BOWMAN HALEY RESERVOIR WATERSHED IMPLEMENTATION

1.0 PROJECT SUMMARY SHEET

PROJECT TITLE: Bowman-Haley Reservoir Watershed Implementation Project

PROJECT SPONSOR:
Bowman-Slope Soil Conservation District
Address: PO Box 920
20 Hwy 12 East
Bowman, ND 58623
Phone: 701-523-8733
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STATE CONTACT PERSON:
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STATE North Dakota WATERSHED Bowman-Haley Reservoir and Tributaries

HYDROLOGIC UNIT CODE: HUC 10: 1013030102 &1013030101
HIGH PRIORITY WATERSHED (yes/no): yes

TMDL Development and/or Implementation (Check any that apply)
PROJECT TYPES**:** [ ] Staffing and Support [x] Watershed [ ] Groundwater [ ] I&E
WATERBODY TYPES: [ ] Groundwater [x] Lake/Reservoirs [x] Rivers [x] Streams [ ] Wetlands [ ] Other
NPS CATEGORY: [x] Agriculture [ ] Urban Runoff [ ] Silviculture [ ] Construction [ ] Resource Extraction [ ] Stowage/Land Disposal [ ] Hydro Modification [ ] Other

PROJECT LOCATION: Bowman County, North Dakota

SUMMARIZATION OF MAJOR GOALS

The long-term goal of this project is to reduce the Harmful Algal Bloom in the Bowman-Haley Reservoir by reducing nutrient inputs from the surrounding watershed area. The medium-term goal of this project is to restore the riparian health of the Bowman-Haley Watershed and to reduce the non-point source pollution along the tributaries of the Bowman-Haley Reservoir, which are: Alkali Creek, Spring Creek, and North Fork of the Grand River. The short-term goal of this project is to reduce the amount of nutrients entering the Bowman-Haley Reservoir through implementation of Best Management Practices (BMPs) in the watershed and community education about nonpoint source pollution impacts.

PROJECT DESCRIPTION

The Bowman-Haley Reservoir Watershed Project is a conservation implementation project focused on reducing nonpoint source pollution in the form of E.Coli, bacteria, sediments, and nutrients, through land and resource management education, implementation of Best Management Practices, and monitoring of associated project activities/successes and water quality improvements. Land and resource management education, in the form of school events, tours, meetings, and media materials, will help reach local landowners, school aged kids, and members of the general public to inform them of water quality issues happening in the Bowman-Haley Reservoir, its tributaries and the surrounding watershed area. The implementation of Best Management Practices will be used to improve soil health, rangeland health,

cropland health, and stream bank stabilization. These practices will improve water quality by reducing the amount of chemicals and sediments deposited into the tributaries through runoff. Monitoring of associated project activities/successes and water quality will help determine if the practices are benefiting the water quality. Through weekly creek sampling, the Bowman-Slope Soil Conservation District (SCD) will be able to compare trends in the water quality data to see if improvements are being made. The main objectives that will help the SCD reach that goal are to (1) hire staff to provide conservation planning, technical assistance, and education to producers and other community members and to oversee the day to day activities that are happening with the project, (2) reverse the inclining water quality trend of phosphorous and nitrogen in the Bowman-Haley Reservoir through land management of the surrounding watershed, (3) monitor the tributaries of the Bowman-Haley Reservoir and conduct follow up evaluations with the producers to track the benefits of BMPs.

Bowman-Haley Funding Allocations

Total FY 24 319 Funds Requested: $268,380
Producer Cost and Match Total: $178,920
Other Federal: Funds $250,000
Total Project Budget: $697,300

2.0 STATEMENT OF NEED

The Bowman-Slope Soil Conservation District's mission is to educate and assist the public with natural resource conservation by producer technical assistance, educational events and materials, conservation programs, collaboration with multi-agencies and organizations, and information campaign and public outreach. Our mission aligns with the Non-Point Source Pollution Management Plan mission to implement a voluntary, incentive-based program that restores and protects the chemical, physical, and biological integrity of waters where the beneficial uses are threated or impaired due to non-point sources of pollution. Through-out this project, both missions will be accomplished by utilizing cost share programs to help producers implement Best Management Practices to help restore water quality in the Bowman-Haley Watershed. This project will support the NPS Management Plan Goal #4 to "Increase the capacity and ability of soil conservation districts and other resource managers to develop and implement comprehensive watershed-based projects to address local water quality priorities." With the help of the North Dakota Department of Environmental Quality 319 Non-Point Source Pollution program and other Natural Resource Conservation Service (NRCS) programs that come in the next four years, such as EQIP and CSP, this project will work to restore soil health on rangeland and croplands in the watershed. The main incentive is to restore healthy water quality in the Bowman Haley Reservoir for recreational purposes.

2.1

The Non-Point Source Pollution Management Program Plan states that when phosphorous is in abundance in a lake, there is a very rapid increase in algal growth in the lake. The excess of nutrients that are available in a body of water can cause eutrophication. Eutrophication is the process of enrichment of reservoirs with nutrients needed to maintain primary production. It causes objectional growth of aquatic algae to the extent that it threatens public health or welfare. The eutrophication that is present in the Bowman-Haley Reservoir is the result of nutrient runoff from agriculture practices in the watershed.

The Bowman-Haley Reservoir is listed on the (303)d Impaired Waters List as having an impairment in nutrients. A map of the 303(d) impaired waters and the 303(d) listing for the Bowman-Haley Reservoir can be found in Appendix F on page 50. The nutrient that impairs the water is phosphorous. Data has shown an incline in the trend of phosphorus since 1994. It is also listed as needing a TMDL.

According to the Bowman-Haley Dam Water Quality Summary prepared the North Dakota Department of Environmental Quality the historical conditions of the lake were more favorable than what the current data shows. The current data also shows that phosphorus concentrations are still higher than desirable. The current nutrients concentrations are greater than historical and ecoregion concentrations and trophic state indices show that Bowman-Haley Dam is heading towards higher eutrophication. The main priority of the project is to improve the water quality trends (specifically for phosphorous) for the Bowman-Haley Reservoir. Through the LWQA projects in 1994-1995 and 2000-2001, there was testing at three locations: the deepest point in the lake and the north and south arms of the reservoir. The data classified the Bowman-Haley reservoir as a "eutrophic, well-buffered waterbody that rarely thermally stratifies." There were dissolved solids concentrations that were higher in 2000-2001 than in 1994-1995 that were likely to be the result of variations in hydraulic discharge. The reports from the studies in 1994-1995 and 2000-2001 showed that the Bowman-Haley Reservoir is limited in phosphorous.

2.2

The Bowman-Haley Reservoir is a 1,732 acre body of water that the US Army Corps of Engineers finished construction on in 1969. The location of the reservoir is at the confluences of the Grand River, Alkali Creek, and Spring Creek South of Bowman, ND in Bowman County. The Bowman-Haley watershed is approximately 304,000 acres. This includes HUC 1013030102 and HUC 1013030101. There

are three main tributaries that drain into the Bowman-Haley Reservoir, which include North Fork of the Grand River, Alkali Creek, and Spring Creek. Stage Creek and Cold Turkey Creek are also smaller tributaries of the watershed that drain into Spring Creek. Lone Tree Creek is a tributary of the North fork of the Grand River. The Bowman-Haley Reservoir is a Class III fishery which means it can support natural reproduction and growth of warm water fishes and associated biota.

While the Bowman-Haley Reservoir is managed for walleye, the North Dakota Game and Fish have reported a wide variety of species in the reservoir in one of their past surveys. The Bowman- Haley Reservoir is a eutrophic lake that has a relatively high nutrient concentration and moderate algae growth according to the Bowman-Haley Dam Water Quality Summary 2024 prepared by the North Dakota Department of Environmental Quality. The Bowman-Haley Reservoir showed slight stratification in July. Median concentrations for both phosphorus and nutrients are higher than desired for the ecoregion benchmark of 1.1 mg L-1 for nitrogen and 0.05 mg L-1 for phosphorous. From data recently collected, the concentrations are greater than historical concentrations prior to 2021-2024. The higher nutrients concentrations and the trophic status of the reservoir indicates that Bowman-Haley is heading towards higher eutrophication. Locate Appendix E on page 21 to read more about the water quality and data collections for Bowman-Reservoir and to see the results from samples collected from 2021-2024.

2.3

See Appendix D on page 16 to see the maps for the Watershed Project. The Bowman-Haley Watershed extends into South Dakota, but the focus area of this project and associated funding will be exclusively utilized in North Dakota.

2.4

The Bowman-Haley Watershed is comprised primarily of rolling to hilly uplands with small scattered areas of badlands and prominent buttes. Slopes are generally gentle with maximum relief of 300 to 500 feet. The watershed has either never been glaciated or was glaciated so long ago as to have no glacial evidence remaining. The Bowman-Haley Watershed is primarily used for rangeland and crop land purposes. The grasslands and pastures consume 60% of the watershed, while the cropland consumes 34%. The other 4% is made up of farmsteads and roads. Most of the rangeland is grazed by cattle in the area. The average AUM for the county is 2.5.

2.5

The Bowman-Haley Reservoir is classified by the North Dakota Department of Environmental Quality as a perpetual offender for being on the advisory and/or warning list for a Harmful Algal Bloom every year since 2018. When a lake is posted in a “Warning” for a harmful algal bloom, that means that blue-green algae bloom is present over a significant portion of the lake and excessive microcystins levels (thresholds are defined by DEQ) have been measured. When a warning is posted, people are advised to avoid contact with the water and avoid recreation activities, and not allow pets in the water. The harmful algae blooms are an overgrowth of cyanobacteria (blue-green algae) in surface water. The algae grows from an excess amount of nutrients, warm water temperatures, slow moving water, and sunlight. The major source of food for algae growth comes from fertilizers, livestock and pet waste, and septic systems. A hypolimnetic drawdown systems is a mechanical way of removing the excess nutrients that are in the water, but as previously stated, this practice has not been as successful in the Bowman-Haley Reservoir. The main source of excess nutrients in the Bowman-Haley Watershed is a result of agricultural contributions from the surrounding landscape. These nutrients come from run-off off of fields and grasslands. With the help of the North Dakota Department of Environmental Quality, the goal of this project is to improve management and reduce run-off from croplands and grasslands with the use of best management practices.

3.0 PROJECT DESCRIPTION

3.1

The long-term goal for this project is to reduce the amount of blue-green algae growing the Bowman-Haley Reservoir. Reducing the amount of blue-green algae that is growing in the reservoir will make the body of water safer for recreational purposes for the public use. This is a goal will be achieved by continuing past efforts to improve water quality, and to implement new practices. The medium-range goals for this project are to restore the riparian health of the watershed and to reduce non-point source pollution along the tributaries of the Bowman-Haley Watershed. This goal will help decrease the amount of nutrients that are being deposited into the Bowman-Haley Reservoir, which will help slow down the amount of algae growth in the reservoir. The short-term goal, that will help the SCD achieve the long-term and medium-term goals, is to reduce the amount of nutrients that are being loaded into the Bowman-Haley Reservoir. From the data collected during the assessment phase of this project (2021 to 2024), the median concentration of total nutrients is trending above the historical median level for the Bowman-Haley Reservoir. Phosphorous concentration from the assessment period had a median of 0.092 mg L-1, significantly above the ecoregion median of 0.05 mg L-1. The median nitrogen concentration (calculated from data collected during the assessment phase) is 1.65 mg L-1, once again, is trending above the median for the ecoregion of 1.1 mg L-1. The goal of this project is to reverse the upward trend of nutrients to a benchmark level appropriate for waterbodies in the Northwest Great Plains ecoregion. Standards and benchmark values for nutrient, sediment and E.coli concentrations will be determined by the DEQ.

3.2

Objective 1: Reverse the upward trend of total nutrients in the Bowman-Haley Reservoir by improving soil health and land management in the watershed.

> **Task 1:** The watershed coordinator will assist landowners with the planning and implementation of Best Management Practices that will improve management on approximately 20,000 acres of land adjacent to the creeks to restore and protect the vegetative communities in the riparian corridor and improve plant diversity, soil health, and infiltration rates on lands adjacent to the riparian corridor.
>
> *Product:* See BMP Table in Appendix C on page 14.
>
> Cost: $227,300

Objective 2: Sponsor and conduct multiple conservation and water quality educational activities for the public to bring interactive and innovative educational opportunities to the community.

> **Task 2:** The Bowman-Slope SCD will employ one part-time support staff to implement all project tasks as the Watershed coordinator. A job description can be found in Appendix H on page 55.
>
> > *Products:* The Watershed Coordinator will be in charge of all administration, technical assistance, educational events, conservation plans, BMP planning, and producer survey for the project.
> >
> > *Cost:* $140,000 (Salary/Fringe for 5 years)
>
> **Task 3:** Conduct educational events for school systems, landowners, and the general public.

Products: The watershed coordinator will host conservation events in the form of lyceums, tours, meetings, and presentations to educate about rangeland health, prescribed grazing techniques, water quality indicators, riparian health, soil health, watershed function and conservation impacts, nutrient management planning, and cropping rotations. One event for the adults will be held in the winter, one event for the school systems will be held in the fall, and each year staff from the SCD will visit the preschool, 2nd grade, and 4th grade in their classrooms.

Cost: $80,000 (Meals, Speakers expenses, travel expenses, prizes, building rental for events, and school educational project supplies)

Task 4: Implement a conservation and water quality information campaign using multi-media sources to distribute education to landowners, the general public, and school systems.

Product: The watershed coordinator will compose educational articles sent out in newsletters every quarter (4 per year), educational booth at local fair, educational Facebook posts about water quality every quarter.

Cost: $0 (Included in staff budget)

Tak 5: Coordinate with other state, federal, and/or local organization's resources management activities in the watershed to ensure water quality issues are being addressed and avoid duplication of efforts.

Product: Increased communication and coordination regarding water quality issues in the watershed.

Cost: $0 (Included in staff budget)

Objective 3: Coordinate with the North Dakota Department of Environmental Quality to monitor and document the water quality trends of the Bowman-Haley Reservoir and its tributaries. Also estimate the benefits of applied Best Management Practices within the watershed.

Task 6: The watershed coordinator will collect samples in accordance with the Sampling and Analysis Plan (SAP) and applicable Standard Operating Procedures (SOPs) written and managed by the NDDEQ.

Product: Samples will be taken from Alkali Creek, Spring Creek, and North Fork Grand River to monitor for levels of nutrients, E Coil, and total suspended solids. Samples will be collected starting in May and concluding in September.

Cost: $0 (Included in staff budget)

Task 7: Monitor BMP's by tracking their location and documenting benefits by use of photo monitoring.

Product: Each BMP applied will be marked using GPS monitoring and photos will be taken to document the health of the specific area. Acres affected and legal description will also be documented. Photo point monitoring will be done in accordance with the NDDEQ SOP.

Cost: $0 (Included in staff budget)

Task 8: Conduct follow up evaluations to document post project watershed functions.

Products: The watershed coordinator will conduct an end of project evaluation by communicating with landowners that participated in the project. They will also revisit BMPs applied to note any improvement in the soil.

Cost: $0 (Included in staff budget)

Task 9: Work with NDDEQ to access the Pollution Loading Estimation Toll that they conduct every year to review results of the quantity of pounds per acre of nutrient reduction.

3.3
See Appendix B on page 12 for the milestone table for this project.

3.4
Applicable permits (404/401 Certifications, Zoning, NDDEQ Approval to Operate) and Cultural Resource Inventories will be obtained based on engineering classification and practice type (i.e. practices listed as undertakings as defined in NPS BMP Guidelines.

3.5
The Bowman-Slope Soil Conservation District has over 30 years of experience with watersheds and 319 projects. The SCD has demonstrated leadership in progressive conservation in the local communities, district, region, and state. The SCD has sufficient resources to implement all aspects of the watershed project, including: personnel with experience in 319 programs, equipment, vehicles, and an established reputation with the agriculture community. In 1990, the Bowman-Slope Soil Conservation District and the EPA implemented a 319 sponsored project to help producers implement practices to improve water quality and reduce non-point source pollution in the Bowman-Haley Reservoir. The second project that took place in the watershed was to remove seventy-five percent of the 1.25 million pounds of undesirable fish biomass in 1994 and 1995.

3.6
The project sponsor will be responsible for insuring the proper Operations and Maintenance (O&M) of 319 funded BMPs. Project staff will monitor and inspect installed BMPs as needed. BMP standards will follow the NRCS Technical Guide and NDDEQ NPS BMP Guidelines. Project staff will inform the cost-share recipients of the O&M conditions during the planning process, the recipient will sign “Section 319 Cost Share Agreement Provisions”, which will be included with the “Conservation Plan of Operations.”

