July 2024

Second Quarter 2024 Monitoring Report Two-Mile Pond Complex Riparian Survey

City of Santa Fe, New Mexico

Photo by Dustin Schwartz
Two-Mile Pond, June 11, 2024

prepared by

JSAI

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SECOND QUARTER 2024 MONITORING REPORT TWO-MILE POND COMPLEX RIPARIAN SURVEY, CITY OF SANTA FE, NEW MEXICO

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CITY OF SANTA FE, NEW MEXICO

1.0 INTRODUCTION

John Shomaker & Associates, Inc. (JSAI) was contracted by City of Santa Fe Public Works Department to provide monthly monitoring of the Two-Mile Pond Complex riparian area from the Restoration Channel staff gage to decommissioned Two-Mile Dam (Figs. 1 through 3). The monitoring area is focused on the riparian area associated with the Restoration Channel and Two-Mile Pond Complex. Six monitoring transects have been identified for assessment of riparian conditions (Fig. 3). JSAI utilized standardized riparian monitoring and assessment methods described by New Mexico Rapid Assessment Method (NMRAM) Field Guide prepared by the New Mexico Environment Department Surface Water Quality Bureau (NMED SWQB) (Muldavin et al., 2022). The NMRAM field guide provides procedures for conducting a rapid ecological assessment of wetlands and riparian areas in the Montane Riverine Wetland Subclass that occur along unconfined mountain streams and rivers at elevations between 6,000 and 8,500 ft above mean sea level (ft amsl).

1.1 Project Background

The Santa Fe River begins in the Sangre de Cristo Mountains and flows to the Rio Grande. The Two-Mile Pond Complex is in the upper reach of the Middle Santa Fe River hydrologic system (Fig. 1). Reservoirs were established in the Middle and Upper Santa Fe River hydrologic system as a result of securing and developing water supply for the City of Santa Fe (Fig 2). The City of Santa Fe reservoirs include:

- Old Stone Dam constructed in 1880, but silted in by 1904
- Two-Mile Dam and Reservoir constructed in 1893 and decommissioned in mid 1990s
- Granite Point (McClure) Dam and Reservoir constructed in 1926
- Nichols Dam and Reservoir constructed in 1943

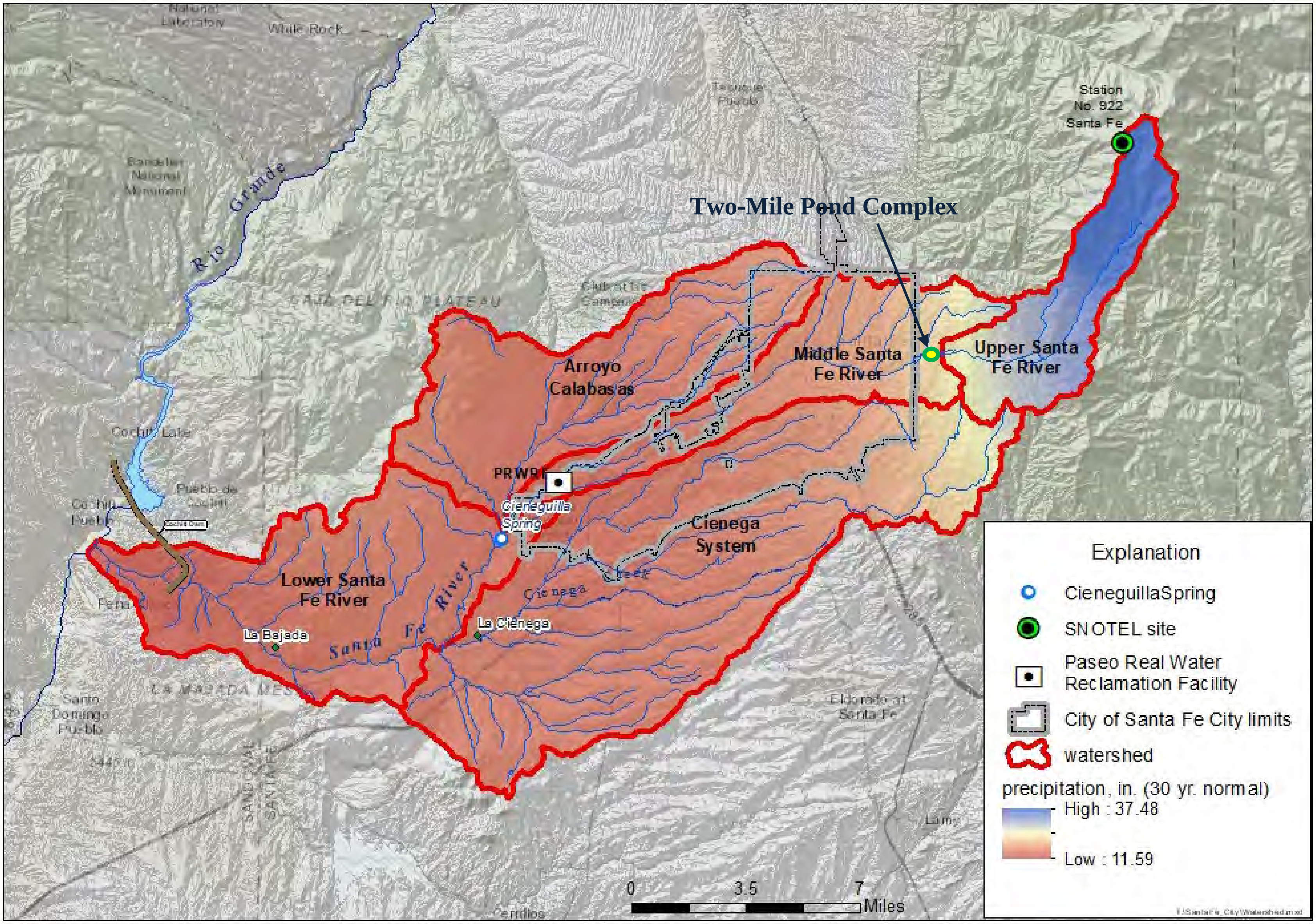


Figure 1. Map of Santa Fe watershed showing location of Two-Mile Pond Complex.

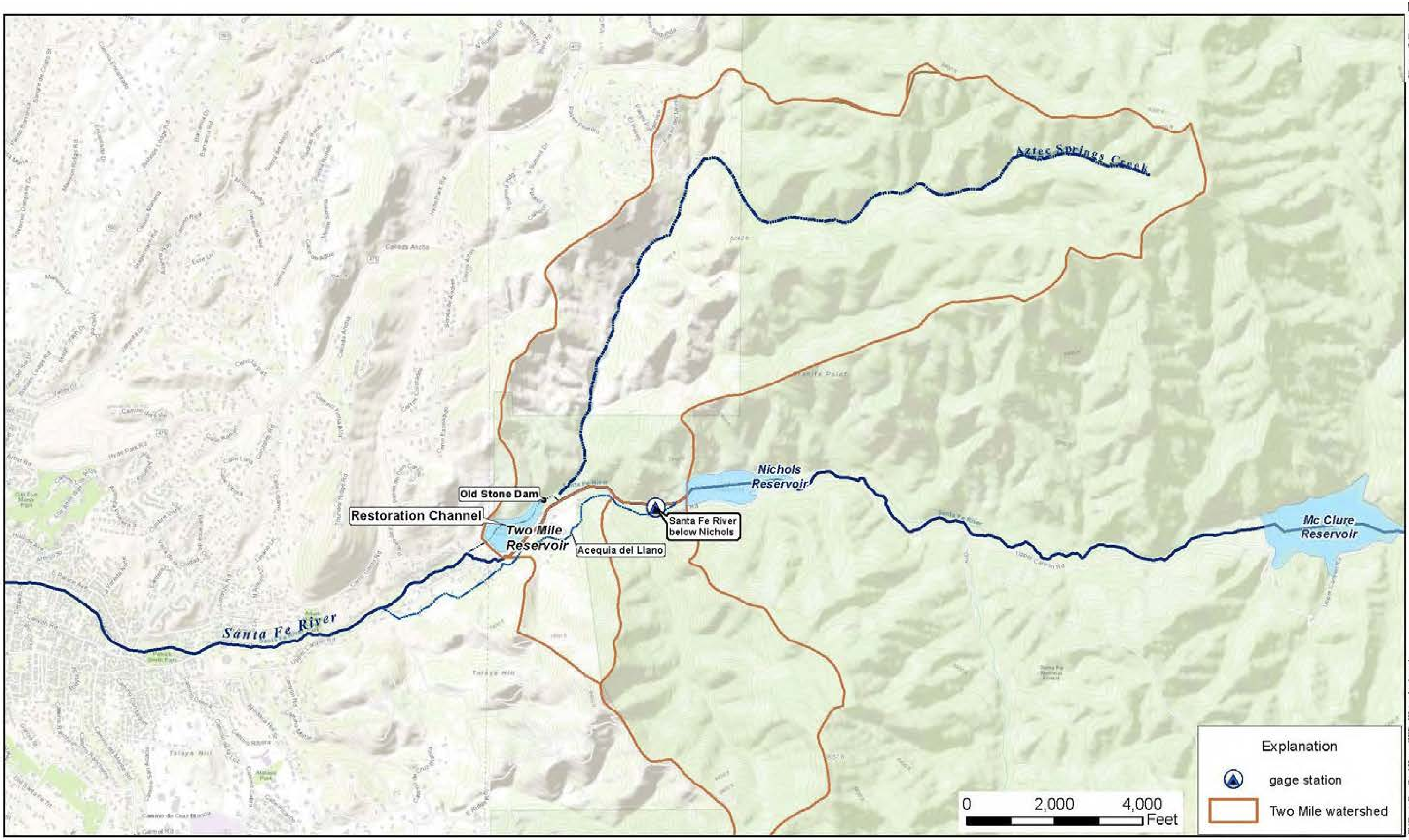


Figure 2. Map showing locations of City of Santa Fe reservoirs, Santa Fe River, and Two-Mile Pond receiving watershed.

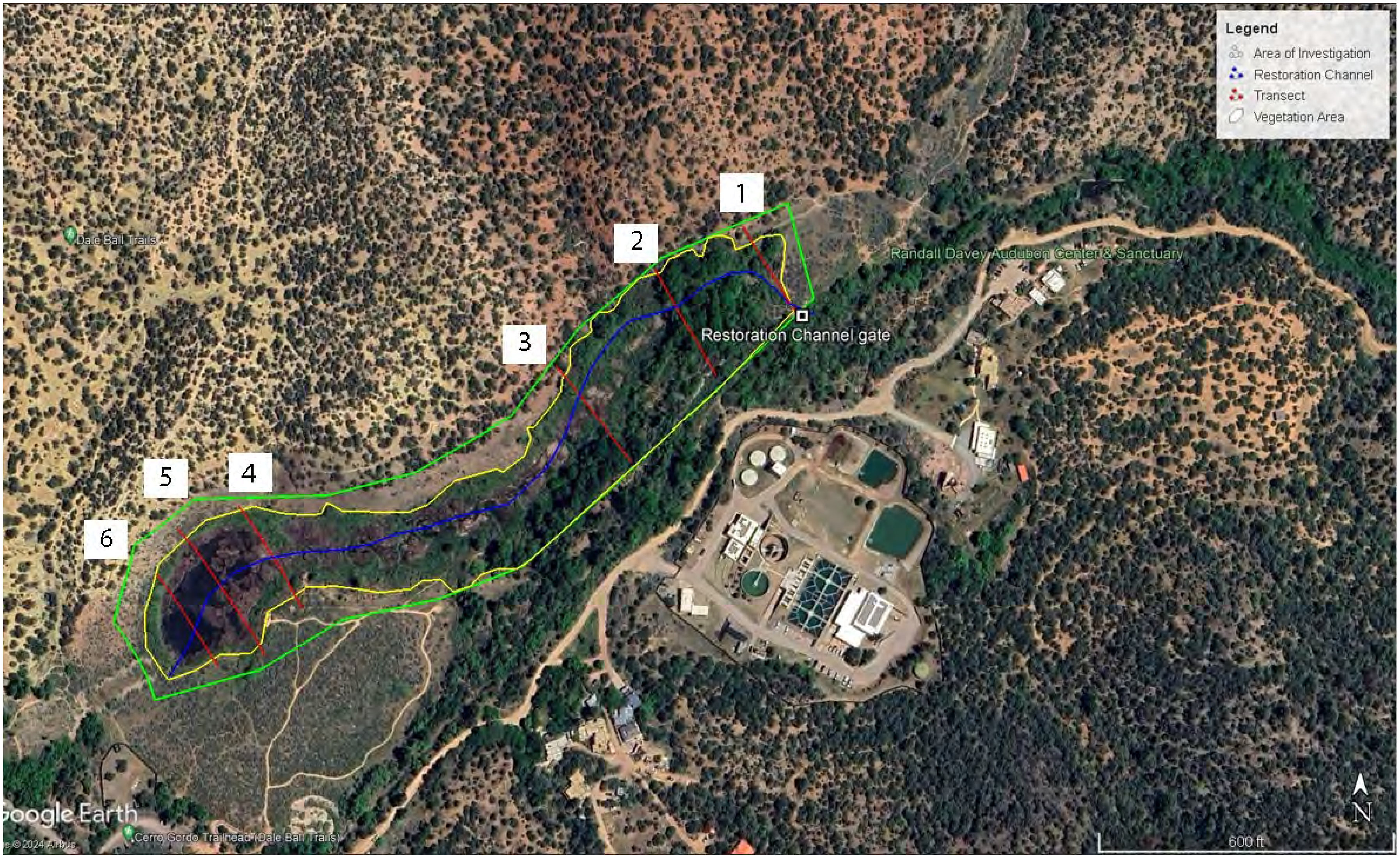


Figure 3. Landscape map showing the Two-Mile Pond Complex and area of investigation on June 7, 2023 aerial photograph.

The Two-Mile Pond Complex is the result of restoration of the decommissioned Two-Mile Dam that was constructed in the Santa Fe River canyon. The Two-Mile Pond Complex was donated to The Nature Conservancy (TNC) in 2000, which converted it into the "Santa Fe Canyon Preserve." Features of the Two-Mile Pond Complex include:

- Restoration Channel
- Remnants of Old Stone Dam
- Remnants of decommissioned Two-Mile Dam
- Established riparian area along the Restoration Channel in the former footprint of Two-Mile Reservoir

The City of Santa Fe Ordinance 2012-10 established the Santa Fe River Target flows for a Living River Initiative. Target Flows are Santa Fe River flows originating from above McClure Reservoir that are bypassed (water that flows past a diversion or storage facility) and released to Santa Fe River at the base of Nichols Dam. Since 2012, target flows have run through Two-Mile Complex via the Santa Fe River and Restoration Channel. Other bypass flows include those for court-ordered acequia deliveries downstream of the Two-Mile Complex.

Santa Fe River bypassed flows are waters of the State. In 2023, the New Mexico Office of the State Engineer (NMOSE) determined that Restoration Channel diversions from the Santa Fe River and storage in Two-Mile Pond had no supporting water right permit, and ordered a stop to these diversions and storage of water. There are concerns that these changes in streamflow conditions through the Two-Mile Pond Complex will alter the established riparian system. The primary objective of assessing the Two-Mile Pond Complex riparian area is to determine current conditions and health of the system, and affects due to changes to the hydrologic regime.

1.2 Scope of Work

The intentions of the quarterly monitoring reports are to provide a summary of the project, to present data collected to date, to provide an assessment of the collected data, and to present observations and findings. The quarterly monitoring reports are to include:

- ➢ field datasheets (Appendix D)
- ➢ landscape map (Fig. 3)
- ➢ sampling rank and score and assessment summary (Table 4)
- ➢ stressor checklist (Appendix D)
- ➢ sampling area rank and score and assessment summaries (Table 8)
- ➢ water flows and budget from the streamflow monitoring network
- ➢ observed changes in surface water and soil moisture conditions

2.0 SUMMARY OF EXISTING DATA AND INFORMATION

Available existing data and information were compiled for the Two-Mile Pond Complex, which were limited to NMED riparian habitat mapping, historical imagery, and streamflow monitoring performed for Santa Fe Water Division.

2.1 NMED SWQB

The NMED SWQB has prepared a riparian habitat map of the Two-Mile Pond Complex portion of the Santa Fe River (Fig. 4). Each colored section represents a different habitat in the Two-Mile Pond area. These habitats were used as a guideline in completing Worksheet 5 and B1 of the Montane Riverine Wetlands field worksheets. It should be noted that Habitat IA1 in this model appears to be exaggerated and was not included in the field observations.

2.2 Google Earth Images

Google Earth historical aerial imagery for the Two-Mile Pond Complex were available for 1991 to 2023. Historical imagery can be referenced from Appendix A. The Restoration Channel and area of investigation were placed on each image for reference. A summary of the historical images reviewed is presented in Table 1. The Two-Mile Pond Complex riparian area begins around 1996, and significant tree canopies are observed by 2005. Since Two-Mile Dam and Reservoir were decommissioned, the riparian area was established and ponded water has been observed in Two-Mile Pond.

Table 1. Summary of the historical images for Two-Mile Pond Complex

Google Earth image date	approximate combined area of riparian and surface water (acres)	observations
May 25,1991	na	Two-Mile Reservoir operational
October 8, 1996	8.86	4 years after Two-Mile decommissioned
December 6, 2002	9.52	significant drought period
May 10, 2004	8.32	prior to SFR target flows
April 26, 2005	9.67	established tree canopies
May 8, 2009	9.39	water present in Two-Mile Pond
June 16, 2011	8.38	beaver ponds present
October 2, 2013	9.96	beaver ponds present
November 1, 2015	10.00	water present in Two-Mile Pond
June 10, 2017	9.64	water present in Two-Mile Pond
March 2, 2021	9.38	water present in Two-Mile Pond
June 7, 2023	10.40	water present in Two-Mile Pond

SFR – Santa Fe River

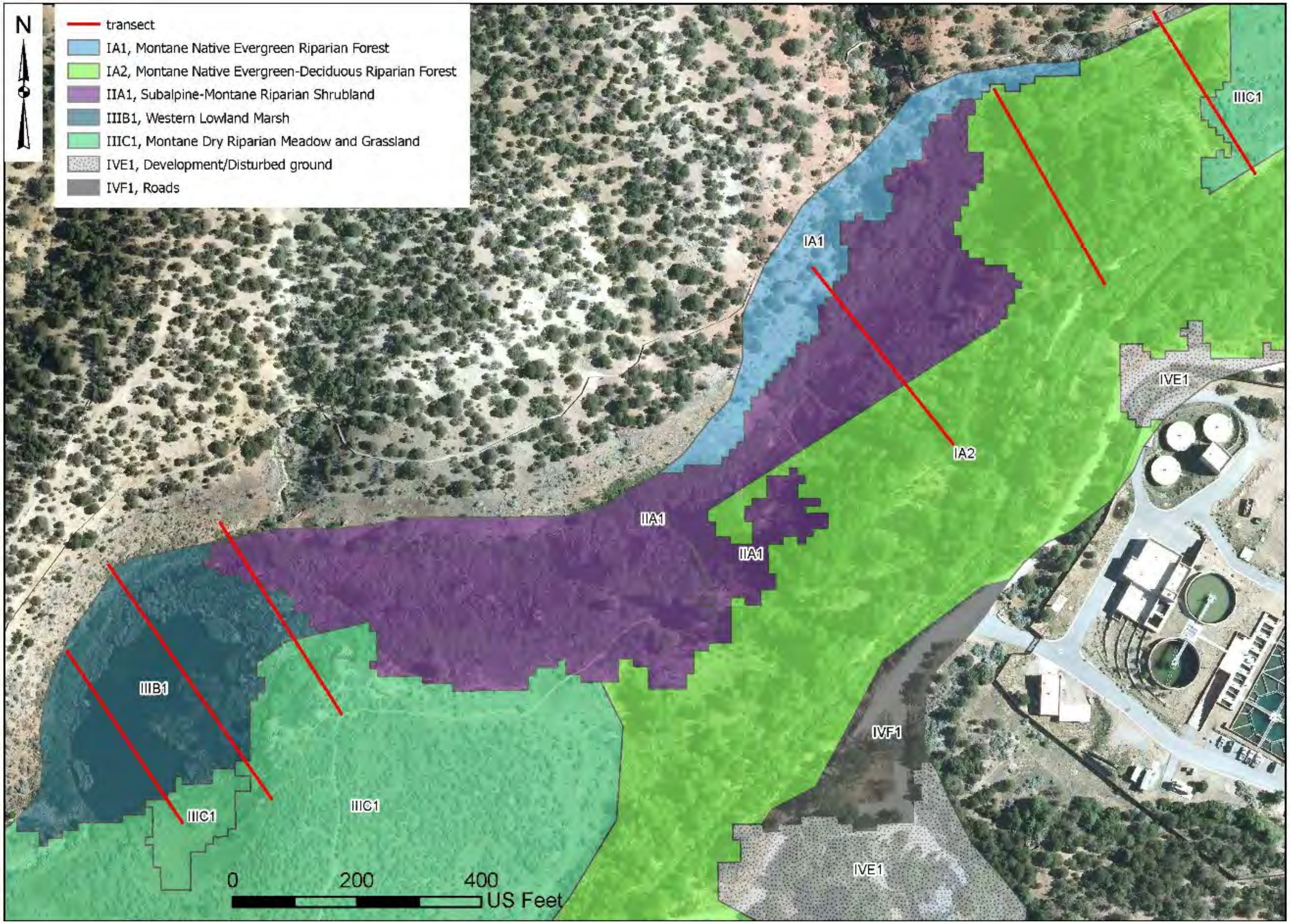


Figure 4. Map showing NMED SWQB defined riparian habitat zones for Two-Mile Pond Complex.

The combined riparian and surface-water area was estimated from each historical image after 1996. Over the last 28 years, the combined riparian and surface-water area has varied between 8.32 and 10.40 acres. For 2013 to current, the average area has been about 10 acres. The primary change in the riparian area has been the development of the tree canopy, particularly from 2005 to current.

2.3 NDMI Images

Normalized Difference Moisture Index (NDMI) from Modified Copernicus Sentinel Data is used to determine vegetation water content and monitor droughts. The values range from -1 to 1 with negative values representing barren soil, values around zero correspond to water stress or dormancy of deciduous vegetation, and positive values represent vegetative canopy without water stress or snowpack cover. NDMI images for January through June 2024 can be referenced from Appendix B, and a summary of observations is presented as Table 2. The quality of the imagery depends on degree of cloud cover.

Table 2. Summary of NDMI images for Two-Mile Pond Complex

image date	Two-Mile Pond Complex observations
January 16, 2024	NMDI 1.00 to 0.10, snowpack covered, barren soil
February 5, 2024	NMDI 0.20 to -0.10, high soil moisture to dormancy
March 3, 2034	NMDI -0.03 to -0.50, indicating water stress or dormancy
April 10, 2024	NMDI -0.01 to -0.20, indicating water stress or dormancy
May 17, 2024	NMDI 0.20 to -0.01, indicating water stress
June 16, 2024	NMDI 1.00 to 0.00, high canopy without water stress

NDMI - Normalized Difference Moisture Index

2.4 NDVI Images

Normalized Difference Vegetation Index (NDVI) from Modified Copernicus Sentinel Data is used to quantify green vegetation. It is a measure of the state of vegetation health based on how plants reflect light at certain wave lengths. The values range from -1 to 1 with negative values representing water; values around zero correspond to barren areas of rock, sand, snow, or dormant vegetation, low positive values represent shrubs, grasses or new growth; and high positive values represent forested areas. NDVI images for January through June 2024 can be referenced from Appendix C, and a summary of observations is presented as Table 3.

Table 3. Summary of NDVI images for Two-Mile Pond Complex

image date	Two-Mile Pond Complex observations
January 16, 2024	NDVI 0.4 to -0.1, snowpack, dormant vegetation
February 5, 2024	NDVI 0.4 to 0.0, snowpack, dormant vegetation
March 3, 2034	NDVI 0.4 to 0.1, shrubs, grasses, new growth
April 10, 2024	NDVI 0.4 to 0.0, soil, water, shrubs, grasses, new growth
May 17, 2024	NDVI 1.0 to 0.2, shrub, grassland, temperate forest
June 16, 2024	NDVI 1.0 to -1.0, water, shrub, temperate forest

NDVI - Normalized Difference Vegetation Index

2.5 Streamflow Monitoring

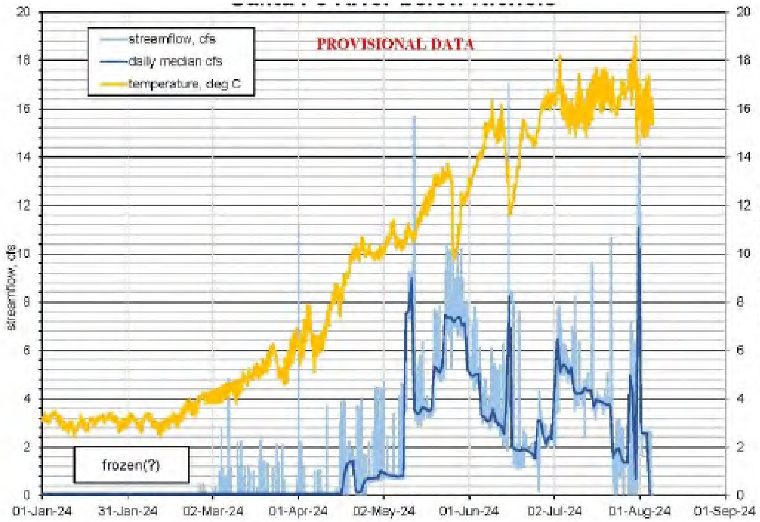
The City of Santa Fe Water Division has contracted JSAI to install and maintain several continuous streamflow monitoring points in the Two-Mile Pond Complex area (Fig. 5). Hydrographs for the Santa Fe River monitoring stations are presented as Figure 6a through 6c, and hydrographs for the Restoration Channel and Two-Mile return are presented as Figures 7a and 7b. Hydrograph for Cerro Gordo acequia diversions is presented as Figure 7c.

The gage *Santa Fe River below Nichols* monitors all bypass flows below Nichols Dam. The river channel at the gage *Santa Fe River below Nichols* was clogged with fallen trees during this last winter, which was cleared and recorded streamflow data validated. Year-to-date transducer data (calculated flow and water temperature) are presented on Figure 6a. From January to about mid-April, streamflow at *Santa Fe River below Nichols* was less than 0.1 cubic feet per second (cfs). Bypass flows for irrigation deliveries and targeted flows for Living River Initiative started around mid-April (Fig. 6a).

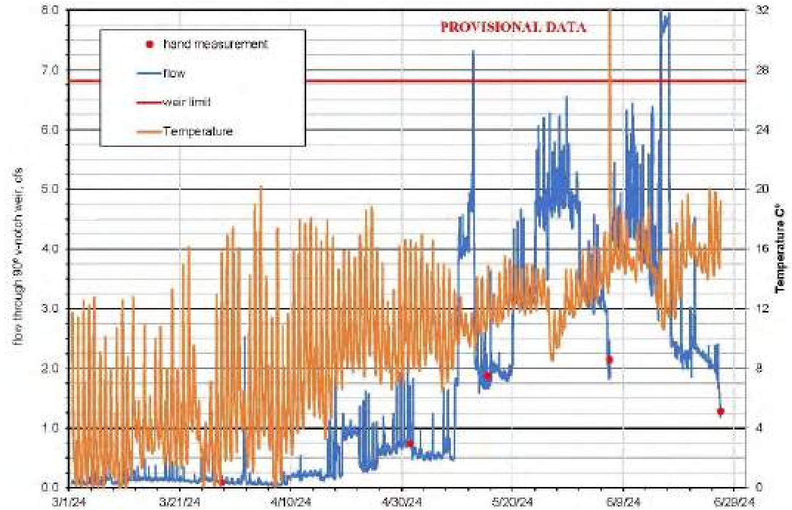
An existing 90° V-notch weir in the Santa Fe River next to Two-Mile Pond was modified by expanding the weir dimensions. At the beginning of March 2024, the V-notch weir was built up and equipped with a stilling well and transducer to accommodate flow measurements up to 6.8 cfs. The V-notch weir next to Two-Mile Pond measures Santa Fe River flows upstream of the Two-Mile Pond return (Figs. 5 and 6b).

Figure 5. Map of Two-Mile Pond Complex showing streamflow monitoring stations.

(a) *Santa Fe River Below Nichols*



(b) Santa Fe River next to Two-Mile Pond



(c) Santa Fe River below Two-Mile Pond return

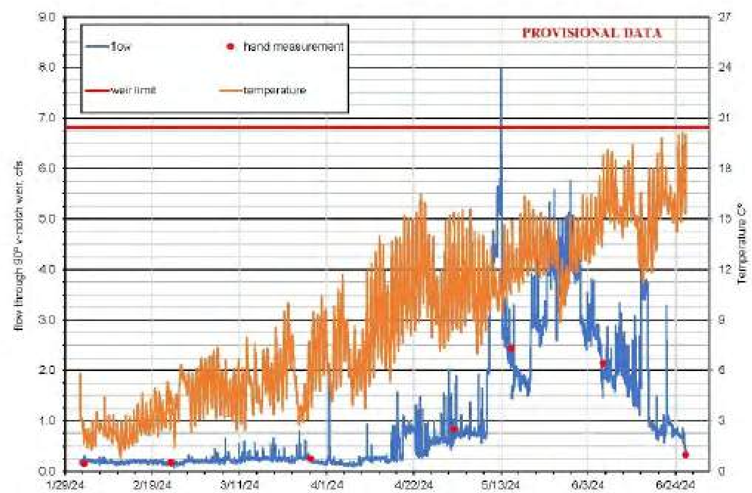
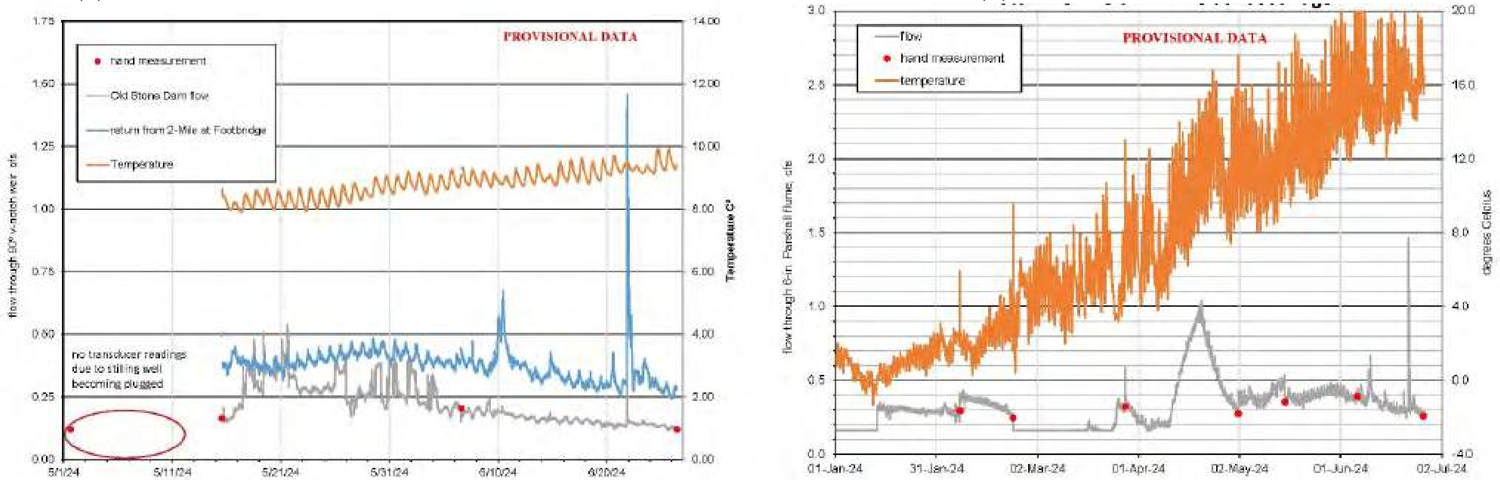


Figure 6. Hydrographs for year-to-date 2024 of (a) *Santa Fe River below Nichols* (b) Santa Fe River next to Two-Mile Pond, and (c) Santa Fe River below Two-Mile Pond return.

(a) Restoration Channel below Old Stone Dam

(b) Two-Mile Pond return



(c) Cerro Gordo diversions from Santa Fe River

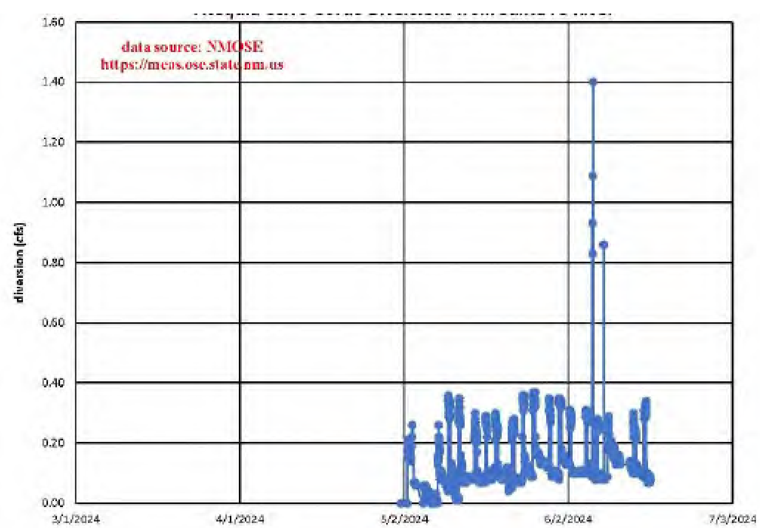


Figure 7. Hydrograph for year-to-date 2024 of (a) Restoration Channel Below Old Stone Dam, (b) Two-Mile Pond return (below Two-Mile), and (c) Cerro Gordo diversions.

At the beginning of February 2024, a 90° v-notch weir was installed in the Santa Fe River below the confluence of Two-Mile Pond return and Santa Fe River (Fig. 5). The weir is equipped to provide continuous monitoring of flows up to 6.8 cfs in the Santa Fe River below Two-Mile Pond return. Streamflow calculated from stage and water temperature can be referenced from Figure 6c.

There are two monitoring stations for the Two-Mile Pond system: 1) Restoration Channel below Old Stone Dam, and 2) Two-Mile Pond return (Fig. 5). The Restoration Channel below Old Stone Dam monitors seepage from the base of Old Stone Dam and flows entering the Two-Mile Pond system from above Old Stone Dam (Fig. 7a). The Two-Mile return 6-in. Parshall flume monitors all streamflow exiting the Two-Mile Pond Complex (Fig. 7b). JSAI has been monitoring this flume for the past few years. There have been issues with maintaining the flume, such as suspended sediment and organic debris clogging the ports for the stilling well and flume entrance.

Santa Fe River flows from below Nichols, around Two-Mile Pond, and downstream of Two-Mile Pond confluence show a base flow of 0.1 cfs during the First Quarter of 2024, and sustained flows above 3 cfs during the Second Quarter of 2024 (Fig. 6a, b, and c). Santa Fe River water temperature increased from winter (3 °C) to summer (18 °C). Low flows at Santa Fe River next to Two Mile show larger daily fluctuations in water temperature (Fig. 6b).

Streamflow measured below Old Stone Dam appears to be less than the Two-Mile return (Fig. 7a); however, this could be within the range of measurement error or a component of underflow in the beaver pond structure that is not measured. Water temperature below Old Stone Dam is relatively constant and lower than Santa Fe River, indicating groundwater issuing from the base of Old Stone Dam. During the Second Quarter of 2024, streamflow through the Two-Mile Pond system averaged about 0.3 cfs (Fig. 7a and b). Daily fluctuations in flow at Two-Mile Pond return may resemble effects from evapotranspiration of the Two-Mile Pond system.

Diversions from Acequia Cerro Gordo are shown on Figure 7c. These diversions need to be considered when estimating water budget for the Santa Fe River from below Nichols to below Two-Mile Pond confluence. Diversion rates appear to average 0.3 cfs for scheduled water delivery days.

3.0 RIPARIAN MONITORING

The monitoring period is January to December 2024. Field investigations are performed monthly during the growing season between March and November. This Second Quarter report includes monthly field investigations from March through June 2024.

3.1 Field Investigations To Date

The New Mexico Rapid Assessment Method (NMRAM) Montane Riverine Wetlands data sheets for assessment of Two-Mile Pond on March 7, 2024; April 9, 2024; May 15, 2024; and June 11, 2024 can be referenced from Appendix D, including the stressor checklist. Field photographs are presented in Appendix E.

Category scores are graded on a scale from 1 to 4 (higher numbers are more desirable indicating better health and riparian condition). Table 4 is a summary of the scoring and ranking method. Each transect is graded independently and the resulting grades are multiplied against a weighted ratio and combined to give each transect a wetland condition score.

Table 4. NMRAM scoring and ranking description

rank	score	description
A	≥3.25 - 4.0	excellent condition
B	≥2.5 - <3.25	good condition
C	≥1.75 - <2.5	fair condition
D	1.0 - <1.75	poor condition

NMRAM - New Mexico Rapid Assessment Method

3.1.1 Landscape Context

Landscape maps (Figs. 3 and 4, Appendix A) and field observations were used to evaluate the landscape context metrics, such as surrounding land use and riparian connectivity. A summary of the landscape context metric scoring is presented as Table 5. Landscape context remains the same throughout the investigations because it is performed remotely and ahead of all investigations. For the year of 2024, it was determined that the landscape context has a score of 3.25, as can be seen in Table 5 below.

Table 5. Average scores for landscape context metrics

landscape context metric	average score 2024
buffer integrity index	3.00
riparian corridor connectivity	4.00
relative wetland size	4.00
surrounding land use	2.00
total	3.25

3.1.2 Biotic Metrics

Biotic metric scores were calculated using the Montane Riverine Wetlands Field Guide method of ranking a riparian area. Each category has a set of biotic measurements and observations that are recorded in the field and then combined to result in a final ranking for the riparian area. Table 6 shows the average of all six transects for the total biotic component of Two-Mile Reservoir. Results from all transects can be found in Appendix D.

Table 6. Average scores for biotic metrics

biotic metrics	March 7 average scores	April average score	May average score	June average score
relative native plant community composition	2.83	3.17	3.00	3.33
vegetation horizontal patch structure	2.83	3.00	3.00	3.00
vegetation vertical structure	2.83	2.83	2.83	2.67
native riparian tree regeneration	3.00	3.50	3.17	2.83
invasive exotic plant species cover	2.83	3.00	3.17	3.00
total	2.87	3.10	3.03	3.33

Each monthly investigation biotic factors including flora and fauna are documented. The NMRAM focuses on the flora aspect of the riparian environment and can be seen in the rankings of each transect. The fauna of the environment can be referenced from Table 7. This table lists all fauna that has been present during the monthly investigations. Merlin Bird ID (a trusted bird identification app) is used in areas where the birds can be heard but are not seen. Traces of animals including tracks, droppings, and other sounds are also documented when they are observed in the field. Photographs of some of these species can be found in Appendix E.

Table 7. Summary of fauna observed in Two-Mile Pond riparian area

date	observed species
3/7/2024	red wing black bird
	small gnats
	goldfish
	deer droppings/tracks
4/9/2024	tadpoles
	bees
	mallard ducks
5/15/2024	pinyon jay
	garter snakes (6)
	spotted towhee
	black chinned hummingbird
	frog croaks
	whiptail lizards
	American robin
	pinacate beetles (3)
	swallowtail butterfly
	boxelder bugs
	gerridae
6/11/2024	whiptail lizards
	mule deer
	black-headed grosbeak
	spotted towhee
	American robin
	house finch
	pine siskin
	yellow breasted chat
	warbling vireo
	lesser gold finch
	western wood pewee
	box elder bugs
	Gerridae
	Melolonthinae

Although no mosquitos were observed by JSAI Staff, the City of Santa Fe, New Mexico Integrated Pest Management conducted their own Two-Mile Pond mosquito survey on June 18, 2024. The results of their field collection can be found in Table 8. Sixty Mosquitos were caught and among them 18 (Culex tarsalis) are common vectors for the West Nile Virus in New Mexico. The entire report can be found in Appendix F.

Table 8. Summary of mosquito survey

species	count	percent of total sample
Aedes increpitus	1	1.52%
Aedes trivittatus	11	16.67%
Anopheles freeborni	6	9.09%
Culex tarsalis	18	27.27%
Culiseta incidens	4	6.06%
Culiseta increpitus	1	1.52%
Culiseta inornata	25	37.88%

3.1.3 Abiotic Metrics

Scores were calculated using the Montane Riverine Wetlands Field Guide method of ranking a riparian area. Each category has a set of abiotic measurements and observations that are recorded in the field and then combined to result in a final ranking for the riparian area. There are four abiotic metrics that reflect the physical status of the riparian area:

1. Physical Patch Complexity, which is a measure of the physical structural complexity of a site that contributes to ecological richness.
2. Channel Equilibrium, which is the assessment of the degree of channel aggradation or degradation relative to reference equilibrium conditions.
3. Steam Bank Stability and Cover, which is a measure of stream bank soil/substrate stability and erosion potential that reflect overall stream bank stability.
4. Soil Surface Condition reflects anthropogenic soil disturbance impacts within the sampling area

Due to the circumstances, Two-Mile Pond “Floodplain Hydrologic Connectivity” was not accounted for since its results could be misleading and its importance is not relevant to this particular investigation. Table 9 shows the average of all six transects for the total abiotic component of Two-Mile Reservoir. Results from all transects can be found in Appendix D.

