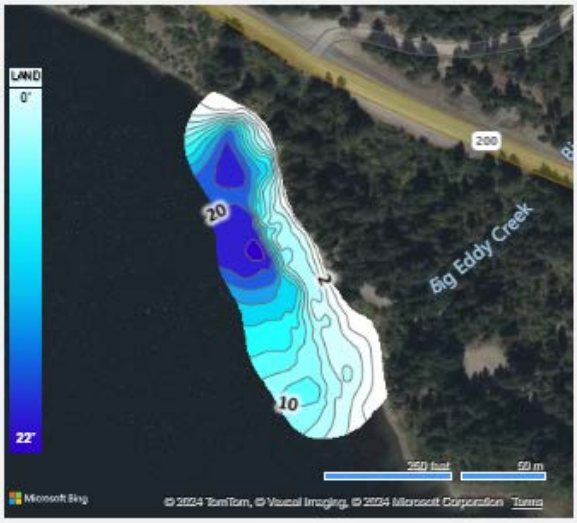
Quality Control

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

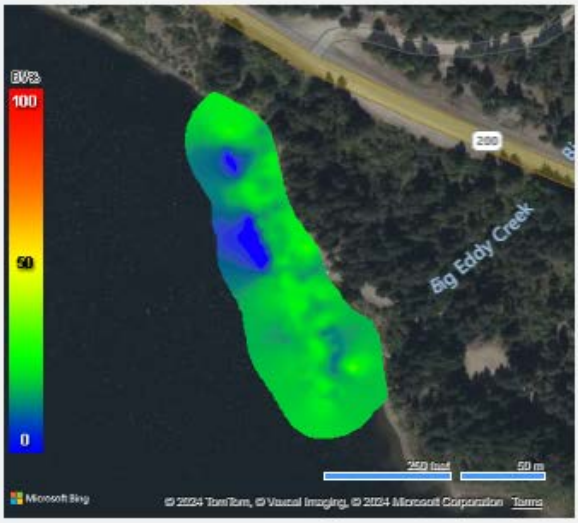
Survey Summary

Type	PAC	Avg BVp	SD BVp	Avg BVw	SD BVw	Depth Range	Depth Avg	No. Depth Records
Point	83.2%	20.4%	± 11.3%	16.9%	± 10.8%	3.58 - 22.76 ft	11.679 ft	658
Grid	89.6%	18.2%	± 5.5%	16.3%	± 7.6%	0.37 - 22.47 ft	10.799 ft	1163

Bathymetric Contour Map



Vegetation Biovolume Heat Map



Plot CAB-05 ~ Five (5) Weeks Post (August 12, 2024)

BIOBASE — VEGETATION ANALYSIS REPORT

Cabinet Gorge Reservoir, Sanders Montana

Report Time Stamp: 2024 August 16 - 18:05 (UTC) ... REPORT LINK

Survey Metadata

Data Collector:	Tom Moorhouse
Survey Time Stamp (UTC):	2024 August 12 - 21:48
Starting Location:	48.066629, -115.927080
Ending Location:	48.067928, -115.928481
Distance	0.320 miles

Survey Statistics

Average Water Temperature:	76.1 °F
Survey Area:	3.627 acres
Survey Volume:	36.766 acre ft
Percent of Waterbody Surveyed:	0.1%
Waterbody Area:	3004.952 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