4.0 COORDINATION PLAN
4.1
(1) The Bowman-Slope Soil Conservation District will be the lead project sponsor for the Bowman-Haley Reservoir Project. The SCD will be responsible for the implementation of all the goals, objectives, tasks, and products presented in this proposal. The SCD will provide all personnel, administration, equipment, and financial support required to successfully implement the project.

(2) The USDA Natural Resources Conservation Service (NRCS) will provide technical assistance, engineering services, technology/equipment, and participate in the educational activities and project promotion. The implementation of NRCS conservation programs (EQIP, WHIP, CSP, etc.) during this project period will correlate with and support the goals and objectives of this project. The NRCS has

communicated their willingness to provide support but stated that they were unable to submit a formal letter of support due to administrative restrictions.

(3) North Dakota State University Extension Service will provide the project with technical and educational assistance for tours, demonstrations, lyceums, newsletters, project promotion, and training. The SCD personnel will work closely with the Bowman County Extension Service to develop an effective education and outreach program.

(4) North Dakota Department of Environmental Quality (NDDEQ) will be the EPA-319 funding administrator for the project. NDDEQ will provide continued technical assistance and training to SCD staff for the implementation.

4.2
Throughout the assessment phase of the Bowman-Haley Reservoir Watershed Project, the Bowman-Slope SCD and cooperators have created public awareness of the need for the project through newsletter articles and one-on-one conservation planning with producers. The SCD mailed a survey to watershed producers to research the general support for the project and specific BMP and educational needs in the watershed. This proved to be a very beneficial tool for the planning the implementation of this project. Survey letters were sent out to producers in the watershed. Of the survey's that were received back all of them showed interest in this project and supported implementing this project in the Bowman-Haley Watershed.

4.3
The SCD will coordinate this watershed project with all applicable programs available in the most efficient method to achieve the goals and objectives of the project. The NRCS programs that are also available in the watershed are CSP and EQIP. Majority of the practices that are involved in those two programs are also programs that are considered BMPs. Through the Bowman-Haley Watershed project, the producers will be able to receive education to go along with the practices that they are implementing with the NRCS. There is also support available through the North Dakota Outdoor Heritage Fund that producers are able to partake in to help restore rangeland and cropland health. The BMPs that will be applied in this watershed will be used to complement and/or build off programs that are also in the area.

4.4
Some of the educational practices that are included in this budget are part of educational programs that are currently implemented by the Bowman-Slope SCD. Since the Bowman-Slope SCD has had a long history working with the North Dakota Department of Environmental Quality, formerly the North Dakota Department of Health, there are projects that started with the use of 319 funds that the Bowman-Slope SCD chose to keep supporting when there were no 319 funds available. The Bowman-Slope SCD would like to continue these events and requires 319 support to do so. With the help of 319 Funds, the Bowman-Slope SCD hopes to provide better educational events and activities than what it would be able to provide on its own.

5.0 EVALUATION AND MONITORING PLAN

5.1
The NDDEQ Watershed Management Program Programmatic Quality Assurance Project Plan (QAPP) details the general quality assurance/quality control (QA/QC) measures for water quality data collected under Section 319 funded projects. A Sampling and Analysis Plan (SAP) specifying sampling site locations, sampling frequency, and referencing applicable Standard Operating Procedures (SOP) for this project is available upon Request.

6.0 BUDGET

6.1
See Appendix A on page 10 for the Budget Table.

7.0 PUBLIC INVOLVEMENT

The Bowman-Haley Watershed project will ensure public involvement by allowing groups of individuals to become educated on water quality issues at the annual event that will be hosted. There has been an expressed amount of interest in bringing the educational events to the public. There will be hands-on events hosted for the general public to learn from. There will also be public involvement through the school systems. Every year the SCD plans to host events for the preschool, 2nd grade, 4th grade, and 6th grade classes. These events will take place both in and outside of the classroom setting.

Appendix A- Budget

Bowman-Haley Watershed BUDGET TABLE						
Source	**FY 2025**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**TOTAL**
319 Funds	**$53,676**	**$53,676**	**$53,676**	**$53,676**	**$53,676**	**$268,380**
Other Federal Funds (NRCS)	**$50,000**	**$50,000**	**$50,000**	**$50,000**	**$50,000**	**$250,000**
Local Match	**$35,784**	**$35,784**	**$35,784**	**$35,784**	**$35,784**	**$178,920**
TOTAL BUDGET FUNDS	**$139,460**	**$139,460**	**$139,460**	**$139,460**	**$139,460**	**$697,300**

Personal/Support	FY 25	FY26	FY27	FY28	FY29	Total	InKind	319
Salary – Part time Project Coordinator	$26,000	$26,000	$26,000	$26,000	$26,000	$130,000	$52,000	$78,000
Travel	$500	$500	$500	$500	$500	$2,500	$1,000	$1,500
Supplies	$1,000	$1,000	$1,000	$1,000	$1,000	$5,000	$2,000	$3,000
Postage	$500	$500	$500	$500	$500	$2,500	$1,000	$1,500
Total	**$28,000**	**$28,000**	**$28,000**	**$28,000**	**$28,000**	**$140,000**	**$56,000**	**$84,000**

Objective 1: Improve Soil Health								
Task 1: Planning & BMPs	$45,460	$45,460	$45,460	$45,460	$45,460	$227,300	$90,920	$136,380
Objective 2: Sponsor and Educational Activities								
Task 2: Employ Part-Time Staff	$28,000	$28,000	$28,000	$28,000	$28,000	$140,000	$56,000	$84,000
Task 3: Educational Events	$16,000	$16,000	$16,000	$16,000	$16,000	$80,000	$32,000	$48,000
Task 4: Educational Campaign	Included in staff budget							
Task 5: Coordination with agencies	Included in staff budget							
Objective 3: Monitor and documentation								
Task 6: Sample Collection	Included in staff budget							
Task 7: Monitoring BMPs	Included in staff budget							
Task 8: Follow-up evaluations	Included in staff budget							
Task 9: Pollution Loading Estimation Toll	Included in staff budget							

Appendix B- Milestone Table

MILESTONE TABLE FOR BOWMAN-HALEY WATERSHED PROJECT

TASK/RESONSIBILITIES	OUTPUT	GOAL	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Objective 1: Reverse the upward trend of total nutrients in the Bowman-Haley Reservoir by improving soil health and land management in the watershed.							
Task 1: Assist landowners with planning and implementation of BMPs **Group 1,2**	locate BMP Table	20,000 acres					
Objective 2 : Sponsor and conduct multiple conservtion and water quality educational activities for the public to bring interactive and innovative educational opportunities to the community							
Task 2: Employ part-time staff. **Group 1**	conservation plans, assessments, educational activities	1 part time staff employed					
Task 3: Conudct educational events. **Group 1,2,3**	lyceums, tours, meetings, and presentations	10 events, 20 school visits					
Task 4: Information Campaign using mulit media sources. **Group 1, 2, 3**	newsletters, social media posts, fair booth	20 newsletter, 10 booths, 20 social media posts					
Task 5: Coordinate with other state agencies. **Group 1, 3**	communnication, coordination	2 agency					
Objective 3: Coordinate with the North Dakota Department of Environmental Quality to monitor and document the water quality trends of the Bowman-Haley Reservoir and its tributaries. Also estimate the benefits of applied Best Management Practices within the watershed.							
Task 6: Sample Collection. **Group 1,4**	3 samples from 3 creek every week for 5 months every year	900 samples					
Task 7: Monitoring BMPs. **Group 1**	data collections	visually identify improvement from BMPs					
Task 8: Followup evaluations. **Group 1**	project evaluation	record of producers visually identifying improvement from BMPs					
Task 9: Pollution Loading Estimation Toll **Group 1, 4**	Loading reductions are modeled byt the NDDEQ on an annual basis						

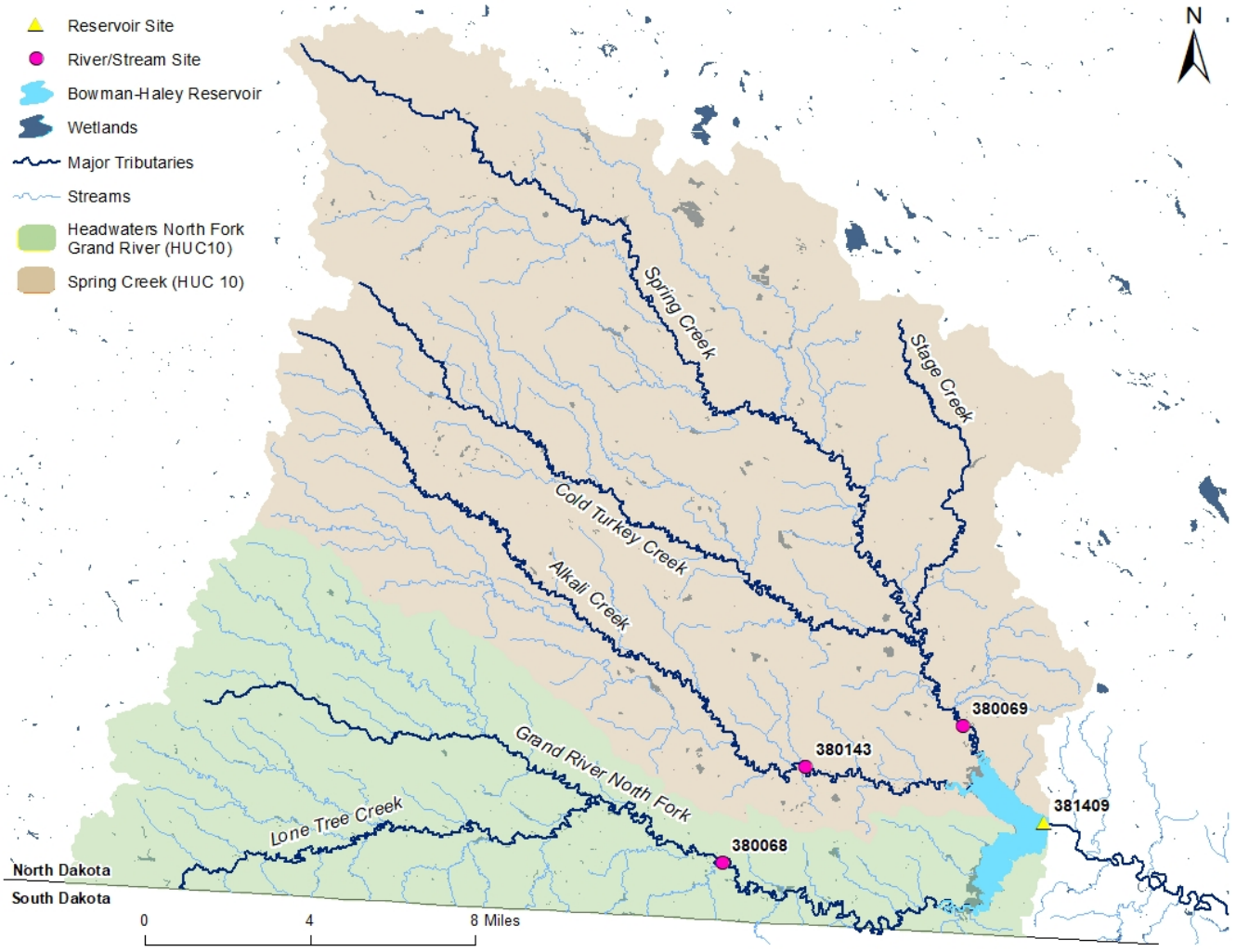
Group 1: Bowman-Slope Soil Conservation District Group 2: NRCS Group 3: NDSU Extension Group 4: ND Department of Enviornmental Quality

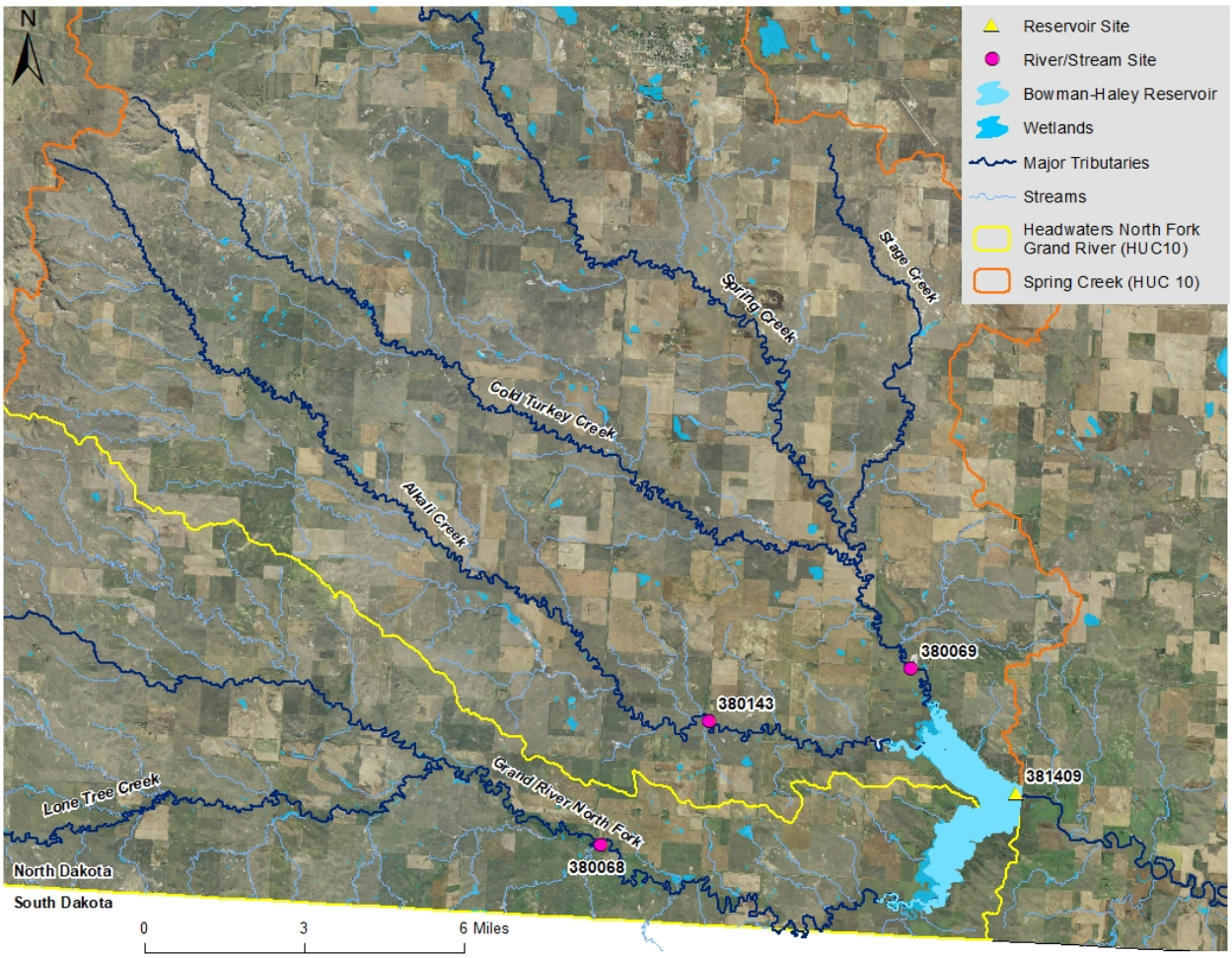
Appendix C- Best Management Practices Table