Table 9. Average scores for abiotic metrics

abiotic categories	March 7 average score	April average score	May average score	June average score
physical patch diversity	2.50	2.33	2.33	2.33
channel equilibrium	4.00	4.00	4.00	3.83
stream bank stability and cover	4.00	4.00	4.00	4.00
soil surface condition	3.67	3.50	3.50	3.33
total	3.54	3.46	3.46	3.38

Two-Mile Pond is covered in leaves and debris from winter especially in the areas of high populations of deciduous trees. The leaves have drifted down and in some areas of the stream, 'beaver dams' or stormflow dams have been created and can hold a significant amount of water, which creates micro-habitats across the area below Old Stone Dam. The channels and waterways themselves are surrounded by thick walls of willows and cattails that keep the banks from eroding. The streams themselves appear to be in a state of equilibrium and there are no signs of active degradation or aggradation that were noticeable at this time. The anthropogenic disturbance also appears low considering the popularity of the area's trails. Overall, the abiotic components of the riparian area appear to rank on the higher end of the scoring throughout Two-Mile Pond Complex.

Field water-quality data were measured during the Second Quarter 2024, and a summary of the field water-quality data can be referenced from Table 10. Monitoring points included Santa Fe River adjacent to Two Mile Pond system, seeps at the base of Old Stone Dam, Transect 3, Beaver Dam at the Restoration Channel below Old Stone Dam, and Transect 6. It is important to notice the Santa Fe River is not directly connected to the Two-Mile Pond system. The specific conductance and turbidity of the water increases as the water moves through the riparian system. This is likely caused by evapo-concetration. Decreasing dissolved oxygen through the Two Mile Pond system is likely indicative of increasing organic matter. The Santa Fe River has lower specific conductance than water below Old Stone Dam, further indicating the source of water below Old Stone Dam is groundwater.

Table 10. Summary of field-measured water-quality data for Two-Mile Pond system

field pH results along Two-Mile Pond					
	Santa Fe River	**Old Stone Dam**	**Transect 3**	**Beaver Dam**	**Transect 6**
4/9/2024	6.75	6.96	7.23	6.86	6.89
5/15/2024	6.69	6.48	6.60	6.50	6.67
6/11/2024	7.60	7.02	7.32	6.72	6.71
specific conductance results along Two-Mile Pond (µS/cm)					
	Santa Fe River	**Old Stone Dam**	**Transect 3**	**Beaver Dam**	**Transect 6**
4/9/2024	76.9	160	170	244	246
5/15/2024	63.0	187	249	350	285
6/11/2024	60.7	181	193	371	358
temperature results along Two-Mile Pond (°C)					
	Santa Fe River	**Old Stone Dam**	**Transect 3**	**Beaver Dam**	**Transect 6**
4/9/2024	7.7	7.9	6.2	11.5	4.5
5/15/2024	14.0	9.3	9.1	13.5	10.2
6/11/2024	16.8	8.4	10.7	14.4	14.2
dissolved oxygen results along Two-Mile Pond (mg/L)					
	Santa Fe River	**Old Stone Dam**	**Transect 3**	**Beaver Dam**	**Transect 6**
5/15/2024	7.87	3.7	7.5	4.15	2.6
turbidity results along Two-Mile Pond (NTU)					
	Santa Fe River	**Old Stone Dam**	**Transect 3**	**Beaver Dam**	**Transect 6**
6/11/2024	6.10	4.44	7.83	8.45	16.20

µS/cm - microsiemens per centimeter
mg/L - milligrams per liter
NTU - nephelometric turbidity units

3.1.4 Summary Riparian Metrics Ranking

The landscape context, biotic, and abiotic metrics for each monthly investigation are ranked and scored using a modified NMRAM. The weighted average for each metric is calculated, tabulated, and ranked using the scoring method summarized in Table 2. The Two-Mile Pond Complex riparian area rankings from March through June are summarized in Table 11. All individual transect grades can be found in Appendix D along with a graph showing each transect's progress over time. Table 11 shows the averages of all six transects for each given month. This way the overall health of the pond can be seen over time without extensive details on individual transects. Each investigation is based on monthly field observations, with the exception of landscape context. Landscape context remains the same throughout the investigations because it is performed remotely and ahead of all investigations. For more detail as to why a particular month did better or worse, the individual transect rankings for each month can be found in Appendix D. Common changes can include things like exotic species becoming more proliferate, land coverage and new growth struggling/striving, new stressors introduced into the environment, or expansion/destruction of existing flora. Table 11 shows the results of the Second Quarter report and the rank for each month can be seen at the bottom.

3.1.5 Soil Moisture

Soil moisture was measured every 15 ft from the southeast end of a transect to the northwest end. Moisture was measured using a conductance-style moisture meter, which had a probe depth of 6 in. The moisture meter gives results from a scale of 1 to 10, which is a relative indicator of moisture based on conductivity of water in the soil. This device helps get a general idea of where water might be concentrated in the ground and over time, and ability to see how this parameter changes. The northwest side of these transects are not always accessible due to thick willows but readings are made until water is reached or until willows become too thick to enter. Willow thickets indicate high moisture areas. Field notes from the soil monitoring can be found in Appendix D.

The soil moisture data for monthly visits from March through June 2024 were contoured. Images of soil moisture distribution can be referenced from Appendix G. Interpretations were made between data points using imagery.

Table 11. Summary of Two-Mile Pond Complex riparian area metrics ranking

NMRAM	weight	monthly investigations			
metric description		**3/7/2024**	**4/9/2024**	**5/15/2024**	**6/11/2024**
landscape context					
buffer integrity index	0.25	3.00	3.00	3.00	3.00
riparian corridor connectivity	0.25	4.00	4.00	4.00	4.00
relative riparian size	0.25	4.00	4.00	4.00	4.00
surrounding land use	0.25	2.00	2.00	2.00	2.00
biotic					
relative native plant community composition	0.20	2.83	3.17	3.00	3.33
vegetation horizontal patch structure	0.20	2.83	3.00	3.00	3.00
vegetation vertical structure	0.20	2.83	2.83	2.83	2.67
native riparian tree regeneration	0.20	3.00	3.50	3.17	2.83
invasive exotic plant species cover	0.20	2.83	3.00	3.17	3.00
abiotic					
physical patch diversity	0.25	2.50	2.33	2.33	2.33
channel equilibrium	0.25	4.00	4.00	4.00	3.83
stream bank stability and cover	0.25	4.00	4.00	4.00	4.00
soil surface condition	0.25	3.67	3.50	3.50	3.33
major attribute					
landscape context	0.30	3.25	3.25	3.25	3.25
biotic	0.35	2.87	3.10	3.03	2.97
abiotic	0.35	3.54	3.46	3.46	3.38
RIPARIAN CONDITION SCORE	Σ	3.22	3.27	3.25	3.19
RIPARIAN RANK		B	A	A	B

4.0 SUMMARY OF FINDINGS

The Two-Mile Pond Complex riparian area started after the decommissioning of Two-Mile Dam and Reservoir in 1992, and has been about the same size for over the last 20 years. Large tree canopies above and below Old Stone Dam became evident around 2005. See historic imagery in Appendix A.

During the Second Quarter field investigation, most of the soils in the Two-Mile Pond riparian area were moist to wet, with the exception of the upstream end above Old Stone Dam and the southern margins of the upper half of the area of investigation (see Appendix G).

Streamflow through Two-Mile Pond Complex during the Second Quarter originated from groundwater discharge at the base of Old Stone Dam. The outflow from Two-Mile Pond ranged from 0.16 to 0.40 cfs, and averaged 0.3 cfs.

For the second quarter, the Two-Mile Pond Complex riparian ranking is between B (good condition) and A (excellent condition). An excellent condition (A) riparian system has intact functions and processes, diverse vegetative communities with almost no exotic weeds, is relatively large compared to its historical size, and has natural buffers. These riparian systems are largely undisturbed and provide an excellent habitat for native flora and fauna.

A good condition (B) is somewhat degraded in response to environmental stressors. Riparian areas with a B ranking have various combinations of relatively minor disturbances or factors negatively affecting condition (e.g., some alteration of the hydrological regimes; evidence of onsite anthropogenic disturbances; and a reduction of vegetative community and structural diversity with the presence of some exotic weeds).

5.0 REFERENCES

Modified Copernicus Sentinel Data, https://www.sentinel-hub.com/ Modified Copernicus Sentinel data [2024]/Sentinel Hub

Muldavin, E.H., Bader, B., Milford, E.R., McGraw, M., Lightfoot, D., Nicholson, B., and Larson, G., 2011, New Mexico Rapid Assessment Method: Montane Riverine Wetlands, Version 1.1. Final report to the New Mexico Environment Department, Surface Water Quality Bureau, Santa Fe, New Mexico, 90 pp. and appendices.

Muldavin, E., Milford, E., Triepke, J., Gonzalez, C., Urbanovsky, A., McCartha, G., Kennedy, A., Chauvin, Y., Smith, J., Leonard, J., Elliot, L., Hanberry, P., Diamond, D., and Clark, A.E., 2022, New Mexico Riparian Habitat Map (NMRipMap): Version 2.0 Plus. New Mexico Natural Heritage, Museum of Southwestern Biology, University of New Mexico; USDA Forest Service, Southwest Region; Missouri Resource Assessment Partnership (MoRAP), University of Missouri, and USDA Forest Service, Geospatial Technology and Applications Center (GTAC), Salt Lake City, UT, Accessible at nhnm.unm.edu/riparian/nmripmap.

City of Santa Fe, 2024, Two Mile Pond Mosquito Survey: City of Santa Fe New Mexico Integrated Pest Management, p 1.

APPENDICES

Appendix A.

Historical Google Earth Images of Two-Mile Pond Complex

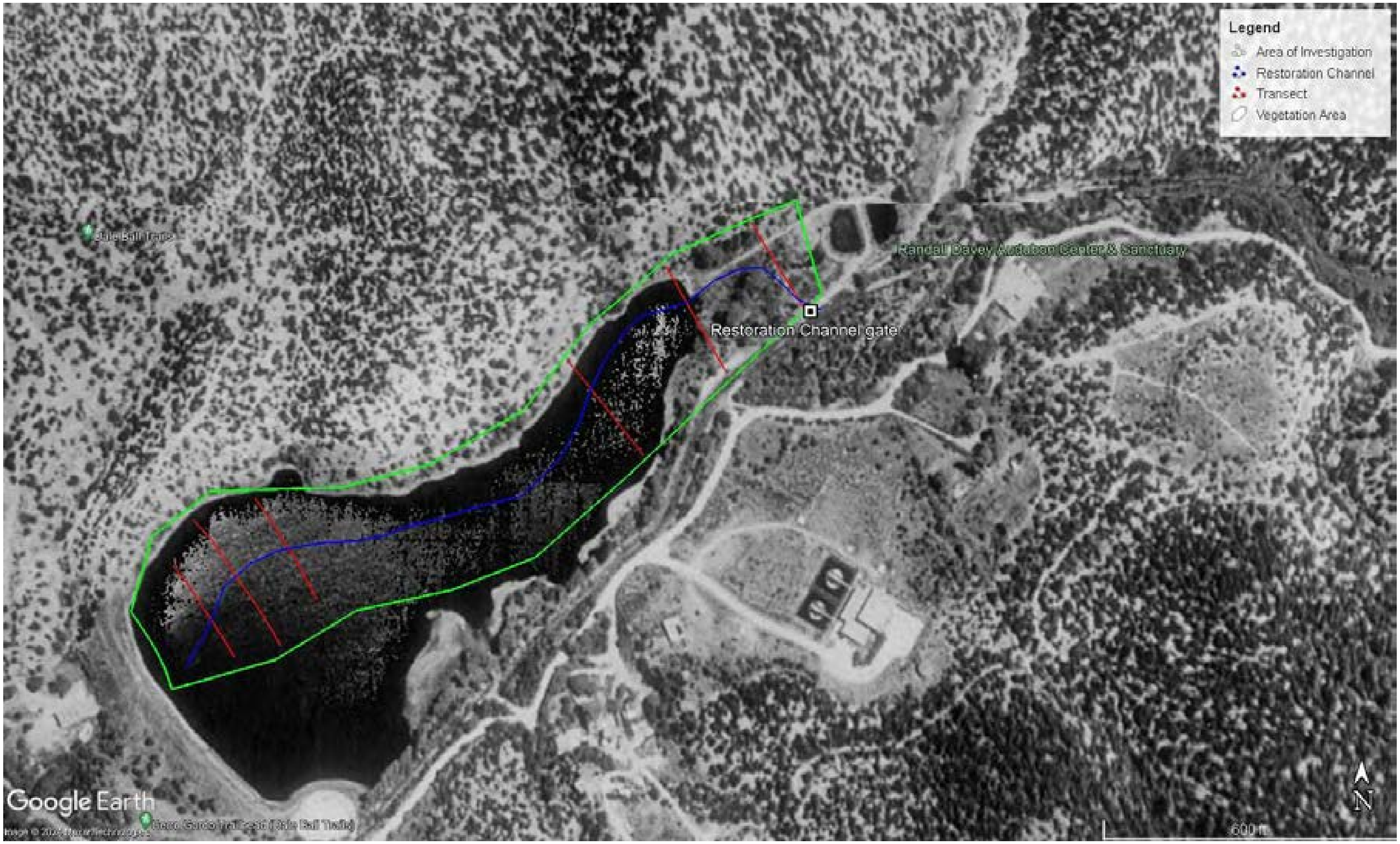


Figure A1. Historical image of Two-Mile Pond Complex dated May 25, 1991.

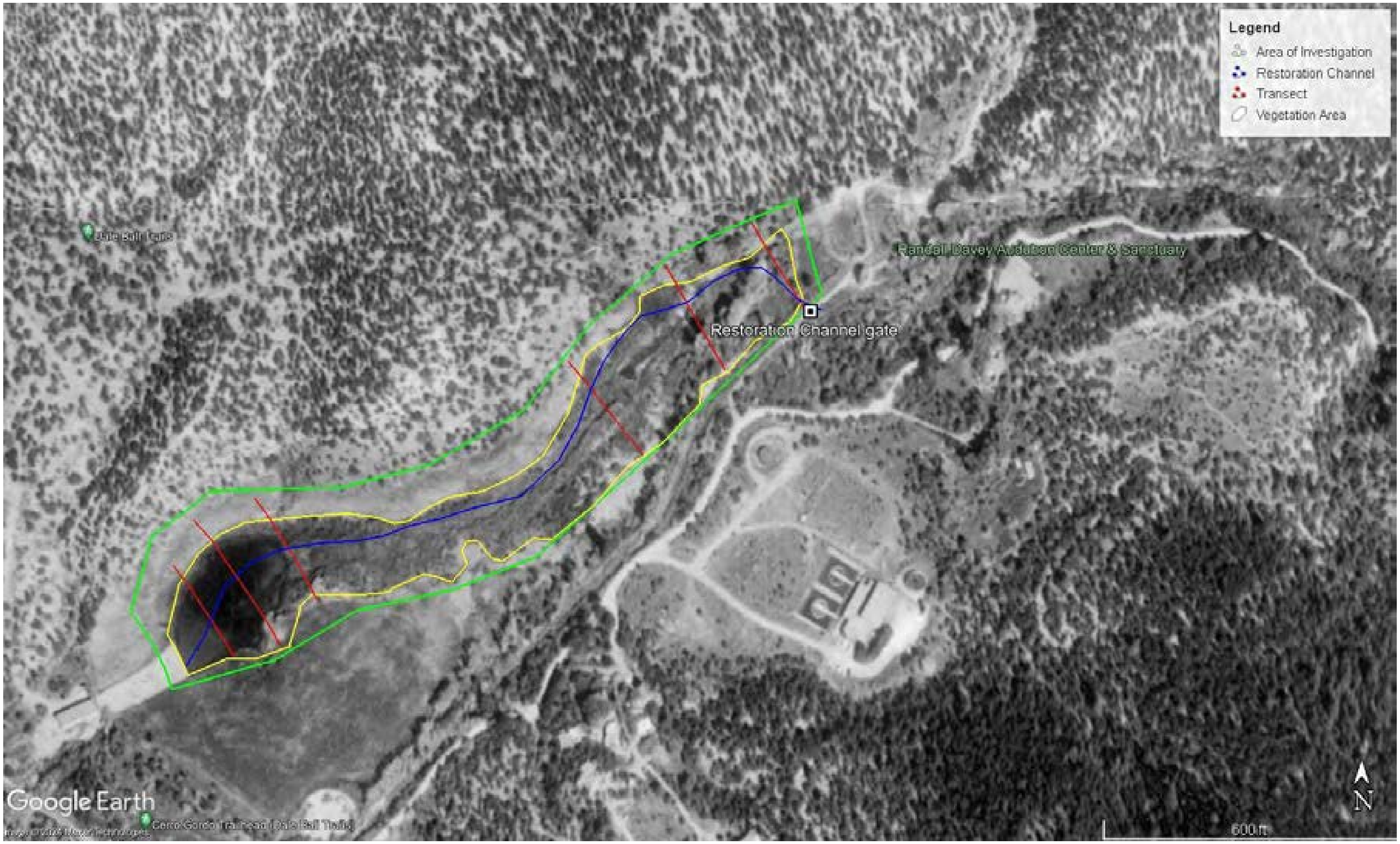


Figure A2. Historical image of Two-Mile Pond Complex dated August 10, 1996.

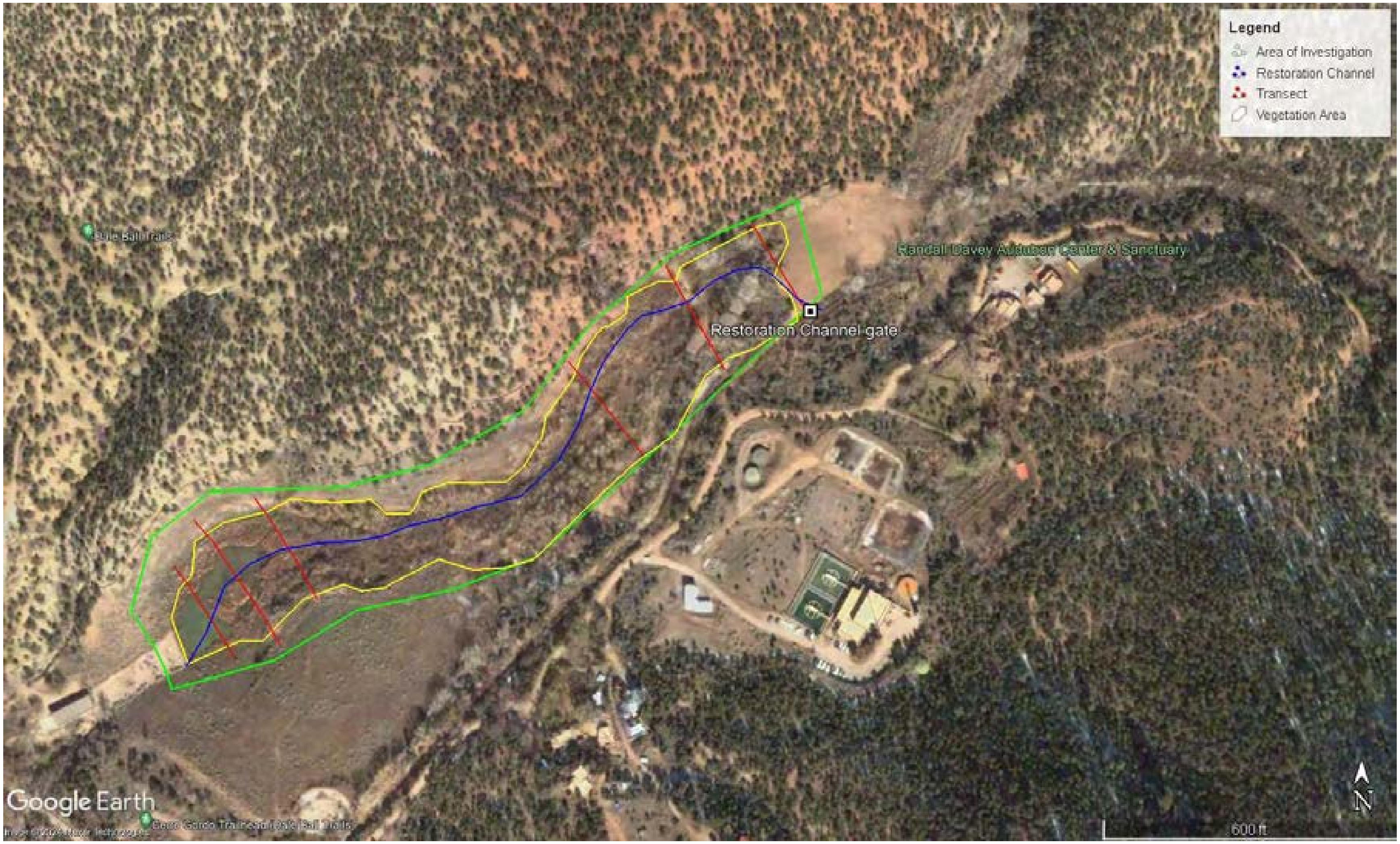


Figure A3. Historical image of Two-Mile Pond Complex dated December 6, 2002.

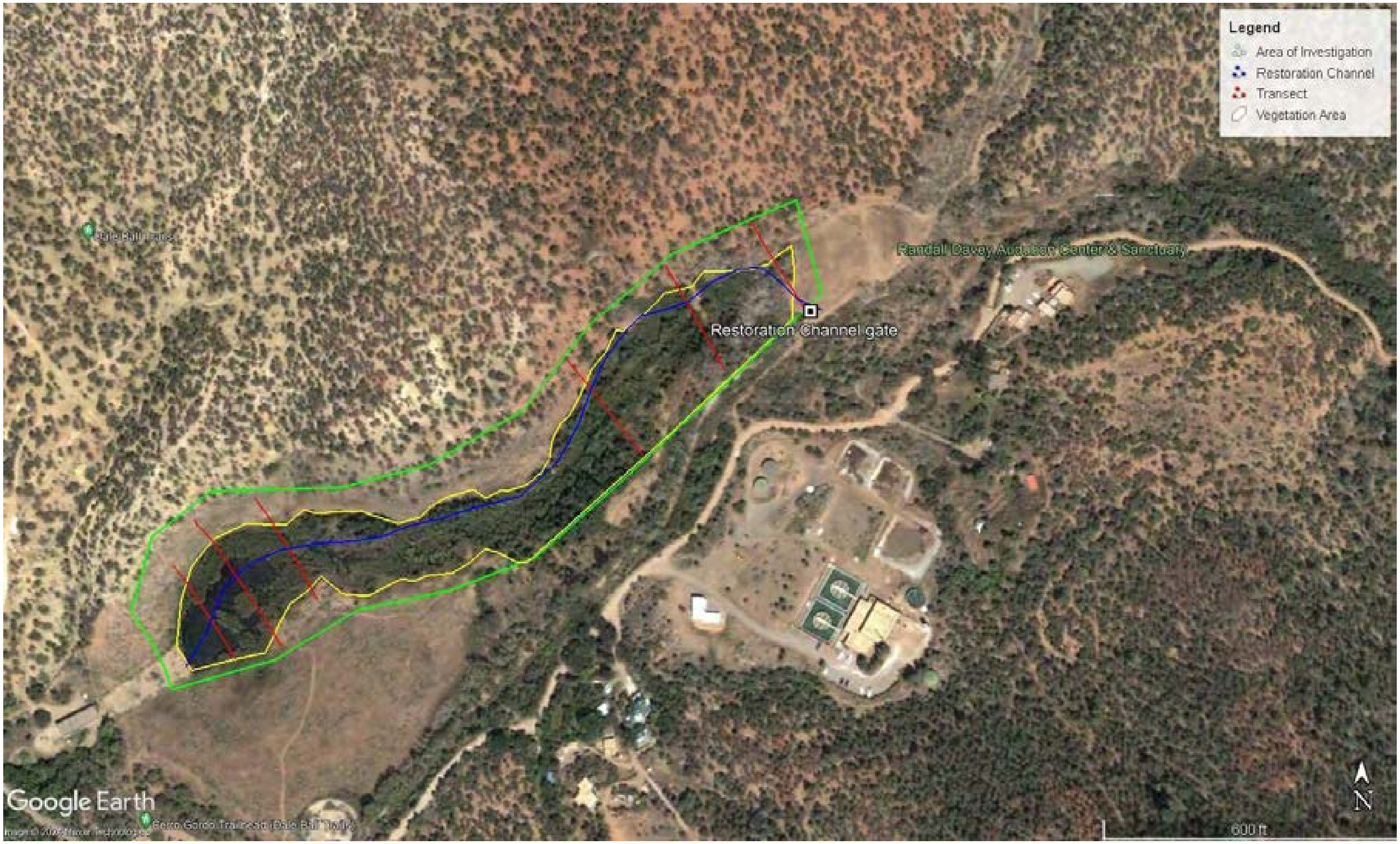


Figure A4. Historical image of Two-Mile Pond Complex dated May 10, 2004.

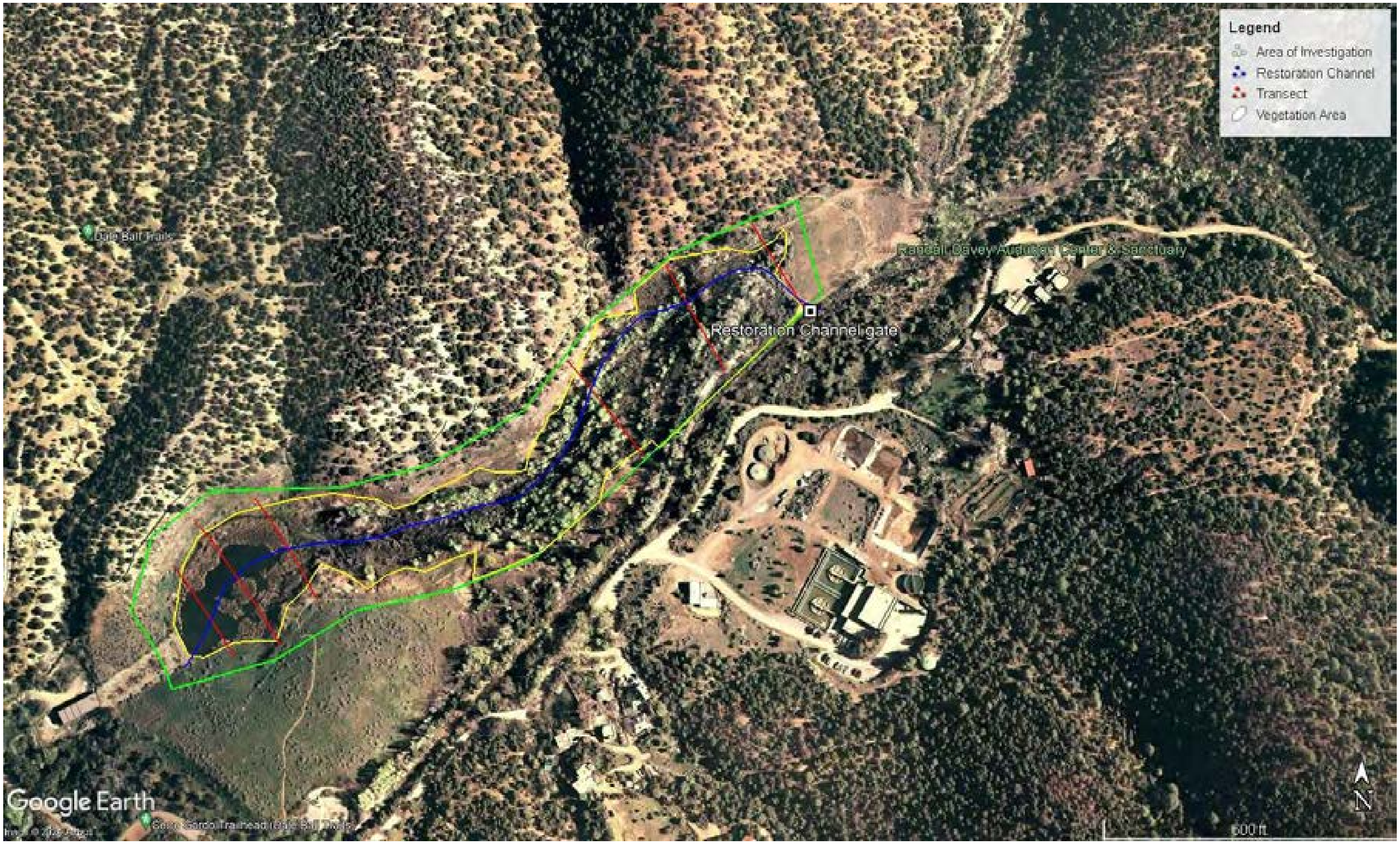


Figure A5. Historical image of Two-Mile Pond Complex dated April 26, 2005.

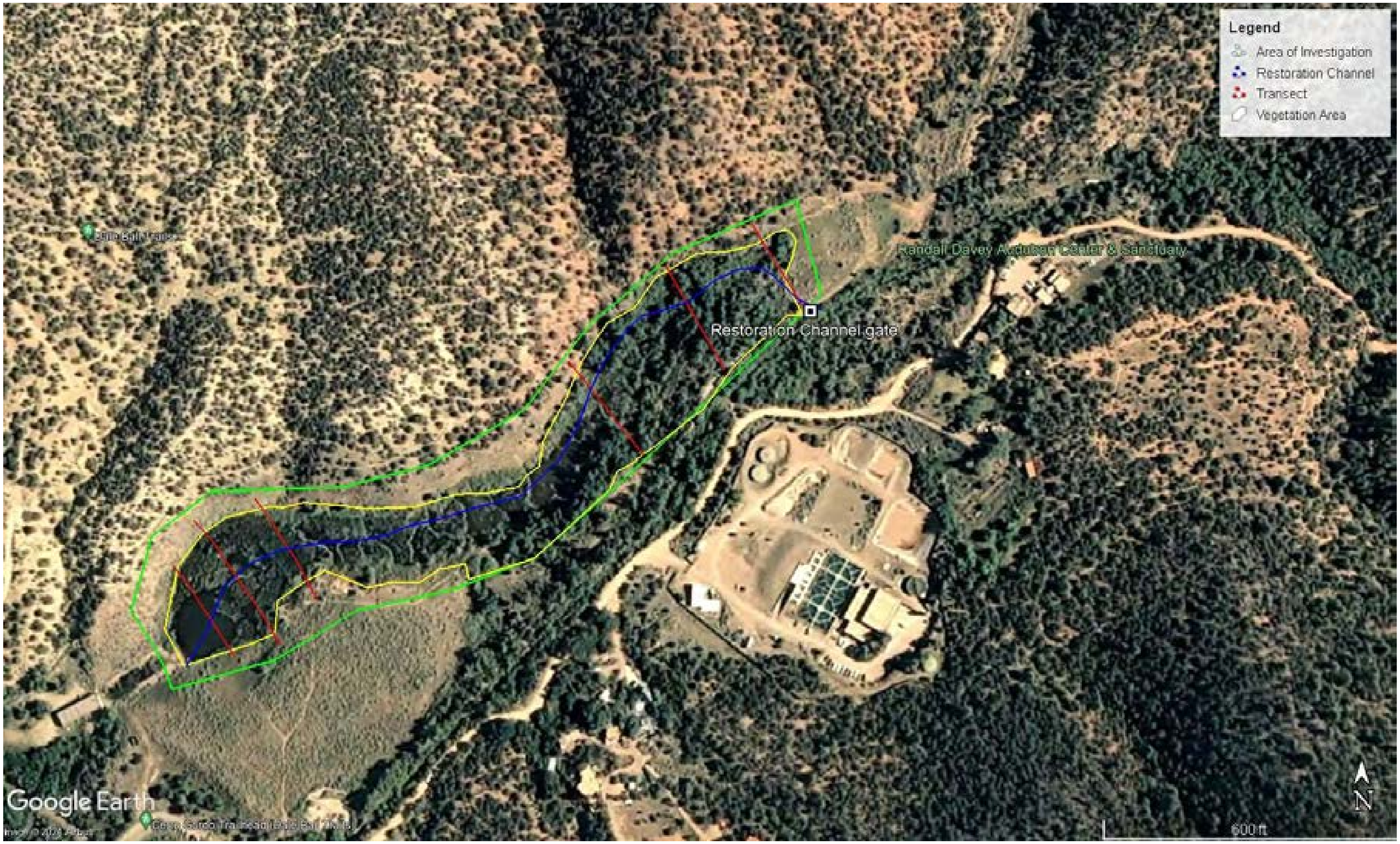


Figure A6. Historical image of Two-Mile Pond Complex dated May 8, 2009.

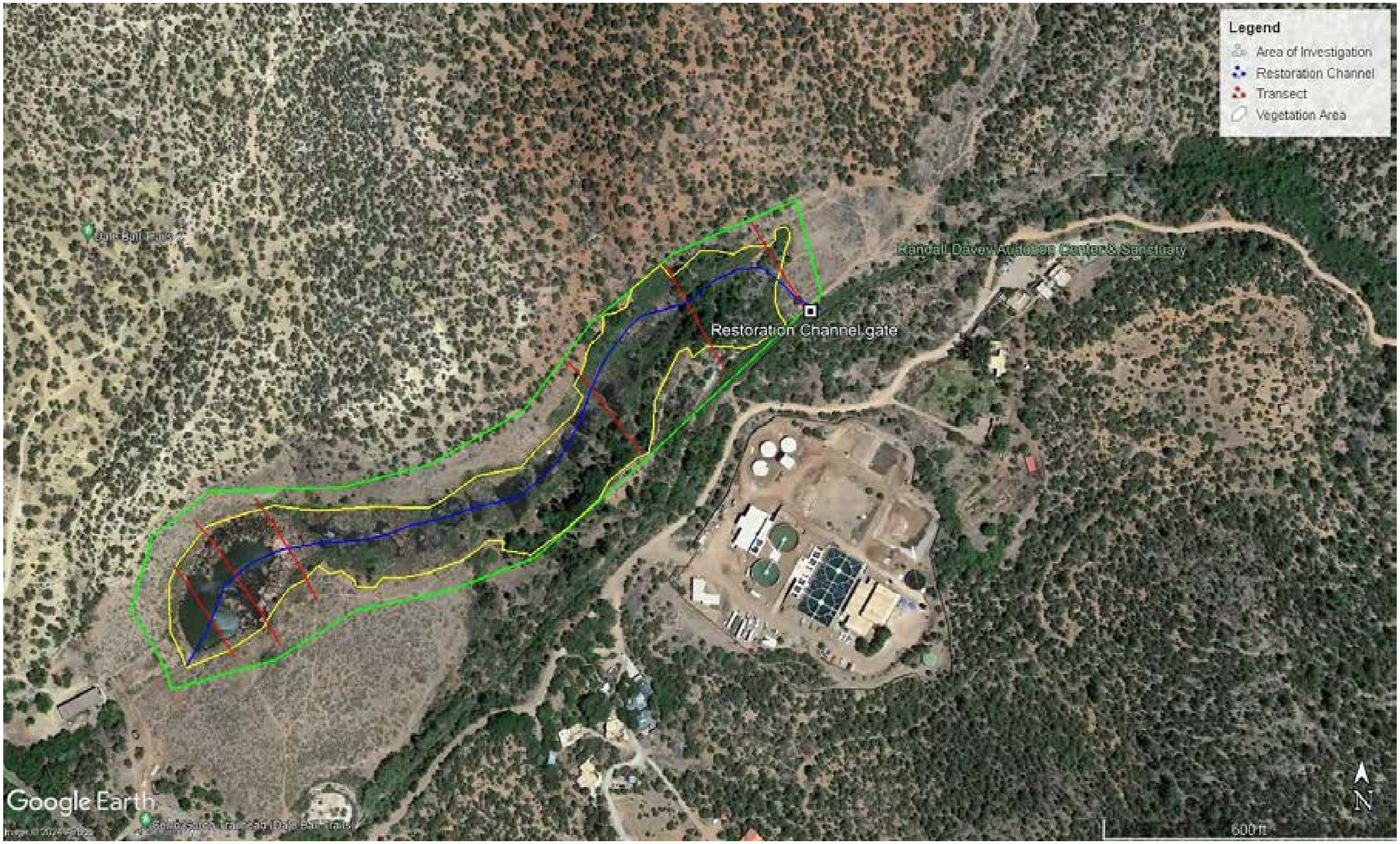


Figure A7. Historical image of Two-Mile Pond Complex dated June 16, 2011.

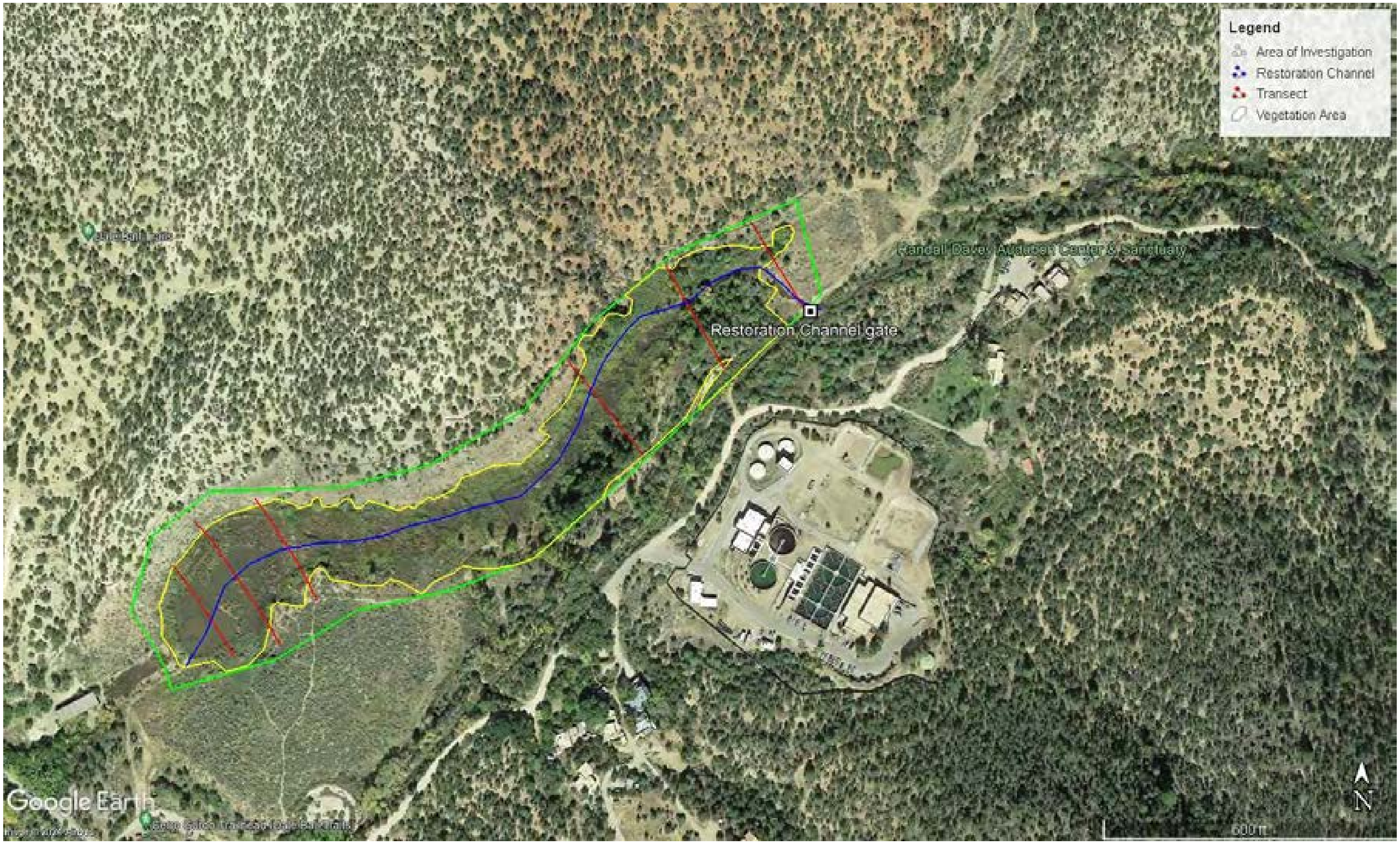


Figure A8. Historical image of Two-Mile Pond Complex dated October 2, 2013.