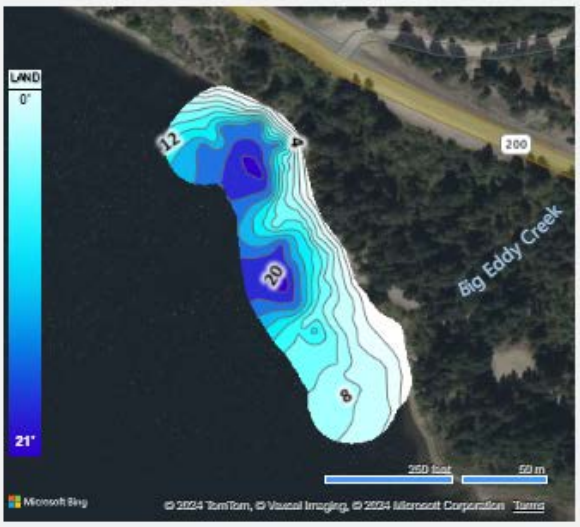
Quality Control

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

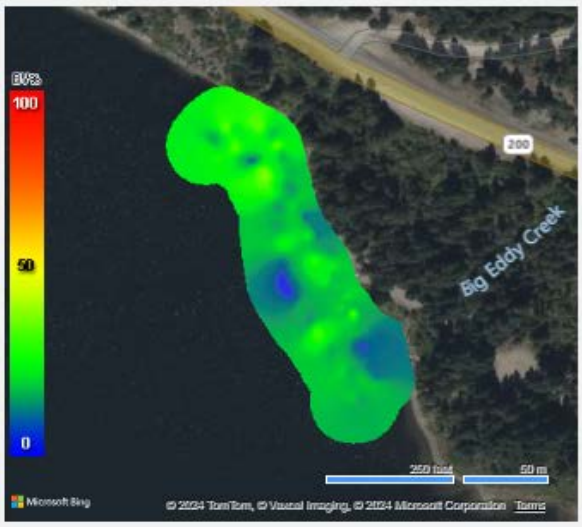
Survey Summary

Type	PAC	Avg BVp	SD BVp	Avg BVw	SD BVw	Depth Range	Depth Avg	No. Depth Records
Point	92.9%	20.0%	± 11.8%	18.6%	± 11.7%	2.94 - 21.05 ft	10.349 ft	491
Grid	97.8%	19.7%	± 7.7%	19.2%	± 8.2%	0.31 - 20.76 ft	10.136 ft	1305

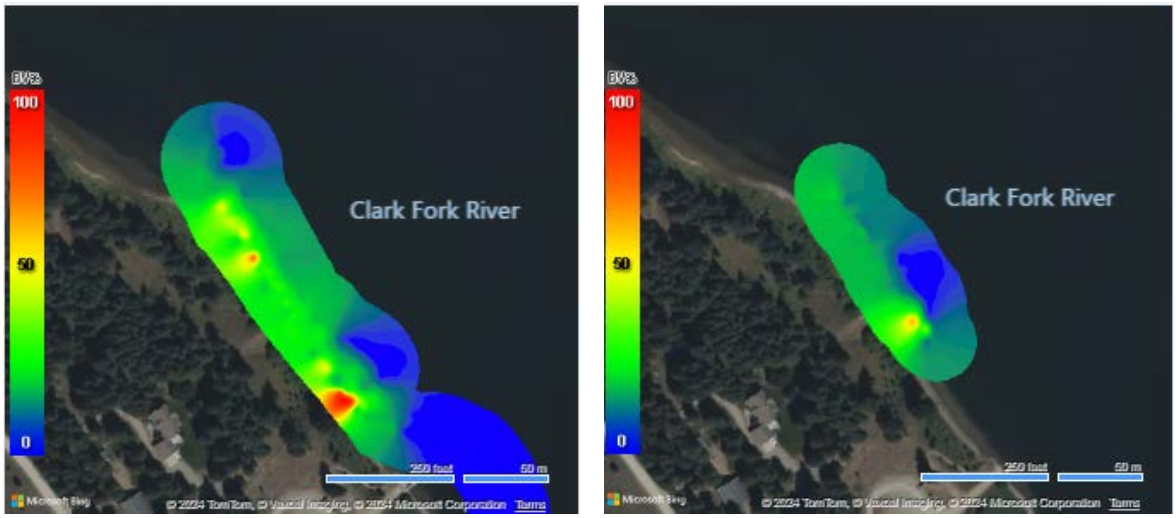
Bathymetric Contour Map



Vegetation Biovolume Heat Map



Plot CAB-29: At Time of Treatment (July 8, 2024 – Left),
~ Five (5) Weeks Post (August 12, 2024 - Right)