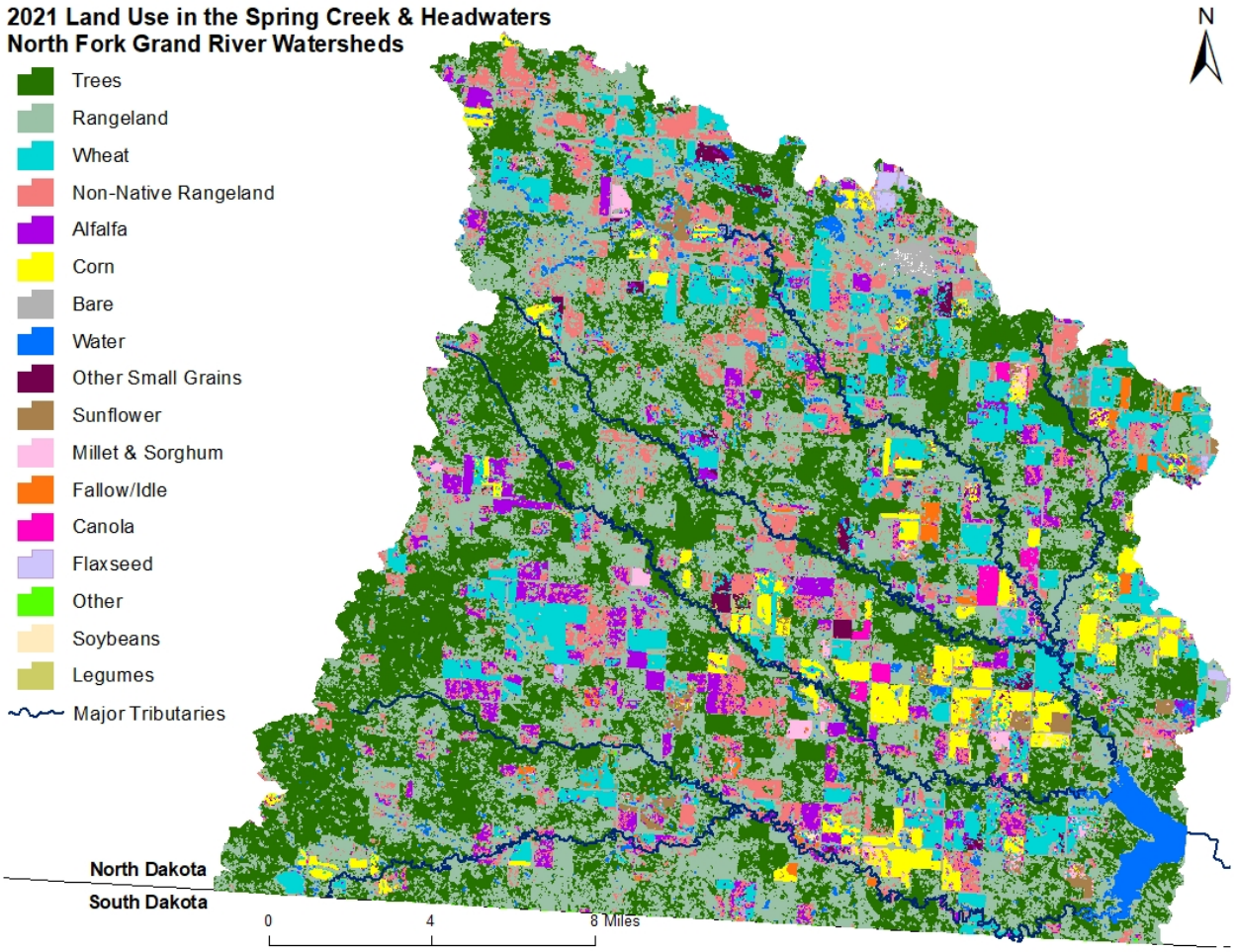
Bowman-Haley Watershed Best Management Practices					
Practice Code	**Practice Desccription**	**Cost/Unit**	**Quanity**	**Total**	**319 FUNDS**
580	**Streambank and Shore Line Protection**	**$25,000/unit***	**1**	**$25,000**	**$15,000**
362	**Diversion Dam**	**$25,000/unit***	**2**	**$50,000**	**$30,000**
340	**Cover Crop**	**$35/acres**	**300 acres**	**$10,500**	**$6,300**
516	**Livestock Pipeline**	**$5.50/foot**	**10,000 fett**	**$55,000**	**$33,000**
382	**Fencing**	**$2/foot**	**10,000 fett**	**$20,000**	**$12,000**
512	**Hayland planting**	**$55/acre**	**160 acres**	**$8,800**	**$5,280**
528A	**Prescribed Grazing**	**$5/acre**	**500 acres**	**$2,500**	**$1,500**
614	**Trough and Tank**	**$1,500/unit**	**10**	**$15,000**	**$9,000**
642	**Well**	**$8,100/unit***	**5**	**$40,500**	**$24,300**
			TOTAL	**$227,300**	**$136,380**
Standard Cost Share Ratio : 60% Federal/ 40% Local Funds					

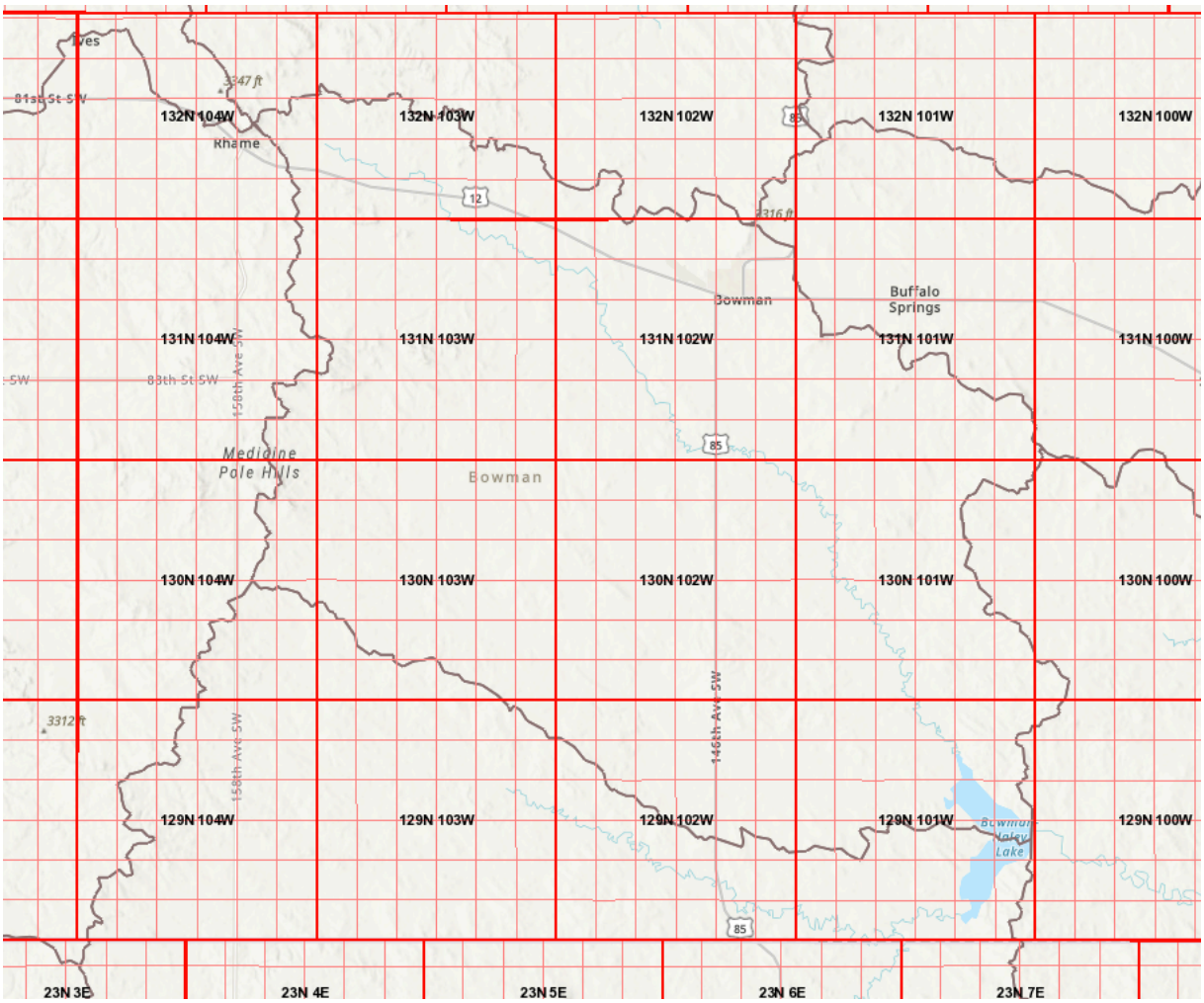
*engineering estimate will need to be done to calculate the actual cost of these practices

Appendix D- Project Maps


Reservoir Site
River/Stream Site
Bowman-Haley Reservoir
Wetlands
Major Tributaries
Streams
Headwaters North Fork Grand River (HUC10)
Spring Creek (HUC 10)
N
Spring Creek
Stage Creek
Cold Turkey Creek
Alkali Creek
Grand River North Fork
Lone Tree Creek
380069
380143
381409
380068
North Dakota
South Dakota
0
4
8 Miles


N
Reservoir Site
River/Stream Site
Bowman-Haley Reservoir
Wetlands
Major Tributaries
Streams
Headwaters North Fork Grand River (HUC10)
Spring Creek (HUC 10)
Stage Creek
Spring Creek
Cold Turkey Creek
Alkali Creek
380069
380143
381409
Grand River North Fork
Lone Tree Creek
380068
North Dakota
South Dakota
0
3
6 Miles


2021 Land Use in the Spring Creek & Headwaters
North Fork Grand River Watersheds
N
Trees
Rangeland
Wheat
Non-Native Rangeland
Alfalfa
Corn
Bare
Water
Other Small Grains
Sunflower
Millet & Sorghum
Fallow/Idle
Canola
Flaxseed
Other
Soybeans
Legumes
Major Tributaries
North Dakota
South Dakota
0
4
8 Miles


Ives
81st St SW
3347 ft
132N 104W
Rhame
132N 103W
132N 102W
85
132N 101W
132N 100W
12
3316 ft
Bowman
Buffalo Springs
131N 104W
131N 103W
131N 102W
131N 101W
131N 100W
SW
83rd St SW
158th Ave SW
Medicine Pole Hills
Bowman
85
130N 104W
130N 103W
130N 102W
130N 101W
130N 100W
3312 ft
158th Ave SW
146th Ave SW
129N 104W
129N 103W
129N 102W
129N 101W
Bowman-Haley Lake
129N 100W
85
23N 3E
23N 4E
23N 5E
23N 6E
23N 7E

Appendix E- Bowman-Haley Water Quality Summaries

Bowman-Haley Dam Water Quality Summary 2024

Completed: September 2024

Prepared for:
Bowman-Slope Soil Conservation District
111 2nd Ave NW,
Bowman, ND 58623

Prepared by:
Emily A. Brazil
N.D. Dept. of Environmental Quality
Normandy Building, 3rd Floor
4201 Normandy Street
Bismarck, ND 58503-1324

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1.0 Overview

The goals for the Bowman-Haley Reservoir Harmful Algal Bloom Intensification Project were to collect water samples to assess and document the in-lake nutrient trends, sources, and their relationship with annual harmful algal bloom occurrences. Through these assessments, water quality impairments (if any) on Bowman-Haley Reservoir will be identified. Preliminary results from 2020-2024 are outlined in the following report.

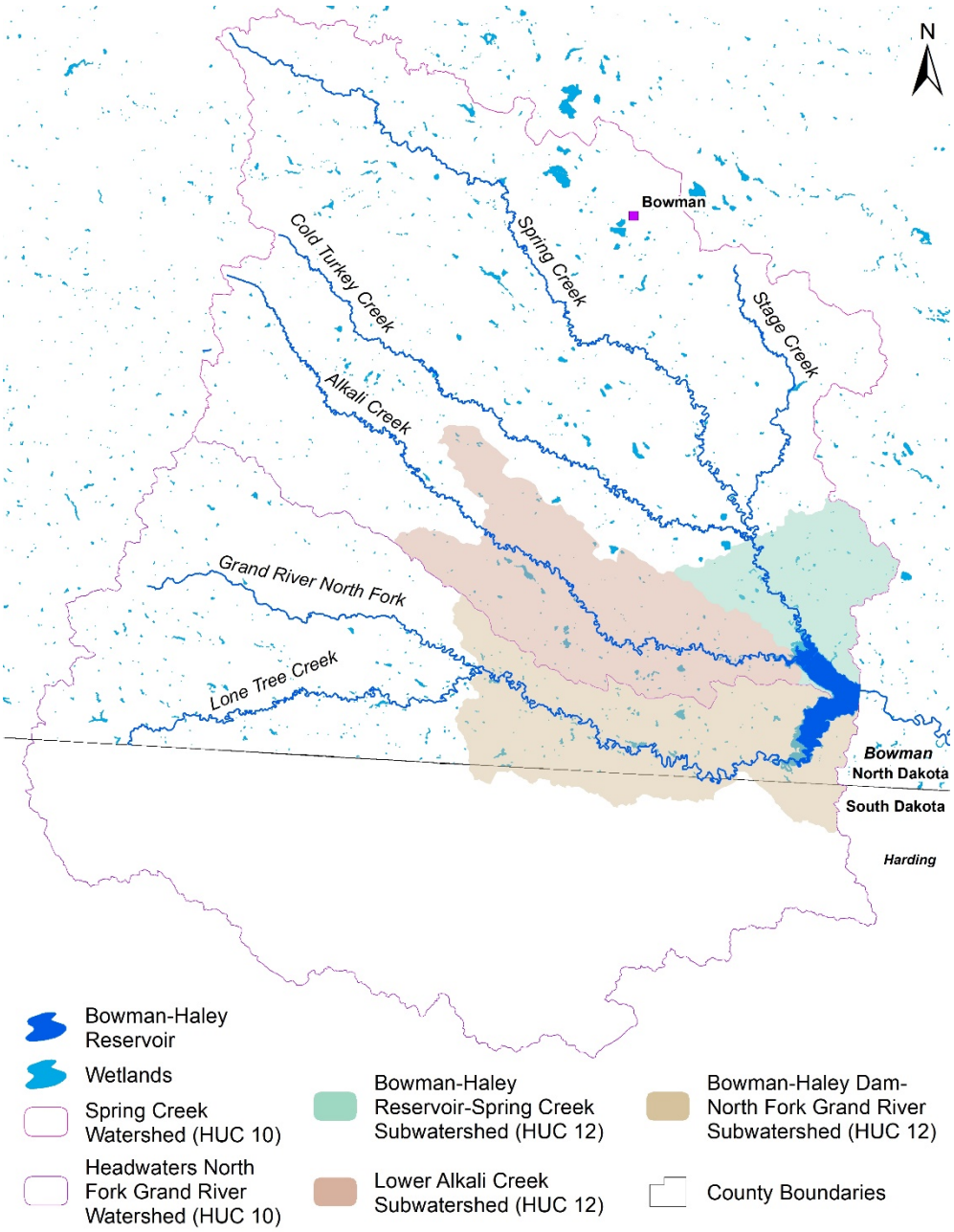

Figure 1. Map Showing the main tributaries that drain into Bowman-Haley Dam and their respective watersheds.

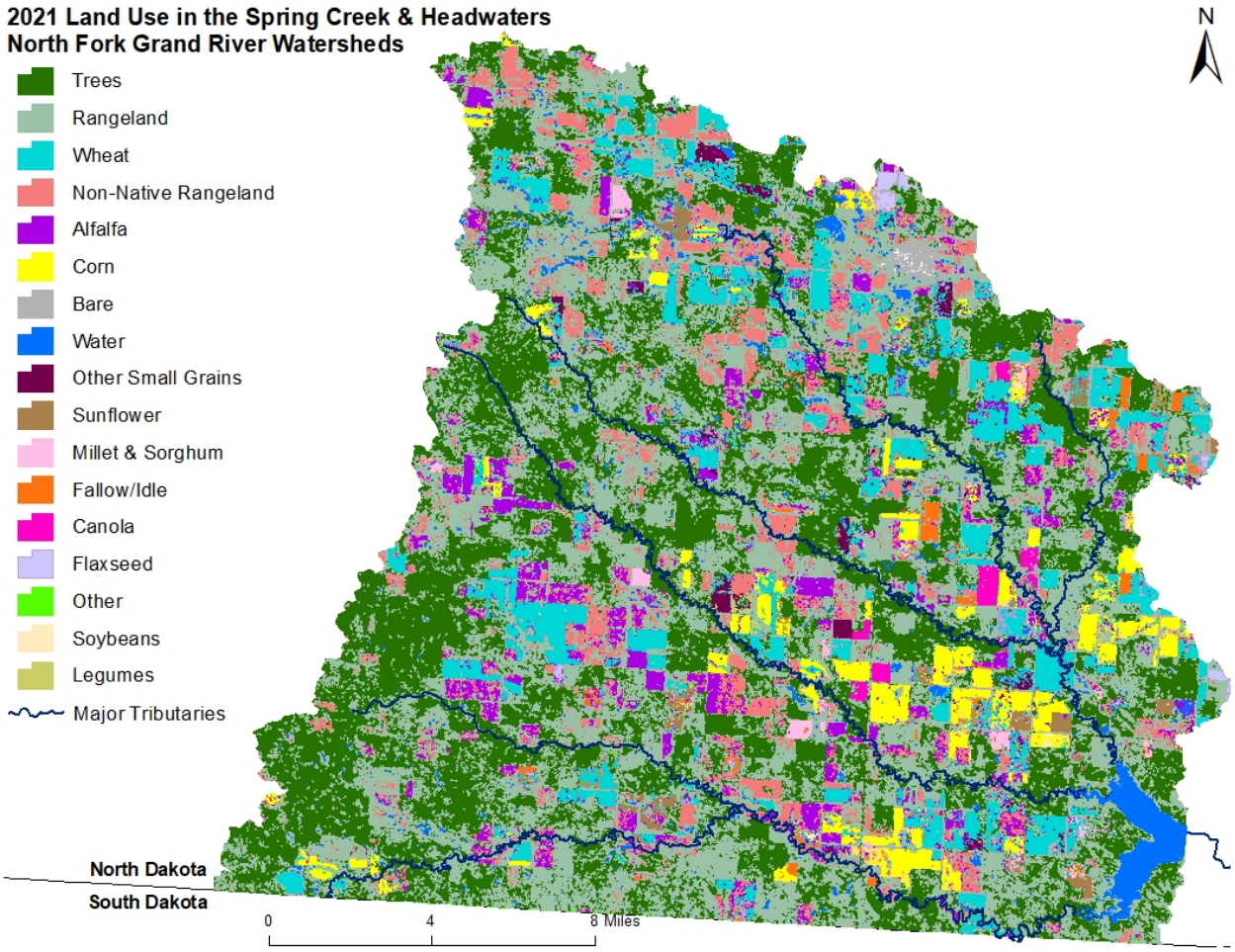

Figure 2. 2021 NASCLD land use data for the North Fork Grand River Subbasin.