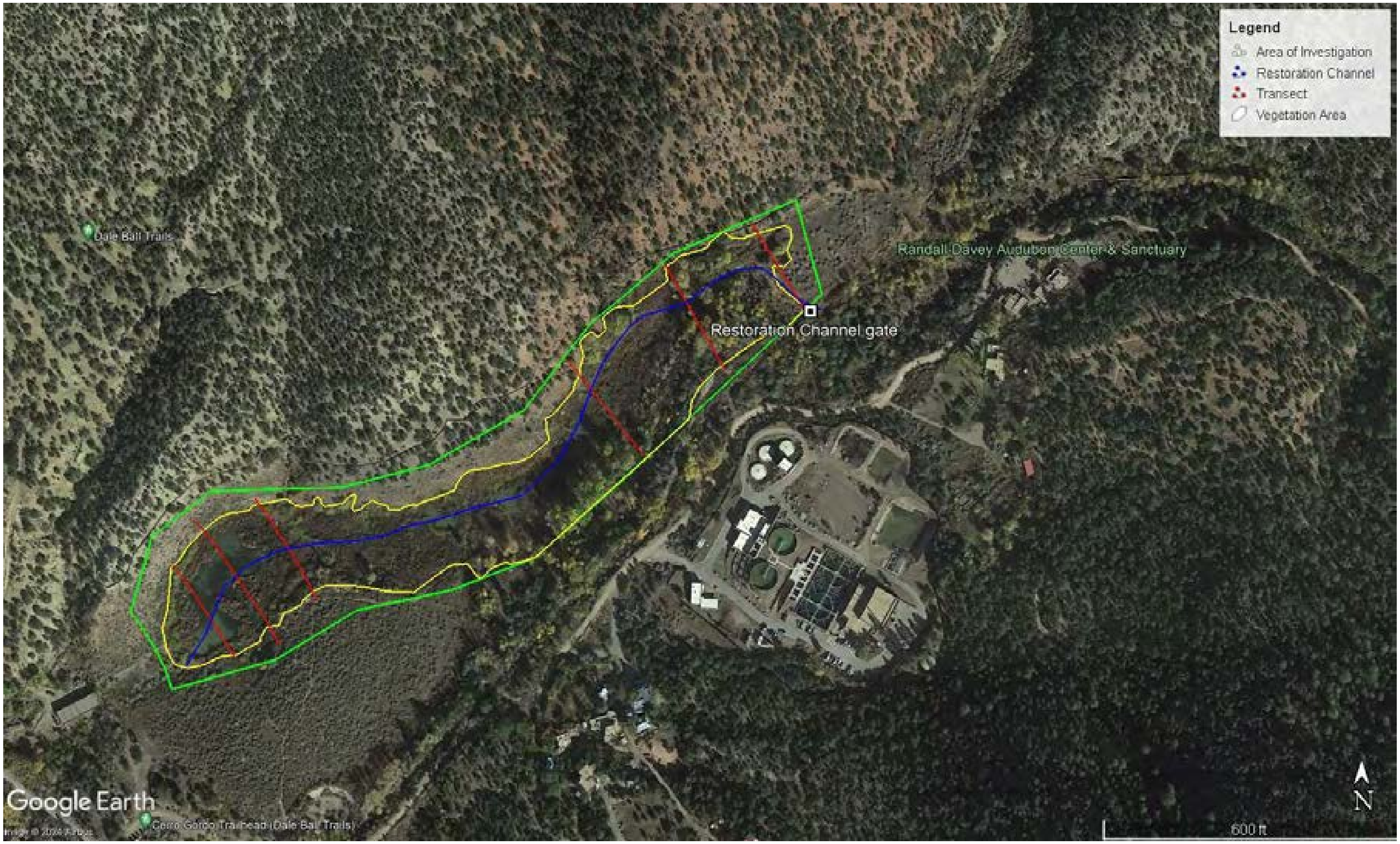


Figure A9. Historical image of Two-Mile Pond Complex dated November 1, 2015.

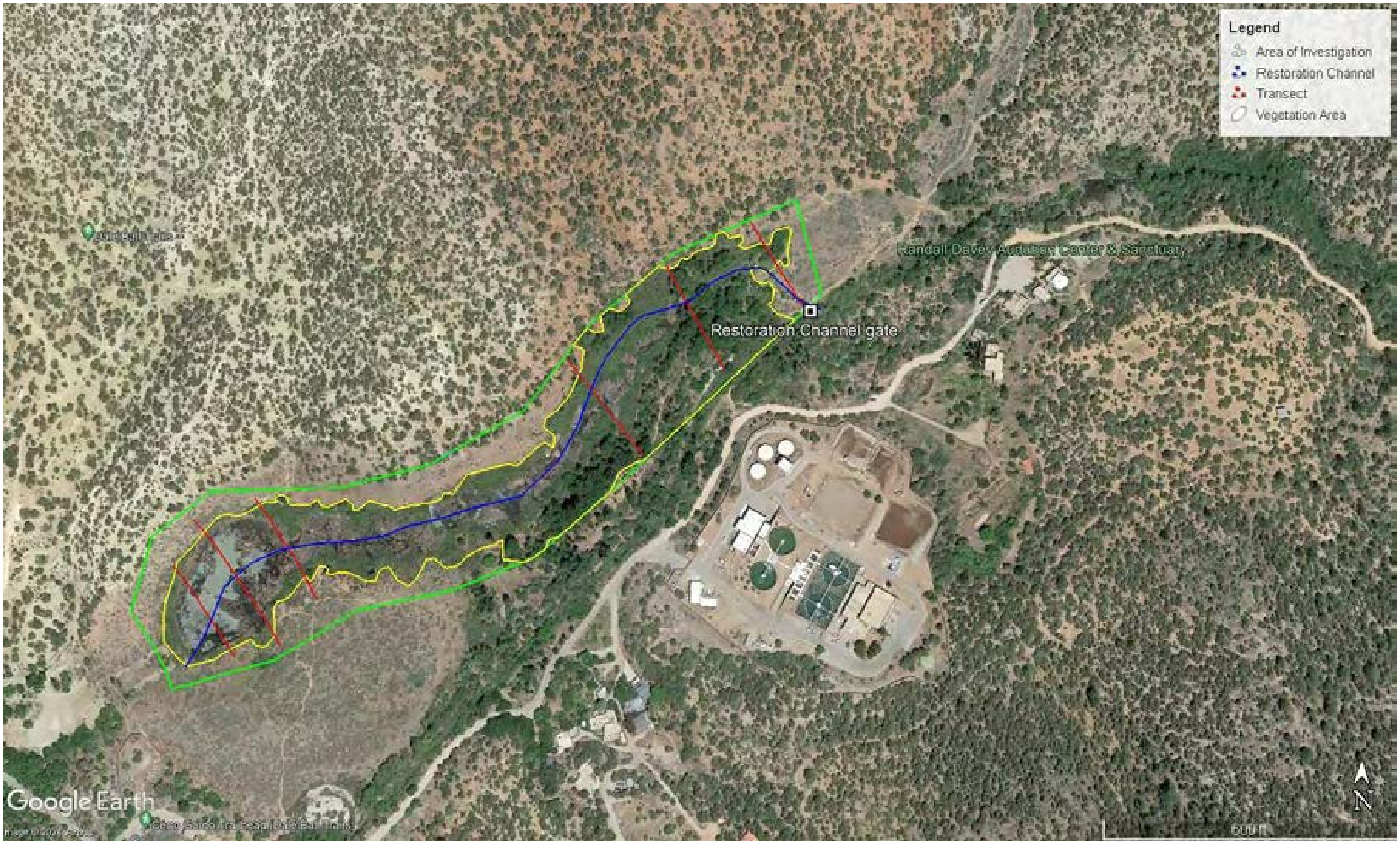


Figure A10. Historical image of Two-Mile Pond Complex dated June 10, 2017.

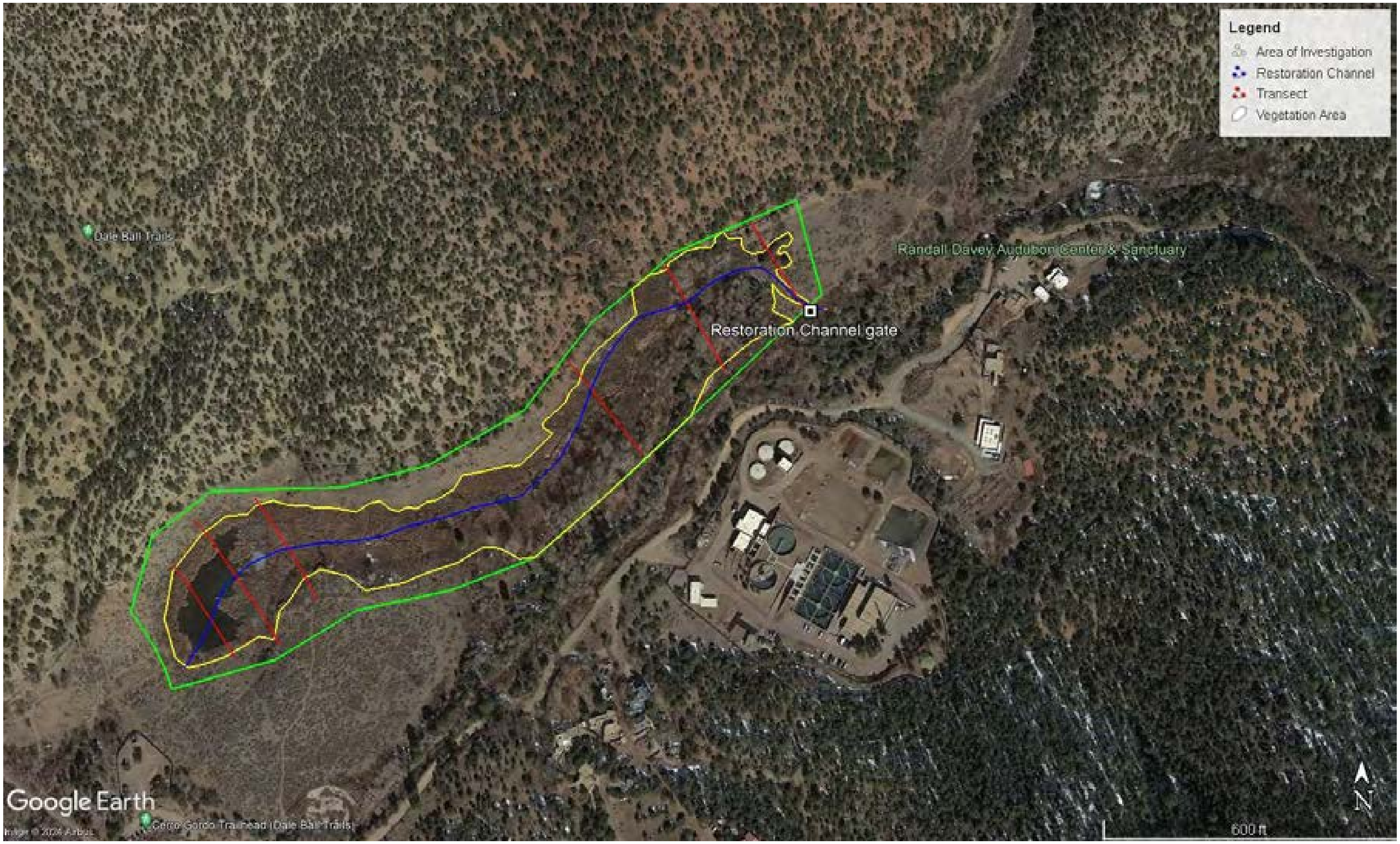


Figure A11. Historical image of Two-Mile Pond Complex dated March 2, 2021.

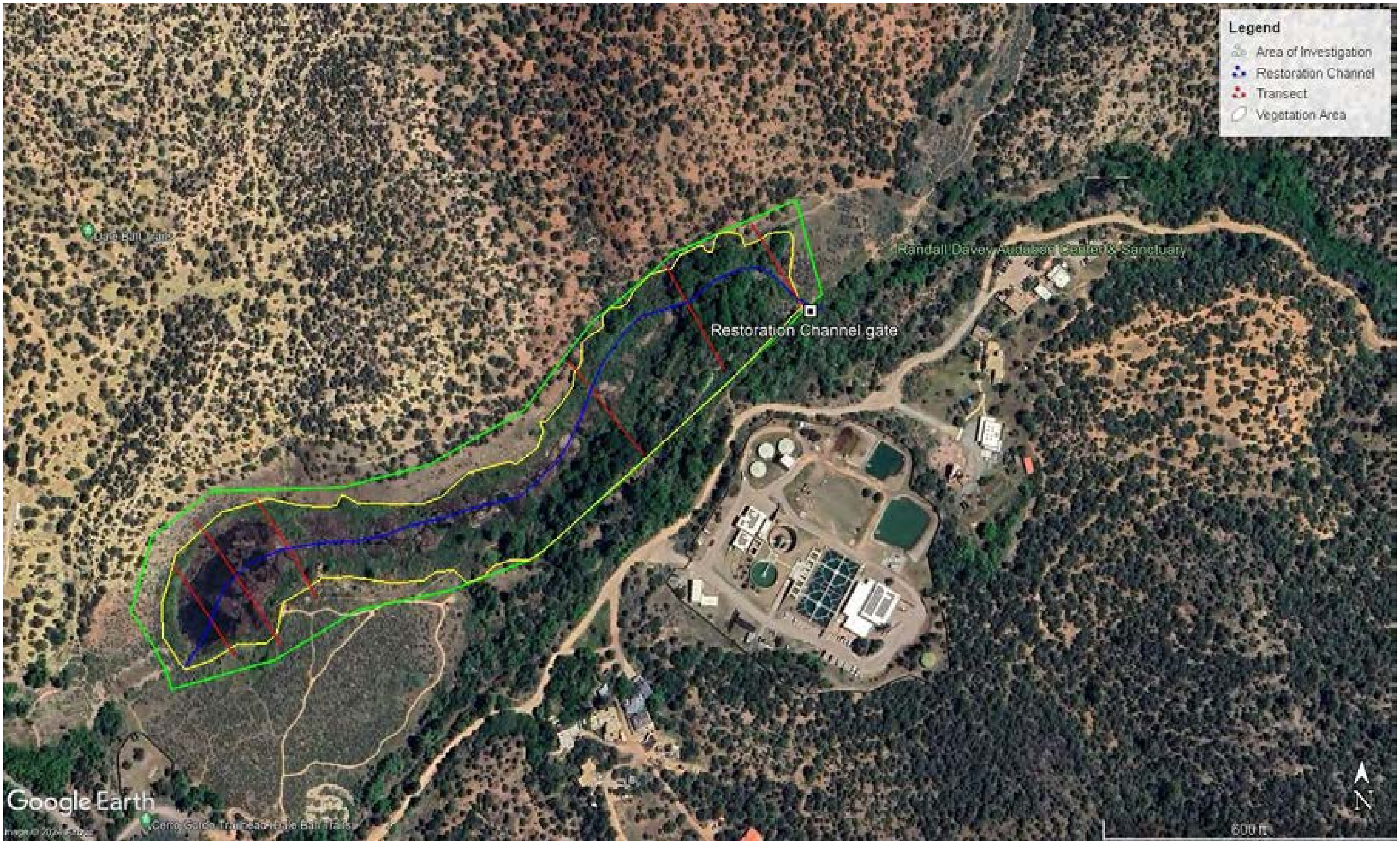
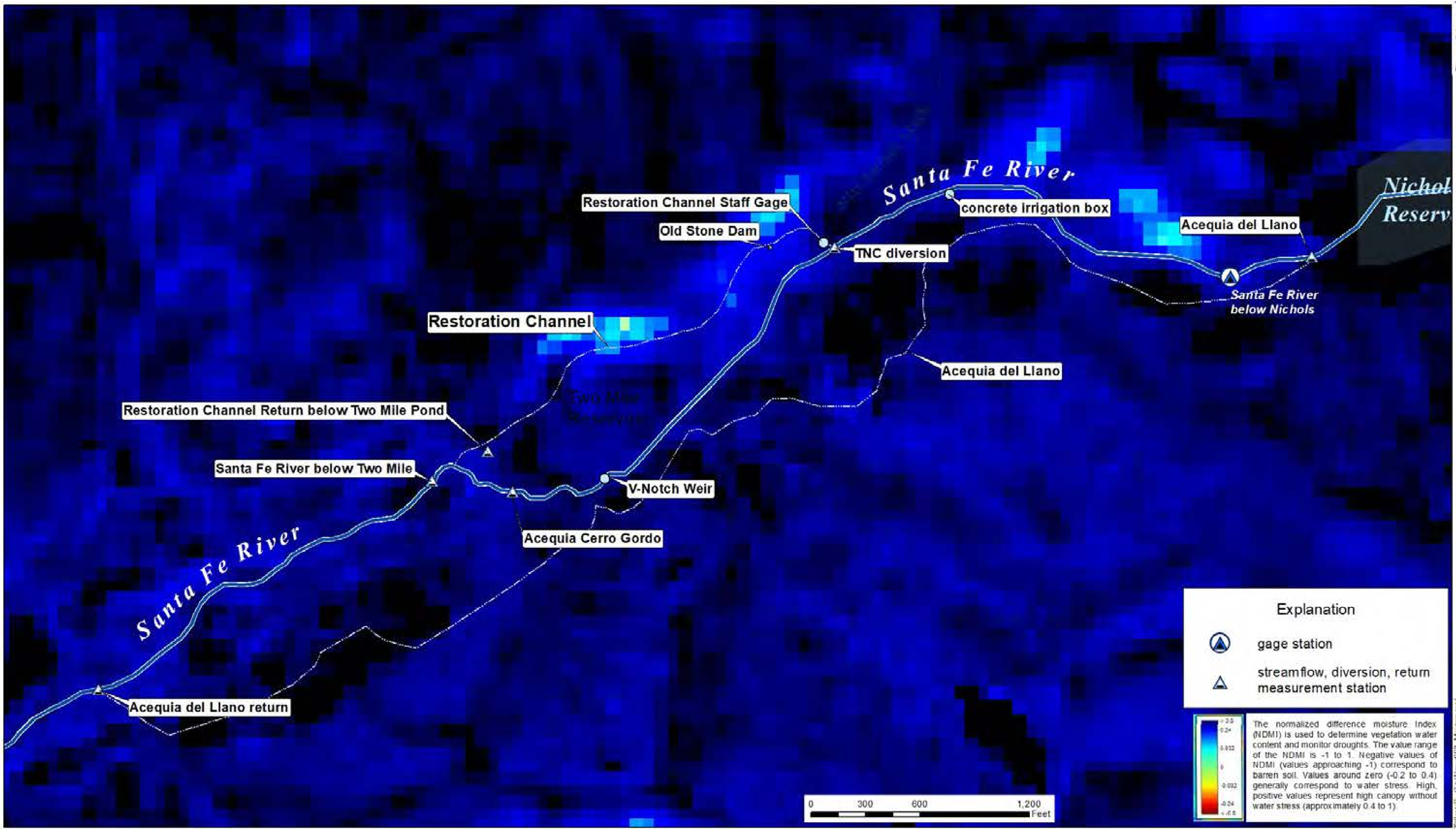


Figure A12. Historical image of Two-Mile Pond Complex dated July 6, 2023.

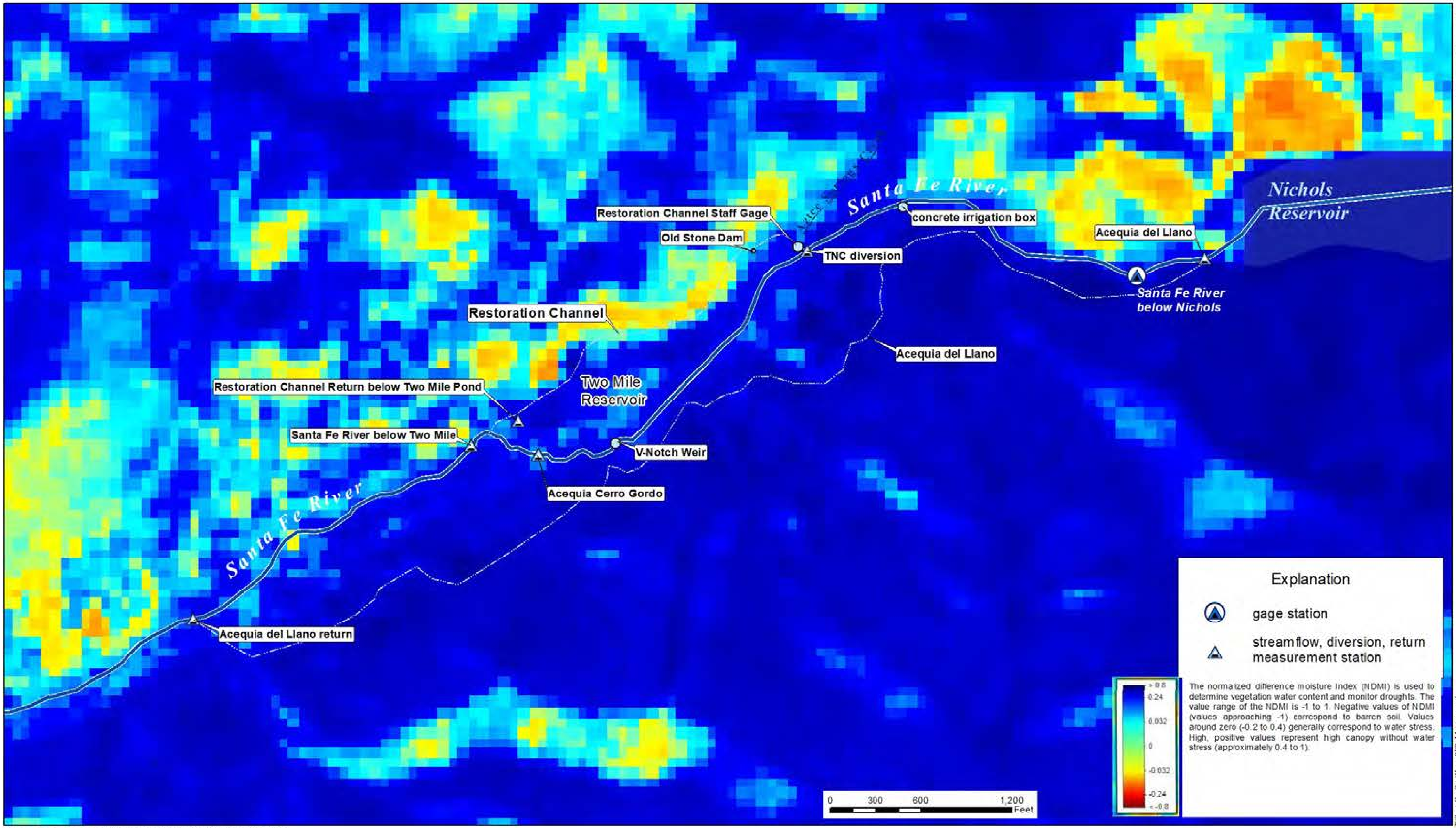
Appendix B.

NDMI Images for Two-Mile Pond Complex



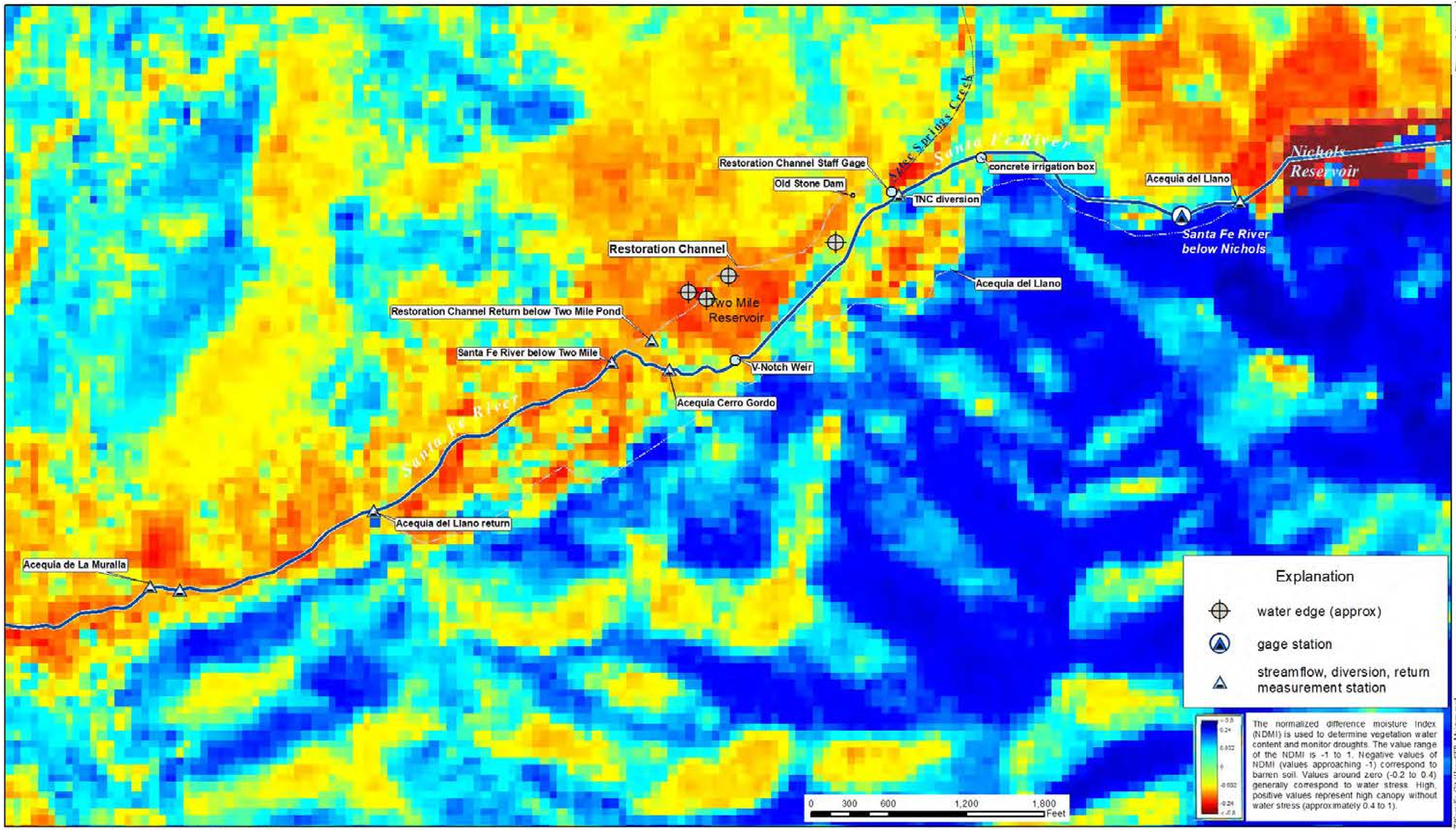
Normalized Difference Moisture Index (NDMI): Jan. 16, 2024

Figure B1. NDMI image of Two-Mile Pond Complex for January 16, 2024.



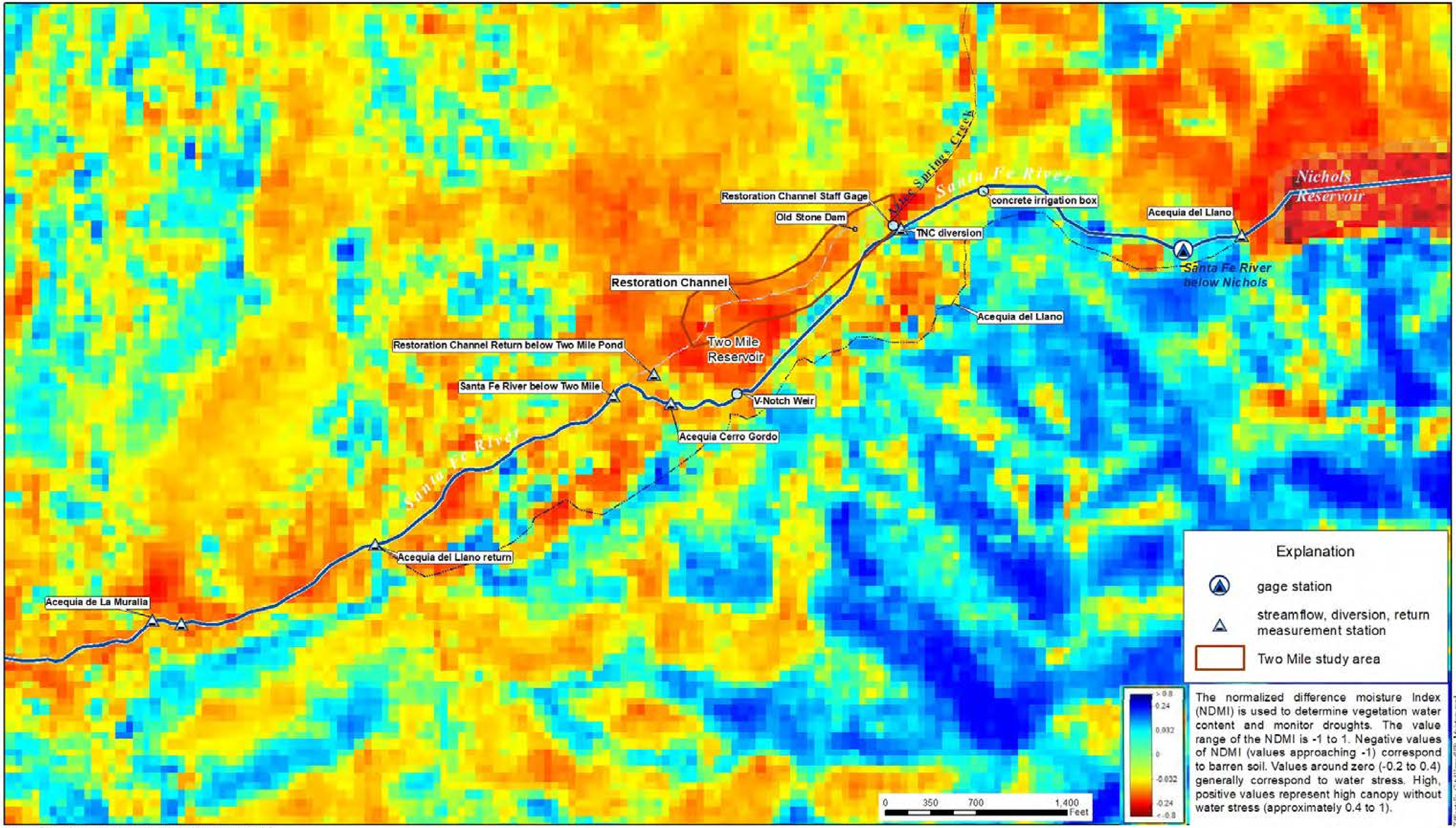
Normalized Difference Vegetation Index (NDVI): March 3, 2024

Figure B2. NDMI image of Two-Mile Pond Complex for February 5, 2024.



Normalized Difference Moisture Index (NDMI): March 3, 2024

Figure B3. NDMI image of Two-Mile Pond Complex for March 3, 2024.



Normalized Difference Moisture Index (NDMI): April 10, 2024

Figure B4. NDMI image of Two-Mile Pond Complex for April 10, 2024.

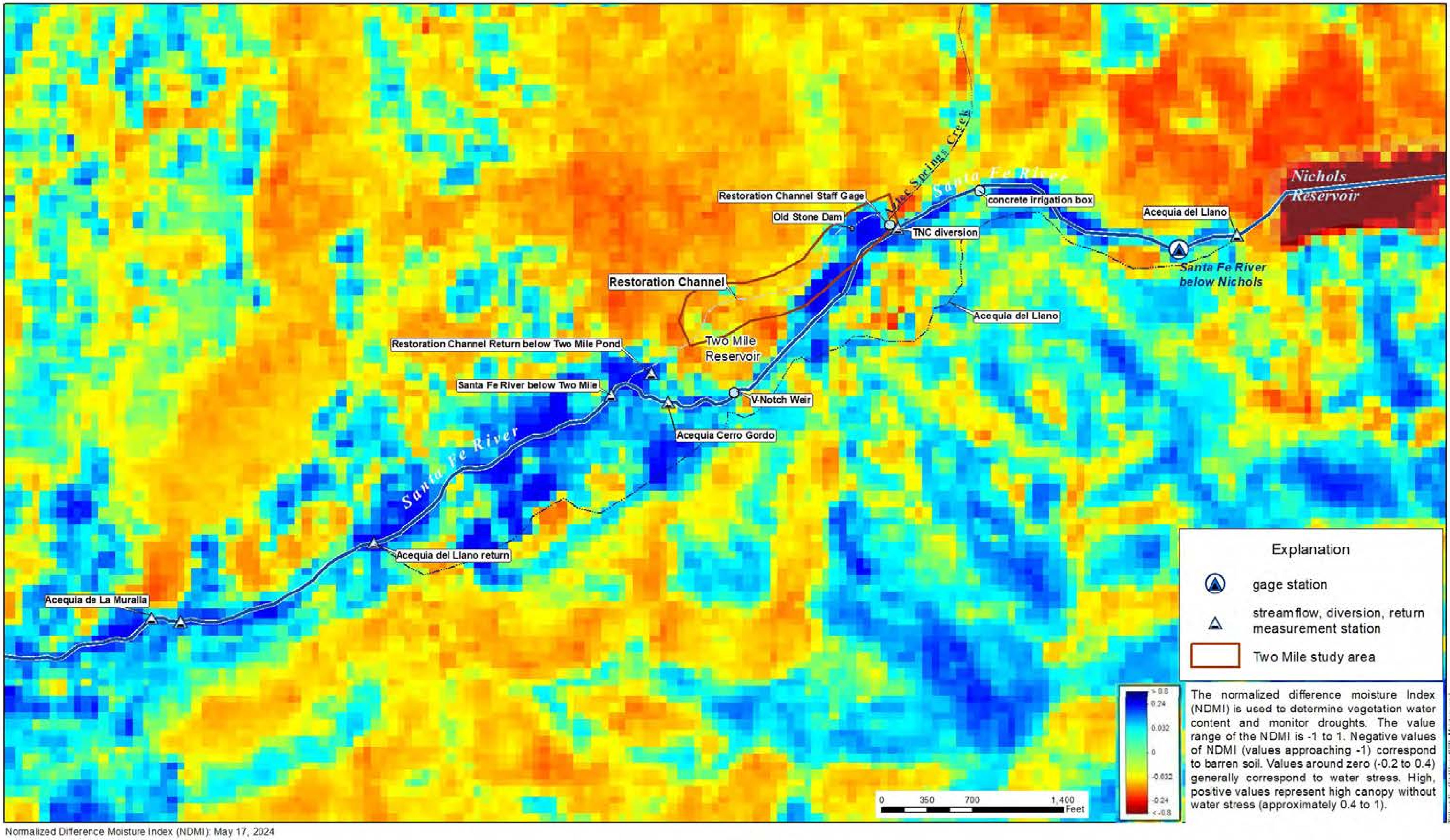
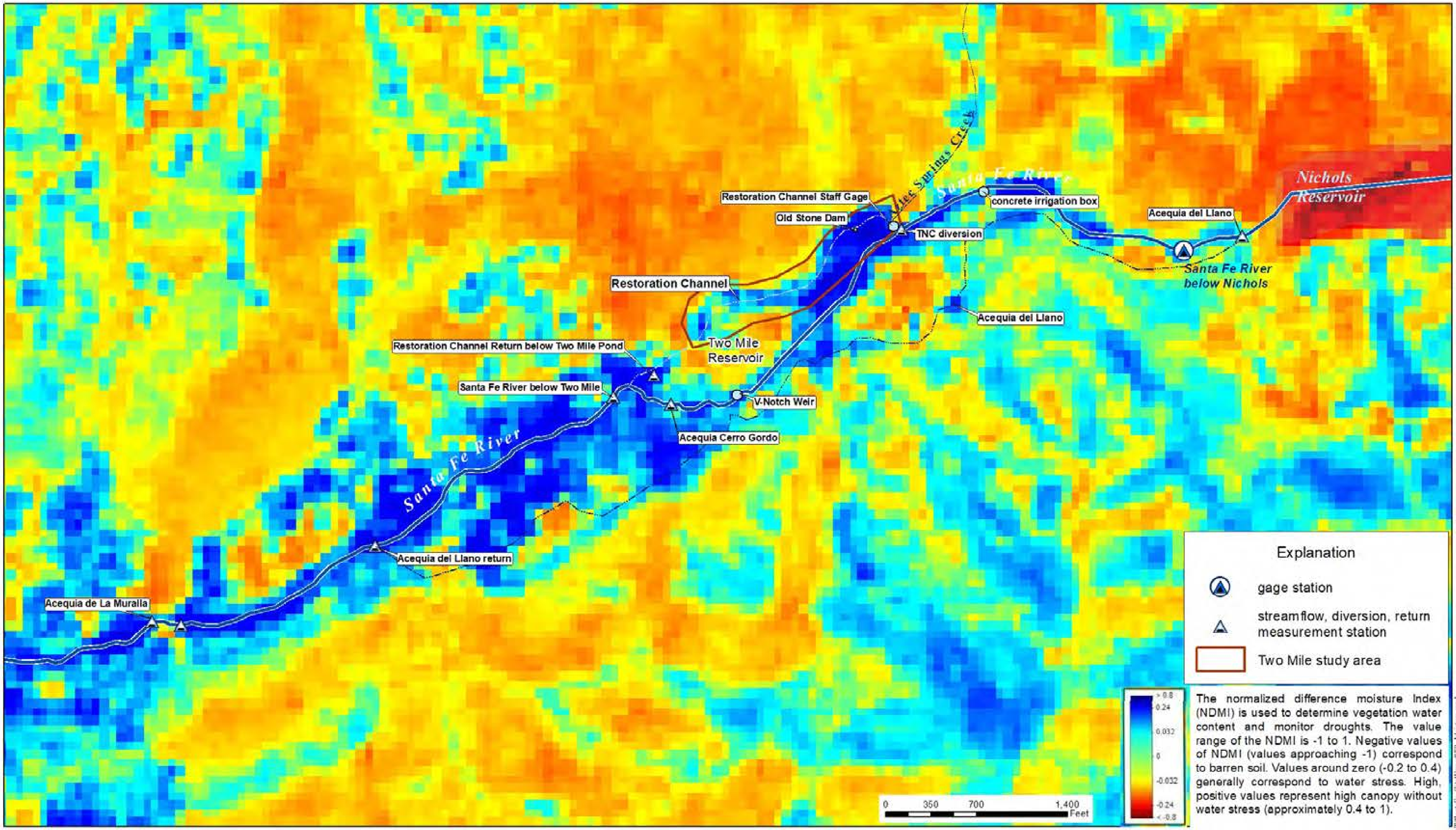


Figure B5. NDMI image of Two-Mile Pond Complex for May 17, 2024.

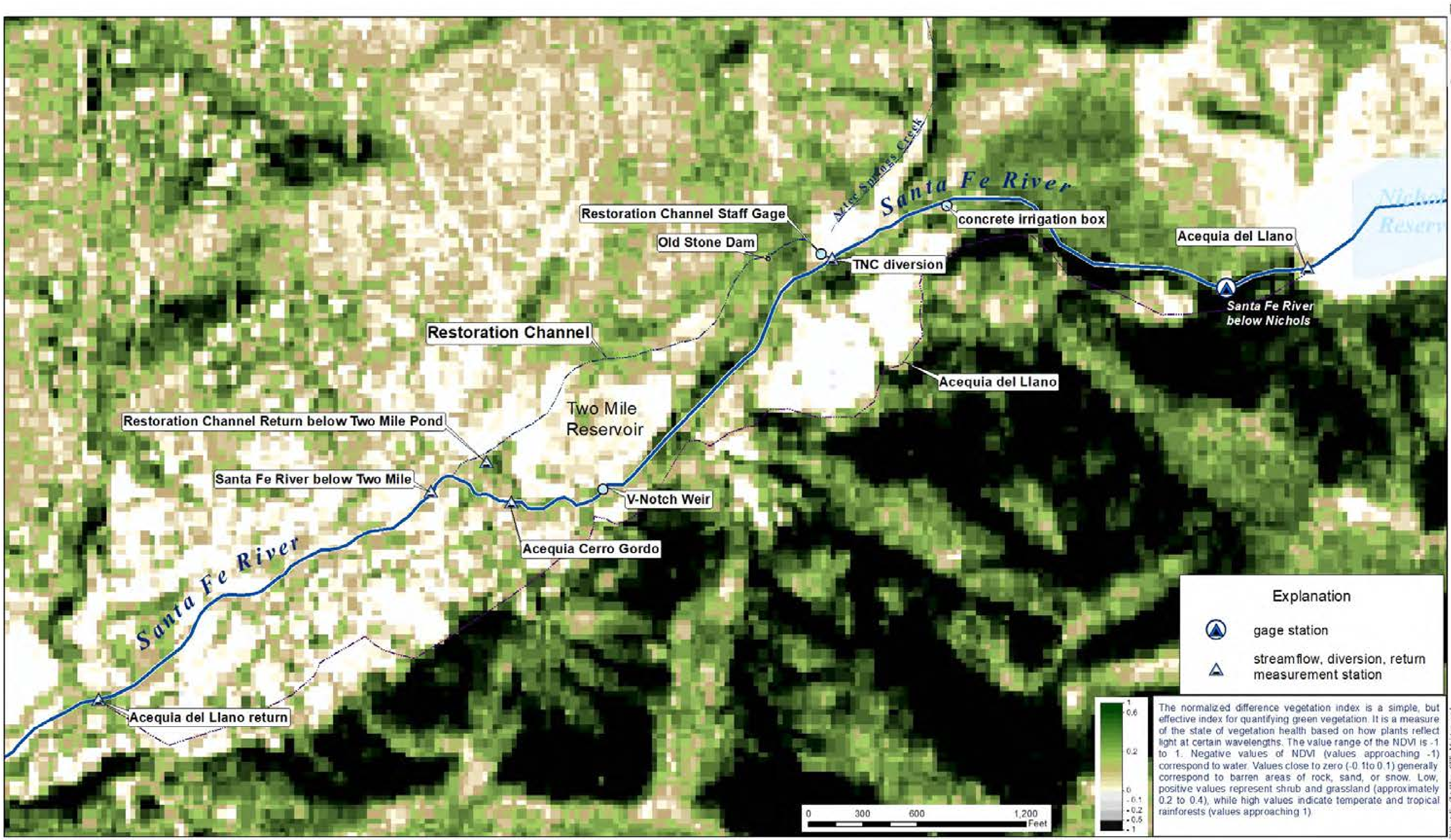


Normalized Difference Moisture Index (NDMI) June 16, 2024

Figure B6. NDMI image of Two-Mile Pond Complex for June 16, 2024.