2024 Cabinet Gorge Reservoir AIS Treatment Plots: At Time of and ~ Five (5) Week Post Plot SAV % Cover and SAV BioVolume Data (Grid Data)									
Plot Number	Date Data Collected Pre Treatment	SAV % Cover	SAV % Bio-Volume	Date Data Collected-Post Treatment	SAV % Cover	SAV % Bio-Volume	SAV % BV Change	Post Treatment EWM Injury Rank	Herbicides Used (ProcellaCOR)
Cabinet Gorge Reservoir									
Cab-29	7/8/2024	77.8	22.7	8/12/2024	81.1	15.7	-31%	98%	ProcellaCOR

Observations/Notes CAB-29: Treated with florpyrauxifen, control visually estimated at 98% control. Control excellent throughout plot, a few EWM damaged, not dead. Elodea and Chara dominant.

Plot CAB-29: At Time of Treatment (July 8, 2024)

BIOBASE — VEGETATION ANALYSIS REPORT

Cabinet Gorge Reservoir, Sanders Montana

Report Time Stamp: 2024 August 17 - 20:05 (UTC) ... REPORT LINK

Survey Metadata

Data Collector:	Tom Moorhouse
Survey Time Stamp (UTC):	2024 July 08 - 18:56
Starting Location:	48.076785, -115.984907
Ending Location:	48.075960, -115.984125
Distance	0.207 miles

Survey Statistics

Average Water Temperature:	70.0 °F
Survey Area:	3.541 acres
Survey Volume:	27.471 acre ft
Percent of Waterbody Surveyed:	0.1%
Waterbody Area:	3004.952 acres

Survey Settings

Includes Edited Data:	Yes
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

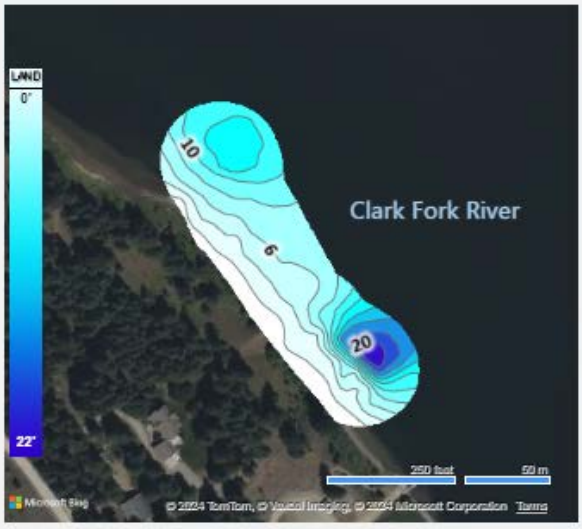
Quality Control

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

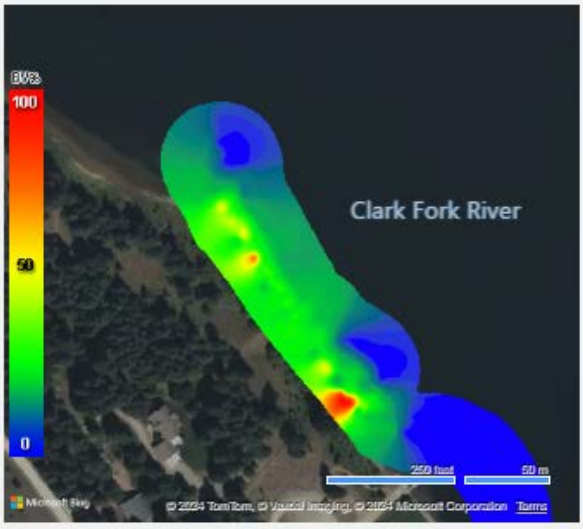
Survey Summary

Type	PAC	Avg BVp	SD BVp	Avg BVw	SD BVw	Depth Range	Depth Avg	No. Depth Records
Point	36.2%	25.4%	± 23.0%	9.2%	± 16.3%	2.56 - 22.25 ft	6.931 ft	295
Grid	77.8%	22.7%	± 13.8%	17.7%	± 15.4%	0.26 - 21.85 ft	7.758 ft	1274