Bowman-Haley Dam is located in the North Fork Grand River Subbasin, a 798,786-acre HUC-8 (8-digit Hydrologic Unit Code, 10130301), located in Bowman and Adams counties in southwestern North Dakota. The North Fork Grand Subbasin extends into Harding and Perkins counties in South Dakota. The western portion of the North Fork Grand Subbasin (Headwaters North Fork Grand River Watershed & Spring Creek Watershed (HUC 10s)), roughly 313,608 acres, drains into Bowman-Haley Reservoir. Bowman-Haley Reservoir eventually drains into the Missouri River near Mobridge, South Dakota. The reservoir was constructed by the U.S. Corp of Engineers in 1961 for flood control, recreational use, and irrigation. The reservoir's normal holding capacity was designed at 4,750-acre feet of water with a surface pool area of 1,743 acres, and a shoreline of 17 miles. The principal land uses within the watershed are rangeland, cropland, farmsteads, and roads (Figure 2).

The parameters that were sampled for this project include Nutrients Complete (i.e., total nitrogen, total Kjeldahl nitrogen, nitrate-nitrite, ammonia, total phosphorus), Total Suspended Solids (TSS), chlorophyll-a, microcystin and phytoplankton. The following summary details the trends of key parameters, from April of 2021 to September of 2024. Graphs are used to visualize sample results throughout the sample period.

1.1 Monitoring

Site ID	Description	Coordinates
381409	13 miles South and 8 miles East of Bowman, ND	46.98517, -103.24819

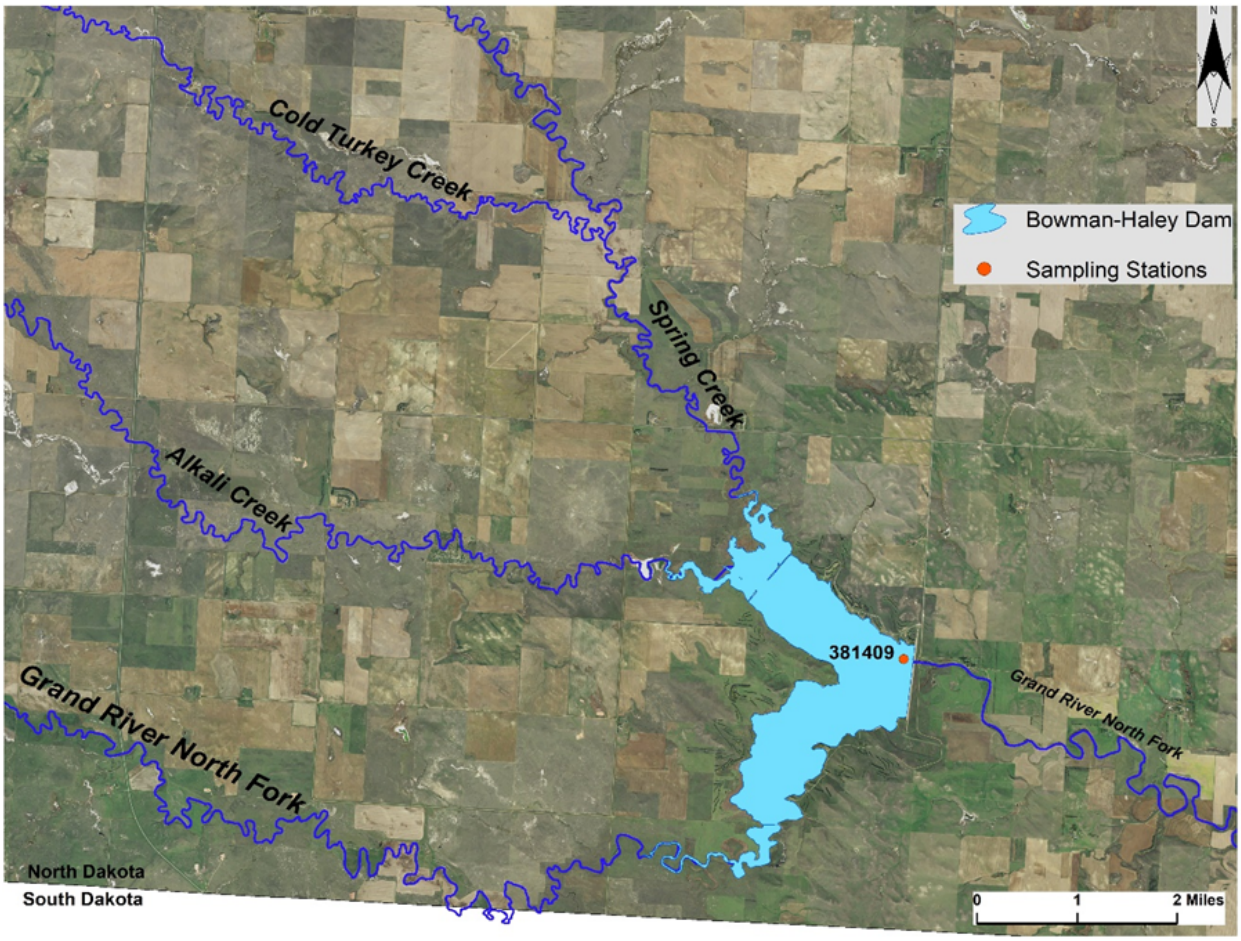

Figure 2. Location of the lake water quality monitoring station.

The goal of this project is to collect water quality data from Bowman-Haley reservoir to document in-lake nutrient trends and sources and their relationship with annual harmful algal bloom (HABs) occurrences.

Monitoring objectives for this project are to provide additional data to be used for assessment, future watershed planning (i.e. TMDL development, 319 projects, etc.) and provide additional data related to HABs in North Dakota. Bowman-Haley Reservoir has experienced significant algal blooms each year since the inception of the NDDEQ Harmful Algal Bloom Surveillance Program in 2016.

Specific objectives:

- Collect water quality samples from 1 STORET site at the deepest part of the reservoir to assess current water quality conditions.
    - Samples will be collected twice per month from June to September and analyze for nutrients complete (i.e. total nitrogen, total Kjeldahl nitrogen, nitrate-nitrite, ammonia, and total phosphorous), total suspended solids (TSS), and chlorophyll-a. Secchi disk transparency measurements will also be collected along with microcystin and phytoplankton samples.
    - If weather and resources permit, one winter sample will also be collected in February.

2.0 Assessment Data

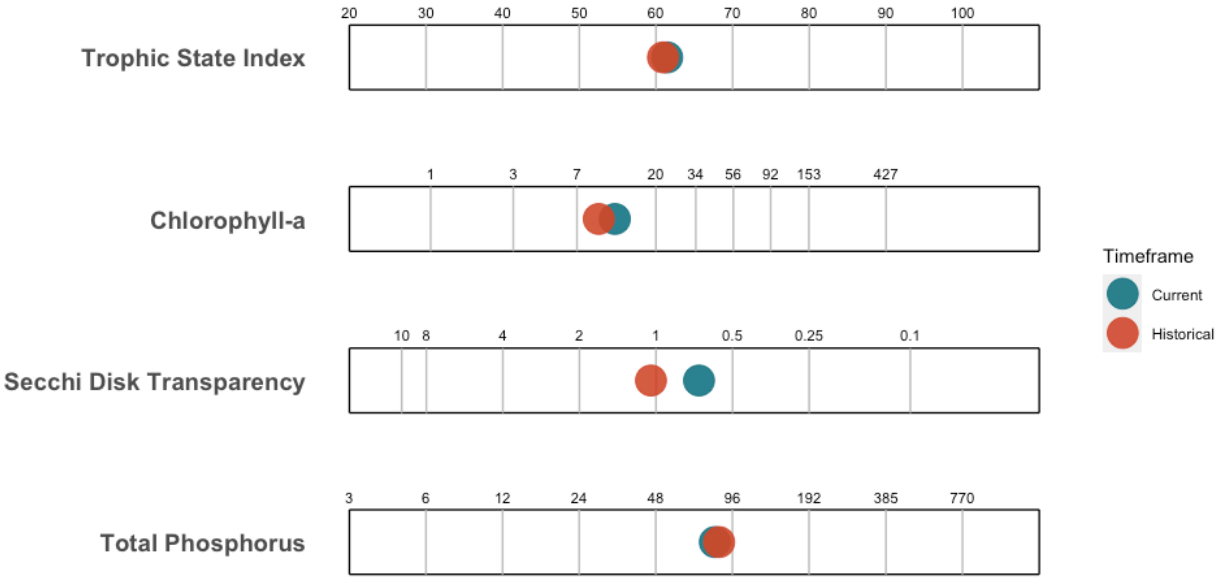

Figure 3. Trophic State for Bowman-Haley Dam during the 2020 – 2024 sampling period and historical samples.

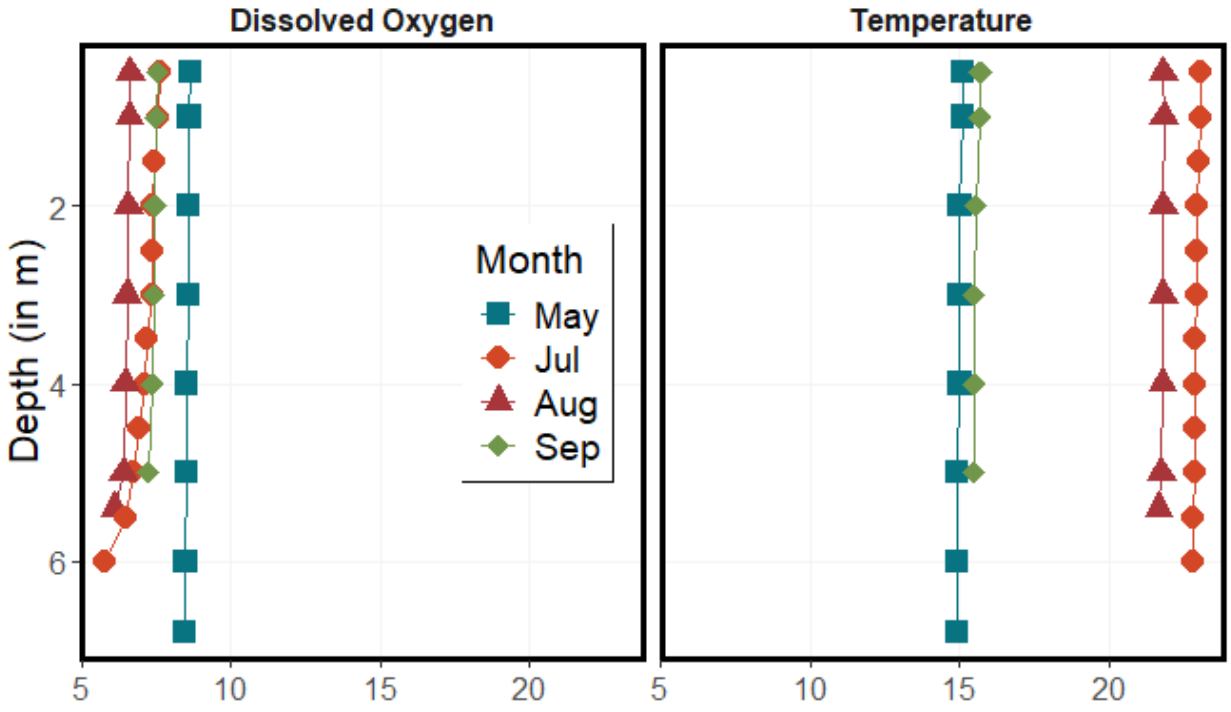

Figure 4. 2024 Temperature and Dissolved Oxygen Profiles for Bowman-Haley Dam.

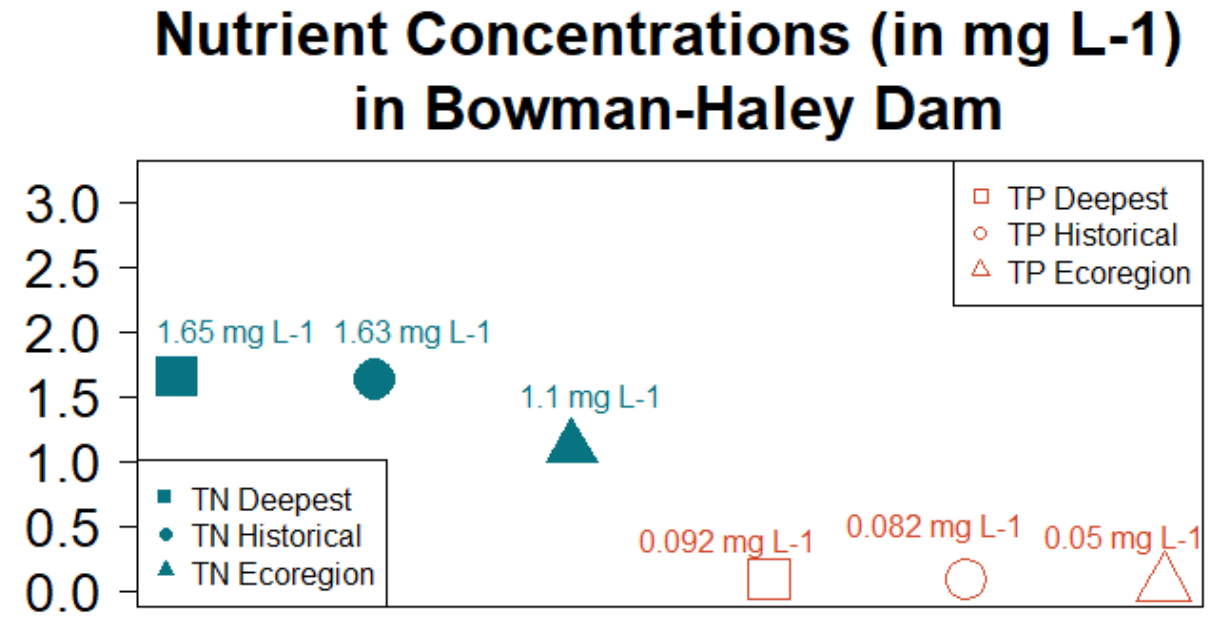

Figure 5. Median total phosphorus and total nitrogen concentrations of current (2021 – 2024), historical and ecoregion data.

Trophic state is a measure used by scientists to assess the condition (where lower scores indicate better water quality) of a lake using three common measures: total phosphorus (TP), Secchi disk transparency and chlorophyll-a concentration. Bowman-Haley Dam is a eutrophic lake that has relatively high nutrient concentrations and moderate algal growth. Historical conditions in the lake were more favorable than what the current data shows (Figure 4.)