Appendix C.

NDVI Images for Two-Mile Pond Complex



Normalized Difference Vegetation Index (NDVI): Jan 16, 2024

Figure C1. NDVI image of Two-Mile Pond Complex for January 16, 2024.

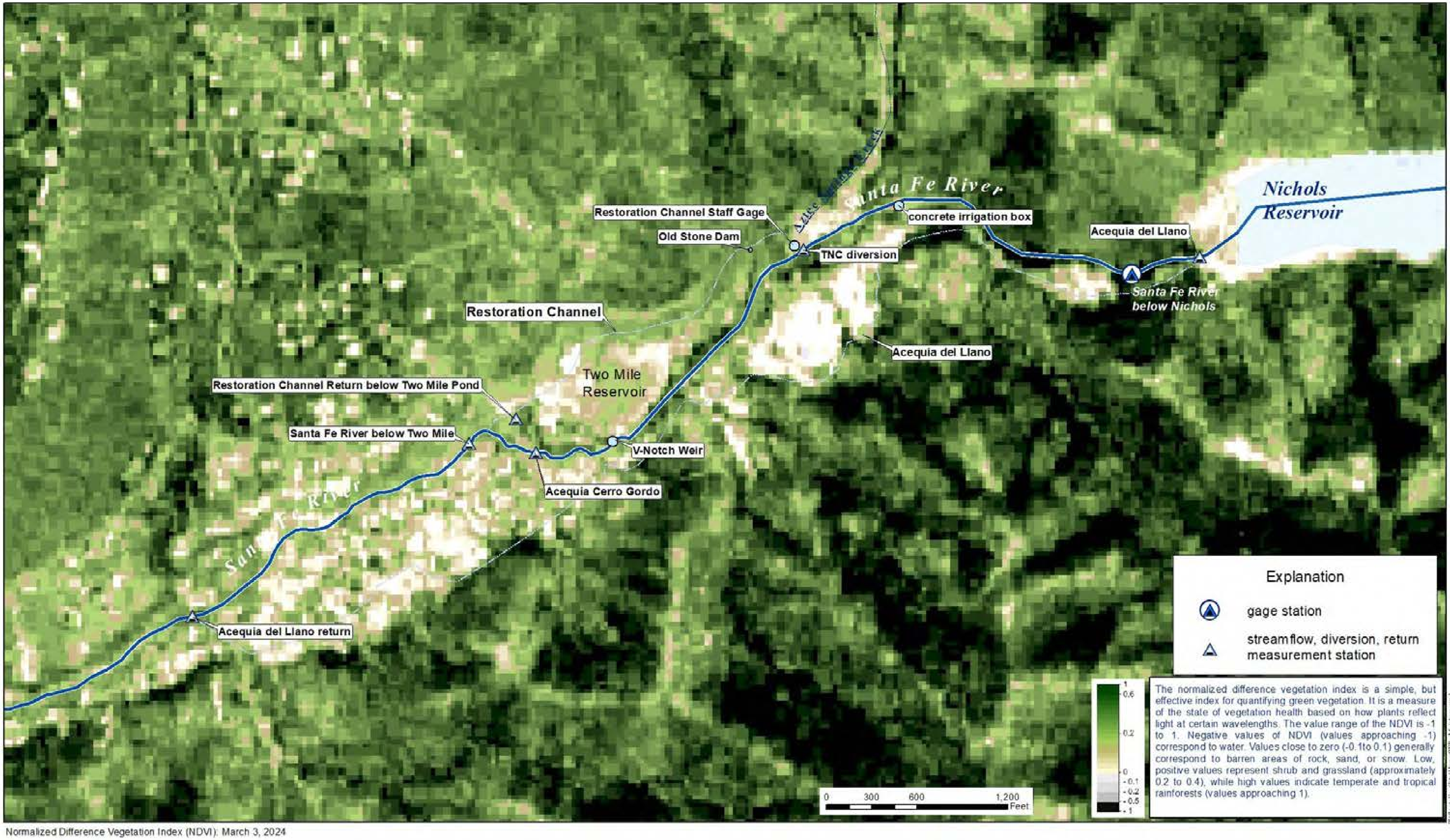


Figure C2. NDVI image of Two-Mile Pond Complex for February 5, 2024.

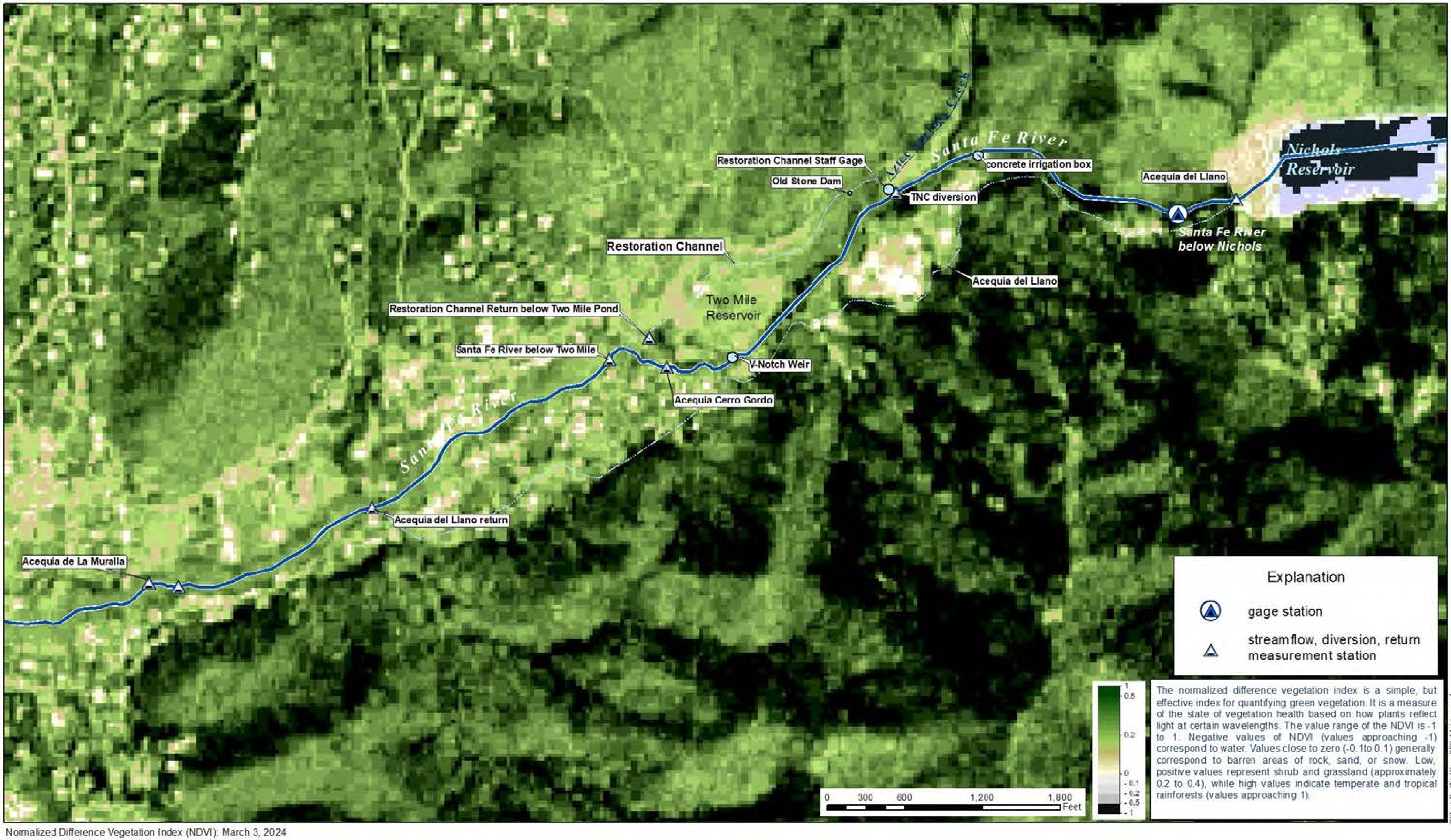
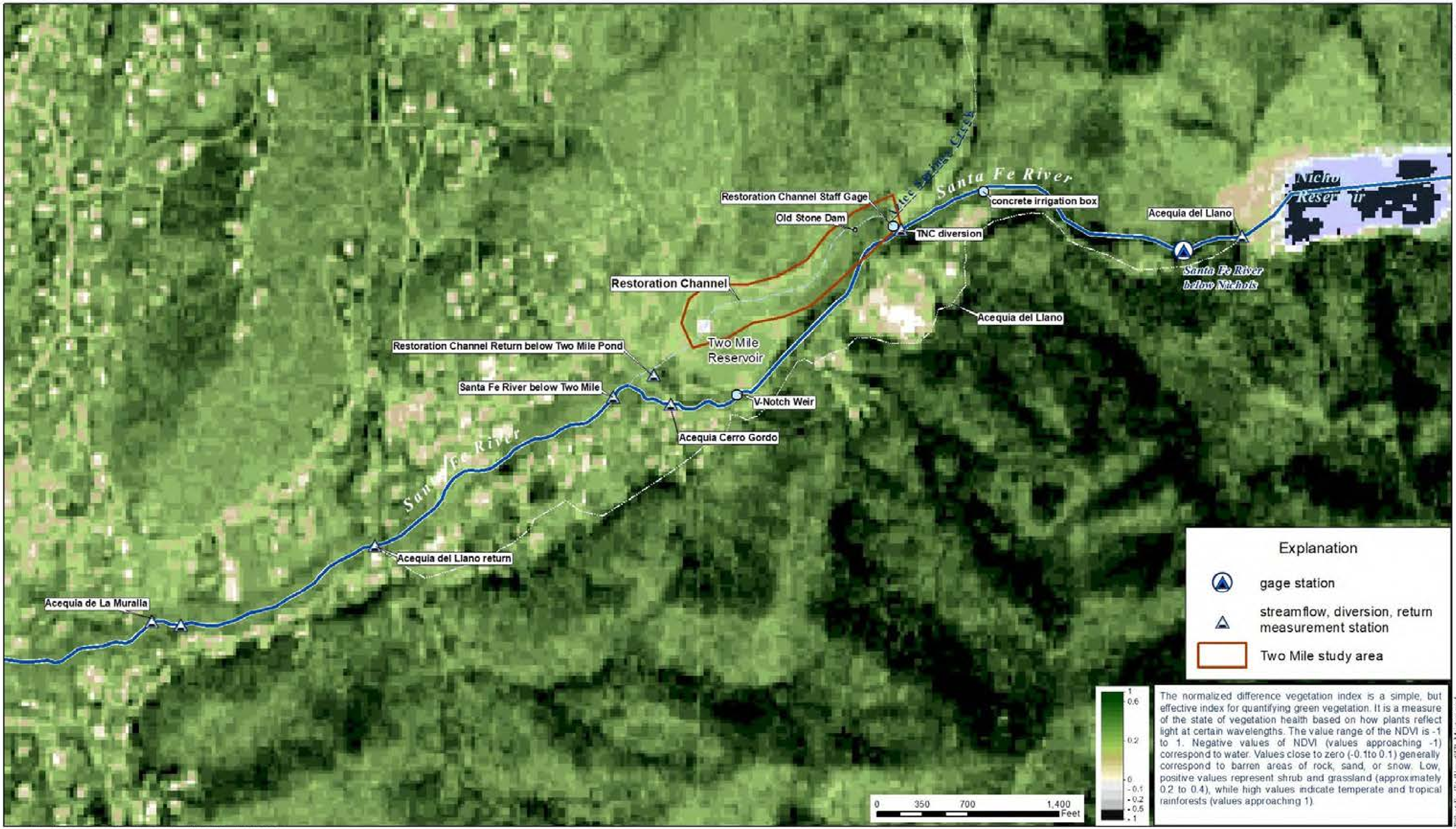
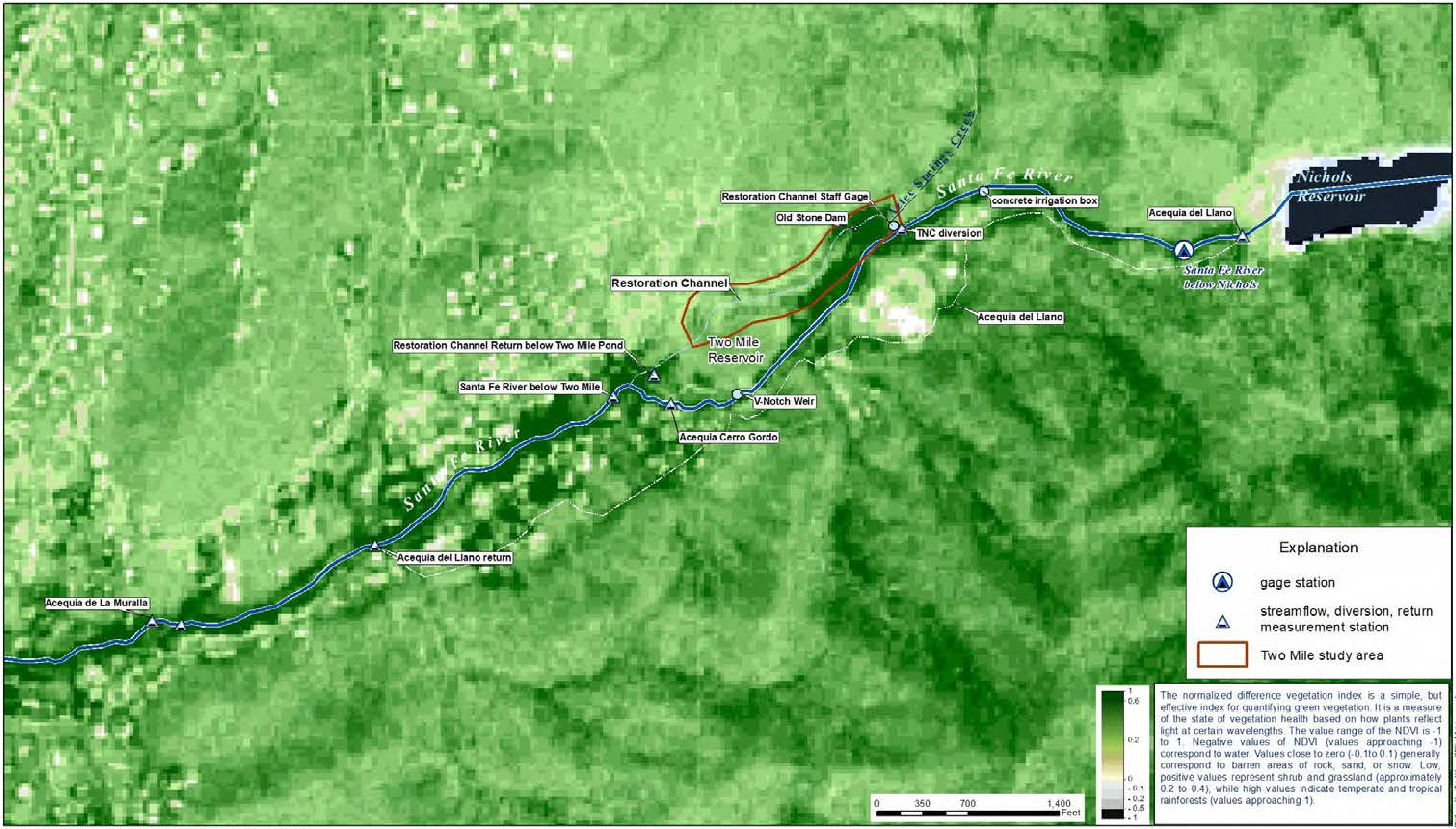


Figure C3. NDVI image of Two-Mile Pond Complex for March 3, 2024.



Normalized Difference Vegetation Index (NDVI): April 10, 2024

Figure C4. NDVI image of Two-Mile Pond Complex for April 10, 2024.



Normalized Difference Vegetation Index (NDVI): May 17, 2024, 2024

Figure C5. NDVI image of Two-Mile Pond Complex for May 17, 2024.

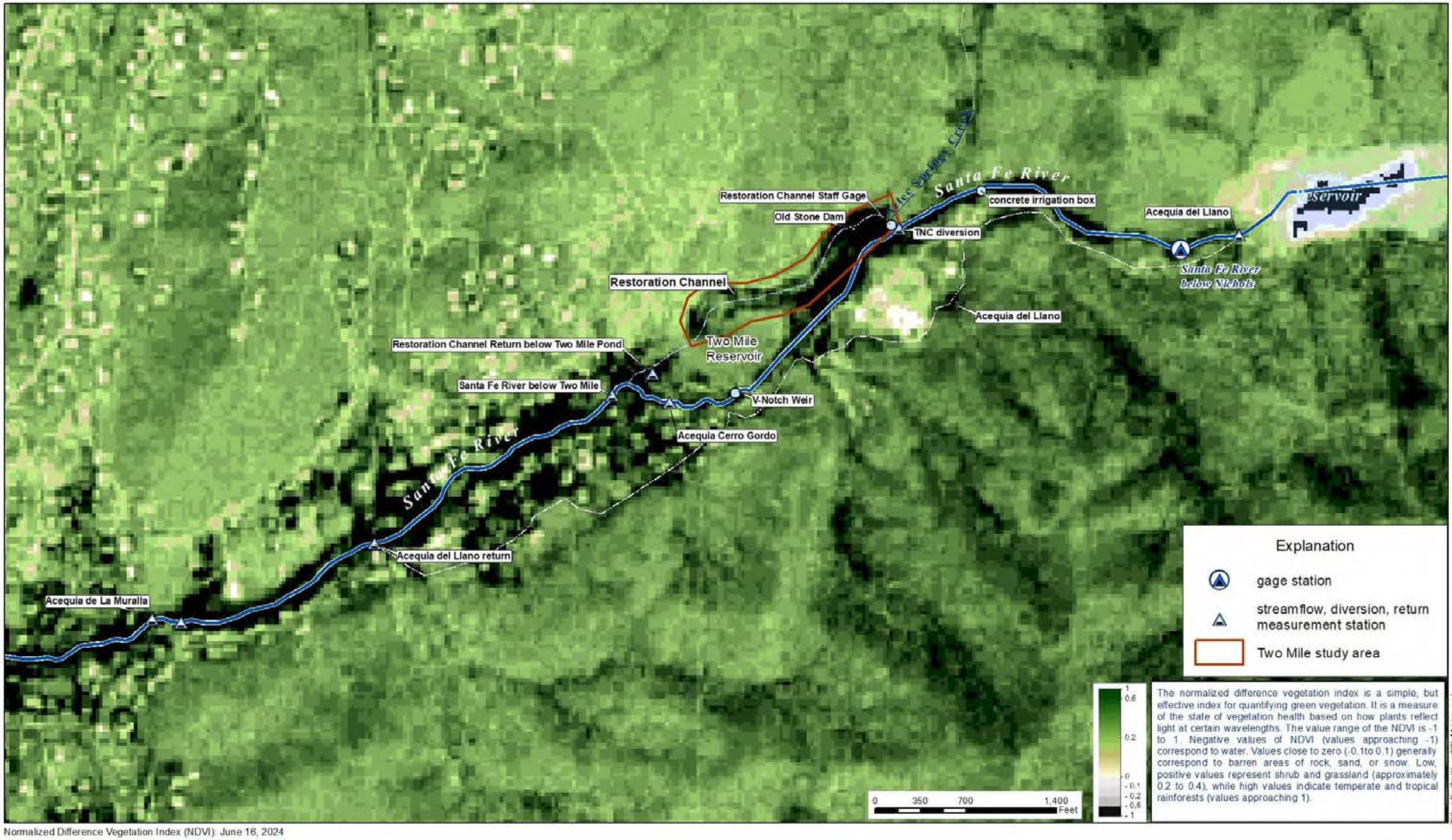


Figure C6. NDVI image of Two-Mile Pond Complex for June 16, 2024.

Appendix D.

Field Investigations Forms

NMRAM Montane Riverine Wetlands Version 2.5

SA Cover Worksheet					
SA Code SF2MI [1]	SA Name : Two Mile Pond Reservoir			Project : Riparian Assesement	
A ...de Tsct [1]	AU Name : Transect [1]			WOI : Two Mile Pond Reservoir	
County Santa Fe	HUC 12 Headwaters Santa Fe River	Elevation (ft) 7299		(m) 2224.7	Ecoregion 6.0 NWFM

SA General Location and Boundary (Rationale, comments)

A riparian system that leads into a pond located on the east side of Santa Fe bordering the Santa Fe National Forest. This reservoir was decommissioned due to safety concerns regarding the reservoir and a water diversion to the area was recently shut down due to lack of water rights.

Driving Directions

Driving to Santa Fe from Albuquerque you head north on Old Pecos Trail. Then head east on Camino Del Monte Sol and right on Canyon Road until you reach the reservoir located to the North.

Ownership The Nature Conservative and The Santa Fe National Forest	Data Sharing Restrictions	Results to client only.	Fish Observed in Wetland?	

Surveyor Role	Surveyor Name	Surveyor Initials
Landscape	Dustin and Annie	DS+AM
Biotic	" "	" "
Abiotic	" "	" "
Stressors	" "	" "

Easting (m)	Northing (m)	Zone	Datum	Latitude (DD ft)	Longitude (DD ft)
-105° 53' 24" W	35° 41' 23" N	13	NAD- 83 UTM	35.689722	-105.89
Survey Date	4/9/24	**Start Time**	09:18	**End Time**	13:08

SA Description

SA Landscape Context (summarize the wetland and surrounding landscape; include condition and impacts)

Environment is still very dry and recovering from winter. Some small growth appearing but Nothing very impactful

SA Biotic Condition (vegetation patterns, composition and structure, exotics and invasives, disturbance evidence, fire and herbivory)

Some baby poles and sprouts are budding but Not much other life. Currant and willows starting to green.

SA Abiotic Condition (hydrological alterations {e.g., dams, walls etc.]; flooding characteristics and evidence of overbank flooding; soil disturbance and other site impacts; explain the hydrologic breaks or other factors that define the SA limits)

Still very dry landscape recovering from winter. Some Construction can be heard in distance

Assessment Summary (Overall site condition summary and comments after the field data is collected.)

Environment is almost identical to last Months investigation just slightly more poles and sprouts beginning.

Provisional Field Score 301	Rank B	Surveyor(s) DCS/AM	Final Score 301	Rank B	Initials DS	Date 4/9/24

SA CODE : SF2MI [1] **Date :** 4/9/24

SA Name : Two Mile Pond Reservoir Transect [1] **Surveyor Initials :** DS

NMRAM - SA Rank Summary Worksheet: Montane Riverine Wetlands 2.5

Metric Description	Rating	Wt	Final Score
Landscape Context		Σ 1.0	3.25
L1. Buffer Integrity Index	3	0.25	0.75
L2. Riparian Corridor Connectivity	4	0.25	1.0
L3. Relative Wetland Size	4	0.25	1.0
L4. Surrounding Land Use	2	0.25	0.5
Biotic		Σ	
B1. Relative Native Plant Community Composition	2	0.2	
B2. Vegetation Horizontal Patch Structure	2	0.2	
B3. Vegetation Vertical Structure	3	0.2	
B4. Native Riparian Tree Regeneration	2	0.2	
B5. Invasive Exotic Plant Species Cover	3	0.2	
Abiotic		Σ	
A1. Floodplain Hydrologic Connectivity		0.3	
A2. Physical Patch Diversity	2	0.2	
A3. Channel Equilibrium	4	0.2	
A4. Stream Bank Stability and Cover	4	0.2	
A5. Soil Surface Condition	4	0.1	

SA Condition Scoring Summary			
Major Attribute	Score	Wt.	Wt. Score
Landscape Context	3.25	0.3	0.975
Biotic		0.35	
Abiotic		0.35	
SA WETLAND CONDITION SCORE Σ			3.01
SA WETLAND RANK =			B

SA Wetland Rank		
Rank	Score	Description
A	≥3.25 - 4.0	Excellent Condition
B	≥2.5 - <3.25	Good Condition
C	≥1.75 - <2.5	Fair Condition
D	1.0 - <1.75	Poor Condition

Stressor Summary	Major	Minor	Top Three	
	0	0	1	Construction
			2	No flow in channel
			3	Trails

Stressor Comments (Evaluation of risk)

No water could affect the willows from growing back

SA CODE : SF2MI [1]

Date : 4/9/24

SA Name : Two Mile Pond Reservoir Transect [1]

Surveyor Initials : DS

Landscape Context

L1 - Buffer Integrity Index

Worksheet 1a. Buffer and RCC Checklist. Check off land cover elements within the buffer area or RCC corridors that are either allowed, or are excluded and considered non-buffer elements that disrupt ecosystem connectivity. Indicate the imagery type and date (season and year of imagery).

Imagery	Google Earth KMZ. file	Image Date	6/23

Allowed buffer/RCC land cover elements			Excluded non-buffer/RCC land cover elements		
Buffer	RCC		Buffer	RCC	
[X]	[X]	Natural or semi-natural vegetation patches	[X]	[X]	Commercial/residential developments, parking lots, dams, bridges, revetments, and other structures
[X]	[X]	Small irrigation ditches without levees	[ ]	[ ]	Lawns, parks, golf courses, sports fields
[ ]	[ ]	Old fields, unmaintained	[ ]	[ ]	Railroads
[ ]	[ ]	Open range land	[ ]	[ ]	Maintained levees, sediment piles, construction materials, staging areas
[X]	[X]	Foot trails, horse trails, unpaved bike trails (low intensity)	[ ]	[ ]	Intensive livestock areas, horse paddocks, feedlots
[X]	[X]	Non-channel open water	[ ]	[ ]	Intensive agriculture: maintained pastures, hay fields, row crops, orchards, and vineyards
[X]	[X]	Non-functioning abandoned vegetated levees, or naturally occurring levees	[X]	[X]	Paved roads or developed second-order unpaved but graded roads
[ ]	[ ]	unpaved two tracks roads	[X]	[X]	Open water bounded by a levee or other manmade structure
[ ]	[ ]	Other	[ ]	[ ]	Other

Worksheet 1b. Buffer Percent Sub-metric. Measure or estimate the percentage of the SA perimeter composed of allowed buffer elements and enter into the Buffer Percent Box below. Rate the sub-metric using Table L1a and enter the rating on the Buffer Integrity Summary Worksheet 1d.

Buffer Percent (%)=	85%

Table L1a. Buffer Percent

Rating	Buffer Percent
4	100%
(X) 3	≥80% - <100%
2	≥50% - <80%
1	<50%

Worksheet 1c. Buffer Width Sub-metric. Measure the length of each buffer line in meters in the GIS or on the map. Average the line lengths and rate using Table L1b. Enter the rating on the Buffer Integrity Summary Worksheet 1d.

Line	Buffer Width (m)	Buffer Width (ft)	Line	Buffer Width (m)	Buffer Width (ft)
A	164.26	538.91	E	161.93	531.26
B	125.25	410.92	F	231.48	759.44
C	115.39	378.57	G	121.25	397.80
D	111.07	364.40	H	155.87	511.38
Average		148.31 (m)		486.58	(ft)

Table L1b. Buffer Width

Rating	Average buffer width
4	≥190m
(X) 3	≥130 - <190m
2	≥65 - <130m
1	<65m

Worksheet 1d. Buffer Integrity Summary. Enter the sub-metric Ratings from Tables L1a and L1b above to calculate the Buffer Integrity Index Score using the formula in the box below. Using the Buffer Integrity Index Score, enter rating for Buffer Integrity in Table L1c on the SA Summary Worksheet.

Buffer % Rating	+	Buffer Width Rating	/2 =	Buffer Integrity Index Score
3	+	3	/2 =	3

Table L1c. Summary Rating for Buffer Integrity

Rating	Score
4	>3.5
(X) 3	>2.5 - ≤3.5
2	>1.5 - ≤2.5
1	≤1.5

SA CODE : SF2MI [/]

SA Name : Two Mile Pond Reservoir Transect [/]

Date : 4/9/24

Surveyor Initials : DS

2 - Riparian Corridor Connectivity (RCC)

Worksheet 2. RCC excluded non-buffer elements calculation. Refer to worksheet 1a for excluded non-buffer RCC land cover elements. Following the steps in the Field Guide, enter the summed values in meters for excluded element lengths for each bank within each segment upstream and downstream of the SA. Sum the values for each segment and calculate % Segment Disruption for the upstream side and the downstream side. Add the total disruption for upstream and downstream segments and then calculate the % Total Disruptions for the riparian corridor. Rate Riparian Corridor Connectivity using Table L2 and the data from this worksheet. Enter rating on the SA Summary Worksheet.

Segments	Upstream Segment		Downstream Segment	
Banks	Left Bank	Right Bank	Left Bank	Right Bank
A) Total Bank Disruption (m)	0	0	0	0
B) Total Disruption by Segment (m)	0		0	
C) % Segment Disruption = (B/1000)*100	0		0	
D) Total Disruption both segments	0			
E) % Total Disruptions = (D/2000)*100	Zero disruption noticeable along the banks.			

Table L2. RCC Rating

Rating	Description
(X 4	**0%** total disruption on both segments combined.
◯ 3	**<15%** total disruption on both segments combined.
◯ 2	**≥15% - <40%** total disruption on both segments combined.
◯ 1	**≥40%** total disruption on both segments combined.

L3 - Relative Wetland Size

Worksheet 3a. Calculate the Relative Size Ratio (RSR) between the current WOI size and the historic WOI size. b. Calculate the Relative Wetland Size Score (RWSI (%)) as (1-RSR)*100. Rate Relative Wetland Size Index using Table L3 and enter rating on the SA Summary Workshe

RSR					RWSI						
Current Size	/	Historic Size	=	RSR	1	-	RSR	X	100	=	RWSI (%)
9	/	10	=	0.9	1	-	0.1	X	100	=	10

Table L3. Relative Wetland Size Rating

Rating	RWSI Score	Description
(X 4	≤10%	Wetland is at or only minimally reduced from its full natural extent
◯ 3	>10% - ≤40%	Wetland remains equal to or more than 60% of its natual size
◯ 2	>40% - ≤70%	Wetland has been reduced by more than 40% its natural size
◯ 1	>70%	Wetland has been reduced by more than 70% its natural size

SA CODE : SF2MI [1]

Date : 4/9/24

SA Name : Two Mile Pond Reservoir Transect [1]

Surveyor Initials : [illegible]

L4 - Surrounding Land Use

Worksheet 4. Surrounding Land Use. Enter the percent area occupied by a given Land Use Element in the Land Use Zone (LUZ) surrounding the SA. Calculate the Land Use Index (LUI) Score by element as the product of the element coefficient times the percent of the LUZ Area occupied. (The %LUZ Area must total 100%.) Sum the LUI scores for each element to create the final LUI Score. Rate using Table L4 and enter the rating in the SA Rank Summary Worksheet.

Land Use Element	Coef	% LUZ Area	LUI Score
Paved roads, parking lots, domestic or commercially developed buildings, mining (gravel pit, quarry, open pit, strip mining), railroads	0	0	0
Unpaved roads (e.g., driveway, tractor trail, unpaved parking lots), paddock, dirt lot	0.1	0	0
Dredging, borrow pits, abandoned mines, water-filled artificial impoundments (ponds and reservoirs)	0.1	0	0
Filling or dumping of sediment or soils	0.1	0	0
Intense recreation (all-terrain vehicle use, camping, popular fishing spot, etc.)	0.3	0	0
Rip-rapped channel (highly modified channel with severely limited vegetation zone that is altered by human activities but not a completely concrete channel [that goes under paved roads]), junkyards, trash dumps, disturbed ground (not including roads)	0.3	0	0
Ski area	0.4	0	0
Dam sites and flood-disturbed shorelines around water storage reservoirs	0.5	0	0
Abandoned artificial impoundments (ponds and reservoirs) and associated disturbed flood zones	0.5	10	5
Artificial/Constructed wetlands, irrigation ditches	0.7	20	14
Developed/Managed trail system (high use trail)	0.8	5	4
Agriculture - active tilled crop production	0.2	0	0
Agriculture - permanent crop (vineyards, orchards, nurseries, berry production)	0.3	0	0
Manicured lawns, sport fields, and golf courses; urban manicured parks	0.3	0	0
Old fields and other disturbed fallow lands dominated by ruderal and/or exotic species (e.g., kochia, Russian thistle, mustards, annual vegetation)	0.5	0	0
Mature old fields and other fallow lands with natural composition, introduced hay field and pastures (e.g., perennial vegetation cover)	0.7	0	0
Restoration areas in process to natural conditions (re-conversion in process)	0.8	65	52
Haying of native grassland (e.g., no tillage, haying and baling only)	0.9	0	0
Heavy logging or tree removal with >50% of large trees (e.g., >30 cm diameter at breast height) removed, woodland/shrub vegetation conversion (chaining, cabling, rotochopping)	0.3	0	0
Commercial tree plantation, Christmas tree farms	0.6	0	0
Selective logging or tree removal with <50% of large trees (e.g., >30 cm diameter at breast height) removed	0.8	0	0
Mature restoration areas returned to natural conditions (re-converted)	0.9	0	0
Natural area, land managed for native vegetation - No agriculture, logging, development	1	0	0
LUI Score= Coefficient * % LUZ Area		100	75

Table L4. Surrounding Land Use Rating	
Rating	**LUI Score**
○ 4	≥95 - 100
○ 3	≥80 - <95
☒ 2	≥40 - <80
○ 1	<40

Biotic Metrics

Worksheet 5. Vegetation Community Patch Polygon Data for Biotic Metrics B3, B4, and B5 for Polygons from SA Biotic Map. Enter data for each polygon under a unique number assigned from the SA Biotic Map. Each polygon is evaluated with respect to Vegetation Vertical Structure (B3), Native Tree Regeneration (B4), and Invasive Exotic Plant Species Cover (B5) metrics. Enter the Vertical Structure Type (VST) for B3, tree regeneration % cover within the polygon for B4 and the % cover of invasive exotic species for B5. Use the Tables in Appendix B and the Field Guide for metric instructions. Enter the species codes for the invasive exotic species found in the polygon (from NM Noxious Weed List - Appendix D). Use the comments box for documenting and describing vegetation community patch features.

Polygon No	B3 Vertical Structure Type	B4 Tree Regeneration % Cover	B5 Invasive Exotic Species % Cover	Invasive Exotic Species (List Code(s))	Comments
1	IA1				
2	IA2	10%	No exotics	None	Maple Pinon, Juniper, Chimisa, Prickly Pear
3	IIA1				
4	IIIB1				
5	IIIC1	0%	>2%	Mullein	Chimisa, willow dry grass
6	IVEI				
7	IVF1				
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

SA CODE: SF2MI [1] **SA Name:** Two Mile Pond Reservoir Transect [1] **Date:** 4/9/24 **Surveyor Initials:** DS

B1 - Relative Native Plant Community Composition

Worksheet 6. CT Plant Species and Polygon Assignments. Starting with CT A, enter the number of the first polygon from Worksheet 5. Enter the species codes for the two top dominant species in each stratum that appears in the polygon. See footnotes for special instructions. If a species appears in more than one strata, assign the species to the stratum in which it is more abundant. Each polygon is either assigned to the same CT if it has the same composition or a new CT is created for the polygon.

									Tall Woody Stratum [1]				Short Woody Stratum [2]				Herbaceous/Sparse Stratum [3]				CT Score [4]		
CT	Polygon Nos.								Species 1	E N	Species 2	E N	Species 3	E N	Species 4	E N	Species 5	E N	Species 6	E N	Raw[4]	% SA[5]	Wt Score[6]
A	2								Maple	N	Pinon	N	Chimisa	N	Willow	N					4.0	30%	1.2
B		5											Willow	N	Chimisa	N	Dry Grass	N	Blue Stem	N	2.0	70%	1.4
C																							
D																							
E																							
F																							
G																							
H																							
I																							
J																							
K																							
L																							
M																							
N																							
O																							
																				Final Weighted Score[7]			2.6

1. Trees and shrubs > 6 m (20 feet) and > 25% total stratum cover; 2. Trees and shrubs ≤6m (20 feet) and >25% total stratum cover; 3. Herbaceous (graminoids and forbs)>10% total stratum cover. [4]Raw Score is from Table B1a (Appendix B); [5]%SA is the percentage of the SA area covered by the CT and expressed as a decimal number; the total area %SA must equal 1; [6]Wt. Score is the product of the Raw Score * % SA; [7]The Final Weighted Score is the sum of the Wt. Scores. Rate the CT Final Weighted Score on Table B1 and enter the Rating for Relative Native Plant Community Composition on the SA Rank Summary Worksheet.

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Table B1. Relative Native Plant Community Composition Rating		
Rating	**CT Final Weighted Score**	
4	≥ 3.75	<10% non-native
3	≥ 3.25 and <3.75	10% ≤20% non-native
2	> 2.0 and <3.25	20% ≤50% non-native
1	≤2.0	>50% non-native

2 - Vegetation Horizontal Patch Structure

orksheet 7. Using Tables B2a and B2c (Appendix B), choose the schematic pattern that best matches the mapped vegetation patch ttern for the SA. Rate using Table B2 and enter rating on the SA Rank Summary Worksheet.

orizontal Patch Structure pattern A,B,C, or D: A

Table B2. Rating for Vegetation Horizontal Patch Structure	
Rating	**Description**
4	Most closely matches Pattern A. SA has a diverse patch structure (≥4 patch types) and complexity. A dominant patch type would be difficult to determine.
3	Pattern B. SA has a moderate degree of patch diversity (3 patch types present) and complexity. A single, dominant patch type may be present, although the other patch types would be well represented and have more than one occurrence in the SA.
2	Pattern C. SA has a low degree of patch diversity and complexity. Two or three patch types may be present; however, a single, dominant patch type exists with the others occupying a small portion of the SA.
1	Pattern D. SA has essentially little to no patch diversity or complexity. The SA is dominated by a single patch type. Other patch types, if present, occur infrequently and occupy a small portion of the SA.

3 - Vegetation Vertical Structure

/orksheet 8. Percentage of SA by vertical structure type (VST). Using the Structure Type from Worksheet 5 and the %SA om Worksheet 6 calculate the total area of the SA occupied by each VST using the formula VST(type) = Sum (%SA for CTs with ame VST) x 100. Enter the total %SA for each VST below.

	VST 1 High Structure Forest	VST 2 Low Structure Forest	VST 5 Tall Shrubland	VST 6S Short Shrubland	VST 6W Herbaceous Wetland	VST 6H Herbaceous Vegetation	VST 7 Sparse Vegetation
Total % of SA		40%		60%			

able B3. Rating for Vegetation Vertical Structure. Using the data from Worksheet 8 rate the SA based on the criteria in Table B3. Pick the ow that best fits the distribution of VSTs in the SA. Each row specifies the required dominant structure type plus co- and sub-dominants. ercentage cover required per co- or sub-dominant is a minimum. The types listed in the columns must be the most common VSTs in the SA for ne rating to be applicable (Worksheet 8). VSTs 1 and 2 can be inverted in dominance and the rating is still applicable. Work from the top of the able down. As long as the requirements for one row are met, any other types may or may not co-occur without changing the rating. Enter the ating on the SA Rank Summary Worksheet.

Rating	Dominant VST	Co- or Sub-dominant VST ≥15%	Sub-dominant VST ≥5%
4	1	5	6W and/or 6H
	1	6W	
	2 or 1 and 2	5	6W and/or 6H
3	1		
	2 or 1 and 2	5	
	2 or 1 and 2	6W	
	5	6W	
2	2 or 1 and 2		
	5		
	6W		
1	6S		
	6H		
	7		

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B4 - Native Riparian Tree Regeneration

Table B4. Native Riparian Tree Regeneration rating. Using the polygon percent cover of native tree seedlings, saplings and poles from Worksheet 5, rate the SA based on polygon percent cover and patch density. Enter the rating on the SA Rank Summary Worksheet.

Rating	Description
4	Native poles, sapling, and seedlings trees well represented, obvious regeneration, many patches or polygons with >5% cover, typically multiple size (age) classes.
3	Native poles, saplings and/or seedlings common, scattered patches or polygons with 1% -5% cover, size classes few.
X 2	Native poles, saplings and/or seedlings present but uncommon, restricted to one or two patches or polygons with typically <1% cover, little size class differentiation.
1	Native poles, saplings, and/or seedlings absent (0% cover).