Bathymetric Contour Map



Vegetation Biovolume Heat Map



Plot CAB-29 ~ Five (5) Weeks Post (August 12, 2024)

BIOBASE — VEGETATION ANALYSIS REPORT

Cabinet Gorge Reservoir, Sanders Montana

Report Time Stamp: 2024 August 16 - 18:04 (UTC) ... REPORT LINK

Survey Metadata

Data Collector:	Tom Moorhouse
Survey Time Stamp (UTC):	2024 August 12 - 22:11
Starting Location:	48.076105, -115.984145
Ending Location:	48.076082, -115.984081
Distance	0.097 miles

Survey Statistics

Average Water Temperature:	74.9 °F
Survey Area:	2.234 acres
Survey Volume:	14.090 acre ft
Percent of Waterbody Surveyed:	0.1%
Waterbody Area:	3004.952 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

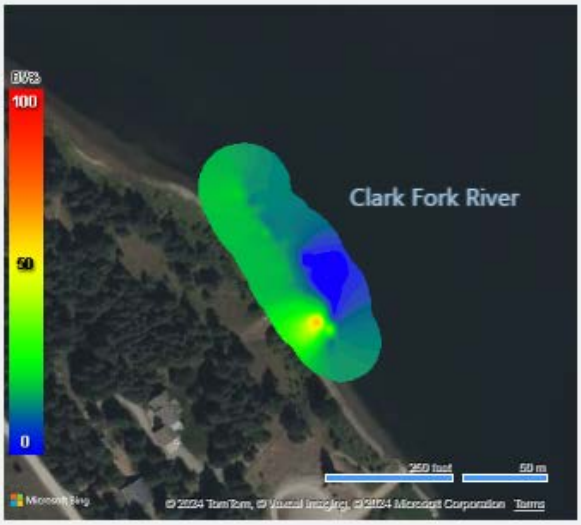
Reviewer:	Ian McCormack
Comments:	We have reviewed this trip. Please use the "ASK THE EXPERTS" button for this trip if you have any questions.

Survey Summary

Type	PAC	Avg BVp	SD BVp	Avg BVw	SD BVw	Depth Range	Depth Avg	No. Depth Records
Point	74.4%	16.7%	± 14.9%	12.4%	± 14.3%	3.63 - 15.27 ft	7.552 ft	221
Grid	81.1%	15.7%	± 8.4%	12.7%	± 9.8%	0.36 - 14.36 ft	6.308 ft	804

Bathymetric Contour Map

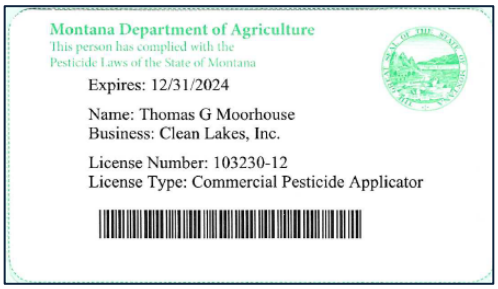
Vegetation Biovolume Heat Map



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: 12/31/2024
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
Email: tmoorhouse@cleanlake.com

SITE SAFETY AND HEALTH OFFICER: Thomas Moorhouse
Cell Phone: 208-929-2757

ALTERNATE SITE SAFETY OFFICER: Thomas Benney
Cell Phone: 925-766-8863

EMERGENCY RESPONSE COORDINATOR: Thomas Moorhouse
Cell Phone: 208-929-2757

ALTERNATE EMERGENCY COORDINATOR: Thomas Benney
Cell Phone: 925-766-8863

SANDERS COUNTY AIP TASK FORCE COORDINATOR Kim Bergstrom
Phone: 406-826-2374
Email: pinnacle@blackfoot.net

END OF AQUATIC PESTICIDE APPLICATION REPORT