Bowman-Haley Dam showed slight stratification in the summer (July), with warmer, well-oxygenated water near the top of the water column and colder, low-oxygenated water at the bottom of the water column (Figure 5.) Chlorophyll A concentrations are also a parameter of concern for Bowman-Haley Dam as larger concentrations of Chlorophyll A have been correlated with Harmful Algal Blooms.

Median concentrations of total nitrogen (TN) in the sampling period were similar to the historical median concentrations and higher to the median for the Missouri Plateau Level IV Ecoregion (hereafter, Missouri Plateau) where Bowman-Haley Dam is located (Figure 6). Median concentration of dissolved TN was similar to TN. Median total phosphorus (TP) concentrations during the sampling period were similar to the historical median and greater than the median for the Missouri Plateau (Figure 6). Median concentration of dissolved phosphorus was less than TP.

Current nutrient concentrations (TP, TN) are greater than historical and ecoregion concentrations and trophic state indices show that Bowman-Haley Dam is heading towards higher eutrophication.

Water Quality Monitoring Summary for the Bowman-Haley Dam Watershed Assessment Project

Final: September 2024

Prepared for:
Bowman County Soil Conservation District
Bowman, ND

Prepared by:
McKenzie Schick
ND Department of Environmental Quality
Division of Water Quality
4201 Normandy St.
Bismarck, ND 58501

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Environmental Quality

Water Quality Monitoring Summary for the Bowman-Haley Dam Watershed Assessment Project

Doug Burgum, Governor
L. David Glatt, P.E., Chief, Environmental Quality

North Dakota Department of Environmental Quality
Division of Water Quality
4201 Normandy St.
Bismarck, ND 58501
701.328.5210

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1. Overview

Bowman-Haley Dam is located in the North Fork Grand Subbasin, a 798,786-acre HUC-8 (8-digit Hydrologic Unit Code, 10130301), located in Bowman and Adams counties in North Dakota and extends into Harding and Perkins counties in South Dakota. The western portion of the North Fork Grand Subbasin (Headwaters North Fork Grand River Watershed & Spring Creek Watershed (HUC 10s), roughly 313,608 acres, drains into the Bowman-Haley Reservoir. The Bowman-Haley Reservoir eventually drains into the Missouri River near Mobridge, South Dakota (Figure 1).

The project primarily focuses on the major tributaries that drain to the Bowman-Haley Reservoir. These major tributaries include Spring Creek, Alkali Creek and North Fork Grand River. In recent years, Harmful Algal Blooms (HABs) have been appearing in Bowman-Haley Reservoir. Due to a lack of monitoring, there is a gap in information on the existing water quality condition of the tributaries draining into Bowman-Haley Reservoir.

This SAP will provide the SCD with guidance towards pursing future Section 319 Watershed Projects in cooperation with the North Dakota Department of Environmental Quality (NDDEQ). Monitoring objectives for this project are related to the NDDEQ Watershed Management Program and watershed coordinator roles of monitoring water quality for assessment and long-term data collection related to Total Maximum Daily Loads (TMDLs).

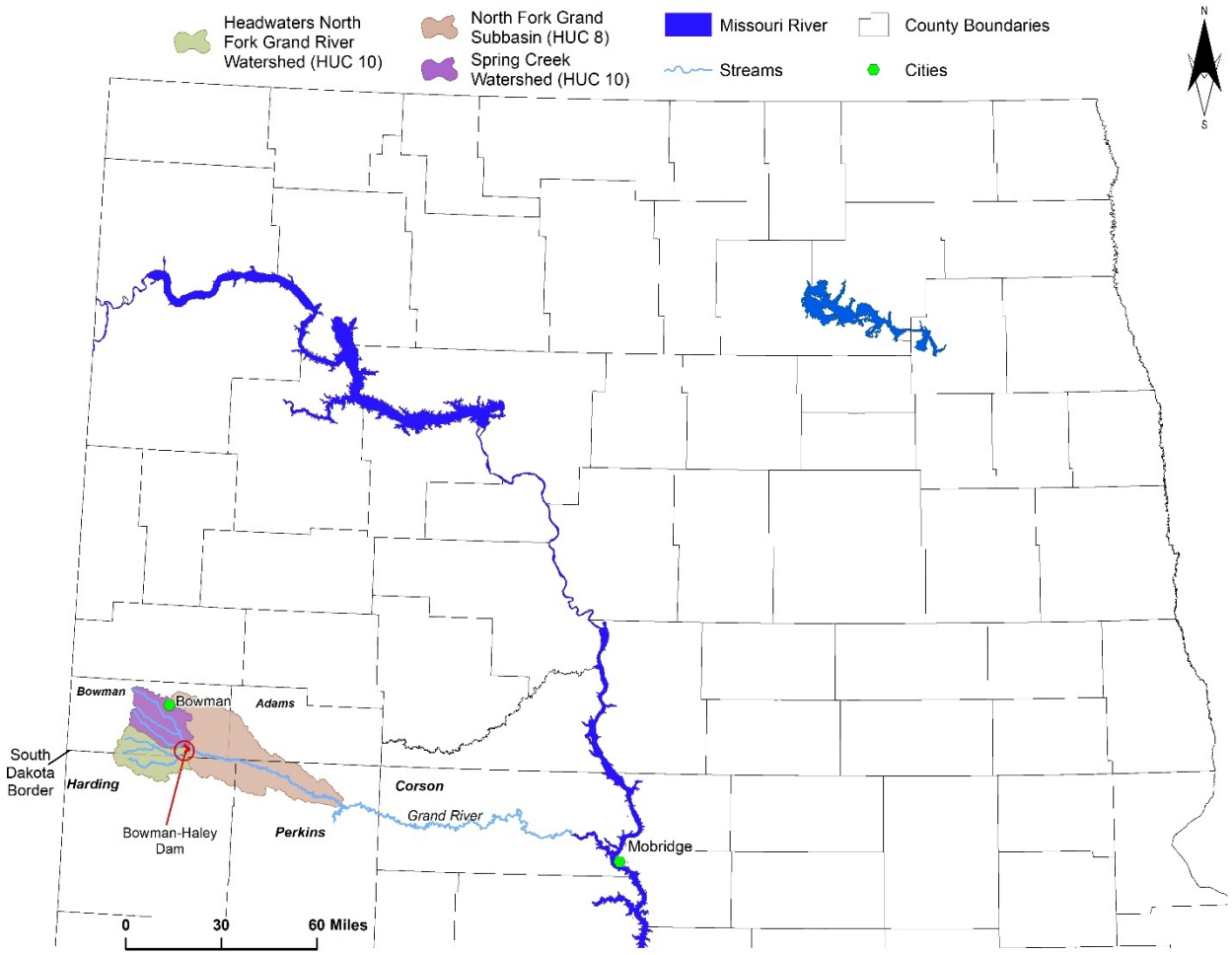

Figure 1. Location of the North Fork Grand River Subbasin in ND and SD.

1.1 Monitoring

The goal of this Sampling and Analysis Plan (SAP) is to assess water quality conditions in three major tributaries of Bowman-Haley Reservoir and to provide clear documentation for how the Bowman-Slope Soil Conservation District (SCD) will conduct monitoring activities.

Specific objectives:

- Collect water quality samples form three (3) STORET sites (Table 1, Figure 2) to assess current water quality conditions.
    - A minimum of five (5) samples per month from Bowman-Haley Watershed stream sites will be collected and analyzed for Nutrients Complete (i.e., total nitrogen, total Kjeldahl nitrogen, nitrate-nitrite, ammonia, total phosphorus), Total Suspended Solids and *E. coli* bacteria.

Table 1. Water Quality Monitoring Stations.

Site ID	Site Description	Latitude Longitude	Data to be Collected
380068	North Fork Grand River 15 miles South of Bowman, ND	Latitude: 45.96513 Longitude: -103.40874	E. coli bacteria Nutrients TSS
380069	Spring Creek 11 miles South and 6 miles East of Bowman, ND	Latitude: 46.01766 Longitude: -103.29186	E. coli bacteria Nutrients TSS
380143	Alkali Creek 12 miles E of Bowman, ND	Latitude: 46.00035 Longitude: -103.36938	E. coli bacteria Nutrients TSS

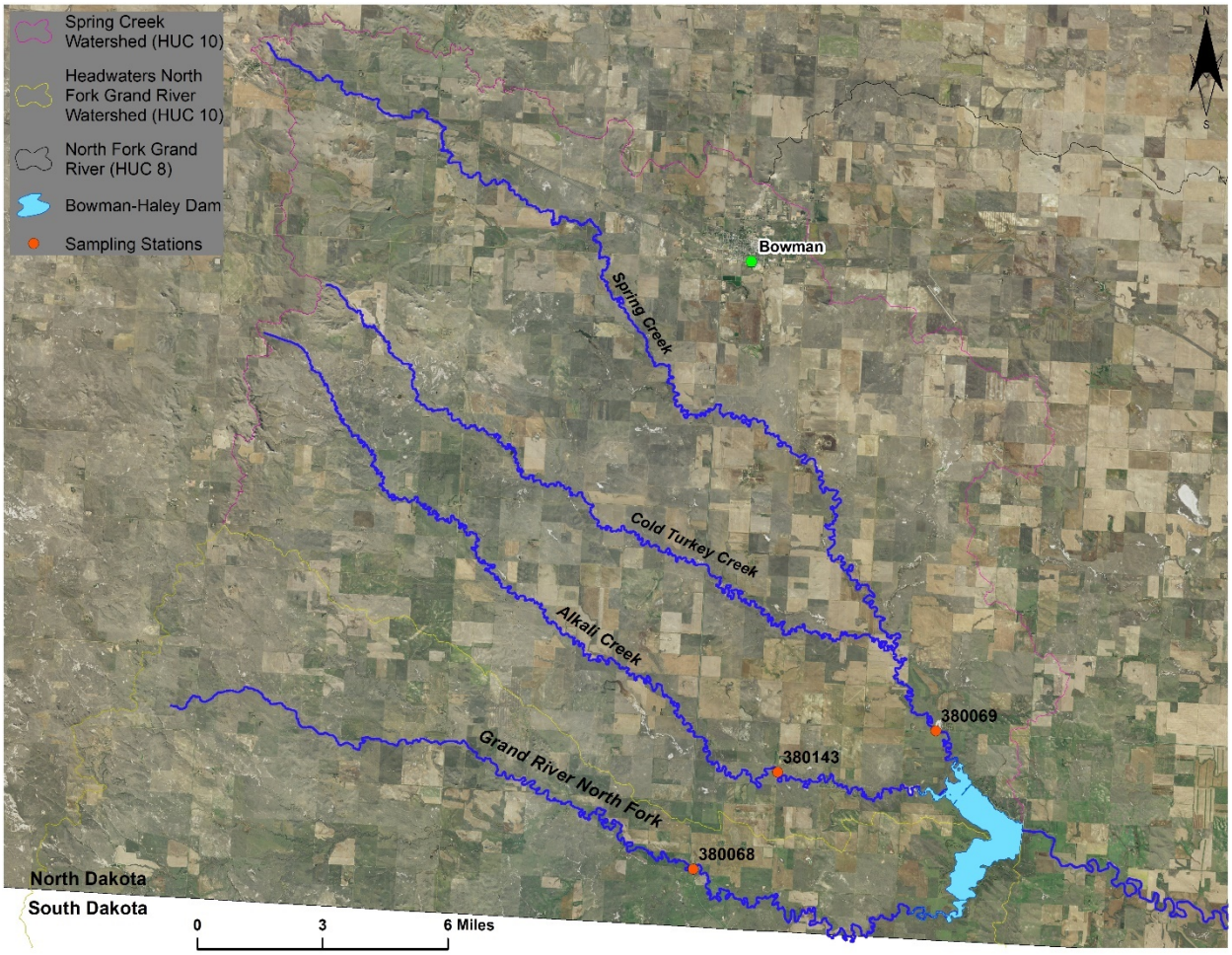

Figure 2. Water Quality Monitoring Stations.

2.0 Assessment Data

2.1 Total Nitrogen, Total Phosphorus, and Total Suspended Solids

Table 2 summarizes the total nitrogen (TN), total phosphorus (TP) and total suspended solids (TSS). Figures 3 through 11 summarize TN, TP, and TSS trends at each of the sites over the course of the sampling years. Descriptive statistics show that TN, TP, and TSS concentrations varied widely during the course of seasonal monitoring, as well as between sites.

Table 2. Summary of Descriptive Statistics Calculated by Site.

2021-2023			
	380068	**380069**	**380143**
#Samples	44	52	36
Total Nitrogen (mg/L)			
Mean	1.05	1.17	1.19
Maximum	2.14	2.22	1.91
Median	1.09	1.15	1.11
Total Phosphorus (mg/L)			
Mean	0.16	0.18	0.16
Maximum	1	0.61	0.35
Median	0.10	0.15	0.14
Total Suspended Solids (mg/L)			
Mean	44.14	25.75	24.81
Maximum	533	150	147
Median	21	16.5	13.5

Average concentrations for TN ranged from a low of 1.05 mg/L at site 380068 to a high of 1.19 mg/L at site 380143 (Figure 3, 6, and 9). Average annual TP concentrations showed very little temporal variation at most sites, however there appeared to be elevated levels of TP at site 380069 (Figure 4, 7, and 10). Site 380068 had the highest TSS average concentration at 44.14 mg/L. 380068 was also the only site that exceeded the daily maximum TSS concentration guideline of 158 (Table 3).