B5 - Invasive Exotic Plant Species Cover

Worksheet 9. Based on Worksheets 5 and 6, calculate or estimate the percentage cover of invasive exotic species for the SA and enter below. Rate using Table B5 and enter the rating on the SA Rank Summary Worksheet.

Rating Method [ ]

Invasive cover (%) [<1%]

calculate

Table B5. Ratings for Invasive Exotic Plant Species Cover

Rating	Invasive Species Cover %
4 X	0%
3	>0% - <1%
2	≥1% - <10%
1	≥10

Additional CTs and Biotic Metric Comments:

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A2 - Physical Patch Complexity

Worksheet 11. Physical Patch Complexity checklist. Check off existing physical patch types for the upper, middle and lower segments of the SA; count the number of unique patch types and rate using Table A2 in combination with the narrative description. Enter the rating on the SA Rank Summary Worksheet.

Upper Segment	Middle Segment	Lower Segment	Field Indicators (check all existing conditions)
☐	☐	☐	Active side channels
☐	☒	☐	Abandoned channels
☐	☐	☐	Backwater/eddy
☐	☐	☐	Riffles or rapids
☐	☐	☐	Shoals, sparely-vegetated bars
☐	☐	☐	Channel boulders
☐	☐	☐	Oxbow lakes/ponds on floodplains
☐	☐	☐	Vegetated island and side bars
☐	☒	☐	Terraces
☐	☐	☐	Channel pools
☐	☐	☐	Beaver ponds
☐	☐	☐	Swales, depressional features on floodplains
☐	☐	☐	Debris jams in channel
☐	☐	☐	Woody wrack piles on the floodplain
☐	☐	☐	Floodplain micro-topography (mounds, pits)
☐	☐	☐	Downed logs
☐	☐	☐	Natural levees
☐	☐	☐	Standing snags
☐	☐	☐	Variegated, convoluted, or crenulated foreshore
☐	☐	☐	Undercut banks in channels
			No. of unique Patch Types

Table A2. Rating for Physical Patch Complexity	
Rating	**Description**
○ 4	**High** degree of physical patch complexity across the floodplain. There are many floodplain micro-habitats present (mounds and pits, woody wrack piles, etc.), many fluvial geomorphic surfaces (swales, side channels, terraces, side bars, etc.), and there is high in-channel complexity (pools and riffles, large woody debris, undercut banks, etc.). As a guide, 12 or more unique indicators are present and well distributed throughout the SA (most indicators are found on multiple segments).
○ 3	**Moderate** physical patch complexity scattered across the floodplain. There are several floodplain micro-habitats present, several fluvial geomorphic surfaces, and there is moderate in-channel complexity. As a guide, 9 - 11 indicators are scattered throughout the SA (some on multiple segments).
○ 2	**Limited** physical patch complexity scattered across the floodplain. There are some floodplain micro-habitats present, some fluvial geomorphic surfaces, and there is limited in-channel complexity. As a guide, on average there are 6 - 8 unique indicators present in the SA (only a few on multiple segments).
☒ 1	**Little** or no physical patch complexity on the floodplain. There are few or no floodplain micro-habitats present, few different fluvial geomorphic surfaces, and there is little or no in-channel complexity. As a guide, ≤ 5 unique indicators are present in the SA.

SA CODE : SF2MI [1] **Date :** 4/9/24

SA Name : Two Mile Pond Reservoir Transect [1] **Surveyor Initials :** DS

A3- Channel Equilibrium

Worksheet 12. Channel Equilibrium Checklist. Check all field indicators that apply to the upper, middle and lower segment of the SA observed at the channel edge of the traverse. Rate using the Table A3 descriptions and based on a preponderance of evidence from this checklist. Enter the rating on the SA Rank Summary Worksheet.

Condition	Upper Segment	Middle Segment	Lower Segment	Field Indicators(check all existing conditions)
Indicators of Channel Equilibrium	☐	☒	☐	The channel has a well-defined bankfull contour that clearly demarcates the point of incipient flooding where moderate frequent flow events spread flow across the floodplain.
	☐	☒	☐	Perennial riparian vegetation is abundant and well established along the bankfull contour, but not below it.
	☐	☒	☐	There is leaf litter, thatch, or wrack in most pools.
	☐	☒	☐	The channel contains embedded woody debris of the size and amount consistent with what is naturally available in the riparian area.
	☐	☒	☐	There is little or no active undercutting or burial of riparian vegetation.
	☐	☐	☐	There are no bars that are densely vegetated with perennial vegetation (neither mid-channel bars or point bars).
	☐	☒	☐	Channel and point-bars consist of well-sorted bed material.
	☐	☒	☐	The channel bed is not planar and without an abundance of fine materials filling the interstitial spaces between larger stream substrate.
	☐	☒	☐	There are channel pools at meander bends and some deep pools within the reach.
Indicators of Active Degradation	☐	☐	☐	The channel is characterized by deeply undercut banks with exposed living roots of trees or shrubs.
	☐	☐	☐	There are abundant bank slides or slumps, or the lower banks are uniformly scoured and not vegetated.
	☐	☐	☐	Bank vegetation is declining in stature or vigor, or many riparian trees and shrubs along the banks are leaning or falling into the channel.
	☐	☐	☐	Channel bed is scoured to large cobbles or boulders and entrained bank material is filling the cobble interstices and pools.
	☐	☐	☐	There are active headcuts within the channel.
	☐	☐	☐	An obvious historical floodplain has recently been abandoned, as indicated by the age structure of its riparian vegetation.
Indicators of Active Aggradation	☐	☐	☐	There is abundant fresh splays of coarse sediment covering the floodplain above the natural point bar elevation.
	☐	☐	☐	There are partially buried living tree trunks or shrubs along the banks.
	☐	☐	☐	The channel bed is planar overall. The stream lacks well-defined channel pools at meander bends, or pools are filled with sediment.
	☐	☐	☐	There are partially buried or sediment-choked culverts.
	☐	☐	☐	There are avulsion channels on the floodplain or adjacent valley floor.

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Table A3. Rating for Channel Equilibrium	
Rating	**Description**
☒ 4	Most of the channel throughout the SA is in equilibrium condition with little evidence of excessive aggradation or degradation based on the field indicators listed in Worksheet 12.
◯ 3	There is some evidence of excessive aggradation or degradation; the channel throughout the SA seems to approach an equilibrium condition. Circle primary process: aggradation or degradation.
◯ 2	There is evidence of severe aggradation or degradation throughout most of the channel through the SA. Circle primary process: aggradation or degradation.
◯ 1	The channel is artificially hardened, channelized, or is concrete throughout most of the SA.

A4- Stream Bank Stability and Cover

Worksheet 13. Bank Soil Stability and Streambank Erosion Potential Checklist. Check the indicator that best describes the condition looking a minimum of 25 m upstream and downstream at the channel edge of the upper, middle and lower segment of the SA. Average the six scores for both Bank Soil Stability and Streambank Erosion Potential. Rate using the Table A4 and enter the rating on the SA Summary Worksheet.

Condition	Upper Segment	Middle Segment	Lower Segment	Field Indicators
Indicators of Bank Soil Stability	☐4	☒4	☐4	Infrequent raw banks, less than 10% of steam bank under stress from trampling, slumping, vegetation removal or active erosion, etc.
	☐3	☐3	☐3	Raw banks and loose soil intermittently and 10%-25% of stream bank under stress from trampling, trail crossing, hoof punching, vegetation removal, erosion etc.
	☐2	☐2	☐2	Significant raw banks and loose soil, 25%-50% of stream bank under stress, trampled, slumping or eroding etc.
	☐1	☐1	☐1	Raw banks almost continuous with greater than 50% of stream bank under stress, loose soil, slumping, trampled or eroding; or channel appear to lack banks due to trampling; or channel that is artificially hardened or concrete along most of its length.
Indicators of Stream Bank Erosion Potential	☐4	☒4	☐4	≥ 80% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by boulders, large cobbles and/or large woody debris that prevent bank erosion.
	☐3	☐3	☐3	≥50% - <80% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those areas not covered by vegetation are protected to allow only minor erosion.
	☐2	☐2	☐2	≥25% - <50% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those area not covered by vegetation or stabilized by roots, are covered by materials or vegetation that give limited protection.
	☐1	☐1	☐1	Less than 25% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those areas not covered by vegetation provide little or no control over erosion and excess shear stress, and the banks are susceptible to erosion by high water flows.

Average Indicator Score	

Table A4. Stream Bank Stability and Cover Rating	
Rating	**Description**
☒ 4	>3.5 - 4.0
◯ 3	>2.5 - ≤3.5
◯ 2	>1.5 - ≤2.5
◯ 1	1.0 - ≤1.5

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Surveyor Initials: DS

A5 - Soil Surface Condition

Worksheet 14. Soil Surface Condition. Check all that apply in the upper, middle and lower SA segments during the field reconnaissance. The absence of these indicators would signify that disturbances are naturally occurring (e.g., flood deposition or low-density wildlife trails). Estimate the percent soil disturbance by segment area and referring to the SA abiotic map. Rate using Table A5 and enter on the SA Rank Summary Worksheet.

Upper Segment	Middle Segment	Lower Segment	Field Indicators (Check all existing conditions)
☐	☐	☐	Active erosion features due to anthropogenic disturbance (eg. rills, gullies, plant pedestals).
☐	☒	☐	Multiple livestock and other (fishing,hiking) trails,
☐	☐	☐	Vehicle tracks including off-road and construction, etc.
☐	☐	☐	Impervious compacted surfaces or pavement
☐	☐	☐	Grading or plowing
☐	☐	☐	Fill
☐	☐	☐	Gravel pits
☐	☐	☐	Anthropogenic levees and berms
☐	☐	☐	Irrigation-driven salinity and mineral crusts
☐	☐	☐	Fire pits
☐	☐	☐	Other:
			Estimate % soil disturbance by segment area

Average % Soil Disturbance:

Table A5. Soil Surface Condition Rating	
Rating	**Description**
○ 4	Bare soil areas due to anthropogenic disturbance absent or very limited. No human-caused impervious surfaces or gravel pits are found within the SA. Total disturbance, including erosion, impervious surfaces, fill, or other anthropogenic degradation to the soil surface is less than 1% of the SA.
☒ 3	Some amount of bare soil from human causes is present but the extent is limited. Area of impervious surfaces are minimal in extent. Total disturbance, including erosion, impervious surfaces, fill, gravel pits, vehicle tracks or other anthropogenic degradation to the soil surface is between 1% and 5% of the sampling area.
○ 2	Bare soils from human causes are common. These may include dense livestock trails, vehicle tracks, trails, construction staging areas, mechanical rutting, or irrigation-driven salinity. Soil disturbance, while apparent, is limited to specific areas and not found across the majority of the SA. Total disturbance, including erosion, impervious surfaces, fill, gravel mining, or other anthropogenic degradation to the soil surface is greater than 5% or less than 10% of the SA.
○ 1	Bare soil areas degrade portions of the site because of altered hydrology or other long-lasting impacts. Deep ruts from off-road vehicles or machinery are present. Livestock disturbance or trails are widespread and several inches deep. Water is channeled into rills or ponded. Additional human-caused impervious surfaces or soil compaction are present. Total disturbance, including erosion, impervious surfaces, fill,gravel mining or other anthropogenic degradation to the soil surface is equal to or greater than 10% of the SA.

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orksheet 15. Stressor Checklist. Check off stressors by intensity category that may be affecting wetland ecological condition of the SA and WOI. Assign tegories using direct evidence where available or your best professional judgement otherwise. If the presence of the stressor is uncertain, mark as "Unknov nk Major Stressors in Dominant Stressor column(Pick up to 3)

ank	Affect				Stressor Group/Stressor	Comments
	Major	Minor	Absent	Unknown		
					Adverse water management	
	☑	☐	☐	☐	Extended low flow dam releases	
	☐	☐	☑	☐	Timing of flow releases not concordant	
	☐	☐	☑	☐	Extended high flow dam releases	
	☐	☐	☑	☐	Agriculture/Urban flow diversion upstream	
					Adverse sediment management	
	☐	☐	☑	☐	Adverse sediment retention by dams	
	☐	☐	☑	☐	Sediment loss by dredging	
	☐	☐	☑	☐	Adverse sediment input (roads/development)	
					Artificial water additions	
	☐	☐	☑	☐	Sewer treatment effluent	
	☐	☐	☑	☐	Point source urban runoff	
	☐	☐	☑	☐	Factory, feedlot outfall	
	☐	☐	☑	☐	Agricultural irrigation ditch returns	
	☐	☐	☑	☐	Mining waste	
					Ground water pumping	
	☐	☐	☑	☐	Urban depletions	
	☐	☐	☑	☐	Fracking	
	☐	☐	☑	☐	Agriculture irrigation wells	
					Watershed alteration	
	☐	☐	☑	☐	Extensive recent fires in watershed	
	☐	☐	☑	☐	Extensive recent timber harvest	
	☐	☐	☑	☐	Extensive open pit mining in watershed	
	☐	☐	☑	☐	Livestock/wildlife overgrazing	
					Local biodiversity impacts	
	☐	☐	☑	☐	Evidence of excessive grazing (local)	
	☐	☐	☑	☐	Excessive noise affecting wildlife	
	0	0		0	Counts by Intensity	

ditional Comments Dry high desert no water flowing through old channel

rsion Date: 04/25/2022 Schema: Montane 2.5

NMRAM Montane Riverine Wetlands Version 2.5

SA Cover Worksheet					
SA Code SF2MI [1]	SA Name : Two Mile Pond Reservoir		Project : Riparian Assesement		
A de Tsct [1]	AU Name : Transect [1]		WOI : Two Mile Pond Reservoir		
County Santa Fe	HUC 12 Headwaters Santa Fe River	Elevation (ft) 7299	(m) 2224.7	Ecoregion 6.0 NWFM	

SA General Location and Boundary (Rationale, comments)

A riparian system that leads into a pond located on the east side of Santa Fe bordering the Santa Fe National Forest. This reservoir was decommissioned due to safety concerns regarding the reservoir and a water diversion to the area was recently shut down due to lack of water rights.

Driving Directions

Driving to Santa Fe from Albuquerque you head north on Old Pecos Trail. Then head east on Camino Del Monte Sol and right on Canyon Road until you reach the reservoir located to the North.

Ownership The Nature Conservative and The Santa Fe National Forest	Data Sharing Restrictions	Results to client only.	Fish Observed in Wetland?	

Surveyor Role	Surveyor Name	Surveyor Initials
Landscape	Dustin + Annie	DS+AM
Biotic	" "	" "
Abiotic	" "	" "
Stressors	" "	" "

Easting (m)	Northing (m)	Zone	Datum	Latitude (DD ft)	Longitude (DD ft)
-105° 53' 24" W	35° 41' 23" N	13	NAD- 83 UTM	35.689722	-105.89
Survey Date	5/15/24	**Start Time**	09.15	**End Time**	13:07

SA Description

SA Landscape Context (summarize the wetland and surrounding landscape; include condition and impacts)

Environment appears to be greening up even if it is still pretty dry. Area is border between high desert and forest

SA Biotic Condition (vegetation patterns, composition and structure, exotics and invasives, disturbance evidence, fire and herbivory)

New Mexico Whiptail, Pravie ~~Ver~~ Borbena, Narrow leaf Willow, Chimisa, Saltbush white butterflies, fleabane, globemallow, golden aster, Willows beginning to green more, maple starting to grow leaves

SA Abiotic Condition (hydrological alterations {e.g., dams, walls etc.]; flooding characteristics and evidence of overbank flooding; soil disturbance and other site impacts; explain the hydrologic breaks or other factors that define the SA limits)

Construction going on near road by Audobon facility. Very dry high desert area.

Assessment Summary (Overall site condition summary and comments after the field data is collected.)

Site finally recovering from winter. Willows appear to be growing back despite no water. Other plants in area appear adapted.

Provisional Field Score 3.08	Rank B	Surveyor(s) DCS	Final Score 3.08	Rank B	Initials DS	Date 5/15/24

SA CODE : SF2MI [1]

Date : 5/15/24

SA Name : Two Mile Pond Reservoir Transect [1]

Surveyor Initials : DS

MRAM - SA Rank Summary Worksheet: Montane Riverine Wetlands 2.5

Metric Description	Rating	Wt	Final Score
andscape Context		Σ 1.0	3.25
1. Buffer Integrity Index	3	0.25	0.75
2. Riparian Corridor Connectivity	4	0.25	1.0
3. Relative Wetland Size	4	0.25	1.0
4. Surrounding Land Use	2	0.25	0.5
iotic		Σ	
31. Relative Native Plant Community Composition	2	0.2	
32. Vegetation Horizontal Patch Structure	3	0.2	
33. Vegetation Vertical Structure	3	0.2	
34. Native Riparian Tree Regeneration	3	0.2	
35. Invasive Exotic Plant Species Cover	4	0.2	
Abiotic		Σ	
A1. Floodplain Hydrologic Connectivity		0.3	
A2. Physical Patch Diversity	1	0.2	
A3. Channel Equilibrium	4	0.2	
A4. Stream Bank Stability and Cover	4	0.2	
A5. Soil Surface Condition	3	0.1	

SA Condition Scoring Summary			
Major Attribute	Score	Wt.	Wt. Score
Landscape Context	3.25	0.3	0.975
Biotic		0.35	
Abiotic		0.35	
SA WETLAND CONDITION SCORE Σ			3.08
SA WETLAND RANK =			B

SA Wetland Rank		
Rank	Score	Description
A	≥3.25 - 4.0	Excellent Condition
B	≥2.5 - <3.25	Good Condition
C	≥1.75 - <2.5	Fair Condition
D	1.0 - <1.75	Poor Condition

Stressor Summary	Major	Minor	Top Three	
	0	0	1	Construction
			2	Trails
			3	No Water

Stressor Comments (Evaluation of risk)

Willows appear to be slightly behind the willows below the dam

SA CODE : SF2MI [1]

Date : 5/15/24

SA Name : Two Mile Pond Reservoir Transect [1]

Surveyor Initials : DS

Landscape Context

L. - Buffer Integrity Index

Worksheet 1a. Buffer and RCC Checklist. Check off land cover elements within the buffer area or RCC corridors that are either allowed, or are excluded and considered non-buffer elements that disrupt ecosystem connectivity. Indicate the imagery type and date (season and year of imagery).

Imagery	Google Earth KMZ. file	Image Date	6/23

Allowed buffer/RCC land cover elements			Excluded non-buffer/RCC land cover elements		
Buffer	RCC		Buffer	RCC	
[X]	[X]	Natural or semi-natural vegetation patches	[X]	[X]	Commercial/residential developments, parking lots, dams, bridges, revetments, and other structures
[X]	[X]	Small irrigation ditches without levees	[ ]	[ ]	Lawns, parks, golf courses, sports fields
[ ]	[ ]	Old fields, unmaintained	[ ]	[ ]	Railroads
[ ]	[ ]	Open range land	[ ]	[ ]	Maintained levees, sediment piles, construction materials, staging areas
[X]	[X]	Foot trails, horse trails, unpaved bike trails (low intensity)	[ ]	[ ]	Intensive livestock areas, horse paddocks, feedlots
[X]	[X]	Non-channel open water	[ ]	[ ]	Intensive agriculture: maintained pastures, hay fields, row crops, orchards, and vineyards
[X]	[X]	Non-functioning abandoned vegetated levees, or naturally occurring levees	[X]	[X]	Paved roads or developed second-order unpaved but graded roads
[ ]	[ ]	unpaved two tracks roads	[X]	[X]	Open water bounded by a levee or other manmade structure
[ ]	[ ]	Other	[ ]	[ ]	Other

Worksheet 1b. Buffer Percent Sub-metric. Measure or estimate the percentage of the SA perimeter composed of allowed buffer elements and enter into the Buffer Percent Box below. Rate the sub-metric using Table L1a and enter the rating on the Buffer Integrity Summary Worksheet 1d.

Buffer Percent (%)=	85%

Table L1a. Buffer Percent

Rating	Buffer Percent
( ) 4	100%
(X) 3	≥80% - <100%
( ) 2	≥50% - <80%
( ) 1	<50%

Worksheet 1c. Buffer Width Sub-metric. Measure the length of each buffer line in meters in the GIS or on the map. Average the line lengths and rate using Table L1b. Enter the rating on the Buffer Integrity Summary Worksheet 1d.

Line	Buffer Width (m)	Buffer Width (ft)	Line	Buffer Width (m)	Buffer Width (ft)
A	164.26	538.91	E	161.93	531.26
B	125.25	410.92	F	231.48	759.44
C	115.39	378.57	G	121.25	397.80
D	111.07	364.40	H	155.87	511.38
Average	148.31	(m)	486.58		(ft)

Table L1b. Buffer Width

Rating	Average buffer width
( ) 4	≥190m
(X) 3	≥130 - <190m
( ) 2	≥65 - <130m
( ) 1	<65m

Worksheet 1d. Buffer Integrity Summary. Enter the sub-metric Ratings from Tables L1a and L1b above to calculate the Buffer Integrity Index Score using the formula in the box below. Using the Buffer Integrity Index Score, enter rating for Buffer Integrity in Table L1c on the SA Summary Worksheet.

Buffer % Rating	+	Buffer Width Rating	/2 =	Buffer Integrity Index Score
3	+	3	/2 =	3

Table L1c. Summary Rating for Buffer Integrity

Rating	Score
( ) 4	>3.5
(X) 3	>2.5 - ≤3.5
( ) 2	>1.5 - ≤2.5
( ) 1	≤1.5

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2 - Riparian Corridor Connectivity (RCC)

Worksheet 2. RCC excluded non-buffer elements calculation. Refer to worksheet 1a for excluded non-buffer RCC land cover elements. Following the steps in the Field Guide, enter the summed values in meters for excluded element lengths for each bank within each segment upstream and downstream of the SA. Sum the values for each segment and calculate % Segment Disruption for the upstream side and the downstream side. Add the total disruption for upstream and downstream segments and then calculate the % Total Disruptions for the riparian corridor. Rate Riparian Corridor Connectivity using Table L2 and the data from this worksheet. Enter rating on the SA Summary Worksheet.

Segments	Upstream Segment		Downstream Segment	
Banks	Left Bank	Right Bank	Left Bank	Right Bank
A) Total Bank Disruption (m)	0	0	0	0
B) Total Disruption by Segment (m)	0		0	
C) % Segment Disruption = (B/1000)*100	0		0	
D) Total Disruption both segments	0			
E) % Total Disruptions = (D/2000)*100	Zero disruption noticeable along the banks.			

Table L2. RCC Rating

Rating	Description
(X) 4	**0%** total disruption on both segments combined.
( ) 3	**<15%** total disruption on both segments combined.
( ) 2	**≥15% - <40%** total disruption on both segments combined.
( ) 1	**≥40%** total disruption on both segments combined.

L3 - Relative Wetland Size

Worksheet 3a. Calculate the Relative Size Ratio (RSR) between the current WOI size and the historic WOI size. b. Calculate the Relative Wetland Size Score (RWSI (%)) as (1-RSR)*100. Rate Relative Wetland Size Index using Table L3 and enter rating on the SA Summary Workshe

RSR					RWSI						
Current Size	/	Historic Size	=	RSR	1	-	RSR	X	100	=	RWSI (%)
9	/	10	=	0.9	1	-	0.1	X	100	=	10

Table L3. Relative Wetland Size Rating

Rating	RWSI Score	Description
(X) 4	≤10%	Wetland is at or only minimally reduced from its full natural extent
( ) 3	>10% - ≤40%	Wetland remains equal to or more than 60% of its natual size
( ) 2	>40% - ≤70%	Wetland has been reduced by more than 40% its natural size
( ) 1	>70%	Wetland has been reduced by more than 70% its natural size

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L4 - Surrounding Land Use

Worksheet 4. Surrounding Land Use. Enter the percent area occupied by a given Land Use Element in the Land Use Zone (LUZ) surrounding the SA. Calculate the Land Use Index (LUI) Score by element as the product of the element coefficient times the percent of the LUZ Area occupied. (The %LUZ Area must total 100%.) Sum the LUI scores for each element to create the final LUI Score. Rate using Table L4 and enter the rating in the SA Rank Summary Worksheet.

Land Use Element	Coef	% LUZ Area	LUI Score
Paved roads, parking lots, domestic or commercially developed buildings, mining (gravel pit, quarry, open pit, strip mining), railroads	0	0	0
Unpaved roads (e.g., driveway, tractor trail, unpaved parking lots), paddock, dirt lot	0.1	0	0
Dredging, borrow pits, abandoned mines, water-filled artificial impoundments (ponds and reservoirs)	0.1	0	0
Filling or dumping of sediment or soils	0.1	0	0
Intense recreation (all-terrain vehicle use, camping, popular fishing spot, etc.)	0.3	0	0
Rip-rapped channel (highly modified channel with severely limited vegetation zone that is altered by human activities but not a completely concrete channel [that goes under paved roads]), junkyards, trash dumps, disturbed ground (not including roads)	0.3	0	0
Ski area	0.4	0	0
Dam sites and flood-disturbed shorelines around water storage reservoirs	0.5	0	0
Abandoned artificial impoundments (ponds and reservoirs) and associated disturbed flood zones	0.5	10	5
Artificial/Constructed wetlands, irrigation ditches	0.7	20	14
Developed/Managed trail system (high use trail)	0.8	5	4
Agriculture - active tilled crop production	0.2	0	0
Agriculture - permanent crop (vineyards, orchards, nurseries, berry production)	0.3	0	0
Manicured lawns, sport fields, and golf courses; urban manicured parks	0.3	0	0
Old fields and other disturbed fallow lands dominated by ruderal and/or exotic species (e.g., kochia, Russian thistle, mustards, annual vegetation)	0.5	0	0
Mature old fields and other fallow lands with natural composition, introduced hay field and pastures (e.g., perennial vegetation cover)	0.7	0	0
Restoration areas in process to natural conditions (re-conversion in process)	0.8	65	52
Haying of native grassland (e.g., no tillage, haying and baling only)	0.9	0	0
Heavy logging or tree removal with >50% of large trees (e.g., >30 cm diameter at breast height) removed, woodland/shrub vegetation conversion (chaining, cabling, rotochopping)	0.3	0	0
Commercial tree plantation, Christmas tree farms	0.6	0	0
Selective logging or tree removal with <50% of large trees (e.g., >30 cm diameter at breast height) removed	0.8	0	0
Mature restoration areas returned to natural conditions (re-converted)	0.9	0	0
Natural area, land managed for native vegetation - No agriculture, logging, development	1	0	0
LUI Score= Coefficient * % LUZ Area		100	75

Table L4. Surrounding Land Use Rating

Rating	LUI Score
○ 4	≥95 - 100
○ 3	≥80 - <95
⊗ 2	≥40 - <80
○ 1	<40

Biotic Metrics

Worksheet 5. Vegetation Community Patch Polygon Data for Biotic Metrics B3, B4, and B5 for Polygons from SA Biotic Map. Enter data for each polygon under a unique number assigned from the SA Biotic Map. Each polygon is evaluated with respect to Vegetation Vertical Structure (B3), Native Tree Regeneration (B4), and Invasive Exotic Plant Species Cover (B5) metrics. Enter the Vertical Structure Type (VST) for B3, tree regeneration % cover within the polygon for B4 and the % cover of invasive exotic species for B5. Use the Tables in Appendix B and the Field Guide for metric instructions. Enter the species codes for the invasive exotic species found in the polygon (from NM Noxious Weed List - Appendix D). Use the comments box for documenting and describing vegetation community patch features.

Polygon No	B3 Vertical Structure Type	B4 Tree Regeneration % Cover	B5 Invasive Exotic Species % Cover	Invasive Exotic Species (List Code(s))	Comments
1	IA1				
2	IA2	30%	No exotics	Not seen	Maple, Chimisa, Prickle pear, golden aster, flea bane
3	IIA1				
4	IIIB1				
5	IIIC1	10%	≥ 2%	dead mullein	Chimisa, willow, prarie barbane, globe mallow
6	IVEI				
7	IVF1				
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

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B1 - Relative Native Plant Community Composition

Worksheet 6. CT Plant Species and Polygon Assignments. Starting with CT A, enter the number of the first polygon from Worksheet 5. Enter the species codes for the two top dominant species in each stratum that appears in the polygon. See footnotes for special instructions. If a species appears in more than one strata, assign the species to the stratum in which it is more abundant. Each polygon is either assigned to the same CT if it has the same composition or a new CT is created for the polygon.

		Tall Woody Stratum 1				Short Woody Stratum 2				Herbaceous/Sparse Stratum 3				CT Score 4		
CT	Polygon Nos.	Species 1	E N	Species 2	E N	Species 3	E N	Species 4	E N	Species 5	E N	Species 6	E N	Raw4	% SA5	Wt Score6
A	2	Maple	N	Pine	N	Chinisa	N	Willow	N					4.0	30%	1.2
B	5					Willow	N	Chinisa	N	Wheat grass	N	Blue stem	N	2.5	70%	1.75
C																
D																
E																
F																
G																
H																
I																
J																
K																
L																
M																
N																
O																
													Final Weighted Score7			2.95

1. Trees and shrubs > 6 m (20 feet) and > 25% total stratum cover; 2. Trees and shrubs ≤6m (20 feet) and >25% total stratum cover; 3. Herbaceous (graminoids and forbs)>10% total stratum cover. 4Raw Score is from Table B1a (Appendix B); 5%SA is the percentage of the SA area covered by the CT and expressed as a decimal number; the total area %SA must equal 1; 6Wt. Score is the product of the Raw Score * % SA; 7The Final Weighted Score is the sum of the Wt. Scores. Rate the CT Final Weighted Score on Table B1 and enter the Rating for Relative Native Plant Community Composition on the SA Rank Summary Worksheet.

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Table B1. Relative Native Plant Community Composition Rating

Rating	CT Final Weighted Score	
4	≥ 3.75	<10% non-native
3	≥ 3.25 and <3.75	10% ≤20% non-native
2	> 2.0 and <3.25	20% ≤50% non-native
1	≤2.0	>50% non-native

- Vegetation Horizontal Patch Structure

rksheet 7. Using Tables B2a and B2c (Appendix B), choose the schematic pattern that best matches the mapped vegetation patch tern for the SA. Rate using Table B2 and enter rating on the SA Rank Summary Worksheet.

rizontal Patch Structure pattern A,B,C, or D:

Table B2. Rating for Vegetation Horizontal Patch Structure

Rating	Description
4	Most closely matches Pattern A. SA has a diverse patch structure (≥4 patch types) and complexity. A dominant patch type would be difficult to determine.
3	Pattern B. SA has a moderate degree of patch diversity (3 patch types present) and complexity. A single, dominant patch type may be present, although the other patch types would be well represented and have more than one occurrence in the SA.
2	Pattern C. SA has a low degree of patch diversity and complexity. Two or three patch types may be present; however, a single, dominant patch type exists with the others occupying a small portion of the SA.
1	Pattern D. SA has essentially little to no patch diversity or complexity. The SA is dominated by a single patch type. Other patch types, if present, occur infrequently and occupy a small portion of the SA.

3 - Vegetation Vertical Structure

orksheet 8. Percentage of SA by vertical structure type (VST). Using the Structure Type from Worksheet 5 and the %SA om Worksheet 6 calculate the total area of the SA occupied by each VST using the formula VST(type) = Sum (%SA for CTs with me VST) x 100. Enter the total %SA for each VST below.

	VST 1 High Structure Forest	VST 2 Low Structure Forest	VST 5 Tall Shrubland	VST 6S Short Shrubland	VST 6W Herbaceous Wetland	VST 6H Herbaceous Vegetation	VST 7 Sparse Vegetation
Total % of SA		50		50			

able B3. Rating for Vegetation Vertical Structure. Using the data from Worksheet 8 rate the SA based on the criteria in Table B3. Pick the ow that best fits the distribution of VSTs in the SA. Each row specifies the required dominant structure type plus co- and sub-dominants. ercentage cover required per co- or sub-dominant is a minimum. The types listed in the columns must be the most common VSTs in the SA for he rating to be applicable (Worksheet 8). VSTs 1 and 2 can be inverted in dominance and the rating is still applicable. Work from the top of the able down. As long as the requirements for one row are met, any other types may or may not co-occur without changing the rating. Enter the ating on the SA Rank Summary Worksheet.

Rating	Dominant VST	Co- or Sub-dominant VST ≥15%	Sub-dominant VST ≥5%
4	1	5	6W and/or 6H
	1	6W	
	2 or 1 and 2	5	6W and/or 6H
X 3	1		
	2 or 1 and 2	5	
	2 or 1 and 2	6W	
	5	6W	
2	2 or 1 and 2		
	5		
	6W		
1	6S		
	6H		
	7		

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B4 - Native Riparian Tree Regeneration

Ta. 34. Native Riparian Tree Regeneration rating. Using the polygon percent cover of native tree seedlings, saplings and poles from Worksheet 5, rate the SA based on polygon percent cover and patch density. Enter the rating on the SA Rank Summary Worksheet.

Rating	Description
○ 4	Native poles, sapling, and seedlings trees well represented, obvious regeneration, many patches or polygons with >5% cover, typically multiple size (age) classes.
X 3	Native poles, saplings and/or seedlings common, scattered patches or polygons with 1% -5% cover, size classes few.
○ 2	Native poles, saplings and/or seedlings present but uncommon, restricted to one or two patches or polygons with typically <1% cover, little size class differentiation.
○ 1	Native poles, saplings, and/or seedlings absent (0% cover).

B5 - Invasive Exotic Plant Species Cover

Worksheet 9. Based on Worksheets 5 and 6, calculate or estimate the percentage cover of invasive exotic species for the SA and enter below. Rate using Table B5 and enter the rating on the SA Rank Summary Worksheet.

Rating Method

Invasive cover (%)

calculate

Table B5. Ratings for Invasive Exotic Plant Species Cover	
Rating	**Invasive Species Cover %**
○ 4 X	0%
○ 3	>0% - <1%
○ 2	≥1% - <10%
○ 1	≥10

Additional CTs and Biotic Metric Comments:

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Abiotic Metrics

A1 - Floodplain Hydrologic Connectivity

Method 1

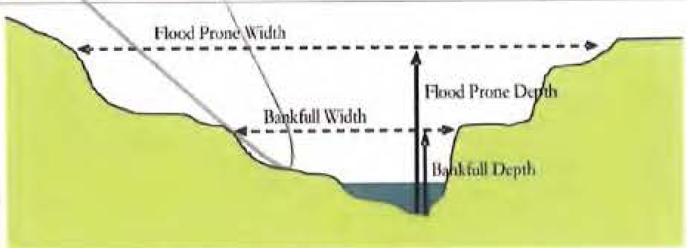
Worksheet 10a. Floodplain Hydrologic Connectivity Measurements. The following six steps are conducted at each of three cross-sections at the approximate mid-points along straight riffles and away from deep pools or meander bends. Use a measuring tape and temporary stakes for horizontal measurements, and a stadia rod or similar measuring stick for vertical measurements. If unavailable, use visual estimates. Where straight channel segments do not occur, or if there is excessive ponding or bankfull indicators are obscured, use the narrative rating approach (Method 2). Enter the rating method in the box below, either meander pool, riffle pool or narrative (Method 2) and choose the corresponding Table (A1a, A1b, or A1c) to rate Floodplain Hydrologic Connectivity. Enter the rating on the SA Rank Summary Worksheet. Photographs of each cross-section are required and recorded in Table A1d.

Steps	Description	Cross-section: 1	2	3
1: Bankfull width	This is a critical step requiring familiarity with field indicators of the bankfull contour. Measure the distance between the right and left bankfull contours with a tape.			
2: Maximum bankfull depth	Keeping the tape level between the right and left bankfull contours, measure the height of the line above the thalweg (the deepest part of the channel). A pocket line level can help here.			
3: Flood-prone depth	Double the estimate of maximum bankfull depth from Step 2.			
4: Flood-prone width	Using a tape, measure the length of a level line at a height equal to the flood prone depth from Step 3 to where it intercepts the right and left banks.			
5: Calculate Entrenchment Ratio	Divide the flood-prone width (Step 4) by the bankfull width (Step 1).			
6: Calculate average ratio	Calculate the average for Step 5 for all three replicate cross-sections. Enter the average here and rate using Table A1a. Enter the rating in the A1 box on the SA Rank Summary Worksheet.			

Rating Method:

Table A1a. Rating for Floodplain Hydrologic Connectivity in meandering single-channel riffle-pool systems

Rating	Description
○ 4	Average entrenchment ratio is ≥ 2.2;
○ 3	Average entrenchment ratio is ≥1.9 - <2.2
○ 2	Average entrenchment ratio is ≥1.5 - <1.9
○ 1	Average entrenchment ratio is < 1.5



Worksheet 10b. Floodplain Hydrologic Connectivity Indicators. Use this Worksheet in conjunction with Table A1c. Check the boxes for all that apply to each segment.

U	M	L	Indicator
☐	☐	☐	Bankful is slightly below bank height
☐	☐	☐	Bankful is well below bank height and channel is incised
☐	☐	☐	Channel widening due to bank failure
☐	☐	☐	Constructed levees preclude floodplain inundation
☐	☐	☐	Stream is straightened/channelized
☐	☐	☐	Inset floodplain formation
☐	☐	☐	Decreased peak flows due to hydrologic modification
☐	☐	☐	Bankfull indicators at point of incipient flooding of the floodplain
☐	☐	☐	Indicators of overbank flow on floodplain
☐	☐	☐	Floodplain inundation due to beaver activity

Table A1b. Rating for Floodplain Hydrologic Connectivity in single-channel step-pool systems

Rating	Description
○ 4	Average entrenchment ratio is ≥ 1.9
○ 3	Average entrenchment ratio is ≥1.4 - <1.9
○ 2	Average entrenchment ratio is ≥1.2 - <1.4
○ 1	Average entrenchment ratio is < 1.2

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Method 2

Table A1c. Narratve Floodplain Hydrologic Connectivity Rating. Select the narrative description that best describes the floodplain hydrologic connectivity. At each cross-section, use Worksheet 10b to record channel incision, bank modification, inset floodplain or other hydrologic evidence that would preclude natural floodplain inundation. Conversely, assess indicators and evidence for overbank flow and floodplain inundation. Record whether beaver activity is obscuring bankful indicators due to inundation of the floodplain. Select a rating from the table below. Use data from Worksheets 10b to help select rating. Enter Rating on SA Summary Worksheet. Photographs are required at each cross-section and recorded in Table A1d.

Rating	Description
○ 4	Fully connected to the natural floodplain. Indicators of bankfull discharge are at the bank/floodplain transition, with over-bankfull flows likely to inundate a broad area of floodplain. Floodplain supports riparian vegetation and shows signs of overbank sediment deposition. Or beaver ponds inundate the entire, normally active floodplain and preclude the identification of bankfull indicators and the active floodplain width.
○ 3	Flow access to the floodplain moderately limited by incision, channelization. Less frequent inundation than fully connected streams described above (as noted by bankfull indicators below floodplain transition). Floodplain supports a riparian overstory, but some understory plants may be upland. An inset floodplain supporting riparian vegetation may also be present.
○ 2	Incised, channelized or modified with an inset floodplain formed, which is regularly inundated and supports riparian vegetation and sediment regimes. Or the stream has minimal access to the natural floodplain due to incision, channelization, or flow modification, and the natural floodplain does not support riparian vegetation except for relatively long-lived phreatophytes (e.g., cottonwood, salt cedar, etc.).
○ 1	Fully disconnected from floodplain, either through incision, bank modification/channelization, or hydrologic modification (i.e., abandonment of floodplain due to decreased peak flows). Indicators may include upland vegetation and lack of overbank sediment deposits on the floodplain, etc.

Table A1d. Photo Point Log for Cross-Section Photographs. For each cross-section record the digital names/numbers of photographs taken looking Upstream and Downstream from the thalweg and looking Bank Right* and Bank Left* across the stream from each side of the cross-section. Leave the cross-section tape and flags indicating bankful in the ground when taking the Bank Right and Bank Left photos. A photo board with SA name and cross-section information is helpful. (*The bank of a stream or river on the right (left) of the observer when facing in the direction of flow or downstream.) See Appendix E for additional details.

Cross Section	Easting (Latitude)	Northing (Longitude)	Upstream	Downstream	Bank Right	Bank Left
1						
2						
3						

Floodplain Hydrologic Connectivity Comments:

Not on JSAI Assessment

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A2 - Physical Patch Complexity

Worksheet 11. Physical Patch Complexity checklist. Check off existing physical patch types for the upper, middle and lower segments of the SA; count the number of unique patch types and rate using Table A2 in combination with the narrative description. Enter the rating on the SA Rank Summary Worksheet.