Table 3. Guideline Concentrations

Nitrogen	Phosphorus	TSS
0.886	0.07	30-day average: 90 Daily maximum: 158

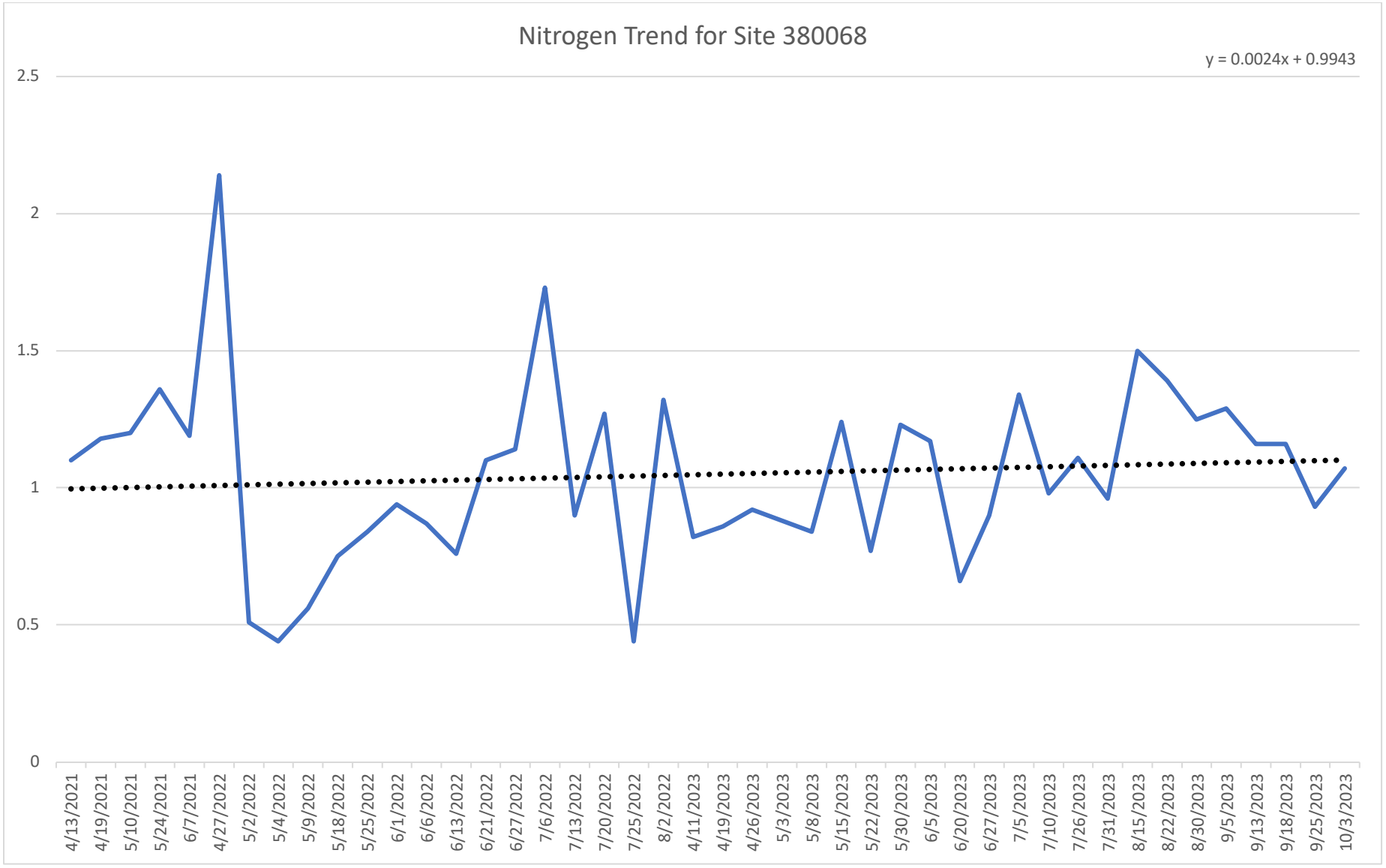

Figure 3. Nitrogen Trend for Site 380068

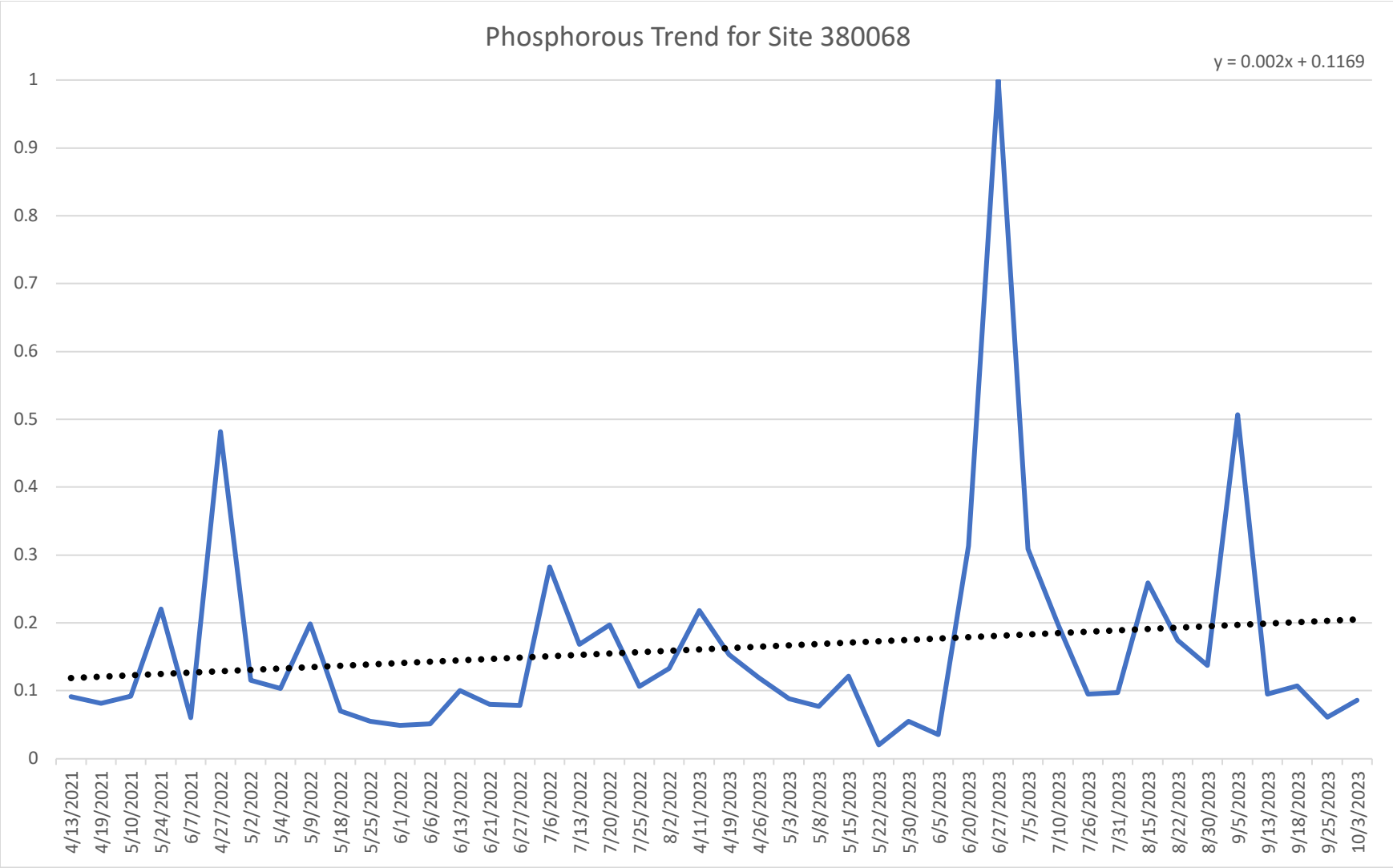

Figure 4. Phosphorous Trend for Site 380068

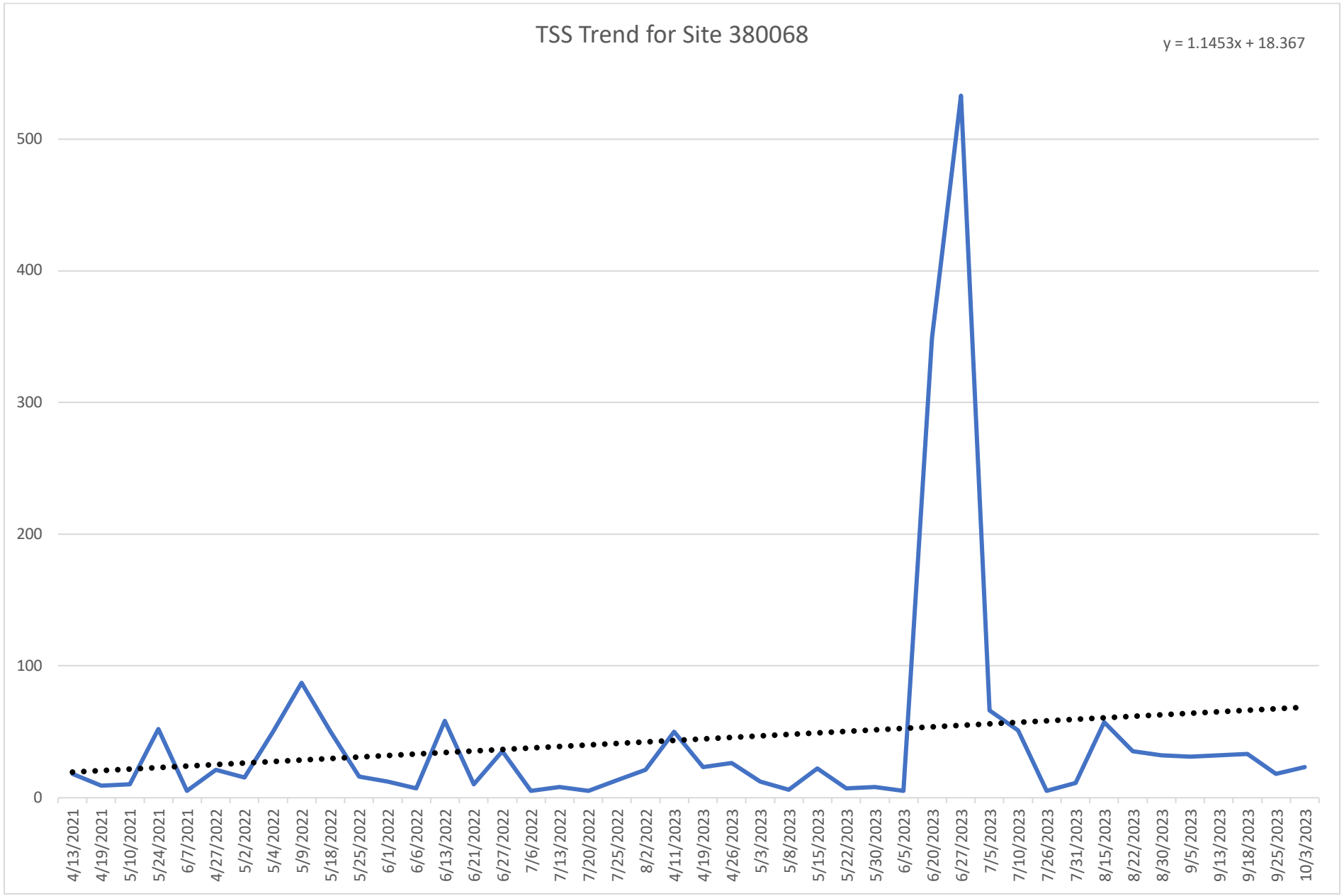

Figure 5. TSS Trend for Site 380068

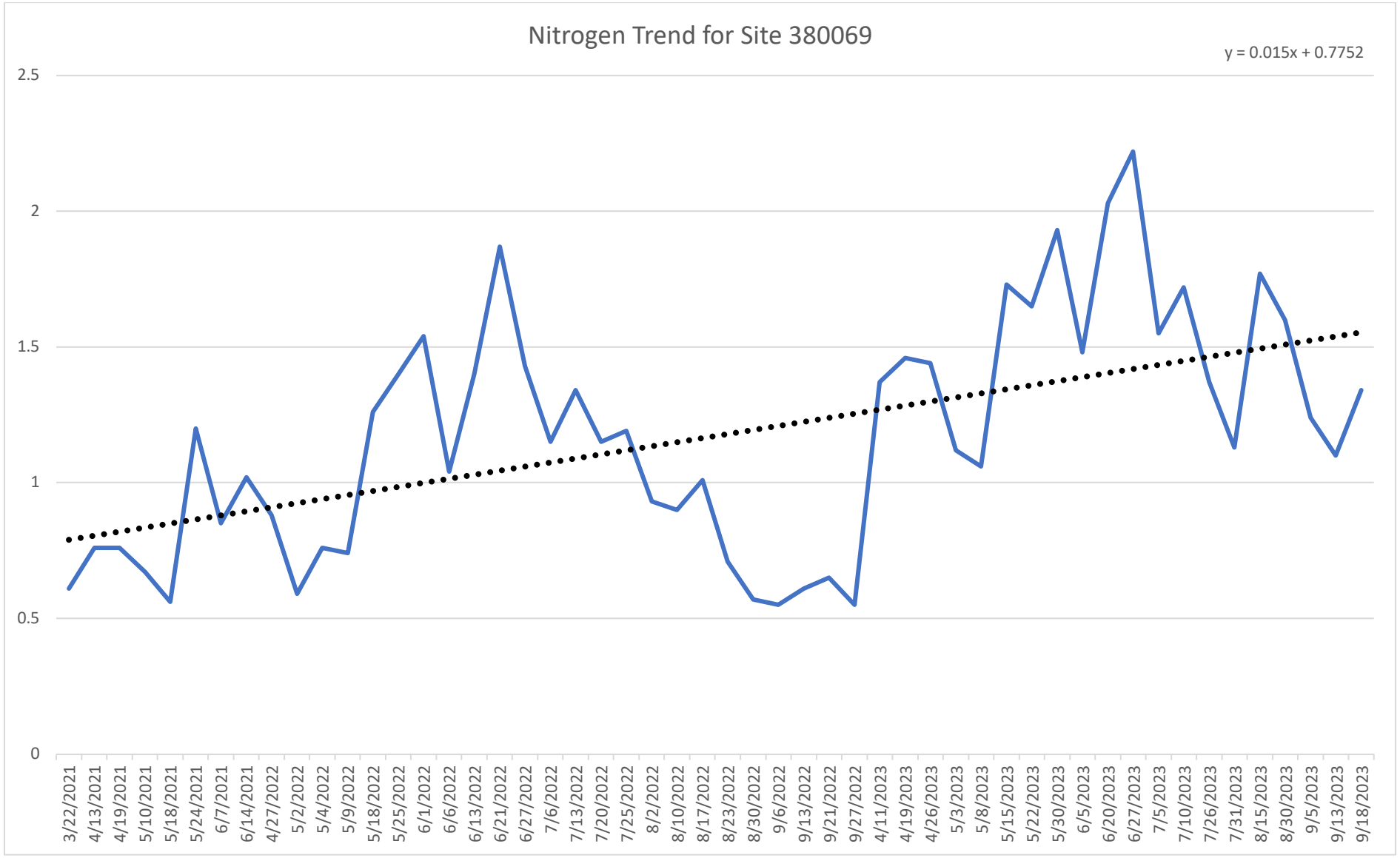

Figure 6. Nitrogen Trend for Site 380069

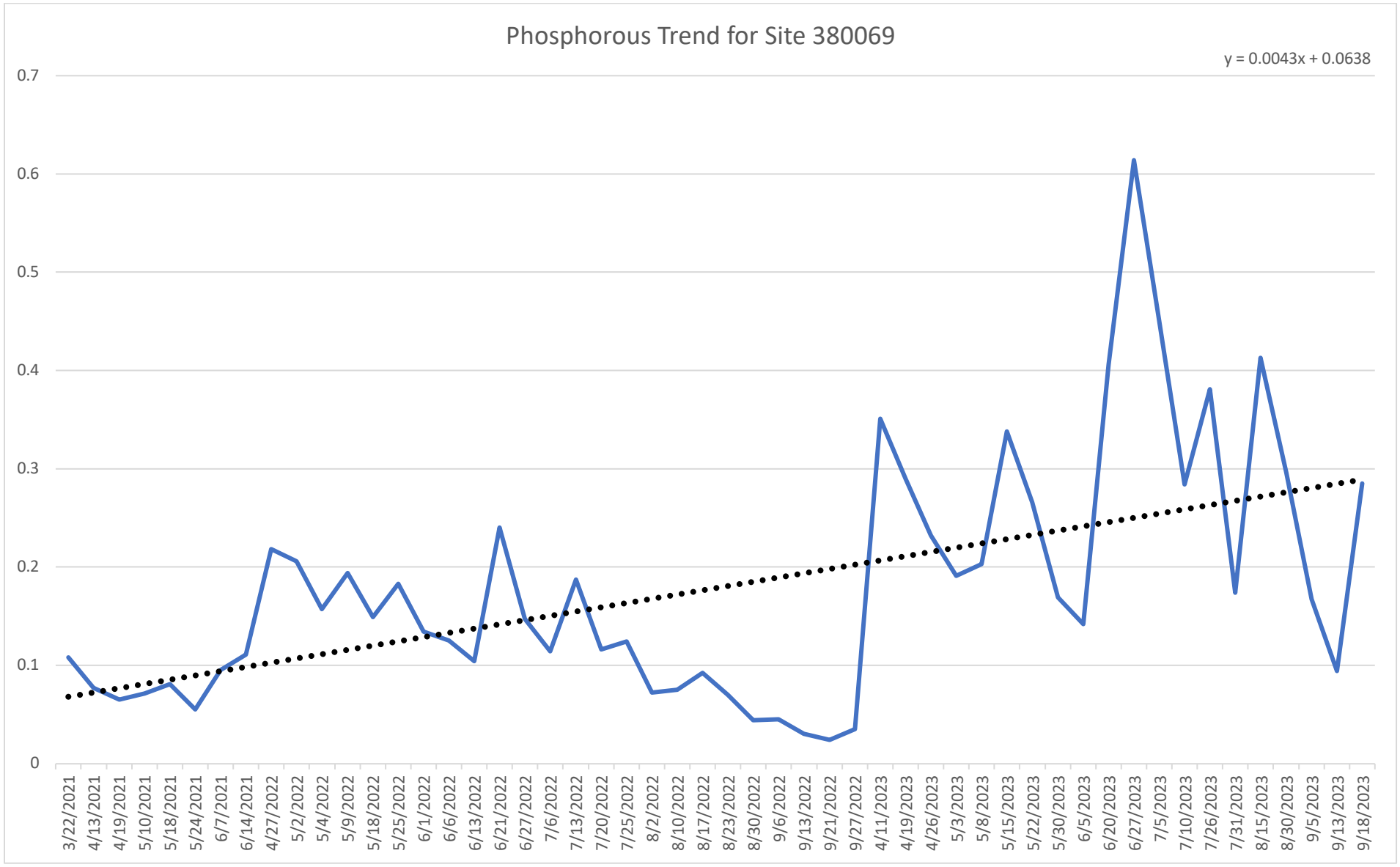

Figure 7. Phosphorous Trend for Site 380069

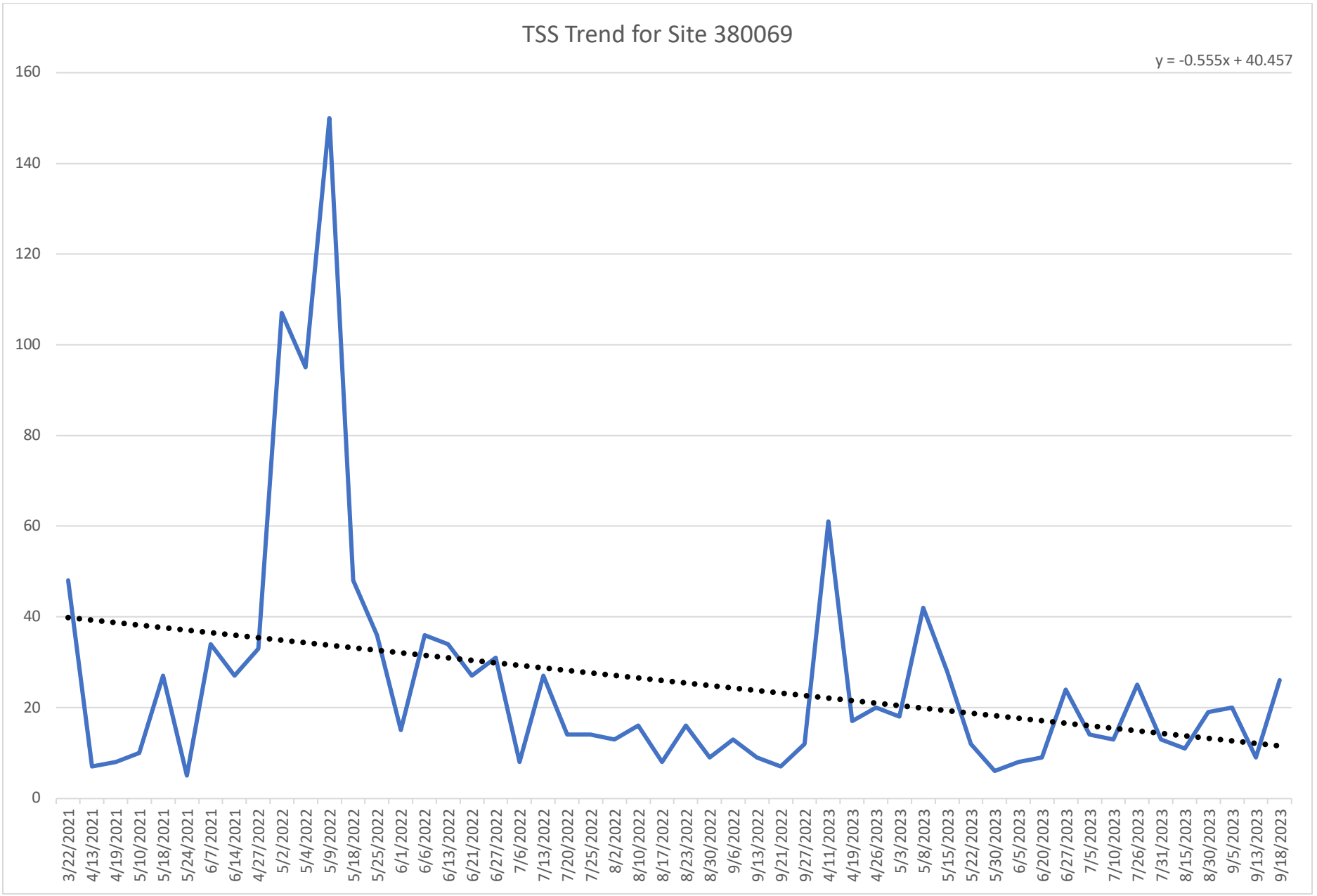

Figure 8. TSS Trend for Site 380069

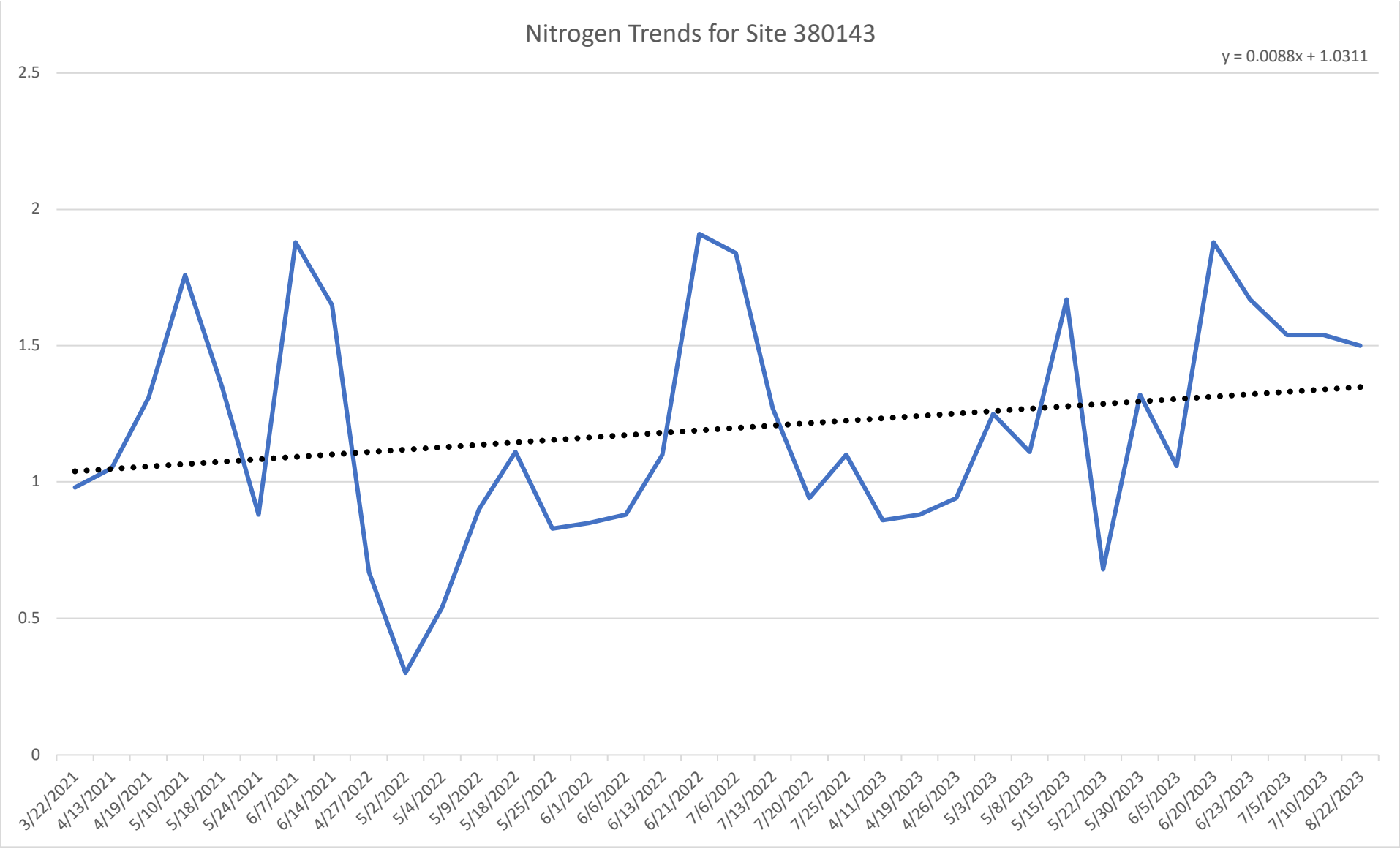

Figure 9. Nitrogen Trend for Site 380143

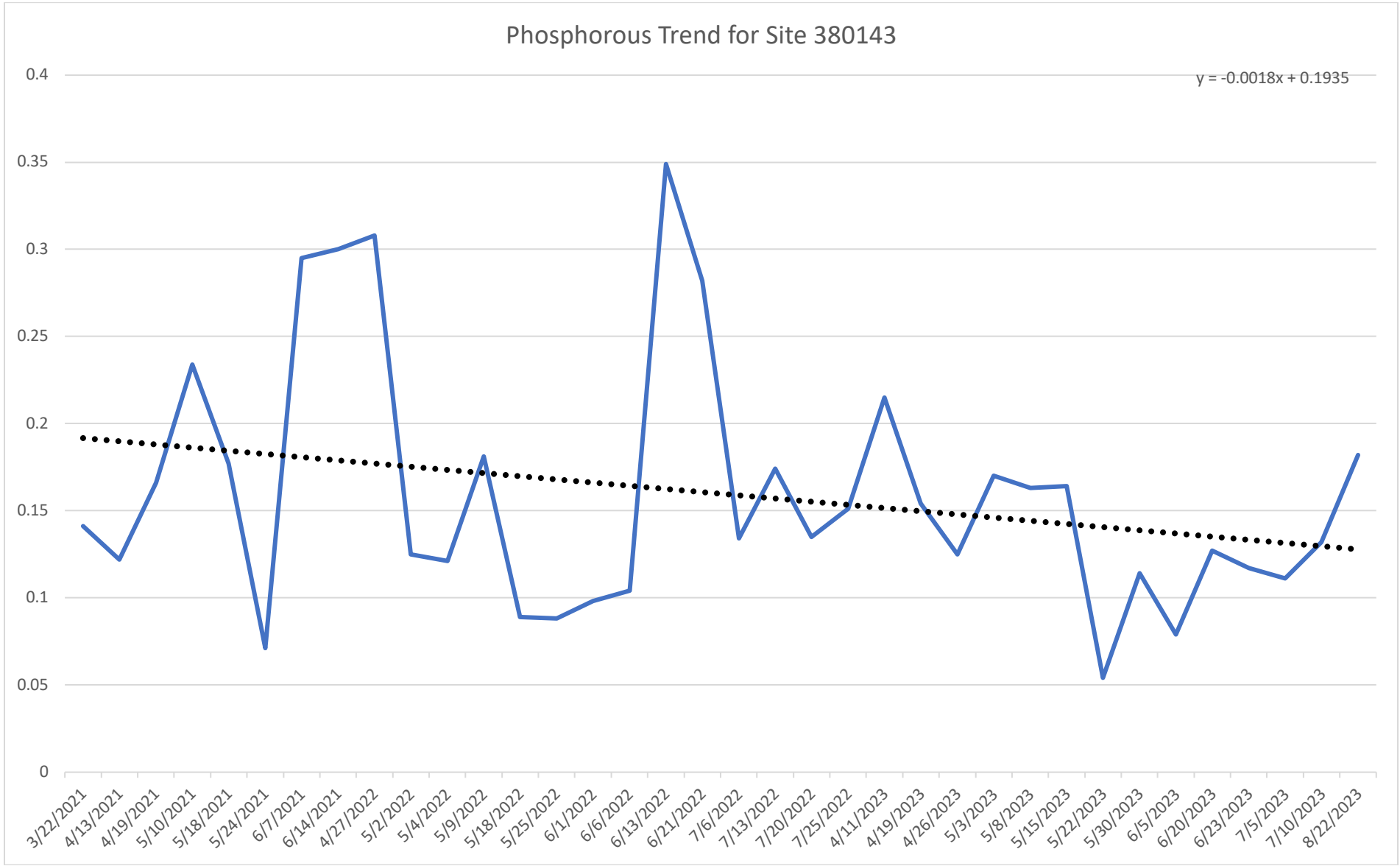

Figure 10. Phosphorous Trend for Site 380143

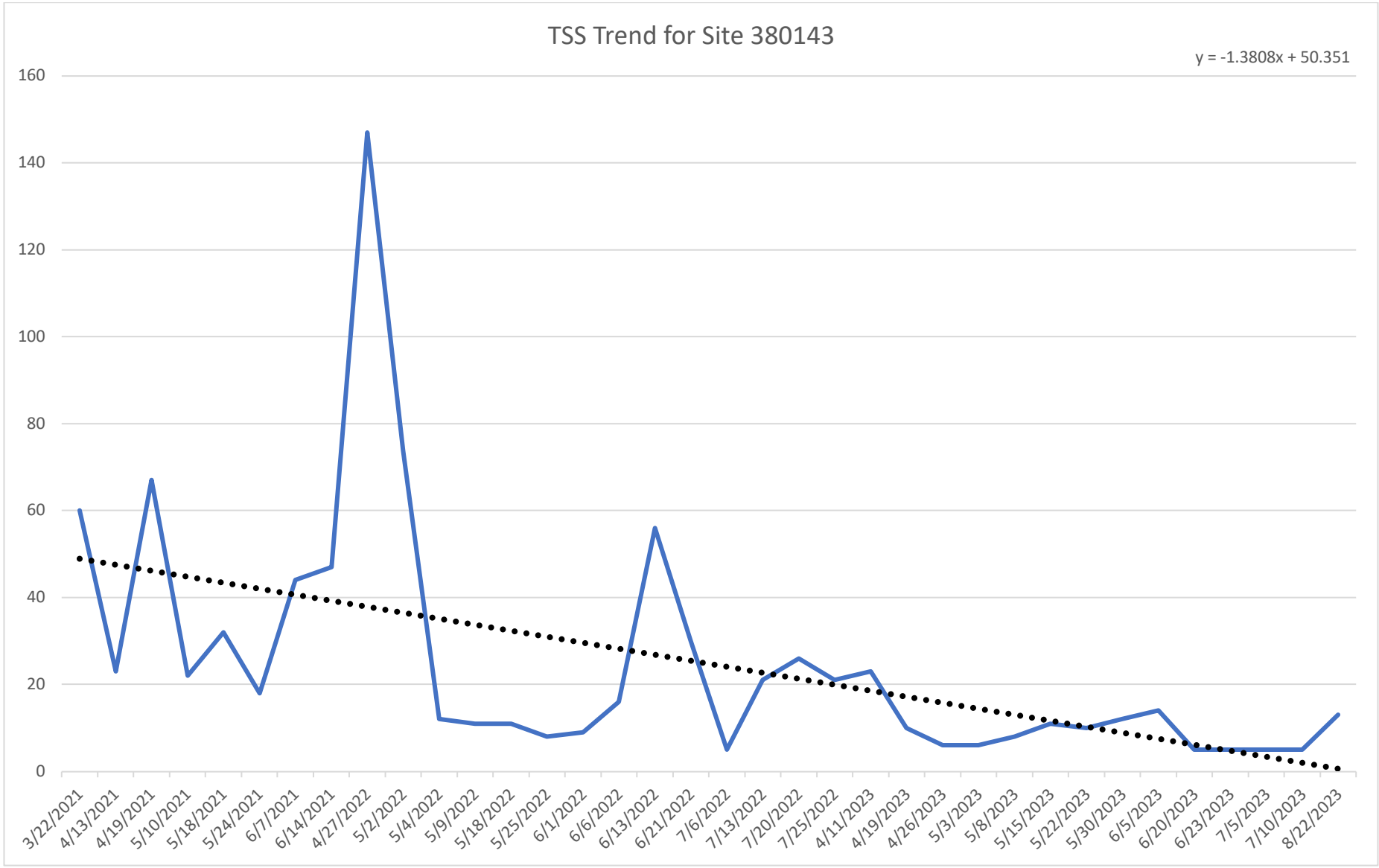

Figure 11. TSS Trend for Site 380143

2.2 E. coli Bacteria

To analyze bacteria levels for recreational use status, data was pooled by month. All sites had geometric mean concentrations of E. coli bacteria in excess of state water quality guidelines (see Table 7). Also, all three sites exceeded the state guidelines where more than 10% of the samples exceeded 409 CFU/100 mL for E. coli bacteria. All three sites are