Upper Segment	Middle Segment	Lower Segment	Field Indicators (check all existing conditions)
☐	☐	☐	Active side channels
☐	☒	☐	Abandoned channels
☐	☐	☐	Backwater/eddy
☐	☐	☐	Riffles or rapids
☐	☐	☐	Shoals, sparely-vegetated bars
☐	☐	☐	Channel boulders
☐	☐	☐	Oxbow lakes/ponds on floodplains
☐	☐	☐	Vegetated island and side bars
☐	☒	☐	Terraces
☐	☐	☐	Channel pools
☐	☐	☐	Beaver ponds
☐	☐	☐	Swales, depressional features on floodplains
☐	☐	☐	Debris jams in channel
☐	☐	☐	Woody wrack piles on the floodplain
☐	☐	☐	Floodplain micro-topography (mounds, pits)
☐	☐	☐	Downed logs
☐	☐	☐	Natural levees
☐	☐	☐	Standing snags
☐	☐	☐	Variegated, convoluted, or crenulated foreshore
☐	☐	☐	Undercut banks in channels
			No. of unique Patch Types

Table A2. Rating for Physical Patch Complexity	
Rating	**Description**
○ 4	**High** degree of physical patch complexity across the floodplain. There are many floodplain micro-habitats present (mounds and pits, woody wrack piles, etc.), many fluvial geomorphic surfaces (swales, side channels, terraces, side bars, etc.), and there is high in-channel complexity (pools and riffles, large woody debris, undercut banks, etc.). As a guide, 12 or more unique indicators are present and well distributed throughout the SA (most indicators are found on multiple segments).
○ 3	**Moderate** physical patch complexity scattered across the floodplain. There are several floodplain micro-habitats present, several fluvial geomorphic surfaces, and there is moderate in-channel complexity. As a guide, 9 - 11 indicators are scattered throughout the SA (some on multiple segments).
○ 2	**Limited** physical patch complexity scattered across the floodplain. There are some floodplain micro-habitats present, some fluvial geomorphic surfaces, and there is limited in-channel complexity. As a guide, on average there are 6 - 8 unique indicators present in the SA (only a few on multiple segments).
☒ 1	**Little** or no physical patch complexity on the floodplain. There are few or no floodplain micro-habitats present, few different fluvial geomorphic surfaces, and there is little or no in-channel complexity. As a guide, ≤ 5 unique indicators are present in the SA.

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A3- Channel Equilibrium

Worksheet 12. Channel Equilibrium Checklist. Check all field indicators that apply to the upper, middle and lower segment of the SA observed at the channel edge of the traverse. Rate using the Table A3 descriptions and based on a preponderance of evidence from this checklist. Enter the rating on the SA Rank Summary Worksheet.

Condition	Upper Segment	Middle Segment	Lower Segment	Field Indicators(check all existing conditions)
Indicators of Channel Equilibrium	☐	☒	☐	The channel has a well-defined bankfull contour that clearly demarcates the point of incipient flooding where moderate frequent flow events spread flow across the floodplain.
	☐	☒	☐	Perennial riparian vegetation is abundant and well established along the bankfull contour, but not below it.
	☐	☒	☐	There is leaf litter, thatch, or wrack in most pools.
	☐	☒	☐	The channel contains embedded woody debris of the size and amount consistent with what is naturally available in the riparian area.
	☐	☒	☐	There is little or no active undercutting or burial of riparian vegetation.
	☐	☐	☐	There are no bars that are densely vegetated with perennial vegetation (neither mid-channel bars or point bars).
	☐	☒	☐	Channel and point-bars consist of well-sorted bed material.
	☐	☒	☐	The channel bed is not planar and without an abundance of fine materials filling the interstitial spaces between larger stream substrate.
	☐	☒	☐	There are channel pools at meander bends and some deep pools within the reach.
Indicators of Active Degradation	☐	☐	☐	The channel is characterized by deeply undercut banks with exposed living roots of trees or shrubs.
	☐	☐	☐	There are abundant bank slides or slumps, or the lower banks are uniformly scoured and not vegetated.
	☐	☐	☐	Bank vegetation is declining in stature or vigor, or many riparian trees and shrubs along the banks are leaning or falling into the channel.
	☐	☐	☐	Channel bed is scoured to large cobbles or boulders and entrained bank material is filling the cobble interstices and pools.
	☐	☐	☐	There are active headcuts within the channel.
	☐	☐	☐	An obvious historical floodplain has recently been abandoned, as indicated by the age structure of its riparian vegetation.
Indicators of Active Aggradation	☐	☐	☐	There is abundant fresh splays of coarse sediment covering the floodplain above the natural point bar elevation.
	☐	☐	☐	There are partially buried living tree trunks or shrubs along the banks.
	☐	☐	☐	The channel bed is planar overall. The stream lacks well-defined channel pools at meander bends, or pools are filled with sediment.
	☐	☐	☐	There are partially buried or sediment-choked culverts.
	☐	☐	☐	There are avulsion channels on the floodplain or adjacent valley floor.

SA CODE : SF2MI [1]   **Date :** 5/15/24

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Table A3. Rating for Channel Equilibrium	
Rating	**Description**
☒ 4	Most of the channel throughout the SA is in equilibrium condition with little evidence of excessive aggradation or degradation based on the field indicators listed in Worksheet 12.
◯ 3	There is some evidence of excessive aggradation or degradation; the channel throughout the SA seems to approach an equilibrium condition. Circle primary process: aggradation or degradation.
◯ 2	There is evidence of severe aggradation or degradation throughout most of the channel through the SA. Circle primary process: aggradation or degradation.
◯ 1	The channel is artificially hardened, channelized, or is concrete throughout most of the SA.

A4- Stream Bank Stability and Cover

Worksheet 13. Bank Soil Stability and Streambank Erosion Potential Checklist. Check the indicator that best describes the condition looking a minimum of 25 m upstream and downstream at the channel edge of the upper, middle and lower segment of the SA. Average the six scores for both Bank Soil Stability and Streambank Erosion Potential. Rate using the Table A4 and enter the rating on the SA Summary Worksheet.

Condition	Upper Segment	Middle Segment	Lower Segment	Field Indicators
Indicators of Bank Soil Stability	☐4	☒4	☐4	Infrequent raw banks, less than 10% of steam bank under stress from trampling, slumping, vegetation removal or active erosion, etc.
	☐3	☐3	☐3	Raw banks and loose soil intermittently and 10%-25% of stream bank under stress from trampling, trail crossing, hoof punching, vegetation removal, erosion etc.
	☐2	☐2	☐2	Significant raw banks and loose soil, 25%-50% of stream bank under stress, trampled, slumping or eroding etc.
	☐1	☐1	☐1	Raw banks almost continuous with greater than 50% of stream bank under stress, loose soil, slumping, trampled or eroding; or channel appear to lack banks due to trampling; or channel that is artificially hardened or concrete along most of its length.
Indicators of Stream Bank Erosion Potential	☐4	☒4	☐4	≥ 80% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by boulders, large cobbles and/or large woody debris that prevent bank erosion.
	☐3	☐3	☐3	≥50% - <80% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those areas not covered by vegetation are protected to allow only minor erosion.
	☐2	☐2	☐2	≥25% - <50% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those area not covered by vegetation or stabilized by roots, are covered by materials or vegetation that give limited protection.
	☐1	☐1	☐1	Less than 25% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those areas not covered by vegetation provide little or no control over erosion and excess shear stress, and the banks are susceptible to erosion by high water flows.

Average Indicator Score	

Table A4. Stream Bank Stability and Cover Rating	
Rating	**Description**
☒ 4	>3.5 - 4.0
◯ 3	>2.5 - ≤3.5
◯ 2	>1.5 - ≤2.5
◯ 1	1.0 - ≤1.5

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A5 - Soil Surface Condition

orksheet 14. Soil Surface Condition. Check all that apply in the upper, middle and lower SA segments during the field reconnaissance. The absence of these indicators would signify that disturbances are naturally occurring (e.g., flood deposition or low-density wildlife trails). Estimate the percent soil disturbance by segment area and referring to the SA abiotic map. Rate using Table A5 and enter on the SA Rank Summary Worksheet.

Upper Segment	Middle Segment	Lower Segment	Field Indicators (Check all existing conditions)
☐	☐	☐	Active erosion features due to anthropogenic disturbance (eg. rills, gullies, plant pedestals).
☐	☒	☐	Multiple livestock and other (fishing,hiking) trails,
☐	☐	☐	Vehicle tracks including off-road and construction, etc.
☐	☐	☐	Impervious compacted surfaces or pavement
☐	☐	☐	Grading or plowing
☐	☐	☐	Fill
☐	☐	☐	Gravel pits
☐	☐	☐	Anthropogenic levees and berms
☐	☐	☐	Irrigation-driven salinity and mineral crusts
☐	☐	☐	Fire pits
☐	☐	☐	Other:
			Estimate % soil disturbance by segment area

Average % Soil Disturbance:

Table A5. Soil Surface Condition Rating	
Rating	**Description**
○ 4	Bare soil areas due to anthropogenic disturbance absent or very limited. No human-caused impervious surfaces or gravel pits are found within the SA. Total disturbance, including erosion, impervious surfaces, fill, or other anthropogenic degradation to the soil surface is less than 1% of the SA.
☒ 3	Some amount of bare soil from human causes is present but the extent is limited. Area of impervious surfaces are minimal in extent. Total disturbance, including erosion, impervious surfaces, fill, gravel pits, vehicle tracks or other anthropogenic degradation to the soil surface is between 1% and 5% of the sampling area.
○ 2	Bare soils from human causes are common. These may include dense livestock trails, vehicle tracks, trails, construction staging areas, mechanical rutting, or irrigation-driven salinity. Soil disturbance, while apparent, is limited to specific areas and not found across the majority of the SA. Total disturbance, including erosion, impervious surfaces, fill, gravel mining, or other anthropogenic degradation to the soil surface is greater than 5% or less than 10% of the SA.
○ 1	Bare soil areas degrade portions of the site because of altered hydrology or other long-lasting impacts. Deep ruts from off-road vehicles or machinery are present. Livestock disturbance or trails are widespread and several inches deep. Water is channeled into rills or ponded. Additional human-caused impervious surfaces or soil compaction are present. Total disturbance, including erosion, impervious surfaces, fill,gravel mining or other anthropogenic degradation to the soil surface is equal to or greater than 10% of the SA.

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rksheet 15. Stressor Checklist. Check off stressors by intensity category that may be affecting wetland ecological condition of the SA and WOI. Assign egories using direct evidence where available or your best professional judgement otherwise. If the presence of the stressor is uncertain, mark as "Unknow nk Major Stressors in Dominant Stressor column(Pick up to 3)

nk	Affect				Stressor Group/Stressor	Comments
	Major	Minor	Absent	Unknown		
					Adverse water management	
	☑	☐	☐	☐	Extended low flow dam releases	
	☐	☐	☑	☐	Timing of flow releases not concordant	
	☐	☐	☑	☐	Extended high flow dam releases	
	☐	☐	☑	☐	Agriculture/Urban flow diversion upstream	
					Adverse sediment management	
	☐	☐	☑	☐	Adverse sediment retention by dams	
	☐	☐	☑	☐	Sediment loss by dredging	
	☐	☐	☑	☐	Adverse sediment input (roads/development)	
					Artificial water additions	
	☐	☐	☑	☐	Sewer treatment effluent	
	☐	☐	☑	☐	Point source urban runoff	
	☐	☐	☑	☐	Factory, feedlot outfall	
	☐	☐	☑	☐	Agricultural irrigation ditch returns	
	☐	☐	☑	☐	Mining waste	
					Ground water pumping	
	☐	☐	☑	☐	Urban depletions	
	☐	☐	☑	☐	Fracking	
	☐	☐	☑	☐	Agriculture irrigation wells	
					Watershed alteration	
	☐	☐	☑	☐	Extensive recent fires in watershed	
	☐	☐	☑	☐	Extensive recent timber harvest	
	☐	☐	☑	☐	Extensive open pit mining in watershed	
	☐	☐	☑	☐	Livestock/wildlife overgrazing	
					Local biodiversity impacts	
	☐	☐	☑	☐	Evidence of excessive grazing (local)	
	☑	☐	☐	☐	Excessive noise affecting wildlife	
	0	0		0	Counts by Intensity	

dditional Comments

ersion Date: 04/25/2022 Schema: Montane 2.5

NMRAM Montane Riverine Wetlands Version 2.5

SA Cover Worksheet					
SA Code SF2MI [1]	SA Name : Two Mile Pond Reservoir		Project : Riparian Assesement		
Code Tsct [1]	AU Name : Transect [1]		WOI : Two Mile Pond Reservoir		
County Santa Fe	HUC 12 Headwaters Santa Fe River	Elevation (ft) 7299	(m) 2224.7	Ecoregion 6.0 NWFM	

SA General Location and Boundary (Rationale, comments)
A riparian system that leads into a pond located on the east side of Santa Fe bordering the Santa Fe National Forest. This reservoir was decommissioned due to safety concerns regarding the reservoir and a water diversion to the area was recently shut down due to lack of water rights.

Driving Directions
Driving to Santa Fe from Albuquerque you head north on Old Pecos Trail. Then head east on Camino Del Monte Sol and right on Canyon Road until you reach the reservoir located to the North.

Ownership The Nature Conservative and The Santa Fe National Forest	Data Sharing Restrictions	Results to client only.	Fish Observed in Wetland?	

Surveyor Role	Surveyor Name	Surveyor Initials
Landscape	Dustin Schwartz	DS
Biotic	Annie McCoy	AM
Abiotic	Dustin Schwartz	DS
Stressors	Dustin Schwartz	DS

Easting (m)	Northing (m)	Zone	Datum	Latitude (DD ft)	Longitude (DD ft)
-105° 53' 24" W	35° 41' 23" N	13	NAD- 83 UTM	35.689722	-105.89
Survey Date	6/11/24	**Start Time**	9:00	**End Time**	15:00

SA Description

SA Landscape Context (summarize the wetland and surrounding landscape; include condition and impacts)

Lots of water from santa fe river today but No sign of over flow into channel.

SA Biotic Condition (vegetation patterns, composition and structure, exotics and invasives, disturbance evidence, fire and herbivory)

glob mallow golden aster willow bush seems very full chimise and salt bush green and dense. whip tails seen every where

SA Abiotic Condition (hydrological alterations {e.g., dams, walls etc.]; flooding characteristics and evidence of overbank flooding; soil disturbance and other site impacts; explain the hydrologic breaks or other factors that define the SA limits)

T 16.8°C 60.7 µs 7.60 pH 6.10 ntu
No water has over flowed into channel but channel very moist

Assessment Summary (Overall site condition summary and comments after the field data is collected.)

Site is crawling with lizards (at least 20 seen) lots of bugs and greening willows. out side of channel still high desert but Plants typically water dependent still flowering.

Provisional Field Score 3.08	Rank B	Surveyor(s) DS/AM	Final Score 3.08	Rank B	Initials DS	Date 6/11/24

SA CODE : SF2MI [|]

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SA Name : Two Mile Pond Reservoir Transect [|]

Surveyor Initials : DS/AM

NMRAM - SA Rank Summary Worksheet: Montane Riverine Wetlands 2.5

Metric Description	Rating	Wt	Final Score
		Σ 1.0	3.25
Landscape Context			
L1. Buffer Integrity Index	3	0.25	0.75
L2. Riparian Corridor Connectivity	4	0.25	1.0
L3. Relative Wetland Size	4	0.25	1.0
L4. Surrounding Land Use	2	0.25	0.5
Biotic		Σ	
B1. Relative Native Plant Community Composition	4	0.2	
B2. Vegetation Horizontal Patch Structure	3	0.2	
B3. Vegetation Vertical Structure	2	0.2	
B4. Native Riparian Tree Regeneration	2	0.2	
B5. Invasive Exotic Plant Species Cover	4	0.2	
Abiotic		Σ	
A1. Floodplain Hydrologic Connectivity		0.3	
A2. Physical Patch Diversity	1	0.2	
A3. Channel Equilibrium	4	0.2	
A4. Stream Bank Stability and Cover	4	0.2	
A5. Soil Surface Condition	3	0.1	

SA Condition Scoring Summary			
Major Attribute	Score	Wt.	Wt. Score
Landscape Context	3.25	0.3	0.975
Biotic		0.35	
Abiotic		0.35	
SA WETLAND CONDITION SCORE Σ			3.08
SA WETLAND RANK =			B

SA Wetland Rank		
Rank	Score	Description
A	≥3.25 - 4.0	Excellent Condition
B	≥2.5 - <3.25	Good Condition
C	≥1.75 - <2.5	Fair Condition
D	1.0 - <1.75	Poor Condition

Stressor Summary	Major	Minor	Top Three	
	0	0	1	Construction
			2	Trails
			3	No water

Stressor Comments (Evaluation of risk)

No water going through channel and many trails but willows appear to be flowering normally

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Landscape Context

- Buffer Integrity Index

Worksheet 1a. Buffer and RCC Checklist. Check off land cover elements within the buffer area or RCC corridors that are either allowed, or are excluded and considered non-buffer elements that disrupt ecosystem connectivity. Indicate the imagery type and date (season and year of imagery).

Imagery	Google Earth KMZ. file
Image Date	6/23

Allowed buffer/RCC land cover elements

Buffer	RCC	
[X]	[X]	Natural or semi-natural vegetation patches
[X]	[X]	Small irrigation ditches without levees
☐	☐	Old fields, unmaintained
☐	☐	Open range land
[X]	[X]	Foot trails, horse trails, unpaved bike trails (low intensity)
[X]	[X]	Non-channel open water
[X]	[X]	Non-functioning abandoned vegetated levees, or naturally occurring levees
☐	☐	unpaved two tracks roads
☐	☐	Other

Excluded non-buffer/RCC land cover elements

Buffer	RCC	
[X]	[X]	Commercial/residential developments, parking lots, dams, bridges, revetments, and other structures
☐	☐	Lawns, parks, golf courses, sports fields
☐	☐	Railroads
☐	☐	Maintained levees, sediment piles, construction materials, staging areas
☐	☐	Intensive livestock areas, horse paddocks, feedlots
☐	☐	Intensive agriculture: maintained pastures, hay fields, row crops, orchards, and vineyards
[X]	[X]	Paved roads or developed second-order unpaved but graded roads
[X]	[X]	Open water bounded by a levee or other manmade structure
☐	☐	Other

Worksheet 1b. Buffer Percent Sub-metric. Measure or estimate the percentage of the SA perimeter composed of allowed buffer elements and enter into the Buffer Percent Box below. Rate the sub-metric using Table L1a and enter the rating on the Buffer Integrity Summary Worksheet 1d.

Buffer Percent (%)= 85%

Table L1a. Buffer Percent

Rating	Buffer Percent
◯ 4	100%
(X) 3	≥80% - <100%
◯ 2	≥50% - <80%
◯ 1	<50%

Worksheet 1c. Buffer Width Sub-metric. Measure the length of each buffer line in meters in the GIS or on the map. Average the line lengths and rate using Table L1b. Enter the rating on the Buffer Integrity Summary Worksheet 1d.

Line	Buffer Width (m)	Buffer Width (ft)	Line	Buffer Width (m)	Buffer Width (ft)
A	164.26	538.91	E	161.93	531.26
B	125.25	410.92	F	231.48	759.44
C	115.39	378.57	G	121.25	397.80
D	111.07	364.40	H	155.87	511.38
Average		148.31 **(m)**		486.58	**(ft)**

Table L1b. Buffer Width

Rating	Average buffer width
◯ 4	≥190m
(X) 3	≥130 - <190m
◯ 2	≥65 - <130m
◯ 1	<65m

Worksheet 1d. Buffer Integrity Summary. Enter the sub-metric Ratings from Tables L1a and L1b above to calculate the Buffer Integrity Index Score using the formula in the box below. Using the Buffer Integrity Index Score, enter rating for Buffer Integrity in Table L1c [illegible]d on the SA Summary Worksheet.

Buffer % Rating	+	Buffer Width Rating	/2 =	Buffer Integrity Index Score
3	+	3	/2 =	3

Table L1c. Summary Rating for Buffer Integrity

Rating	Score
◯ 4	>3.5
(X) 3	>2.5 - ≤3.5
◯ 2	>1.5 - ≤2.5
◯ 1	≤1.5

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L2 - Riparian Corridor Connectivity (RCC)

Worksheet 2. RCC excluded non-buffer elements calculation. Refer to worksheet 1a for excluded non-buffer RCC land cover elements. Following the steps in the Field Guide, enter the summed values in meters for excluded element lengths for each bank within each segment upstream and downstream of the SA. Sum the values for each segment and calculate % Segment Disruption for the upstream side and the downstream side. Add the total disruption for upstream and downstream segments and then calculate the % Total Disruptions for the riparian corridor. Rate Riparian Corridor Connectivity using Table L2 and the data from this worksheet. Enter rating on the SA Summary Worksheet.

Segments	Upstream Segment		Downstream Segment	
Banks	**Left Bank**	**Right Bank**	**Left Bank**	**Right Bank**
A) Total Bank Disruption (m)	0	0	0	0
B) Total Disruption by Segment (m)	0		0	
C) % Segment Disruption = (B/1000)*100	0		0	
D) Total Disruption both segments	0			
E) % Total Disruptions = (D/2000)*100	Zero disruption noticeable along the banks.			

Table L2. RCC Rating

Rating	Description
(X) 4	**0%** total disruption on both segments combined.
◯ 3	**<15%** total disruption on both segments combined.
◯ 2	**≥15% - <40%** total disruption on both segments combined.
◯ 1	**≥40%** total disruption on both segments combined.

L3 - Relative Wetland Size

Worksheet 3a. Calculate the Relative Size Ratio (RSR) between the current WOI size and the historic WOI size. b. Calculate the Relative Wetland Size Score (RWSI (%)) as (1-RSR)*100. Rate Relative Wetland Size Index using Table L3 and enter rating on the SA Summary Worksheet.

RSR					RWSI						
Current Size	/	Historic Size	=	RSR	1	-	RSR	X	100	=	RWSI (%)
9	/	10	=	0.9	1	-	0.1	X	100	=	10

Table L3. Relative Wetland Size Rating

Rating	RWSI Score	Description
(X) 4	≤10%	Wetland is at or only minimally reduced from its full natural extent
◯ 3	>10% - ≤40%	Wetland remains equal to or more than 60% of its natual size
◯ 2	>40% - ≤70%	Wetland has been reduced by more than 40% its natural size
◯ 1	>70%	Wetland has been reduced by more than 70% its natural size

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L4 - Surrounding Land Use

Worksheet 4. Surrounding Land Use. Enter the percent area occupied by a given Land Use Element in the Land Use Zone (LUZ) surrounding the SA. Calculate the Land Use Index (LUI) Score by element as the product of the element coefficient times the percent of the LUZ Area occupied. (The %LUZ Area must total 100%.) Sum the LUI scores for each element to create the final LUI Score. Rate using Table L4 and enter the rating in the SA Rank Summary Worksheet.

Land Use Element	Coef	% LUZ Area	LUI Score
Paved roads, parking lots, domestic or commercially developed buildings, mining (gravel pit, quarry, open pit, strip mining), railroads	0	0	0
Unpaved roads (e.g., driveway, tractor trail, unpaved parking lots), paddock, dirt lot	0.1	0	0
Dredging, borrow pits, abandoned mines, water-filled artificial impoundments (ponds and reservoirs)	0.1	0	0
Filling or dumping of sediment or soils	0.1	0	0
Intense recreation (all-terrain vehicle use, camping, popular fishing spot, etc.)	0.3	0	0
Rip-rapped channel (highly modified channel with severely limited vegetation zone that is altered by human activities but not a completely concrete channel [that goes under paved roads]), junkyards, trash dumps, disturbed ground (not including roads)	0.3	0	0
Ski area	0.4	0	0
Dam sites and flood-disturbed shorelines around water storage reservoirs	0.5	0	0
Abandoned artificial impoundments (ponds and reservoirs) and associated disturbed flood zones	0.5	10	5
Artificial/Constructed wetlands, irrigation ditches	0.7	20	14
Developed/Managed trail system (high use trail)	0.8	5	4
Agriculture - active tilled crop production	0.2	0	0
Agriculture - permanent crop (vineyards, orchards, nurseries, berry production)	0.3	0	0
Manicured lawns, sport fields, and golf courses; urban manicured parks	0.3	0	0
Old fields and other disturbed fallow lands dominated by ruderal and/or exotic species (e.g., kochia, Russian thistle, mustards, annual vegetation)	0.5	0	0
Mature old fields and other fallow lands with natural composition, introduced hay field and pastures (e.g., perennial vegetation cover)	0.7	0	0
Restoration areas in process to natural conditions (re-conversion in process)	0.8	65	52
Haying of native grassland (e.g., no tillage, haying and baling only)	0.9	0	0
Heavy logging or tree removal with >50% of large trees (e.g., >30 cm diameter at breast height) removed, woodland/shrub vegetation conversion (chaining, cabling, rotochopping)	0.3	0	0
Commercial tree plantation, Christmas tree farms	0.6	0	0
Selective logging or tree removal with <50% of large trees (e.g., >30 cm diameter at breast height) removed	0.8	0	0
Mature restoration areas returned to natural conditions (re-converted)	0.9	0	0
Natural area, land managed for native vegetation - No agriculture, logging, development	1	0	0
LUI Score= Coefficient * % LUZ Area		100	75

Table L4. Surrounding Land Use Rating	
Rating	**LUI Score**
◯ 4	≥95 - 100
◯ 3	≥80 - <95
⊗ 2	≥40 - <80
◯ 1	<40

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Biotic Metrics

Worksheet 5. Vegetation Community Patch Polygon Data for Biotic Metrics B3, B4, and B5 for Polygons from SA Biotic Map. Enter data for each polygon under a unique number assigned from the SA Biotic Map. Each polygon is evaluated with respect to Vegetation Vertical Structure (B3), Native Tree Regeneration (B4), and Invasive Exotic Plant Species Cover (B5) metrics. Enter the Vertical Structure Type (VST) for B3, tree regeneration % cover within the polygon for B4 and the % cover of invasive exotic species for B5. Use the Tables in Appendix B and the Field Guide for metric instructions. Enter the species codes for the invasive exotic species found in the polygon (from NM Noxious Weed List - Appendix D). Use the comments box for documenting and describing vegetation community patch features.

Polygon No	B3 Vertical Structure Type	B4 Tree Regeneration % Cover	B5 Invasive Exotic Species % Cover	Invasive Exotic Species (List Code(s))	Comments
1	IA1				
2	IA2	50%	Few exotics	golden Aster	globe mallow
3	IIA1				
4	IIIB1	50%	None seen		salt bush, chimisa
5	IIIC1				
6	IVEI				
7	IVF1				
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

SA CO SF2MI [ ] **SA Name:** Two Mile Pond Reservoir T ect [ ] **Date:** 6/11/24 **Surveyor Initials:** M

B1 - Relative Native Plant Community Composition

Worksheet 6. CT Plant Species and Polygon Assignments. Starting with CT A, enter the number of the first polygon from Worksheet 5. Enter the species codes for the two top dominant species in each stratum that appears in the polygon. See footnotes for special instructions. If a species appears in more than one strata, assign the species to the stratum in which it is more abundant. Each polygon is either assigned to the same CT if it has the same composition or a new CT is created for the polygon.

		Tall Woody Stratum 1				Short Woody Stratum 2				Herbaceous/Sparse Stratum 3				CT Score 4		
CT	Polygon Nos.	Species 1	E N	Species 2	E N	Species 3	E N	Species 4	E N	Species 5	E N	Species 6	E N	Raw4	% SA5	Wt Score6
A	2	Maple	N	Pine	N	Chimis	N	Willow	N	Golden Aster	E			3.75	35%	1.31
B	5					Willow	N	Chimisa	N	Blue stem	N			3.0	65%	1.95
C																
D																
E																
F																
G																
H																
I																
J																
K																
L																
M																
N																
O																
												Final Weighted Score7				3.26

1. Trees and shrubs > 6 m (20 feet) and > 25% total stratum cover; 2. Trees and shrubs ≤6m (20 feet) and >25% total stratum cover; 3. Herbaceous (graminoids and forbs)>10% total stratum cover. 4Raw Score is from Table B1a (Appendix B); 5%SA is the percentage of the SA area covered by the CT and expressed as a decimal number; the total area %SA must equal 1; 6Wt. Score is the product of the Raw Score * % SA; 7The Final Weighted Score is the sum of the Wt. Scores. Rate the CT Final Weighted Score on Table B1 and enter the Rating for Relative Native Plant Community Composition on the SA Rank Summary Worksheet.

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Table B1. Relative Native Plant Community Composition Rating		
Rating	**CT Final Weighted Score**	
X 4	≥ 3.75	<10% non-native
3	≥ 3.25 and <3.75	10% ≤20% non-native
2	> 2.0 and <3.25	20% ≤50% non-native
1	≤2.0	>50% non-native

B2 - Vegetation Horizontal Patch Structure

Worksheet 7. Using Tables B2a and B2c (Appendix B), choose the schematic pattern that best matches the mapped vegetation patch pattern for the SA. Rate using Table B2 and enter rating on the SA Rank Summary Worksheet.

Horizontal Patch Structure pattern A,B,C, or D: A

Table B2. Rating for Vegetation Horizontal Patch Structure	
Rating	**Description**
4	Most closely matches Pattern A. SA has a diverse patch structure (≥4 patch types) and complexity. A dominant patch type would be difficult to determine.
X 3	Pattern B. SA has a moderate degree of patch diversity (3 patch types present) and complexity. A single, dominant patch type may be present, although the other patch types would be well represented and have more than one occurrence in the SA.
2	Pattern C. SA has a low degree of patch diversity and complexity. Two or three patch types may be present; however, a single, dominant patch type exists with the others occupying a small portion of the SA.
1	Pattern D. SA has essentially little to no patch diversity or complexity. The SA is dominated by a single patch type. Other patch types, if present, occur infrequently and occupy a small portion of the SA.

B3 - Vegetation Vertical Structure

Worksheet 8. Percentage of SA by vertical structure type (VST). Using the Structure Type from Worksheet 5 and the %SA from Worksheet 6 calculate the total area of the SA occupied by each VST using the formula VST(type) = Sum (%SA for CTs with same VST) x 100. Enter the total %SA for each VST below.

	VST 1 High Structure Forest	VST 2 Low Structure Forest	VST 5 Tall Shrubland	VST 6S Short Shrubland	VST 6W Herbaceous Wetland	VST 6H Herbaceous Vegetation	VST 7 Sparse Vegetation
Total % of SA		30%	70%				

Table B3. Rating for Vegetation Vertical Structure. Using the data from Worksheet 8 rate the SA based on the criteria in Table B3. Pick the row that best fits the distribution of VSTs in the SA. Each row specifies the required dominant structure type plus co- and sub-dominants. Percentage cover required per co- or sub-dominant is a minimum. The types listed in the columns must be the most common VSTs in the SA for the rating to be applicable (Worksheet 8). VSTs 1 and 2 can be inverted in dominance and the rating is still applicable. Work from the top of the table down. As long as the requirements for one row are met, any other types may or may not co-occur without changing the rating. Enter the rating on the SA Rank Summary Worksheet.

Rating	Dominant VST	Co- or Sub-dominant VST ≥15%	Sub-dominant VST ≥5%
4	1	5	6W and/or 6H
	1	6W	
	2 or 1 and 2	5	6W and/or 6H
3	1		
	2 or 1 and 2	5	
	2 or 1 and 2	6W	
	5	6W	
X 2	2 or 1 and 2		
	5		
	6W		
1	6S		
	6H		
	7		

SA CODE : SF2MI [/]

Date : 6/11/24

SA Name : Two Mile Pond Reservoir Transect [/]

Surveyor Initials : DS/AM

B4 - Native Riparian Tree Regeneration

B4. Native Riparian Tree Regeneration rating. Using the polygon percent cover of native tree seedlings, saplings and poles from Worksheet 5, rate the SA based on polygon percent cover and patch density. Enter the rating on the SA Rank Summary Worksheet.

Rating	Description
○ 4	Native poles, sapling, and seedlings trees well represented, obvious regeneration, many patches or polygons with >5% cover, typically multiple size (age) classes.
○ 3	Native poles, saplings and/or seedlings common, scattered patches or polygons with 1% -5% cover, size classes few.
X 2	Native poles, saplings and/or seedlings present but uncommon, restricted to one or two patches or polygons with typically <1% cover, little size class differentiation.
○ 1	Native poles, saplings, and/or seedlings absent (0% cover).

B5 - Invasive Exotic Plant Species Cover

Worksheet 9. Based on Worksheets 5 and 6, calculate or estimate the percentage cover of invasive exotic species for the SA and enter below. Rate using Table B5 and enter the rating on the SA Rank Summary Worksheet.

Rating Method [ ]

Invasive cover (%) <1

calculate

Table B5. Ratings for Invasive Exotic Plant Species Cover	
Rating	**Invasive Species Cover %**
○ 4	0%
○ 3 X	>0% - <1%
2	≥1% - <10%
○ 1	≥10

Additional CTs and Biotic Metric Comments:

SA CODE : SF2MI [|] **Date :** 6/11/24

SA Name : Two Mile Pond Reservoir Transect [\ ] **Surveyor Initials :** DS/AM

Abiotic Metrics

A1 - Floodplain Hydrologic Connectivity

Method 1

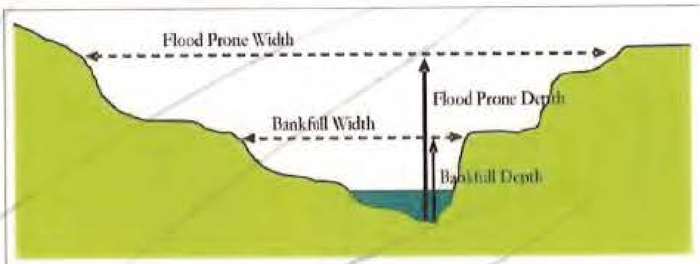
Worksheet 10a. Floodplain Hydrologic Connectivity Measurements. The following six steps are conducted at each of three cross-sections at the approximate mid-points along straight riffles and away from deep pools or meander bends. Use a measuring tape and temporary stakes for horizontal measurements, and a stadia rod or similar measuring stick for vertical measurements. If unavailable, use visual estimates. Where straight channel segments do not occur, or if there is excessive ponding or bankfull indicators are obscured, use the narrative rating approach (Method 2). Enter the rating method in the box below, either meander pool, riffle pool or narrative (Method 2) and choose the corresponding Table (A1a, A1b, or A1c) to rate Floodplain Hydrologic Connectivity. Enter the rating on the SA Rank Summary Worksheet. Photographs of each cross-section are required and recorded in Table A1d.

Steps	Description	Cross-section: 1	2	3
1: Bankfull width	This is a critical step requiring familiarity with field indicators of the bankfull contour. Measure the distance between the right and left bankfull contours with a tape.			
2: Maximum bankfull depth	Keeping the tape level between the right and left bankfull contours, measure the height of the line above the thalweg (the deepest part of the channel). A pocket line level can help here.			
3: Flood-prone depth	Double the estimate of maximum bankfull depth from Step 2.			
4: Flood-prone width	Using a tape, measure the length of a level line at a height equal to the flood prone depth from Step 3 to where it intercepts the right and left banks.			
5: Calculate Entrenchment Ratio	Divide the flood-prone width (Step 4) by the bankfull width (Step 1).			
6: Calculate average ratio	Calculate the average for Step 5 for all three replicate cross-sections. Enter the average here and rate using Table A1a. Enter the rating in the A1 box on the SA Rank Summary Worksheet.			

Rating Method	

Table A1a. Rating for Floodplain Hydrologic Connectivity in meandering single-channel riffle-pool systems

Rating	Description
◯ 4	Average entrenchment ratio is ≥ 2.2;
◯ 3	Average entrenchment ratio is ≥1.9 - <2.2
◯ 2	Average entrenchment ratio is ≥1.5 - <1.9
◯ 1	Average entrenchment ratio is < 1.5



Worksheet 10b. Floodplain Hydrologic Connectivity Indicators. Use this Worksheet in conjunction with Table A1c. Check the boxes for all that apply to each segment.

U	M	L	Indicator
☐	☐	☐	Bankful is slightly below bank height
☐	☐	☐	Bankful is well below bank height and channel is incised
☐	☐	☐	Channel widening due to bank failure
☐	☐	☐	Constructed levees preclude floodplain inundation
☐	☐	☐	Stream is straightened/channelized
☐	☐	☐	Inset floodplain formation
☐	☐	☐	Decreased peak flows due to hydrologic modification
☐	☐	☐	Bankfull indicators at point of incipient flooding of the floodplain
☐	☐	☐	Indicators of overbank flow on floodplain
☐	☐	☐	Floodplain inundation due to beaver activity

Table A1b. Rating for Floodplain Hydrologic Connectivity in single-channel step-pool systems

Rating	Description
◯ 4	Average entrenchment ratio is ≥ 1.9
◯ 3	Average entrenchment ratio is ≥1.4 - <1.9
◯ 2	Average entrenchment ratio is ≥1.2 - <1.4
◯ 1	Average entrenchment ratio is < 1.2

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Surveyor Initials : DS/AM

Method 2

ɔle A1c. Narratve Floodplain Hydrologic Connectivity Rating. Select the narrative description that best describes the floodplain hydrologic connectivity. At each cross-section, use Worksheet 10b to record channel incision, bank modification, inset floodplain or other hydrologic evidence that would preclude natural floodplain inundation. Conversely, assess indicators and evidence for overbank flow and floodplain inundation. Record whether beaver activity is obscuring bankful indicators due to inundation of the floodplain. Select a rating from the table below. Use data from Worksheets 10b to help select rating. Enter Rating on SA Summary Worksheet. Photographs are required at each cross-section and recorded in Table A1d.

Rating	Description
◯ 4	Fully connected to the natural floodplain. Indicators of bankfull discharge are at the bank/floodplain transition, with over-bankfull flows likely to inundate a broad area of floodplain. Floodplain supports riparian vegetation and shows signs of overbank sediment deposition. Or beaver ponds inundate the entire, normally active floodplain and preclude the identification of bankfull indicators and the active floodplain width.
◯ 3	Flow access to the floodplain moderately limited by incision, channelization. Less frequent inundation than fully connected streams described above (as noted by bankfull indicators below floodplain transition). Floodplain supports a riparian overstory, but some understory plants may be upland. An inset floodplain supporting riparian vegetation may also be present.
◯ 2	Incised, channelized or modified with an inset floodplain formed, which is regularly inundated and supports riparian vegetation and sediment regimes. Or the stream has minimal access to the natural floodplain due to incision, channelization, or flow modification, and the natural floodplain does not support riparian vegetation except for relatively long-lived phreatophytes (e.g., cottonwood, salt cedar, etc.).
◯ 1	Fully disconnected from floodplain, either through incision, bank modification/channelization, or hydrologic modification (i.e., abandonment of floodplain due to decreased peak flows). Indicators may include upland vegetation and lack of overbank sediment deposits on the floodplain, etc.

1 : A1d. Photo Point Log for Cross-Section Photographs. For each cross-section record the digital names/numbers of photographs taken looking Upstream and Downstream from the thalweg and looking Bank Right* and Bank Left* across the stream from each side of the cross-section. Leave the cross-section tape and flags indicating bankful in the ground when taking the Bank Right and Bank Left photos. A photo board with SA name and cross-section information is helpful. (*The bank of a stream or river on the right (left) of the observer when facing in the direction of flow or downstream.) See Appendix E for additional details.

Cross Section	Easting (Latitude)	Northing (Longitude)	Upstream	Downstream	Bank Right	Bank Left
1						
2						
3						

Floodplain Hydrologic Connectivity Comments:

Not used in JSAI Assessment

SA CODE : SF2MI [1] **Date :** 6/11/24

SA Name : Two Mile Pond Reservoir Transect [1] **Surveyor Initials :** DS/AM

A2 - Physical Patch Complexity

Worksheet 11. Physical Patch Complexity checklist. Check off existing physical patch types for the upper, middle and lower segments of the SA; count the number of unique patch types and rate using Table A2 in combination with the narrative description. Enter the rating on the SA Rank Summary Worksheet.

Upper Segment	Middle Segment	Lower Segment	Field Indicators (check all existing conditions)
☐	☐	☐	Active side channels
☐	☒	☐	Abandoned channels
☐	☐	☐	Backwater/eddy
☐	☐	☐	Riffles or rapids
☐	☐	☐	Shoals, sparely-vegetated bars
☐	☐	☐	Channel boulders
☐	☐	☐	Oxbow lakes/ponds on floodplains
☐	☐	☐	Vegetated island and side bars
☐	☒	☐	Terraces
☐	☐	☐	Channel pools
☐	☐	☐	Beaver ponds
☐	☐	☐	Swales, depressional features on floodplains
☐	☐	☐	Debris jams in channel
☐	☐	☐	Woody wrack piles on the floodplain
☐	☐	☐	Floodplain micro-topography (mounds, pits)
☐	☐	☐	Downed logs
☐	☐	☐	Natural levees
☐	☐	☐	Standing snags
☐	☐	☐	Variegated, convoluted, or crenulated foreshore
☐	☐	☐	Undercut banks in channels
			No. of unique Patch Types

Table A2. Rating for Physical Patch Complexity

Rating	Description
○ 4	**High** degree of physical patch complexity across the floodplain. There are many floodplain micro-habitats present (mounds and pits, woody wrack piles, etc.), many fluvial geomorphic surfaces (swales, side channels, terraces, side bars, etc.), and there is high in-channel complexity (pools and riffles, large woody debris, undercut banks, etc.). As a guide, 12 or more unique indicators are present and well distributed throughout the SA (most indicators are found on multiple segments).
○ 3	**Moderate** physical patch complexity scattered across the floodplain. There are several floodplain micro-habitats present, several fluvial geomorphic surfaces, and there is moderate in-channel complexity. As a guide, 9 - 11 indicators are scattered throughout the SA (some on multiple segments).
○ 2	**Limited** physical patch complexity scattered across the floodplain. There are some floodplain micro-habitats present, some fluvial geomorphic surfaces, and there is limited in-channel complexity. As a guide, on average there are 6 - 8 unique indicators present in the SA (only a few on multiple segments).
☒ 1	**Little** or no physical patch complexity on the floodplain. There are few or no floodplain micro-habitats present, few different fluvial geomorphic surfaces, and there is little or no in-channel complexity. As a guide, ≤ 5 unique indicators are present in the SA.