threatened during some months. There were large peaks in bacteria concentrations at all sites in midsummer which can be attributed to riparian grazing and feedlot runoff. Excluding these concentration peaks, there were no significant trends identified that could be attributed to an explanatory variable. Two of the sites did not have enough samples (minimum 5) during August and September to assess the status.

Table 4. Summary of E. coli Bacteria Data Calculated at Site 380068

380068										
	May		June		July		August		September	
	5/2/2022	5	6/7/2021	5	7/6/2022	20	8/2/2022	6500	9/5/2023	1000
	5/4/2022	10	6/6/2022	2500	7/13/2022	31	8/15/2023	120	9/13/2023	280
	5/18/2022	110	6/13/2022	3400	7/20/2022	52	8/22/2023	63	9/18/2023	1000
	5/25/2022	41	6/21/2022	1600	7/25/2022	1500	8/30/2023	63	9/25/2023	230
	5/3/2023	20	6/27/2022	350	7/5/2023	1300				
	5/8/2023	63	6/5/2023	63	7/10/2023	990				
	5/15/2023	490	6/20/2023	1400	7/26/2023	63				
	5/22/2023	74	6/27/2023	5200	7/31/2023	470				
	5/30/2023	340								
# of Samples	9		8		8		4		4	
Geo Mean	53		569		192		*		*	
% Over 409	11%		63%		50%		*		*	
Status	FST		NS		NS		*		*	

[1]FS=Fully Supporting, [2]FST=Fully Supporting, but Threatened, [3]NS=Not Supporting.
*Not enough data to assess.