SA CODE : SF2MI [1] **Date :** 6/11/24

SA Name : Two Mile Pond Reservoir Transect [1] **Surveyor Initials :** DS/AM

A3- Channel Equilibrium

Worksheet 12. Channel Equilibrium Checklist. Check all field indicators that apply to the upper, middle and lower segment of the SA observed at the channel edge of the traverse. Rate using the Table A3 descriptions and based on a preponderance of evidence from this checklist. Enter the rating on the SA Rank Summary Worksheet.

Condition	Upper Segment	Middle Segment	Lower Segment	Field Indicators(check all existing conditions)
Indicators of Channel Equilibrium	☐	☒	☐	The channel has a well-defined bankfull contour that clearly demarcates the point of incipient flooding where moderate frequent flow events spread flow across the floodplain.
	☐	☒	☐	Perennial riparian vegetation is abundant and well established along the bankfull contour, but not below it.
	☐	☒	☐	There is leaf litter, thatch, or wrack in most pools.
	☐	☒	☐	The channel contains embedded woody debris of the size and amount consistent with what is naturally available in the riparian area.
	☐	☒	☐	There is little or no active undercutting or burial of riparian vegetation.
	☐	☐	☐	There are no bars that are densely vegetated with perennial vegetation (neither mid-channel bars or point bars).
	☐	☒	☐	Channel and point-bars consist of well-sorted bed material.
	☐	☒	☐	The channel bed is not planar and without an abundance of fine materials filling the interstitial spaces between larger stream substrate.
	☐	☒	☐	There are channel pools at meander bends and some deep pools within the reach.
Indicators of Active Degradation	☐	☐	☐	The channel is characterized by deeply undercut banks with exposed living roots of trees or shrubs.
	☐	☐	☐	There are abundant bank slides or slumps, or the lower banks are uniformly scoured and not vegetated.
	☐	☐	☐	Bank vegetation is declining in stature or vigor, or many riparian trees and shrubs along the banks are leaning or falling into the channel.
	☐	☐	☐	Channel bed is scoured to large cobbles or boulders and entrained bank material is filling the cobble interstices and pools.
	☐	☐	☐	There are active headcuts within the channel.
	☐	☐	☐	An obvious historical floodplain has recently been abandoned, as indicated by the age structure of its riparian vegetation.
Indicators of Active Aggradation	☐	☐	☐	There is abundant fresh splays of coarse sediment covering the floodplain above the natural point bar elevation.
	☐	☐	☐	There are partially buried living tree trunks or shrubs along the banks.
	☐	☐	☐	The channel bed is planar overall. The stream lacks well-defined channel pools at meander bends, or pools are filled with sediment.
	☐	☐	☐	There are partially buried or sediment-choked culverts.
	☐	☐	☐	There are avulsion channels on the floodplain or adjacent valley floor.

SA CODE : SF2MI [1]

Date : 6/11/24

SA Name : Two Mile Pond Reservoir Transect [1]

Surveyor Initials : DS/AM

Table A3. Rating for Channel Equilibrium	
Rating	**Description**
☒ 4	Most of the channel throughout the SA is in equilibrium condition with little evidence of excessive aggradation or degradation based on the field indicators listed in Worksheet 12.
◯ 3	There is some evidence of excessive aggradation or degradation; the channel throughout the SA seems to approach an equilibrium condition. Circle primary process: aggradation or degradation.
◯ 2	There is evidence of severe aggradation or degradation throughout most of the channel through the SA. Circle primary process: aggradation or degradation.
◯ 1	The channel is artificially hardened, channelized, or is concrete throughout most of the SA.

A4- Stream Bank Stability and Cover

Worksheet 13. Bank Soil Stability and Streambank Erosion Potential Checklist. Check the indicator that best describes the condition looking a minimum of 25 m upstream and downstream at the channel edge of the upper, middle and lower segment of the SA. Average the six scores for both Bank Soil Stability and Streambank Erosion Potential. Rate using the Table A4 and enter the rating on the SA Summary Worksheet.

Condition	Upper Segment	Middle Segment	Lower Segment	Field Indicators
Indicators of Bank Soil Stability	☐4	☒4	☐4	Infrequent raw banks, less than 10% of steam bank under stress from trampling, slumping, vegetation removal or active erosion, etc.
	☐3	☐3	☐3	Raw banks and loose soil intermittently and 10%-25% of stream bank under stress from trampling, trail crossing, hoof punching, vegetation removal, erosion etc.
	☐2	☐2	☐2	Significant raw banks and loose soil, 25%-50% of stream bank under stress, trampled, slumping or eroding etc.
	☐1	☐1	☐1	Raw banks almost continuous with greater than 50% of stream bank under stress, loose soil, slumping, trampled or eroding; or channel appear to lack banks due to trampling; or channel that is artificially hardened or concrete along most of its length.
Indicators of Stream Bank Erosion Potential	☐4	☒4	☐4	≥ 80% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by boulders, large cobbles and/or large woody debris that prevent bank erosion.
	☐3	☐3	☐3	≥50% - <80% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those areas not covered by vegetation are protected to allow only minor erosion.
	☐2	☐2	☐2	≥25% - <50% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those area not covered by vegetation or stabilized by roots, are covered by materials or vegetation that give limited protection.
	☐1	☐1	☐1	Less than 25% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those areas not covered by vegetation provide little or no control over erosion and excess shear stress, and the banks are susceptible to erosion by high water flows.

Average Indicator Score	

Table A4. Stream Bank Stability and Cover Rating	
Rating	**Description**
☒ 4	>3.5 - 4.0
◯ 3	>2.5 - ≤3.5
◯ 2	>1.5 - ≤2.5
◯ 1	1.0 - ≤1.5

SA CODE : SF2MI [1] **Date :** 6/11/24

SA Name : Two Mile Pond Reservoir Transect [1] **Surveyor Initials :** DS/AM

A5 - Soil Surface Condition

Worksheet 14. Soil Surface Condition. Check all that apply in the upper , middle and lower SA segments during the field reconnaissance. The absence of these indicators would signify that disturbances are naturally occurring (e.g., flood deposition or low-density wildlife trails). Estimate the percent soil disturbance by segment area and referring to the SA abiotic map. Rate using Table A5 and enter on the SA Rank Summary Worksheet.

Upper Segment	Middle Segment	Lower Segment	Field Indicators (Check all existing conditions)
☐	☐	☐	Active erosion features due to anthropogenic disturbance (eg. rills, gullies, plant pedestals).
☐	☒	☐	Multiple livestock and other (fishing,hiking) trails,
☐	☒	☐	Vehicle tracks including off-road and construction, etc.
☐	☐	☐	Impervious compacted surfaces or pavement
☐	☐	☐	Grading or plowing
☐	☐	☐	Fill
☐	☐	☐	Gravel pits
☐	☐	☐	Anthropogenic levees and berms
☐	☐	☐	Irrigation-driven salinity and mineral crusts
☐	☐	☐	Fire pits
☐	☐	☐	Other:
			Estimate % soil disturbance by segment area

Average % Soil Disturbance:

Table A5. Soil Surface Condition Rating	
Rating	**Description**
○ 4	Bare soil areas due to anthropogenic disturbance absent or very limited. No human-caused impervious surfaces or gravel pits are found within the SA. Total disturbance, including erosion, impervious surfaces, fill, or other anthropogenic degradation to the soil surface is less than 1% of the SA.
☒ 3	Some amount of bare soil from human causes is present but the extent is limited. Area of impervious surfaces are minimal in extent. Total disturbance, including erosion, impervious surfaces, fill, gravel pits, vehicle tracks or other anthropogenic degradation to the soil surface is between 1% and 5% of the sampling area.
○ 2	Bare soils from human causes are common. These may include dense livestock trails, vehicle tracks, trails, construction staging areas, mechanical rutting, or irrigation-driven salinity. Soil disturbance, while apparent, is limited to specific areas and not found across the majority of the SA. Total disturbance, including erosion, impervious surfaces, fill, gravel mining, or other anthropogenic degradation to the soil surface is greater than 5% or less than 10% of the SA.
○ 1	Bare soil areas degrade portions of the site because of altered hydrology or other long-lasting impacts. Deep ruts from off-road vehicles or machinery are present. Livestock disturbance or trails are widespread and several inches deep. Water is channeled into rills or ponded. Additional human-caused impervious surfaces or soil compaction are present. Total disturbance, including erosion, impervious surfaces, fill,gravel mining or other anthropogenic degradation to the soil surface is equal to or greater than 10% of the SA.

SA CODE : SF2MI [1]

Date : 6/11/24

SA Name : Two Mile Pond Reservoir Transect [1]

Surveyor Initials : DS/AM

Vorksheet 15. Stressor Checklist. Check off stressors by intensity category that may be affecting wetland ecological condition of the SA and WOI. Assign ategories using direct evidence where available or your best professional judgement otherwise. If the presence of the stressor is uncertain, mark as "Unkno "
ank Major Stressors in Dominant Stressor column(Pick up to 3)

Rank	Affect: Major	Affect: Minor	Affect: Absent	Affect: Unknown	Stressor Group/Stressor	Comments
					Adverse water management	
	☐	☐	☐	☐	Extended low flow dam releases	
	☐	☐	☐	☐	Timing of flow releases not concordant	
	☐	☐	☐	☐	Extended high flow dam releases	
	☐	☐	☐	☐	Agriculture/Urban flow diversion upstream	
					Adverse sediment management	
	☐	☐	☐	☐	Adverse sediment retention by dams	
	☐	☐	☐	☐	Sediment loss by dredging	
	☐	☐	☐	☐	Adverse sediment input (roads/development)	
					Artificial water additions	
	☐	☐	☐	☐	Sewer treatment effluent	
	☐	☐	☐	☐	Point source urban runoff	
	☐	☐	☐	☐	Factory, feedlot outfall	
	☐	☐	☐	☐	Agricultural irrigation ditch returns	
	☐	☐	☐	☐	Mining waste	
					Ground water pumping	
	☐	☐	☐	☐	Urban depletions	
	☐	☐	☐	☐	Fracking	
	☐	☐	☐	☐	Agriculture irrigation wells	
					Watershed alteration	
	☐	☐	☐	☐	Extensive recent fires in watershed	
	☐	☐	☐	☐	Extensive recent timber harvest	
	☐	☐	☐	☐	Extensive open pit mining in watershed	
	☐	☐	☐	☐	Livestock/wildlife overgrazing	
					Local biodiversity impacts	
	☐	☐	☐	☐	Evidence of excessive grazing (local)	
	☐	☐	☐	☐	Excessive noise affecting wildlife	
	0	0		0	Counts by Intensity	

Additional Comments

Version Date: 04/25/2022

Schema: Montane 2.5

NMRAM Montane Riverine Wetlands Version 2.5

SA Cover Worksheet

SA Code SF2MI [2]	SA Name : Two Mile Pond Reservoir		Project : Riparian Assesement	
A de Tsct [2]	AU Name : Transect [2]		WOI : Two Mile Pond Reservoir	
County Santa Fe	HUC 12 Headwaters Santa Fe River	Elevation (ft) 7299	(m) 2224.7	Ecoregion 6.0 NWFM

SA General Location and Boundary (Rationale, comments)

A riparian system that leads into a pond located on the east side of Santa Fe bordering the Santa Fe National Forest. This reservoir was decommissioned due to safety concerns regarding the reservoir and a water diversion to the area was recently shut down due to lack of water rights.

Driving Directions

Driving to Santa Fe from Albuquerque you head north on Old Pecos Trail. Then head east on Camino Del Monte Sol and right on Canyon Road until you reach the reservoir located to the North.

Ownership The Nature Conservative and The Santa Fe National Forest	Data Sharing Restrictions	Results to client only.	Fish Observed in Wetland?	

Surveyor Role	Surveyor Name	Surveyor Initials
Landscape	"Dustin + Annie"	DS+AM
Biotic	" "	" "
Abiotic	" "	" "
Stressors	" "	" "

Easting (m)	Northing (m)	Zone	Datum	Latitude (DD ft)	Longitude (DD ft)
-105° 53' 24" W	35° 41' 23" N	13	NAD- 83 UTM	35.689722	-105.89
Survey Date	4/9/24	**Start Time**	09:18	**End Time**	13:05

SA Description

SA Landscape Context (summarize the wetland and surrounding landscape; include condition and impacts)

Above the dam, common hiking trail with benches. The leaves are starting to bud on the willow trees and cotton woods.

SA Biotic Condition (vegetation patterns, composition and structure, exotics and invasives, disturbance evidence, fire and herbivory)

This Area has a forest area the first half then goes to a willow bush section around the channel and end in another high forest area

SA Abiotic Condition (hydrological alterations {e.g., dams, walls etc.]; flooding characteristics and evidence of overbank flooding; soil disturbance and other site impacts; explain the hydrologic breaks or other factors that define the SA limits)

The abandon stream still shows no sign of flowing water and is layering with dead leaves.

Assessment Summary (Overall site condition summary and comments after the field data is collected.)

Area seems similar to last visit. Some new growth Appearing but interested to see how willows grow.

Provisional Field Score	3,058	Rank	B	Surveyor(s)	DS/AM	Final Score	3.058	Rank	B	Initials	DS	Date 4/9/24

SA CODE : SF2MI [2]

Date : 4/9/24

SA Name : Two Mile Pond Reservoir Transect [2]

Surveyor Initials : DS

MRAM - SA Rank Summary Worksheet: Montane Riverine Wetlands 2.5

Metric Description	Rating	Wt	Final Score
Landscape Context		Σ 1.0	3.25
L1. Buffer Integrity Index	3	0.25	0.75
L2. Riparian Corridor Connectivity	4	0.25	1.0
L3. Relative Wetland Size	4	0.25	1.0
L4. Surrounding Land Use	2	0.25	0.5
Biotic		Σ	
B1. Relative Native Plant Community Composition	4	0.2	
B2. Vegetation Horizontal Patch Structure	2	0.2	
B3. Vegetation Vertical Structure	3	0.2	
B4. Native Riparian Tree Regeneration	4	0.2	
B5. Invasive Exotic Plant Species Cover	3	0.2	
Abiotic		Σ	
A1. Floodplain Hydrologic Connectivity	X	0.3	
A2. Physical Patch Diversity	2	0.2	
A3. Channel Equilibrium	4	0.2	
A4. Stream Bank Stability and Cover	4	0.2	
A5. Soil Surface Condition	2	0.1	

SA Condition Scoring Summary			
Major Attribute	Score	Wt.	Wt. Score
Landscape Context	3.25	0.3	0.975
Biotic	3.2	0.35	
Abiotic	2.75	0.35	
SA WETLAND CONDITION SCORE Σ			3.058
SA WETLAND RANK =			B

SA Wetland Rank		
Rank	Score	Description
A	≥3.25 - 4.0	Excellent Condition
B	≥2.5 - <3.25	Good Condition
C	≥1.75 - <2.5	Fair Condition
D	1.0 - <1.75	Poor Condition

Stressor Summary	Major	Minor	Top Three	
	0	0	1	Construction
			2	Low water
			3	Trail use

Stressor Comments (Evaluation of risk)

Trails and park usage as well as no water affects this area the most.

SA CODE : SF2MI [2]

Date : 4/9/24

SA Name : Two Mile Pond Reservoir Transect [2]

Surveyor Initials : DS

Landscape Context

L1 - Buffer Integrity Index

Worksheet 1a. Buffer and RCC Checklist. Check off land cover elements within the buffer area or RCC corridors that are either allowed, or are excluded and considered non-buffer elements that disrupt ecosystem connectivity. Indicate the imagery type and date (season and year of imagery).

Imagery	Google Earth KMZ. file	Image Date	6/23

Allowed buffer/RCC land cover elements

Buffer	RCC	
[x]	[x]	Natural or semi-natural vegetation patches
[x]	[x]	Small irrigation ditches without levees
[ ]	[ ]	Old fields, unmaintained
[ ]	[ ]	Open range land
[x]	[x]	Foot trails, horse trails, unpaved bike trails (low intensity)
[x]	[x]	Non-channel open water
[x]	[x]	Non-functioning abandoned vegetated levees, or naturally occurring levees
[ ]	[ ]	unpaved two tracks roads
[ ]	[ ]	Other

Excluded non-buffer/RCC land cover elements

Buffer	RCC	
[x]	[x]	Commercial/residential developments, parking lots, dams, bridges, revetments, and other structures
[ ]	[ ]	Lawns, parks, golf courses, sports fields
[ ]	[ ]	Railroads
[ ]	[ ]	Maintained levees, sediment piles, construction materials, staging areas
[ ]	[ ]	Intensive livestock areas, horse paddocks, feedlots
[ ]	[ ]	Intensive agriculture: maintained pastures, hay fields, row crops, orchards, and vineyards
[x]	[x]	Paved roads or developed second-order unpaved but graded roads
[x]	[x]	Open water bounded by a levee or other manmade structure
[ ]	[ ]	Other

Worksheet 1b. Buffer Percent Sub-metric. Measure or estimate the percentage of the SA perimeter composed of allowed buffer elements and enter into the Buffer Percent Box below. Rate the sub-metric using Table L1a and enter the rating on the Buffer Integrity Summary Worksheet 1d.

Buffer Percent (%)= 85%

Table L1a. Buffer Percent

Rating	Buffer Percent
○ 4	100%
(x) 3	≥80% - <100%
○ 2	≥50% - <80%
○ 1	<50%

Worksheet 1c. Buffer Width Sub-metric. Measure the length of each buffer line in meters in the GIS or on the map. Average the line lengths and rate using Table L1b. Enter the rating on the Buffer Integrity Summary Worksheet 1d.

Line	Buffer Width (m)	Buffer Width (ft)	Line	Buffer Width (m)	Buffer Width (ft)
A	164.26	538.91	E	161.93	531.26
B	125.25	410.92	F	231.48	759.44
C	115.39	378.57	G	121.25	397.80
D	111.07	364.40	H	155.87	511.38
Average	148.31 (m)			486.58	(ft)

Table L1b. Buffer Width

Rating	Average buffer width
○ 4	≥190m
(x) 3	≥130 - <190m
○ 2	≥65 - <130m
○ 1	<65m

Worksheet 1d. Buffer Integrity Summary. Enter the sub-metric Ratings from Tables L1a and L1b above to calculate the Buffer Integrity Index Score using the formula in the box below. Using the Buffer Integrity Index Score, enter rating for Buffer Integrity in Table L1c on the SA Summary Worksheet.

Buffer % Rating	+	Buffer Width Rating	/2 =	Buffer Integrity Index Score
3	+	3	/2 =	3

Table L1c. Summary Rating for Buffer Integrity

Rating	Score
○ 4	>3.5
(x) 3	>2.5 - ≤3.5
○ 2	>1.5 - ≤2.5
○ 1	≤1.5

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2 - Riparian Corridor Connectivity (RCC)

Worksheet 2. RCC excluded non-buffer elements calculation. Refer to worksheet 1a for excluded non-buffer RCC land cover elements. Following the steps in the Field Guide, enter the summed values in meters for excluded element lengths for each bank within each segment upstream and downstream of the SA. Sum the values for each segment and calculate % Segment Disruption for the upstream side and the downstream side. Add the total disruption for upstream and downstream segments and then calculate the % Total disruptions for the riparian corridor. Rate Riparian Corridor Connectivity using Table L2 and the data from this worksheet. Enter rating on the SA Summary Worksheet.

Segments	Upstream Segment		Downstream Segment	
Banks	Left Bank	Right Bank	Left Bank	Right Bank
A) Total Bank Disruption (m)	0	0	0	0
B) Total Disruption by Segment (m)	0		0	
C) % Segment Disruption = (B/1000)*100	0		0	
D) Total Disruption both segments	0			
E) % Total Disruptions = (D/2000)*100	Zero disruption noticeable along the banks.			

Table L2. RCC Rating

Rating	Description
(X) 4	**0%** total disruption on both segments combined.
( ) 3	**<15%** total disruption on both segments combined.
( ) 2	**≥15% - <40%** total disruption on both segments combined.
( ) 1	**≥40%** total disruption on both segments combined.

L3 - Relative Wetland Size

Worksheet 3a. Calculate the Relative Size Ratio (RSR) between the current WOI size and the historic WOI size. b. Calculate the Relative Wetland Size Score (RWSI (%)) as (1-RSR)*100. Rate Relative Wetland Size Index using Table L3 and enter rating on the SA Summary Worksh

RSR					RWSI						
Current Size	/	Historic Size	=	RSR	1	-	RSR	X	100	=	RWSI (%)
9	/	10	=	0.9	1	-	0.1	X	100	=	10

Table L3. Relative Wetland Size Rating

Rating	RWSI Score	Description
(X) 4	≤10%	Wetland is at or only minimally reduced from its full natural extent
( ) 3	>10% - ≤40%	Wetland remains equal to or more than 60% of its natual size
( ) 2	>40% - ≤70%	Wetland has been reduced by more than 40% its natural size
( ) 1	>70%	Wetland has been reduced by more than 70% its natural size

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SA Name: Two Mile Pond Reservoir Transect [2]

Surveyor Initials: DS

L4 - Surrounding Land Use

Worksheet 4. Surrounding Land Use. Enter the percent area occupied by a given Land Use Element in the Land Use Zone (LUZ) surrounding the SA. Calculate the Land Use Index (LUI) Score by element as the product of the element coefficient times the percent of the LUZ Area occupied. (The %LUZ Area must total 100%.) Sum the LUI scores for each element to create the final LUI Score. Rate using Table L4 and enter the rating in the SA Rank Summary Worksheet.

Land Use Element	Coef	% LUZ Area	LUI Score
Paved roads, parking lots, domestic or commercially developed buildings, mining (gravel pit, quarry, open pit, strip mining), railroads	0	0	0
Unpaved roads (e.g., driveway, tractor trail, unpaved parking lots), paddock, dirt lot	0.1	0	0
Dredging, borrow pits, abandoned mines, water-filled artificial impoundments (ponds and reservoirs)	0.1	0	0
Filling or dumping of sediment or soils	0.1	0	0
Intense recreation (all-terrain vehicle use, camping, popular fishing spot, etc.)	0.3	0	0
Rip-rapped channel (highly modified channel with severely limited vegetation zone that is altered by human activities but not a completely concrete channel [that goes under paved roads]), junkyards, trash dumps, disturbed ground (not including roads)	0.3	0	0
Ski area	0.4	0	0
Dam sites and flood-disturbed shorelines around water storage reservoirs	0.5	0	0
Abandoned artificial impoundments (ponds and reservoirs) and associated disturbed flood zones	0.5	10	5
Artificial/Constructed wetlands, irrigation ditches	0.7	20	14
Developed/Managed trail system (high use trail)	0.8	5	4
Agriculture - active tilled crop production	0.2	0	0
Agriculture - permanent crop (vineyards, orchards, nurseries, berry production)	0.3	0	0
Manicured lawns, sport fields, and golf courses; urban manicured parks	0.3	0	0
Old fields and other disturbed fallow lands dominated by ruderal and/or exotic species (e.g., kochia, Russian thistle, mustards, annual vegetation)	0.5	0	0
Mature old fields and other fallow lands with natural composition, introduced hay field and pastures (e.g., perennial vegetation cover)	0.7	0	0
Restoration areas in process to natural conditions (re-conversion in process)	0.8	65	52
Haying of native grassland (e.g., no tillage, haying and baling only)	0.9	0	0
Heavy logging or tree removal with >50% of large trees (e.g., >30 cm diameter at breast height) removed, woodland/shrub vegetation conversion (chaining, cabling, rotochopping)	0.3	0	0
Commercial tree plantation, Christmas tree farms	0.6	0	0
Selective logging or tree removal with <50% of large trees (e.g., >30 cm diameter at breast height) removed	0.8	0	0
Mature restoration areas returned to natural conditions (re-converted)	0.9	0	0
Natural area, land managed for native vegetation - No agriculture, logging, development	1	0	0
LUI Score= Coefficient * % LUZ Area		100	75

Table L4. Surrounding Land Use Rating

Rating	LUI Score
◯ 4	≥95 - 100
◯ 3	≥80 - <95
⊗ 2	≥40 - <80
◯ 1	<40

Biotic Metrics

Worksheet 5. Vegetation Community Patch Polygon Data for Biotic Metrics B3, B4, and B5 for Polygons from SA Biotic Map. Enter data for each polygon under a unique number assigned from the SA Biotic Map. Each polygon is evaluated with respect to Vegetation Vertical Structure (B3), Native Tree Regeneration (B4), and Invasive Exotic Plant Species Cover (B5) metrics. Enter the Vertical Structure Type (VST) for B3, tree regeneration % cover within the polygon for B4 and the % cover of invasive exotic species for B5. Use the Tables in Appendix B and the Field Guide for metric instructions. Enter the species codes for the invasive exotic species found in the polygon (from NM Noxious Weed List - Appendix D). Use the comments box for documenting and describing vegetation community patch features.

Polygon No	B3 Vertical Structure Type	B4 Tree Regeneration % Cover	B5 Invasive Exotic Species % Cover	Invasive Exotic Species (List Code(s))	Comments
1	IA1			Possible vine	
2	IA2	Juniper No New	<5	Elm? unknown	Horse tails grasses coming back willows still dry
3	IIA1	growth on			
4	IIIB1	Cotton wood elm or willow			
5	IIIC1				
6	IVEI				
7	IVF1				
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

SA CODE: SF2MI [2] **SA Name:** Two Mile Pond Reservoir Transect [2] **Date:** 4/9/24 **Surveyor Initials:** S

B1 - Relative Native Plant Community Composition

Worksheet 6. CT Plant Species and Polygon Assignments. Starting with CT A, enter the number of the first polygon from Worksheet 5. Enter the species codes for the two top dominant species in each stratum that appears in the polygon. See footnotes for special instructions. If a species appears in more than one strata, assign the species to the stratum in which it is more abundant. Each polygon is either assigned to the same CT if it has the same composition or a new CT is created for the polygon.

CT	Polygon Nos.	Tall Woody Stratum 1				Short Woody Stratum 2				Herbaceous/Sparse Stratum 3				CT Score 4		
		Species 1	E N	Species 2	E N	Species 3	E N	Species 4	E N	Species 5	E N	Species 6	E N	Raw[4]	% SA[5]	Wt Score[6]
A	2	Cottonwood	N	Elm	U	willow	N	Juniper	N	Horsetail	n	Unk trees	n	3.75	100%	3.75
B																
C																
D																
E																
F																
G																
H																
I																
J																
K																
L																
M																
N																
O																
													Final Weighted Score[7]			4.00

1. Trees and shrubs > 6 m (20 feet) and > 25% total stratum cover; 2. Trees and shrubs ≤6m (20 feet) and >25% total stratum cover; 3. Herbaceous (graminoids and forbs)>10% total stratum cover. [4]Raw Score is from Table B1a (Appendix B); [5]%SA is the percentage of the SA area covered by the CT and expressed as a decimal number; the total area %SA must equal 1; [6]Wt. Score is the product of the Raw Score * % SA; [7]The Final Weighted Score is the sum of the Wt. Scores. Rate the CT Final Weighted Score on Table B1 and enter the Rating for Relative Native Plant Community Composition on the SA Rank Summary Worksheet.

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Table B1. Relative Native Plant Community Composition Rating

Rating	CT Final Weighted Score	
4	≥ 3.75	<10% non-native
3	≥ 3.25 and <3.75	10% ≤20% non-native
2	> 2.0 and <3.25	20% ≤50% non-native
1	≤2.0	>50% non-native

- Vegetation Horizontal Patch Structure

Worksheet 7. Using Tables B2a and B2c (Appendix B), choose the schematic pattern that best matches the mapped vegetation patch pattern for the SA. Rate using Table B2 and enter rating on the SA Rank Summary Worksheet.

Horizontal Patch Structure pattern A,B,C, or D: C

Table B2. Rating for Vegetation Horizontal Patch Structure

Rating	Description
4	Most closely matches Pattern A. SA has a diverse patch structure (≥4 patch types) and complexity. A dominant patch type would be difficult to determine.
3	Pattern B. SA has a moderate degree of patch diversity (3 patch types present) and complexity. A single, dominant patch type may be present, although the other patch types would be well represented and have more than one occurrence in the SA.
2	Pattern C. SA has a low degree of patch diversity and complexity. Two or three patch types may be present; however, a single, dominant patch type exists with the others occupying a small portion of the SA.
1	Pattern D. SA has essentially little to no patch diversity or complexity. The SA is dominated by a single patch type. Other patch types, if present, occur infrequently and occupy a small portion of the SA.

B - Vegetation Vertical Structure

Worksheet 8. Percentage of SA by vertical structure type (VST). Using the Structure Type from Worksheet 5 and the %SA from Worksheet 6 calculate the total area of the SA occupied by each VST using the formula VST(type) = Sum (%SA for CTs with same VST) x 100. Enter the total %SA for each VST below.

	VST 1 High Structure Forest	VST 2 Low Structure Forest	VST 5 Tall Shrubland	VST 6S Short Shrubland	VST 6W Herbaceous Wetland	VST 6H Herbaceous Vegetation	VST 7 Sparse Vegetation
Total % of SA	50			50			

Table B3. Rating for Vegetation Vertical Structure. Using the data from Worksheet 8 rate the SA based on the criteria in Table B3. Pick the row that best fits the distribution of VSTs in the SA. Each row specifies the required dominant structure type plus co- and sub-dominants. Percentage cover required per co- or sub-dominant is a minimum. The types listed in the columns must be the most common VSTs in the SA for the rating to be applicable (Worksheet 8). VSTs 1 and 2 can be inverted in dominance and the rating is still applicable. Work from the top of the table down. As long as the requirements for one row are met, any other types may or may not co-occur without changing the rating. Enter the rating on the SA Rank Summary Worksheet.

Rating	Dominant VST	Co- or Sub-dominant VST ≥15%	Sub-dominant VST ≥5%
4	1	5	6W and/or 6H
	1	6W	
	2 or 1 and 2	5	6W and/or 6H
3 (X)	1		
	2 or 1 and 2	5	
	2 or 1 and 2	6W	
	5	6W	
2	2 or 1 and 2		
	5		
	6W		
1	6S		
	6H		
	7		

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Surveyor Initials : PS

B4 - Native Riparian Tree Regeneration

Table B4. Native Riparian Tree Regeneration rating. Using the polygon percent cover of native tree seedlings, saplings and poles from Worksheet 5, rate the SA based on polygon percent cover and patch density. Enter the rating on the SA Rank Summary Worksheet.

Rating	Description
X 4	Native poles, sapling, and seedlings trees well represented, obvious regeneration, many patches or polygons with >5% cover, typically multiple size (age) classes.
3	Native poles, saplings and/or seedlings common, scattered patches or polygons with 1% -5% cover, size classes few.
2	Native poles, saplings and/or seedlings present but uncommon, restricted to one or two patches or polygons with typically <1% cover, little size class differentiation.
1	Native poles, saplings, and/or seedlings absent (0% cover).

B5 - Invasive Exotic Plant Species Cover

Worksheet 9. Based on Worksheets 5 and 6, calculate or estimate the percentage cover of invasive exotic species for the SA and enter below. Rate using Table B5 and enter the rating on the SA Rank Summary Worksheet.

Rating Method

Invasive cover (%) < 1%

calculate

Table B5. Ratings for Invasive Exotic Plant Species Cover	
Rating	**Invasive Species Cover %**
4	0%
3 X	>0% - <1%
2	≥1% - <10%
1	≥10

Additional CTs and Biotic Metric Comments:

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A2 - Physical Patch Complexity

Worksheet 11. Physical Patch Complexity checklist. Check off existing physical patch types for the upper, middle and lower segments of the SA; count the number of unique patch types and rate using Table A2 in combination with the narrative description. Enter the rating on the SA Rank Summary Worksheet.

Upper Segment	Middle Segment	Lower Segment	Field Indicators (check all existing conditions)
☐	☐	☐	Active side channels
☐	☒	☐	Abandoned channels
☐	☐	☐	Backwater/eddy
☐	☐	☐	Riffles or rapids
☐	☐	☐	Shoals, sparely-vegetated bars
☐	☐	☐	Channel boulders
☐	☐	☐	Oxbow lakes/ponds on floodplains
☐	☐	☐	Vegetated island and side bars
☐	☒	☐	Terraces
☐	☐	☐	Channel pools
☐	☐	☐	Beaver ponds
☐	☐	☐	Swales, depressional features on floodplains
☐	☐	☐	Debris jams in channel
☐	☐	☐	Woody wrack piles on the floodplain
☐	☐	☐	Floodplain micro-topography (mounds, pits)
☐	☐	☐	Downed logs
☐	☐	☐	Natural levees
☐	☐	☐	Standing snags
☐	☐	☐	Variegated, convoluted, or crenulated foreshore
☐	☐	☐	Undercut banks in channels
			No. of unique Patch Types

Table A2. Rating for Physical Patch Complexity	
Rating	**Description**
○ 4	**High** degree of physical patch complexity across the floodplain. There are many floodplain micro-habitats present (mounds and pits, woody wrack piles, etc.), many fluvial geomorphic surfaces (swales, side channels, terraces, side bars, etc.), and there is high in-channel complexity (pools and riffles, large woody debris, undercut banks, etc.). As a guide, 12 or more unique indicators are present and well distributed throughout the SA (most indicators are found on multiple segments).
○ 3	**Moderate** physical patch complexity scattered across the floodplain. There are several floodplain micro-habitats present, several fluvial geomorphic surfaces, and there is moderate in-channel complexity. As a guide, 9 - 11 indicators are scattered throughout the SA (some on multiple segments).
○ 2	**Limited** physical patch complexity scattered across the floodplain. There are some floodplain micro-habitats present, some fluvial geomorphic surfaces, and there is limited in-channel complexity. As a guide, on average there are 6 - 8 unique indicators present in the SA (only a few on multiple segments).
☒ 1	**Little** or no physical patch complexity on the floodplain. There are few or no floodplain micro-habitats present, few different fluvial geomorphic surfaces, and there is little or no in-channel complexity. As a guide, ≤ 5 unique indicators are present in the SA.

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A3- Channel Equilibrium

Worksheet 12. Channel Equilibrium Checklist. Check all field indicators that apply to the upper, middle and lower segment of the SA observed at the channel edge of the traverse. Rate using the Table A3 descriptions and based on a preponderance of evidence from this checklist. Enter the rating on the SA Rank Summary Worksheet.

Condition	Upper Segment	Middle Segment	Lower Segment	Field Indicators(check all existing conditions)
Indicators of Channel Equilibrium	☐	☒	☐	The channel has a well-defined bankfull contour that clearly demarcates the point of incipient flooding where moderate frequent flow events spread flow across the floodplain.
	☐	☒	☐	Perennial riparian vegetation is abundant and well established along the bankfull contour, but not below it.
	☐	☒	☐	There is leaf litter, thatch, or wrack in most pools.
	☐	☒	☐	The channel contains embedded woody debris of the size and amount consistent with what is naturally available in the riparian area.
	☐	☒	☐	There is little or no active undercutting or burial of riparian vegetation.
	☐	☐	☐	There are no bars that are densely vegetated with perennial vegetation (neither mid-channel bars or point bars).
	☐	☒	☐	Channel and point-bars consist of well-sorted bed material.
	☐	☒	☐	The channel bed is not planar and without an abundance of fine materials filling the interstitial spaces between larger stream substrate.
	☐	☒	☐	There are channel pools at meander bends and some deep pools within the reach.
Indicators of Active Degradation	☐	☐	☐	The channel is characterized by deeply undercut banks with exposed living roots of trees or shrubs.
	☐	☐	☐	There are abundant bank slides or slumps, or the lower banks are uniformly scoured and not vegetated.
	☐	☐	☐	Bank vegetation is declining in stature or vigor, or many riparian trees and shrubs along the banks are leaning or falling into the channel.
	☐	☐	☐	Channel bed is scoured to large cobbles or boulders and entrained bank material is filling the cobble interstices and pools.
	☐	☐	☐	There are active headcuts within the channel.
	☐	☐	☐	An obvious historical floodplain has recently been abandoned, as indicated by the age structure of its riparian vegetation.
Indicators of Active Aggradation	☐	☐	☐	There is abundant fresh splays of coarse sediment covering the floodplain above the natural point bar elevation.
	☐	☐	☐	There are partially buried living tree trunks or shrubs along the banks.
	☐	☐	☐	The channel bed is planar overall. The stream lacks well-defined channel pools at meander bends, or pools are filled with sediment.
	☐	☐	☐	There are partially buried or sediment-choked culverts.
	☐	☐	☐	There are avulsion channels on the floodplain or adjacent valley floor.

SA CODE : SF2MI [2] **Date :** 4/9/24

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Table A3. Rating for Channel Equilibrium

Rating	Description
☒ 4	Most of the channel throughout the SA is in equilibrium condition with little evidence of excessive aggradation or degradation based on the field indicators listed in Worksheet 12.
◯ 3	There is some evidence of excessive aggradation or degradation; the channel throughout the SA seems to approach an equilibrium condition. Circle primary process: aggradation or degradation.
◯ 2	There is evidence of severe aggradation or degradation throughout most of the channel through the SA. Circle primary process: aggradation or degradation.
◯ 1	The channel is artificially hardened, channelized, or is concrete throughout most of the SA.

A4- Stream Bank Stability and Cover

Worksheet 13. Bank Soil Stability and Streambank Erosion Potential Checklist. Check the indicator that best describes the condition looking a minimum of 25 m upstream and downstream at the channel edge of the upper, middle and lower segment of the SA. Average the six scores for both Bank Soil Stability and Streambank Erosion Potential. Rate using the Table A4 and enter the rating on the SA Summary Worksheet.

Condition	Upper Segment	Middle Segment	Lower Segment	Field Indicators
Indicators of Bank Soil Stability	☐4	☒4	☐4	Infrequent raw banks, less than 10% of steam bank under stress from trampling, slumping, vegetation removal or active erosion, etc.
	☐3	☐3	☐3	Raw banks and loose soil intermittently and 10%-25% of stream bank under stress from trampling, trail crossing, hoof punching, vegetation removal, erosion etc.
	☐2	☐2	☐2	Significant raw banks and loose soil, 25%-50% of stream bank under stress, trampled, slumping or eroding etc.
	☐1	☐1	☐1	Raw banks almost continuous with greater than 50% of stream bank under stress, loose soil, slumping, trampled or eroding; or channel appear to lack banks due to trampling; or channel that is artificially hardened or concrete along most of its length.
Indicators of Stream Bank Erosion Potential	☐4	☒4	☐4	≥ 80% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by boulders, large cobbles and/or large woody debris that prevent bank erosion.
	☐3	☐3	☐3	≥50% - <80% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those areas not covered by vegetation are protected to allow only minor erosion.
	☐2	☐2	☐2	≥25% - <50% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those area not covered by vegetation or stabilized by roots, are covered by materials or vegetation that give limited protection.
	☐1	☐1	☐1	Less than 25% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those areas not covered by vegetation provide little or no control over erosion and excess shear stress, and the banks are susceptible to erosion by high water flows.

Average Indicator Score [ ]

Table A4. Stream Bank Stability and Cover Rating

Rating	Description
☒ 4	>3.5 - 4.0
◯ 3	>2.5 - ≤3.5
◯ 2	>1.5 - ≤2.5
◯ 1	1.0 - ≤1.5

SA CODE : SF2MI [2] **Date :** 4/19/24

SA Name : Two Mile Pond Reservoir Transect [2] **Surveyor Initials :** DS

A5 - Soil Surface Condition

Worksheet 14. Soil Surface Condition. Check all that apply in the upper , middle and lower SA segments during the field reconnaissance. The absence of these indicators would signify that disturbances are naturally occurring (e.g., flood deposition or low-density wildlife trails). Estimate the percent soil disturbance by segment area and referring to the SA abiotic map. Rate using Table A5 and enter on the SA Rank Summary Worksheet.