Table 5. Summary of E. coli Bacteria Data Calculated at Site 380069

380069					
	May	June	July	August	September
	5/2/2022 5	6/7/2021 1400	7/6/2022 2900	8/2/2022 290	9/6/2022 280
	5/4/2022 20	6/14/2021 2300	7/13/2022 10	8/10/2022 260	9/13/2022 320
	5/18/2022 280	6/6/2022 8700	7/20/2022 200	8/17/2022 570	9/21/2022 98
	5/25/2022 280	6/13/2022 4900	7/25/2022 130	8/23/2022 120	9/27/2022 86
	5/3/2023 4800	6/21/2022 4900	7/5/2023 140	8/30/2022 1000	9/5/2023 2300
	5/8/2023 5200	6/27/2022 510	7/10/2023 700	8/15/2023 120	9/13/2023 180
	5/15/2023 5200	6/5/2023 330	7/26/2023 2400	8/30/2023 350	9/18/2023 180
	5/22/2023 1800	6/20/2023 1400	7/31/2023 2800		
	5/30/2023 3100	6/27/2023 130			
# of Samples	9	9	8	7	7
Geo Mean	563	1400	386	300	247
% Over 409	56%	78%	50%	29%	14%
Status	NS	NS	NS	NS	NS

[1]FS=Fully Supporting, [2]FST=Fully Supporting, but Threatened, [3]NS=Not Supporting.

Table 6. Summary of E. coli Bacteria Data Calculated at Site 380143

380143					
	May	June	July	August	September
	5/2/2022 41	6/7/2021 670	7/6/2022 760	8/22/2023 220	
	5/4/2022 5	6/14/2021 400	7/13/2022 41		
	5/18/2022 20	6/6/2022 880	7/20/2022 86		
	5/25/2022 320	6/13/2022 930	7/25/2022 130		
	5/3/2022 73	6/21/2022 73	7/5/2023 160		
	5/8/2023 41	6/5/2023 910	7/10/2023 160		
	5/15/2023 380	6/20/2023 85			
	5/22/2023 220	6/23/2023 74			
	5/30/2023 460				
# of Samples	9	8	6	1	0
Geo Mean	81	313	144	*	*
% Over 409	11%	50%	17%	*	*
Status	FST	NS	NS	*	*

[1]FS=Fully Supporting, [2]FST=Fully Supporting, but Threatened, [3]NS=Not Supporting.
*Not enough data to assess.

Table 7. North Dakota Bacteria Water Quality Standards for Rivers and Streams

Parameter	Standard	
	Geometric Mean[1]	Maximum[2]
E. coli Bacteria	126 CFU/100 mL	409 CFU/100 mL

[1] Expressed as a geometric mean of representative samples collected during any consecutive 30-day period.
[2] No more than 10 percent of samples collected during any consecutive 30-day period shall individually exceed the standard.

3.0 Beneficial Use Assessment

3.1 Aquatic Life Use

Nutrients

Eutrophication is defined as the increase in primary productivity resulting from excessive nutrient inputs into rivers. The negative impacts from eutrophication may include the reduction of dissolved oxygen due to algal growth and subsequent decomposition by microbial activity and alteration of the algal community. The alteration of the algal community can lead to a decrease in food resource quality for aquatic insects and fish and an alteration of the aquatic insect and fish communities to include less intolerant species (e.g., stonecats, mayflies, stoneflies). Concentrations of TN or TP at which rivers are considered eutrophic can be influenced by spatial and temporal variations in a variety of factors and is still an area of significant research. Based on nutrient concentrations, aquatic life uses could be impacted due to runoff from crop lands, runoff of manure from pasture and animal feeding areas, runoff from riparian grazing by livestock, or direct deposit of manure into the streams.

Total Suspended Solids

In addition to nutrients, TSS concentrations can have an impact on aquatic life use in streams. The negative effects of TSS on aquatic life are dependent on the concentration and the duration of the exposure. Long durations of high concentrations of TSS can negatively impact the reproduction, feeding, and movement of fish and aquatic insect communities. In addition, suspended solids can eventually settle and cause sedimentation problems, like the filling of interstitial space and the smothering of benthic organisms.

TSS is the amount of both mineral and organic solids suspended in water and is often used as a surrogate measure for suspended sediments. North Dakota, along with most other states, does not have TSS criteria designed to protect aquatic life use. However, South Dakota has set a standard for TSS at a 30-day average of 90 mg/L and a daily maximum of 158 mg/L for permanent warm-water fisheries. Given the similarities between North Dakota and South Dakota, the South Dakota TSS standard will be used as a reference for this report.

About 29 percent of the samples collected at these sites had TSS concentrations greater than 30 mg/L. Based on South Dakota's criteria, there were 2 exceedances of the 158 mg/L acute standard. These exceedances are occurring during the spring months and could be attributed to spring runoff and rain events.

4.0 References

USGS, 2006. Bryce, S. A., & Cowardin, L. M., Ecoregions of North Dakota, and South Dakota (n.d.).

DFO, 2000. Effects of sediment on fish and their habitat. DFO Pacific Region Habitat Status Report 2000/01.

NDDEQ, 2019. CHAPTER 33.1-16-02.1 STANDARDS OF QUALITY FOR WATERS OF THE STATE.

Appendix F- 303(d) List

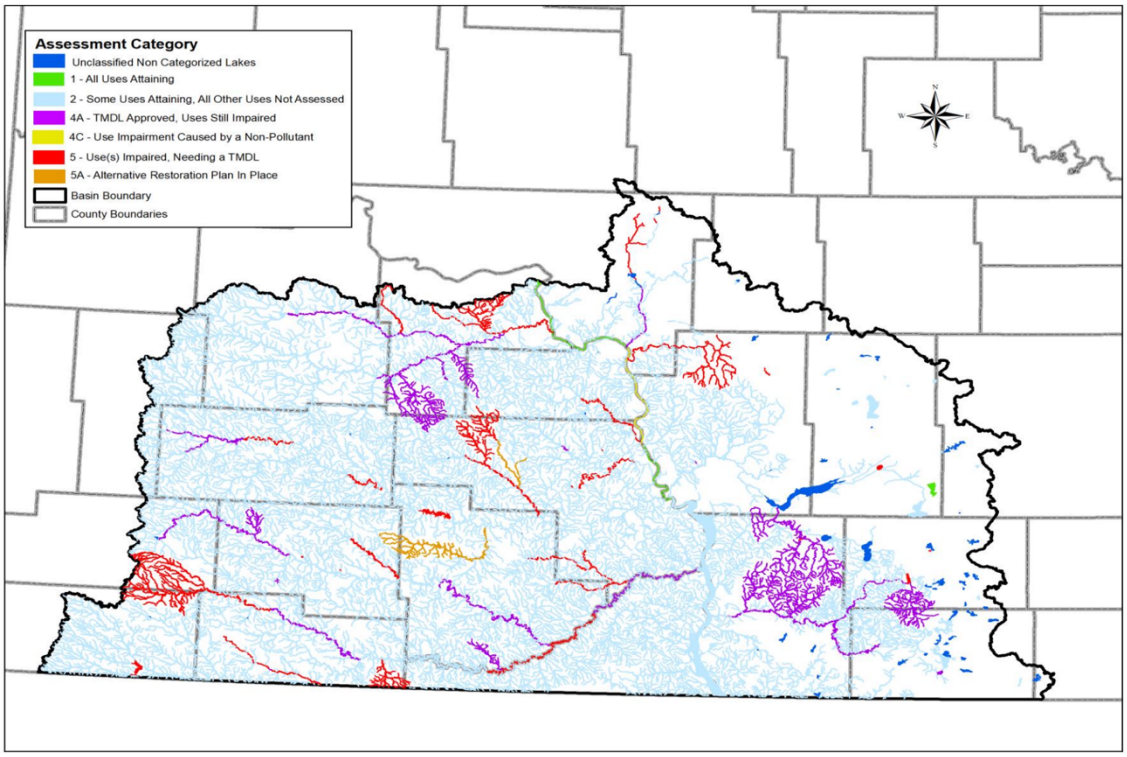

Figure VI-3. Graphical Depiction of 2020-2022 Section 303(d) Listed/Category 5 Waters in the Lower Missouri River Basin.

ND-10130301-001-L_00	A 1,750 acre Us Army Corps of Engineers constructed reservoir located at the confluences of the Grand River, Alkali Creek and Spring Creek in Bowman County, North Dakota.	1814.4 Acres	Low	No	Recreation	Nutrients

Appendix G- Letters of Support

NDSU | EXTENSION SERVICE
BOWMAN COUNTY

October 29, 2024

North Dakota Department of Environmental Quality
Division of Water Quality
319 Nonpoint Source Pollution Management Program
4201 Normandy Street, Bismarck, ND 58503

Dear Grant Review Committee,

This is a letter of support for the Bowman-Slope Soil Conservation District and partners to receive funding for a 319 Watershed Project Grant for the understanding and improvement of water quality to the Bowman-Haley Watershed.

This watershed is widely used in our area, serving as a vital resource not only for agriculture and wildlife conservation but also as a cornerstone for economic development and tourism. Bowman-Haley Dam is one of the few recreational waterways within an 80-mile radius that supports water-based activities for visitors from the tri-state region and beyond. Additionally, it sustains a broad network of public and private hunting opportunities, making it a significant asset for both local residents and out-of-state guests.

Water quality remains a significant concern in our area due to high levels of salts, sulfate, nitrates, and nutrients that impact its suitability for agriculture, wildlife, and recreation. The watershed tributaries feeding Bowman-Haley Dam—including the North Fork Grand River, Alkali Creek, and Spring Creek—have historically struggled with issues like algae blooms, affecting farmers, ranchers, and recreational users who depend on these waterways.

I strongly believe that continued support for this project, and others like it, will be essential in providing valuable information, practical solutions, and educational resources to help local producers maintain and improve water quality within this watershed and others across our state. I fully support this project and urge funding for this vital resource, which will benefit the entire southwest region of North Dakota.

Sincerely,

Penny Nester

Penny Nester, CCA
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NDSU Extension, Conservation Leadership and Planning
307 Morrill Hall, NDSU, Fargo, ND 58108-6050
701-715-3080

TO: Sierra Lee, Bowman-Slope SCD Manager

FROM: Hannah Nordby, NDSU Extension Conservation Leadership and Planning Area V Coordinator

DATE: October 31st, 2024

RE: Bowman Haley Watershed

Dear Ms. Lee:

As the NDSU Extension Area V Program Coordinator for Conservation Leadership and Planning, I am in full support of the Bowman Haley Watershed Project. The data collected from the tributaries and the Bowman-Haley Dam is vital in determining causes for the Harmful Algae Bloom that is present. A natural next step is to implement a watershed project addressing and preventing these algae blooms.

The consistency in projects available to area producers over the years has been received well by producers and landowners. Past watershed projects have increased conservation practices, in the areas of education, soil/water health and land preservation. Continuing to encourage better agriculture practices by implementing a new watershed project is important to address local environmental concerns.

As an Area V Program Coordinator I commit to supporting the Bowman-Slope Conservation District's proposed project and your continued efforts to assess and assist addressing the needs of the landowners within the watershed for the duration of the project.

Sincerely,

Hannah Nordby

Hannah Nordby

Appendix H- Job Description

Job Title:	Watershed Coordinator		
Hours:	8 hours/day ½ hour for lunch break	**Working hour options:**	8:00-4:30
Location:	Bowman	**Travel Required:**	For Training and Meetings:
Level/Salary Range:	$ /hr	**Position Type:**	Full Time or Part Time Position type and hours are negatable at the time of interviews.
Benefits:	Paid holidays, sick leave and annual leave earned based on SCD Policy of years of service and hours worked. Insurance 100% premium paid, 3% retirement match		
Supervision:	This position is the direct responsibility of the Board of Supervisors		

Job Description

ROLE AND RESPONSIBILITIES

This position is that of Watershed Coordinator is to manage and administer water quality and/or Nonpoint Source Pollution grants and other related projects for the Bowman-Slope Soil Conservation District.

1. Work directly with landowners/operators to initiate and implement water quality and conservation practices
2. Collaborate with towns, government agencies and other nonprofit groups.
3. Conduct educational workshops and information campaigns
4. In cooperation with various federal, state, and local agencies assess the need for conservation work within the SCD and recommends actions and programs to meet these needs.
5. Grant/Program Management
    a. Write grant and funding applications
    b. Conduct and manage needs assessments for projects
    c. Make oral and written presentations to funding committees for projects
    d. Mange Project workloads, budgets, and allocations
    e. Prepare documentation, report and track project process and required reporting
    f. Prepare final documentation and reporting for the end of projects
    g. Communicate and coordinate with project grantors and partners
6. Maintains a cooperative relationship with all agencies operating in the SCD
7. Report monthly to the District Board of Supervisors on activities at the monthly District Meetings & the watershed program.
8. Coordinates request for district assistance with NRCS District Conservationist and other appropriate resources agencies.
9. Field work that may require physical exertion such as incline walking, lifting, water sampling, survey field work
10. Initiate and coordinate watershed assessments
11. Supervises SCD staff as needed
12. Maintain daily contact with the office and notify office of any changes in schedule

13. Assesses the need for conservation work with the District and recommends actions and programs
14. Work with SCD staff to keep abreast of all federal, state, and local laws that affect the conservation work within the District
15. Promote conservation practices through cooperator contact and follow-up
16. Assist with District programs
17. Attend training sessions when approved by the District Board
18. Prepares and presents conservation programs to schools, groups, and agencies
19. Assist NRCS personnel and advise them of landowners needing technical assistance
20. Apply conservation practices according to NRCS specifications
21. Keep an up to date log on daily activates to present at the District Board Meetings
22. Become familiar with NRCS Field Office Technical Guide for conservation practice specifications
23. Be familiar with the published soil survey and its uses in planning conservation practices
24. Operate District and NRCS equipment safely for authorized purposes only
25. Contract Administration – task include assisting with:
    a. Developing modifications
    b. Preparing payment documents
    c. Development of contract support documents
    d. Maintaining tracking systems
    e. Performing status reviews
26. Case File Management – tasks include assisting with:
    a. Correspondence development and filing
27. Conservation Planning – tasks include assisting with:
    a. Development of plan maps
    b. Plan development
    c. Inventory and evaluation
    d. On site planning and locating practices
28. Conservation Application – tasks include assisting with:
    a. Practice design
    b. Design worksheets
    c. Practice layout in the field
    d. Surveying
    e. Environmental compliance
    f. Staking practices
    g. Inspections and certification of practices
29. Program outreach and marketing – tasks include assisting with:
    a. On site visits with customers
    b. Conservation Articles
    c. Mailings
    d. Meetings
    e. Training sessions
    f. Local Work Group Coordination
    g. Accepting and processing applications

30. Assumes responsibility and exercise own initiative in furthering district programs.
31. Perform other related duties as requested by the SCD Board.

QUALIFICATIONS AND EDUCATION REQUIREMENTS

- **MUST HAVE CURRENT DRIVER'S LICENSE**
- **STRENGTH REQUIREMENTS: MUST BE ABLE TO LIFT UP TO 75 POUNDS**
- **MOVEMENT REQUIREMENTS: THIS POSITION REQUIRES FIELDWORK THAT MAY INVOLVE PHYSICAL EXERTION SUCH AS WALKING ROUGH TERRAIN. MUST BE ABLE TO CLIMB, BALANCE, REACH, CROUCH, STOOP, KNEEL**
- **MUST BE A UNITED STATES CITIZEN OR ALIEN AUTHORIZED TO WORK IN THE UNITED STATES**

Education

- A high school diploma

- An associates or bachelor's degree preferred
- **Experience**
  - Experience in natural resources/agriculture/farming operations and equipment is required

PREFERRED SKILLS

- Familiar with Microsoft Word, PowerPoint, and Excel. Helpful if you have knowledge in Arc-GIS and the ability to learn computer programs necessary to perform the job outlined.
- Strong communication, interpersonal, and organizational skills
- Must be able to work independently

ADDITIONAL NOTES

On the job training will be provided.
A background check is required.