Upper Segment	Middle Segment	Lower Segment	Field Indicators (Check all existing conditions)
☐	☐	☐	Active erosion features due to anthropogenic disturbance (eg. rills, gullies, plant pedestals).
☐	☒	☐	Multiple livestock and other (fishing,hiking) trails,
☐	☐	☐	Vehicle tracks including off-road and construction, etc.
☐	☐	☐	Impervious compacted surfaces or pavement
☐	☐	☐	Grading or plowing
☐	☐	☐	Fill
☐	☐	☐	Gravel pits
☐	☐	☐	Anthropogenic levees and berms
☐	☐	☐	Irrigation-driven salinity and mineral crusts
☐	☐	☐	Fire pits
☐	☐	☐	Other:
			Estimate % soil disturbance by segment area

Average % Soil Disturbance:

Table A5. Soil Surface Condition Rating

Rating	Description
○ 4	Bare soil areas due to anthropogenic disturbance absent or very limited. No human-caused impervious surfaces or gravel pits are found within the SA. Total disturbance, including erosion, impervious surfaces, fill, or other anthropogenic degradation to the soil surface is less than 1% of the SA.
○ 3	Some amount of bare soil from human causes is present but the extent is limited. Area of impervious surfaces are minimal in extent. Total disturbance, including erosion, impervious surfaces, fill, gravel pits, vehicle tracks or other anthropogenic degradation to the soil surface is between 1% and 5% of the sampling area.
X 2	Bare soils from human causes are common. These may include dense livestock trails, vehicle tracks, trails, construction staging areas, mechanical rutting, or irrigation-driven salinity. Soil disturbance, while apparent, is limited to specific areas and not found across the majority of the SA. Total disturbance, including erosion, impervious surfaces, fill, gravel mining, or other anthropogenic degradation to the soil surface is greater than 5% or less than 10% of the SA.
○ 1	Bare soil areas degrade portions of the site because of altered hydrology or other long-lasting impacts. Deep ruts from off-road vehicles or machinery are present. Livestock disturbance or trails are widespread and several inches deep. Water is channeled into rills or ponded. Additional human-caused impervious surfaces or soil compaction are present. Total disturbance, including erosion, impervious surfaces, fill,gravel mining or other anthropogenic degradation to the soil surface is equal to or greater than 10% of the SA.

SA CODE : SF2MI [2] **Date :** 4/9/24

SA Name : Two Mile Pond Reservoir Transect [2] **Surveyor Initials :** DS

rksheet 15. Stressor Checklist. Check off stressors by intensity category that may be affecting wetland ecological condition of the SA and WOI. Assign egories using direct evidence where available or your best professional judgement otherwise. If the presence of the stressor is uncertain, mark as "Unknov k Major Stressors in Dominant Stressor column(Pick up to 3)

nk	Affect				Stressor Group/Stressor	Comments
	Major	Minor	Absent	Unknown		
					Adverse water management	
	☒	☐	☒	☐	Extended low flow dam releases	
	☐	☐	☒	☐	Timing of flow releases not concordant	
	☐	☐	☒	☐	Extended high flow dam releases	
	☐	☐	☒	☐	Agriculture/Urban flow diversion upstream	
					Adverse sediment management	
	☐	☐	☒	☐	Adverse sediment retention by dams	
	☐	☐	☒	☐	Sediment loss by dredging	
	☐	☐	☒	☐	Adverse sediment input (roads/development)	
					Artificial water additions	
	☐	☐	☒	☐	Sewer treatment effluent	
	☐	☐	☒	☐	Point source urban runoff	
	☐	☐	☒	☐	Factory, feedlot outfall	
	☐	☐	☒	☐	Agricultural irrigation ditch returns	
	☐	☐	☒	☐	Mining waste	
					Ground water pumping	
	☐	☐	☒	☐	Urban depletions	
	☐	☐	☒	☐	Fracking	
	☐	☐	☒	☐	Agriculture irrigation wells	
					Watershed alteration	
	☐	☐	☒	☐	Extensive recent fires in watershed	
	☐	☐	☒	☐	Extensive recent timber harvest	
	☐	☐	☒	☐	Extensive open pit mining in watershed	
	☐	☐	☒	☐	Livestock/wildlife overgrazing	
					Local biodiversity impacts	
	☐	☐	☒	☐	Evidence of excessive grazing (local)	
	☐	☒	☐	☐	Excessive noise affecting wildlife	
	0	0		0	Counts by Intensity	

Additional Comments No water is going to this area

Version Date: 04/25/2022 Schema: Montane 2.5

NMRAM Montane Riverine Wetlands Version 2.5

SA Cover Worksheet					
SA Code SF2MI [2]	SA Name : Two Mile Pond Reservoir			Project : Riparian Assesement	
A[illegible]de Tsct [2]	AU Name : Transect [2]			WOI : Two Mile Pond Reservoir	
County Santa Fe	HUC 12 Headwaters Santa Fe River	Elevation (ft) 7299		(m) 2224.7	Ecoregion 6.0 NWFM

SA General Location and Boundary (Rationale, comments)
A riparian system that leads into a pond located on the east side of Santa Fe bordering the Santa Fe National Forest. This reservoir was decommissioned due to safety concerns regarding the reservoir and a water diversion to the area was recently shut down due to lack of water rights.

Driving Directions
Driving to Santa Fe from Albuquerque you head north on Old Pecos Trail. Then head east on Camino Del Monte Sol and right on Canyon Road until you reach the reservoir located to the North.

Ownership The Nature Conservative and The Santa Fe National Forest	Data Sharing Restrictions	Results to client only.	Fish Observed in Wetland?	

Surveyor Role	Surveyor Name	Surveyor Initials
Landscape	"Dustin and Annie"	" DS+AM "
Biotic	" "	" "
Abiotic	" "	" "
Stressors	" "	" "
		" "

Easting (m)	Northing (m)	Zone	Datum	Latitude (DD ft)	Longitude (DD ft)
-105° 53' 24" W	35° 41' 23" N	13	NAD- 83 UTM	35.689722	-105.89
Survey Date	5/15/24	Start Time		End Time	

SA Description

SA Landscape Context (summarize the wetland and surrounding landscape; include condition and impacts)

"Stream" is dead dry and doesnt hold moisture 70% ground coverage off trail
dandelions seen in area

SA Biotic Condition (vegetation patterns, composition and structure, exotics and invasives, disturbance evidence, fire and herbivory)

Blue bird Narrow leaf cotton wood Apple tree willow, Box Elder, Horse tail willow trees, garter snake, Spotted Towhee.

SA Abiotic Condition (hydrological alterations {e.g., dams, walls etc.]; flooding characteristics and evidence of overbank flooding; soil disturbance and other site impacts; explain the hydrologic breaks or other factors that define the SA limits)

This Area still has no sign of water going through the channel and is the most pedestrian filled part of the park

Assessment Summary (Overall site condition summary and comments after the field data is collected.)

Trees are flowering and lots of snakes (6) seen in the area. Appears to be turning into a good ecosystem despite recent water changes

Provisional Field Score 3.12	Rank B	Surveyor(s) DCS	Final Score 3.12	Rank B	Initials DS	Date 5/15/24

SA CODE: SF2MI [2]

SA Name: Two Mile Pond Reservoir Transect [2]

Date: 5/15/24

Surveyor Initials: DS

MRAM - SA Rank Summary Worksheet: Montane Riverine Wetlands 2.5			
Metric Description	Rating	Wt	Final Score
		Σ 1.0	3.25
Landscape Context			
1. Buffer Integrity Index	3	0.25	0.75
2. Riparian Corridor Connectivity	4	0.25	1.0
3. Relative Wetland Size	4	0.25	1.0
4. Surrounding Land Use	2	0.25	0.5
Biotic		Σ	
B1. Relative Native Plant Community Composition	4	0.2	
B2. Vegetation Horizontal Patch Structure	2	0.2	
B3. Vegetation Vertical Structure	3	0.2	
B4. Native Riparian Tree Regeneration	4	0.2	
B5. Invasive Exotic Plant Species Cover	4	0.2	
Abiotic		Σ	
A1. Floodplain Hydrologic Connectivity		0.3	
A2. Physical Patch Diversity	1	0.2	
A3. Channel Equilibrium	4	0.2	
A4. Stream Bank Stability and Cover	4	0.2	
A5. Soil Surface Condition	2	0.1	

SA Condition Scoring Summary			
Major Attribute	Score	Wt.	Wt. Score
Landscape Context	3.25	0.3	0.975
Biotic		0.35	
Abiotic		0.35	
SA WETLAND CONDITION SCORE Σ			3.12
SA WETLAND RANK =			B

SA Wetland Rank		
Rank	Score	Description
A	≥3.25 - 4.0	Excellent Condition
B	≥2.5 - <3.25	Good Condition
C	≥1.75 - <2.5	Fair Condition
D	1.0 - <1.75	Poor Condition

Stressor Summary	Major	Minor	Top Three	
	0	0	1	Construction
			2	No water
			3	Pedestrians

Stressor Comments (Evaluation of risk)

No water coming through old channel doesnt appear to affect the wall of willows

SA CODE : SF2MI [2]

Date : 5/15/ 24

SA Name : Two Mile Pond Reservoir Transect [2]

Surveyor Initials : DS

Landscape Context

L1 - Buffer Integrity Index

Worksheet 1a. Buffer and RCC Checklist. Check off land cover elements within the buffer area or RCC corridors that are either allowed, or are excluded and considered non-buffer elements that disrupt ecosystem connectivity. Indicate the imagery type and date (season and year of imagery).

Imagery	Google Earth KMZ. file	Image Date	6/23

Allowed buffer/RCC land cover elements			Excluded non-buffer/RCC land cover elements		
Buffer	RCC		Buffer	RCC	
[x]	[x]	Natural or semi-natural vegetation patches	[x]	[x]	Commercial/residential developments, parking lots, dams, bridges, revetments, and other structures
[x]	[x]	Small irrigation ditches without levees	[ ]	[ ]	Lawns, parks, golf courses, sports fields
[ ]	[ ]	Old fields, unmaintained	[ ]	[ ]	Railroads
[ ]	[ ]	Open range land	[ ]	[ ]	Maintained levees, sediment piles, construction materials, staging areas
[x]	[x]	Foot trails, horse trails, unpaved bike trails (low intensity)	[ ]	[ ]	Intensive livestock areas, horse paddocks, feedlots
[x]	[x]	Non-channel open water	[ ]	[ ]	Intensive agriculture: maintained pastures, hay fields, row crops, orchards, and vineyards
[x]	[x]	Non-functioning abandoned vegetated levees, or naturally occurring levees	[x]	[x]	Paved roads or developed second-order unpaved but graded roads
[ ]	[ ]	unpaved two tracks roads	[x]	[x]	Open water bounded by a levee or other manmade structure
[ ]	[ ]	Other	[ ]	[ ]	Other

Worksheet 1b. Buffer Percent Sub-metric. Measure or estimate the percentage of the SA perimeter composed of allowed buffer elements and enter into the Buffer Percent Box below. Rate the sub-metric using Table L1a and enter the rating on the Buffer Integrity Summary Worksheet 1d.

Buffer Percent (%)=	85%

Table L1a. Buffer Percent

Rating	Buffer Percent
( ) 4	100%
(X) 3	≥80% - <100%
( ) 2	≥50% - <80%
( ) 1	<50%

Worksheet 1c. Buffer Width Sub-metric. Measure the length of each buffer line in meters in the GIS or on the map. Average the line lengths and rate using Table L1b. Enter the rating on the Buffer Integrity Summary Worksheet 1d.

Line	Buffer Width (m)	Buffer Width (ft)	Line	Buffer Width (m)	Buffer Width (ft)
A	164.26	538.91	E	161.93	531.26
B	125.25	410.92	F	231.48	759.44
C	115.39	378.57	G	121.25	397.80
D	111.07	364.40	H	155.87	511.38
Average	148.31 (m)		486.58	(ft)	

Table L1b. Buffer Width

Rating	Average buffer width
( ) 4	≥190m
(X) 3	≥130 - <190m
( ) 2	≥65 - <130m
( ) 1	<65m

Worksheet 1d. Buffer Integrity Summary. Enter the sub-metric Ratings from Tables L1a and L1b above to calculate the Buffer Integrity Index Score using the formula in the box below. Using the Buffer Integrity Index Score, enter rating for Buffer Integrity in Table L1c on the SA Summary Worksheet.

Buffer % Rating	+	Buffer Width Rating	/2 =	Buffer Integrity Index Score
3	+	3	/2 =	3

Table L1c. Summary Rating for Buffer Integrity

Rating	Score
( ) 4	>3.5
(X) 3	>2.5 - ≤3.5
( ) 2	>1.5 - ≤2.5
( ) 1	≤1.5

SA CODE : SF2MI [2]

Date : 5/15/24

SA Name : Two Mile Pond Reservoir Transect [2]

Surveyor Initials : DS

2 - Riparian Corridor Connectivity (RCC)

orksheet 2. RCC excluded non-buffer elements calculation. Refer to worksheet 1a for
cluded non-buffer RCC land cover elements. Following the steps in the Field Guide, enter
e summed values in meters for excluded element lengths for each bank within each
gment upstream and downstream of the SA. Sum the values for each segment and
lculate % Segment Disruption for the upstream side and the downstream side. Add the
tal disruption for upstream and downstream segments and then calculate the % Total
isruptions for the riparian corridor. Rate Riparian Corridor Connectivity using Table L2 and
e data from this worksheet. Enter rating on the SA Summary Worksheet.

Segments	Upstream Segment		Downstream Segment	
Banks	Left Bank	Right Bank	Left Bank	Right Bank
) Total Bank Disruption (m)	0	0	0	0
) Total Disruption by Segment (m)	0		0	
) % Segment Disruption = (B/1000)*100	0		0	
) Total Disruption both segments	0			
) % Total Disruptions = (D/2000)*100	Zero disruption noticeable along the banks.			

Table L2. RCC Rating

Rating	Description
(X) 4	**0%** total disruption on both segments combined.
( ) 3	**<15%** total disruption on both segments combined.
( ) 2	**≥15% - <40%** total disruption on both segments combined.
( ) 1	**≥40%** total disruption on both segments combined.

3 - Relative Wetland Size

Worksheet 3a. Calculate the Relative Size Ratio (RSR) between the current WOI size and the historic WOI size. b. Calculate the Relative Wetland Size Score (RWSI (%)) as (1-RSR)*100. Rate Relative Wetland Size Index using Table L3 and enter rating on the SA Summary Workshe

RSR					RWSI						
Current Size	/	Historic Size	=	RSR	1	-	RSR	X	100	=	RWSI (%)
9	/	10	=	0.9	1	-	0.1	X	100	=	10

Table L3. Relative Wetland Size Rating

Rating	RWSI Score	Description
(X) 4	≤10%	Wetland is at or only minimally reduced from its full natural extent
( ) 3	>10% - ≤40%	Wetland remains equal to or more than 60% of its natual size
( ) 2	>40% - ≤70%	Wetland has been reduced by more than 40% its natural size
( ) 1	>70%	Wetland has been reduced by more than 70% its natural size

SA CODE : SF2MI [2] **Date :** 5/15/24

SA Name : Two Mile Pond Reservoir Transect [2] **Surveyor Initials :** DS

L4 - Surrounding Land Use

Worksheet 4. Surrounding Land Use. Enter the percent area occupied by a given Land Use Element in the Land Use Zone (LUZ) surrounding the SA. Calculate the Land Use Index (LUI) Score by element as the product of the element coefficient times the percent of the LUZ Area occupied. (The %LUZ Area must total 100%.) Sum the LUI scores for each element to create the final LUI Score. Rate using Table L4 and enter the rating in the SA Rank Summary Worksheet.

Land Use Element	Coef	% LUZ Area	LUI Score
Paved roads, parking lots, domestic or commercially developed buildings, mining (gravel pit, quarry, open pit, strip mining), railroads	0	0	0
Unpaved roads (e.g., driveway, tractor trail, unpaved parking lots), paddock, dirt lot	0.1	0	0
Dredging, borrow pits, abandoned mines, water-filled artificial impoundments (ponds and reservoirs)	0.1	0	0
Filling or dumping of sediment or soils	0.1	0	0
Intense recreation (all-terrain vehicle use, camping, popular fishing spot, etc.)	0.3	0	0
Rip-rapped channel (highly modified channel with severely limited vegetation zone that is altered by human activities but not a completely concrete channel [that goes under paved roads]), junkyards, trash dumps, disturbed ground (not including roads)	0.3	0	0
Ski area	0.4	0	0
Dam sites and flood-disturbed shorelines around water storage reservoirs	0.5	0	0
Abandoned artificial impoundments (ponds and reservoirs) and associated disturbed flood zones	0.5	10	5
Artificial/Constructed wetlands, irrigation ditches	0.7	20	14
Developed/Managed trail system (high use trail)	0.8	5	4
Agriculture - active tilled crop production	0.2	0	0
Agriculture - permanent crop (vineyards, orchards, nurseries, berry production)	0.3	0	0
Manicured lawns, sport fields, and golf courses; urban manicured parks	0.3	0	0
Old fields and other disturbed fallow lands dominated by ruderal and/or exotic species (e.g., kochia, Russian thistle, mustards, annual vegetation)	0.5	0	0
Mature old fields and other fallow lands with natural composition, introduced hay field and pastures (e.g., perennial vegetation cover)	0.7	0	0
Restoration areas in process to natural conditions (re-conversion in process)	0.8	65	52
Haying of native grassland (e.g., no tillage, haying and baling only)	0.9	0	0
Heavy logging or tree removal with >50% of large trees (e.g., >30 cm diameter at breast height) removed, woodland/shrub vegetation conversion (chaining, cabling, rotochopping)	0.3	0	0
Commercial tree plantation, Christmas tree farms	0.6	0	0
Selective logging or tree removal with <50% of large trees (e.g., >30 cm diameter at breast height) removed	0.8	0	0
Mature restoration areas returned to natural conditions (re-converted)	0.9	0	0
Natural area, land managed for native vegetation - No agriculture, logging, development	1	0	0
LUI Score= Coefficient * % LUZ Area		100	75

Table L4. Surrounding Land Use Rating	
Rating	**LUI Score**
( ) 4	≥95 - 100
( ) 3	≥80 - <95
(X) 2	≥40 - <80
( ) 1	<40

Biotic Metrics

Worksheet 5. Vegetation Community Patch Polygon Data for Biotic Metrics B3, B4, and B5 for Polygons from SA Biotic Map. Enter data for each polygon under a unique number assigned from the SA Biotic Map. Each polygon is evaluated with respect to Vegetation Vertical Structure (B3), Native Tree Regeneration (B4), and Invasive Exotic Plant Species Cover (B5) metrics. Enter the Vertical Structure Type (VST) for B3, tree regeneration % cover within the polygon for B4 and the % cover of invasive exotic species for B5. Use the Tables in Appendix B and the Field Guide for metric instructions. Enter the species codes for the invasive exotic species found in the polygon (from NM Noxious Weed List - Appendix D). Use the comments box for documenting and describing vegetation community patch features.

Polygon No	B3 Vertical Structure Type	B4 Tree Regeneration % Cover	B5 Invasive Exotic Species % Cover	Invasive Exotic Species (List Code(s))	Comments
1	IA1				
2	IA2	46%	None noted	None	Area is looking green and producing shade for up sprouting horsetails and wheat grasses.
3	IIA1				
4	IIIB1				
5	IIIC1				
6	IVEI				
7	IVF1				
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

SA CODE : SF2MI [2]　　**SA Name :** Two Mile Pond Reservoir Transect [2]　　**Date :** 5/15/24　　**Surveyor Initials :** [illegible]

B1 - Relative Native Plant Community Composition

Worksheet 6. CT Plant Species and Polygon Assignments. Starting with CT A, enter the number of the first polygon from Worksheet 5. Enter the species codes for the two top dominant species in each stratum that appears in the polygon. See footnotes for special instructions. If a species appears in more than one strata, assign the species to the stratum in which it is more abundant. Each polygon is either assigned to the same CT if it has the same composition or a new CT is created for the polygon.

CT	Polygon Nos.	Tall Woody Stratum 1				Short Woody Stratum 2				Herbaceous/Sparse Stratum 3				CT Score 4		
		Species 1	E N	Species 2	E N	Species 3	E N	Species 4	E N	Species 5	E N	Species 6	E N	Raw4	% SA5	Wt Score6
A	2	Narrowleaf Cottonwood	N	Box Elder	N	Willow trees	N	Apple Trees	U	Horse tail	N	Short willow	N	4.00	100%	4.00
B																
C																
D																
E																
F																
G																
H																
I																
J																
K																
L																
M																
N																
O																
														Final Weighted Score7		4.00

1. Trees and shrubs > 6 m (20 feet) and > 25% total stratum cover; 2. Trees and shrubs ≤6m (20 feet) and >25% total stratum cover; 3. Herbaceous (graminoids and forbs)>10% total stratum cover. 4Raw Score is from Table B1a (Appendix B); 5%SA is the percentage of the SA area covered by the CT and expressed as a decimal number; the total area %SA must equal 1; 6Wt. Score is the product of the Raw Score * % SA; 7The Final Weighted Score is the sum of the Wt. Scores. Rate the CT Final Weighted Score on Table B1 and enter the Rating for Relative Native Plant Community Composition on the SA Rank Summary Worksheet.

SA CODE : SF2MI [2]

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SA Name : Two Mile Pond Reservoir Transect [2]

Table B1. Relative Native Plant Community Composition Rating

Rating	CT Final Weighted Score	
4	≥ 3.75	<10% non-native
3	≥ 3.25 and <3.75	10% ≤20% non-native
2	> 2.0 and <3.25	20% ≤50% non-native
1	≤2.0	>50% non-native

- Vegetation Horizontal Patch Structure

rksheet 7. Using Tables B2a and B2c (Appendix B), choose the schematic pattern that best matches the mapped vegetation patch tern for the SA. Rate using Table B2 and enter rating on the SA Rank Summary Worksheet.

rizontal Patch Structure pattern A,B,C, or D:

Table B2. Rating for Vegetation Horizontal Patch Structure

Rating	Description
4	Most closely matches Pattern A. SA has a diverse patch structure (≥4 patch types) and complexity. A dominant patch type would be difficult to determine.
3	Pattern B. SA has a moderate degree of patch diversity (3 patch types present) and complexity. A single, dominant patch type may be present, although the other patch types would be well represented and have more than one occurrence in the SA.
2	Pattern C. SA has a low degree of patch diversity and complexity. Two or three patch types may be present; however, a single, dominant patch type exists with the others occupying a small portion of the SA.
1	Pattern D. SA has essentially little to no patch diversity or complexity. The SA is dominated by a single patch type. Other patch types, if present, occur infrequently and occupy a small portion of the SA.

3 - Vegetation Vertical Structure

Vorksheet 8. Percentage of SA by vertical structure type (VST). Using the Structure Type from Worksheet 5 and the %SA om Worksheet 6 calculate the total area of the SA occupied by each VST using the formula VST(type) = Sum (%SA for CTs with ame VST) x 100. Enter the total %SA for each VST below.

	VST 1 High Structure Forest	VST 2 Low Structure Forest	VST 5 Tall Shrubland	VST 6S Short Shrubland	VST 6W Herbaceous Wetland	VST 6H Herbaceous Vegetation	VST 7 Sparse Vegetation
Total % of SA	50			50			

Table B3. Rating for Vegetation Vertical Structure. Using the data from Worksheet 8 rate the SA based on the criteria in Table B3. Pick the ow that best fits the distribution of VSTs in the SA. Each row specifies the required dominant structure type plus co- and sub-dominants. Percentage cover required per co- or sub-dominant is a minimum. The types listed in the columns must be the most common VSTs in the SA for he rating to be applicable (Worksheet 8). VSTs 1 and 2 can be inverted in dominance and the rating is still applicable. Work from the top of the able down. As long as the requirements for one row are met, any other types may or may not co-occur without changing the rating. Enter the rating on the SA Rank Summary Worksheet.

Rating	Dominant VST	Co- or Sub-dominant VST ≥15%	Sub-dominant VST ≥5%
4	1	5	6W and/or 6H
	1	6W	
	2 or 1 and 2	5	6W and/or 6H
3	1		
	2 or 1 and 2	5	
	2 or 1 and 2	6W	
	5	6W	
2	2 or 1 and 2		
	5		
	6W		
1	6S		
	6H		
	7		

SA CODE : SF2MI [2]

Date : 5/15/24

SA Name : Two Mile Pond Reservoir Transect [2]

Surveyor Initials : DS

B4 - Native Riparian Tree Regeneration

Table B4. Native Riparian Tree Regeneration rating. Using the polygon percent cover of native tree seedlings, saplings and poles from Worksheet 5, rate the SA based on polygon percent cover and patch density. Enter the rating on the SA Rank Summary Worksheet.

Rating	Description
☒ 4	Native poles, sapling, and seedlings trees well represented, obvious regeneration, many patches or polygons with >5% cover, typically multiple size (age) classes.
◯ 3	Native poles, saplings and/or seedlings common, scattered patches or polygons with 1% -5% cover, size classes few.
◯ 2	Native poles, saplings and/or seedlings present but uncommon, restricted to one or two patches or polygons with typically <1% cover, little size class differentiation.
◯ 1	Native poles, saplings, and/or seedlings absent (0% cover).

B5 - Invasive Exotic Plant Species Cover

Worksheet 9. Based on Worksheets 5 and 6, calculate or estimate the percentage cover of invasive exotic species for the SA and enter below. Rate using Table B5 and enter the rating on the SA Rank Summary Worksheet.

Rating Method [ ]

Invasive cover (%) [6]

calculate

Table B5. Ratings for Invasive Exotic Plant Species Cover

Rating	Invasive Species Cover %
◯ 4 x	0%
◯ 3	>0% - <1%
◯ 2	≥1% - <10%
◯ 1	≥10

Additional CTs and Biotic Metric Comments:

SA CODE : SF2MI [ ]

Date :

SA Name : Two Mile Pond Reservoir Transect [ ]

Surveyor Initials :

Abiotic Metrics

A1 - Floodplain Hydrologic Connectivity

Method 1

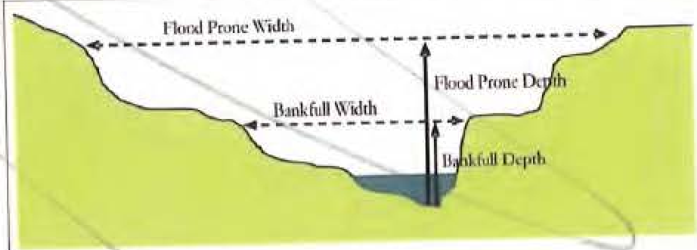
Worksheet 10a. Floodplain Hydrologic Connectivity Measurements. The following six steps are conducted at each of three cross-sections at the approximate mid-points along straight riffles and away from deep pools or meander bends. Use a measuring tape and temporary stakes for horizontal measurements, and a stadia rod or similar measuring stick for vertical measurements. If unavailable, use visual estimates. Where straight channel segments do not occur, or if there is excessive ponding or bankfull indicators are obscured, use the narrative rating approach (Method 2). Enter the rating method in the box below, either meander pool, riffle pool or narrative (Method 2) and choose the corresponding Table (A1a, A1b, or A1c) to rate Floodplain Hydrologic Connectivity. Enter the rating on the SA Rank Summary Worksheet. Photographs of each cross-section are required and recorded in Table A1d.

Steps	Description	Cross-section: 1	2	3
1: Bankfull width	This is a critical step requiring familiarity with field indicators of the bankfull contour. Measure the distance between the right and left bankfull contours with a tape.			
2: Maximum bankfull depth	Keeping the tape level between the right and left bankfull contours, measure the height of the line above the thalweg (the deepest part of the channel). A pocket line level can help here.			
3: Flood-prone depth	Double the estimate of maximum bankfull depth from Step 2.			
4: Flood-prone width	Using a tape, measure the length of a level line at a height equal to the flood prone depth from Step 3 to where it intercepts the right and left banks.			
5: Calculate Entrenchment Ratio	Divide the flood-prone width (Step 4) by the bankfull width (Step 1).			
6: Calculate average ratio	Calculate the average for Step 5 for all three replicate cross-sections. Enter the average here and rate using Table A1a. Enter the rating in the A1 box on the SA Rank Summary Worksheet.			

Rating Method

Table A1a. Rating for Floodplain Hydrologic Connectivity in meandering single-channel riffle-pool systems

Rating	Description
4	Average entrenchment ratio is ≥ 2.2;
3	Average entrenchment ratio is ≥1.9 - <2.2
2	Average entrenchment ratio is ≥1.5 - <1.9
1	Average entrenchment ratio is < 1.5



Worksheet 10b. Floodplain Hydrologic Connectivity Indicators. Use this Worksheet in conjunction with Table A1c. Check the boxes for all that apply to each segment.

U	M	L	Indicator
☐	☐	☐	Bankful is slightly below bank height
☐	☐	☐	Bankful is well below bank height and channel is incised
☐	☐	☐	Channel widening due to bank failure
☐	☐	☐	Constructed levees preclude floodplain inundation
☐	☐	☐	Stream is straightened/channelized
☐	☐	☐	Inset floodplain formation
☐	☐	☐	Decreased peak flows due to hydrologic modification
☐	☐	☐	Bankfull indicators at point of incipient flooding of the floodplain
☐	☐	☐	Indicators of overbank flow on floodplain
☐	☐	☐	Floodplain inundation due to beaver activity

Table A1b. Rating for Floodplain Hydrologic Connectivity in single-channel step-pool systems

Rating	Description
4	Average entrenchment ratio is ≥ 1.9
3	Average entrenchment ratio is ≥1.4 - <1.9
2	Average entrenchment ratio is ≥1.2 - <1.4
1	Average entrenchment ratio is < 1.2

SA CODE : SF2MI [ ]

Date :

SA Name : Two Mile Pond Reservoir Transect [ ]

Surveyor Initials :

Method 2

Table A1c. Narratve Floodplain Hydrologic Connectivity Rating. Select the narrative description that best describes the floodplain hydrologic connectivity. At each cross-section, use Worksheet 10b to record channel incision, bank modification, inset floodplain or other hydrologic evidence that would preclude natural floodplain inundation. Conversely, assess indicators and evidence for overbank flow and floodplain inundation. Record whether beaver activity is obscuring bankful indicators due to inundation of the floodplain. Select a rating from the table below. Use data from Worksheets 10b to help select rating. Enter Rating on SA Summary Worksheet. Photographs are required at each cross-section and recorded in Table A1d.

Rating	Description
◯ 4	Fully connected to the natural floodplain. Indicators of bankfull discharge are at the bank/floodplain transition, with over-bankfull flows likely to inundate a broad area of floodplain. Floodplain supports riparian vegetation and shows signs of overbank sediment deposition. Or beaver ponds inundate the entire, normally active floodplain and preclude the identification of bankfull indicators and the active floodplain width.
◯ 3	Flow access to the floodplain moderately limited by incision, channelization. Less frequent inundation than fully connected streams described above (as noted by bankfull indicators below floodplain transition). Floodplain supports a riparian overstory, but some understory plants may be upland. An inset floodplain supporting riparian vegetation may also be present.
◯ 2	Incised, channelized or modified with an inset floodplain formed, which is regularly inundated and supports riparian vegetation and sediment regimes. Or the stream has minimal access to the natural floodplain due to incision, channelization, or flow modification, and the natural floodplain does not support riparian vegetation except for relatively long-lived phreatophytes (e.g., cottonwood, salt cedar, etc.).
◯ 1	Fully disconnected from floodplain, either through incision, bank modification/channelization, or hydrologic modification (i.e., abandonment of floodplain due to decreased peak flows). Indicators may include upland vegetation and lack of overbank sediment deposits on the floodplain, etc.

Table A1d. Photo Point Log for Cross-Section Photographs. For each cross-section record the digital names/numbers of photographs taken looking Upstream and Downstream from the thalweg and looking Bank Right* and Bank Left* across the stream from each side of the cross-section. Leave the cross-section tape and flags indicating bankful in the ground when taking the Bank Right and Bank Left photos. A photo board with SA name and cross-section information is helpful. (*The bank of a stream or river on the right (left) of the observer when facing in the direction of flow or downstream.) See Appendix E for additional details.

Cross Section	Easting (Latitude)	Northing (Longitude)	Upstream	Downstream	Bank Right	Bank Left
1						
2						
3						

Floodplain Hydrologic Connectivity Comments:

Not in JSAI Assesmont

SA CODE : SF2MI [2] Date : 5/15/24

SA Name : Two Mile Pond Reservoir Transect [2] Surveyor Initials : DS

A2 - Physical Patch Complexity

Worksheet 11. Physical Patch Complexity checklist. Check off existing physical patch types for the upper, middle and lower segments of the SA; count the number of unique patch types and rate using Table A2 in combination with the narrative description. Enter the rating on the SA Rank Summary Worksheet.

Upper Segment	Middle Segment	Lower Segment	Field Indicators (check all existing conditions)
☐	☐	☐	Active side channels
☐	☒	☐	Abandoned channels
☐	☐	☐	Backwater/eddy
☐	☐	☐	Riffles or rapids
☐	☐	☐	Shoals, sparely-vegetated bars
☐	☐	☐	Channel boulders
☐	☐	☐	Oxbow lakes/ponds on floodplains
☐	☐	☐	Vegetated island and side bars
☐	☒	☐	Terraces
☐	☐	☐	Channel pools
☐	☐	☐	Beaver ponds
☐	☐	☐	Swales, depressional features on floodplains
☐	☐	☐	Debris jams in channel
☐	☐	☐	Woody wrack piles on the floodplain
☐	☐	☐	Floodplain micro-topography (mounds, pits)
☐	☐	☐	Downed logs
☐	☐	☐	Natural levees
☐	☐	☐	Standing snags
☐	☐	☐	Variegated, convoluted, or crenulated foreshore
☐	☐	☐	Undercut banks in channels
			No. of unique Patch Types

Table A2. Rating for Physical Patch Complexity

Rating	Description
○ 4	**High** degree of physical patch complexity across the floodplain. There are many floodplain micro-habitats present (mounds and pits, woody wrack piles, etc.), many fluvial geomorphic surfaces (swales, side channels, terraces, side bars, etc.), and there is high in-channel complexity (pools and riffles, large woody debris, undercut banks, etc.). As a guide, 12 or more unique indicators are present and well distributed throughout the SA (most indicators are found on multiple segments).
○ 3	**Moderate** physical patch complexity scattered across the floodplain. There are several floodplain micro-habitats present, several fluvial geomorphic surfaces, and there is moderate in-channel complexity. As a guide, 9 - 11 indicators are scattered throughout the SA (some on multiple segments).
○ 2	**Limited** physical patch complexity scattered across the floodplain. There are some floodplain micro-habitats present, some fluvial geomorphic surfaces, and there is limited in-channel complexity. As a guide, on average there are 6 - 8 unique indicators present in the SA (only a few on multiple segments).
☒ 1	**Little** or no physical patch complexity on the floodplain. There are few or no floodplain micro-habitats present, few different fluvial geomorphic surfaces, and there is little or no in-channel complexity. As a guide, ≤ 5 unique indicators are present in the SA.

SA CODE : SF2MI [2] **Date :** 5/15/24

SA Name : Two Mile Pond Reservoir Transect [2] **Surveyor Initials :** DJ

A3- Channel Equilibrium

Worksheet 12. Channel Equilibrium Checklist. Check all field indicators that apply to the upper, middle and lower segment of the SA observed at the channel edge of the traverse. Rate using the Table A3 descriptions and based on a preponderance of evidence from this checklist. Enter the rating on the SA Rank Summary Worksheet.

Condition	Upper Segment	Middle Segment	Lower Segment	Field Indicators(check all existing conditions)
Indicators of Channel Equilibrium	☐	☒	☐	The channel has a well-defined bankfull contour that clearly demarcates the point of incipient flooding where moderate frequent flow events spread flow across the floodplain.
	☐	☒	☐	Perennial riparian vegetation is abundant and well established along the bankfull contour, but not below it.
	☐	☒	☐	There is leaf litter, thatch, or wrack in most pools.
	☐	☒	☐	The channel contains embedded woody debris of the size and amount consistent with what is naturally available in the riparian area.
	☐	☒	☐	There is little or no active undercutting or burial of riparian vegetation.
	☐	☐	☐	There are no bars that are densely vegetated with perennial vegetation (neither mid-channel bars or point bars).
	☐	☒	☐	Channel and point-bars consist of well-sorted bed material.
	☐	☒	☐	The channel bed is not planar and without an abundance of fine materials filling the interstitial spaces between larger stream substrate.
	☐	☒	☐	There are channel pools at meander bends and some deep pools within the reach.
Indicators of Active Degradation	☐	☐	☐	The channel is characterized by deeply undercut banks with exposed living roots of trees or shrubs.
	☐	☐	☐	There are abundant bank slides or slumps, or the lower banks are uniformly scoured and not vegetated.
	☐	☐	☐	Bank vegetation is declining in stature or vigor, or many riparian trees and shrubs along the banks are leaning or falling into the channel.
	☐	☐	☐	Channel bed is scoured to large cobbles or boulders and entrained bank material is filling the cobble interstices and pools.
	☐	☐	☐	There are active headcuts within the channel.
	☐	☐	☐	An obvious historical floodplain has recently been abandoned, as indicated by the age structure of its riparian vegetation.
Indicators of Active Aggradation	☐	☐	☐	There is abundant fresh splays of coarse sediment covering the floodplain above the natural point bar elevation.
	☐	☐	☐	There are partially buried living tree trunks or shrubs along the banks.
	☐	☐	☐	The channel bed is planar overall. The stream lacks well-defined channel pools at meander bends, or pools are filled with sediment.
	☐	☐	☐	There are partially buried or sediment-choked culverts.
	☐	☐	☐	There are avulsion channels on the floodplain or adjacent valley floor.

SA CODE : SF2MI [2]   **Date :** 5/15/24

SA Name : Two Mile Pond Reservoir Transect [2]   **Surveyor Initials :** DS

Table A3. Rating for Channel Equilibrium	
Rating	**Description**
☒ 4	Most of the channel throughout the SA is in equilibrium condition with little evidence of excessive aggradation or degradation based on the field indicators listed in Worksheet 12.
◯ 3	There is some evidence of excessive aggradation or degradation; the channel throughout the SA seems to approach an equilibrium condition. Circle primary process: aggradation or degradation.
◯ 2	There is evidence of severe aggradation or degradation throughout most of the channel through the SA. Circle primary process: aggradation or degradation.
◯ 1	The channel is artificially hardened, channelized, or is concrete throughout most of the SA.

A4- Stream Bank Stability and Cover

Worksheet 13. Bank Soil Stability and Streambank Erosion Potential Checklist. Check the indicator that best describes the condition looking a minimum of 25 m upstream and downstream at the channel edge of the upper, middle and lower segment of the SA. Average the six scores for both Bank Soil Stability and Streambank Erosion Potential. Rate using the Table A4 and enter the rating on the SA Summary Worksheet.

Condition	Upper Segment	Middle Segment	Lower Segment	Field Indicators
Indicators of Bank Soil Stability	☐4	☒4	☐4	Infrequent raw banks, less than 10% of steam bank under stress from trampling, slumping, vegetation removal or active erosion, etc.
	☐3	☐3	☐3	Raw banks and loose soil intermittently and 10%-25% of stream bank under stress from trampling, trail crossing, hoof punching, vegetation removal, erosion etc.
	☐2	☐2	☐2	Significant raw banks and loose soil, 25%-50% of stream bank under stress, trampled, slumping or eroding etc.
	☐1	☐1	☐1	Raw banks almost continuous with greater than 50% of stream bank under stress, loose soil, slumping, trampled or eroding; or channel appear to lack banks due to trampling; or channel that is artificially hardened or concrete along most of its length.
Indicators of Stream Bank Erosion Potential	☐4	☒4	☐4	≥ 80% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by boulders, large cobbles and/or large woody debris that prevent bank erosion.
	☐3	☐3	☐3	≥50% - <80% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those areas not covered by vegetation are protected to allow only minor erosion.
	☐2	☐2	☐2	≥25% - <50% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those area not covered by vegetation or stabilized by roots, are covered by materials or vegetation that give limited protection.
	☐1	☐1	☐1	Less than 25% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those areas not covered by vegetation provide little or no control over erosion and excess shear stress, and the banks are susceptible to erosion by high water flows.

Average Indicator Score ☐

Table A4. Stream Bank Stability and Cover Rating	
Rating	**Description**
☒ 4	>3.5 - 4.0
◯ 3	>2.5 - ≤3.5
◯ 2	>1.5 - ≤2.5
◯ 1	1.0 - ≤1.5

SA CODE: SF2MI [2]

Date: 5/15/24

SA Name: Two Mile Pond Reservoir Transect [2]

Surveyor Initials: DS

A5 - Soil Surface Condition

Worksheet 14. Soil Surface Condition. Check all that apply in the upper, middle and lower SA segments during the field reconnaissance. The absence of these indicators would signify that disturbances are naturally occurring (e.g., flood deposition or low-density wildlife trails). Estimate the percent soil disturbance by segment area and referring to the SA abiotic map. Rate using Table A5 and enter on the SA Rank Summary Worksheet.

Upper Segment	Middle Segment	Lower Segment	Field Indicators (Check all existing conditions)
☐	☐	☐	Active erosion features due to anthropogenic disturbance (eg. rills, gullies, plant pedestals).
☐	☒	☐	Multiple livestock and other (fishing,hiking) trails,
☐	☐	☐	Vehicle tracks including off-road and construction, etc.
☐	☐	☐	Impervious compacted surfaces or pavement
☐	☐	☐	Grading or plowing
☐	☐	☐	Fill
☐	☐	☐	Gravel pits
☐	☐	☐	Anthropogenic levees and berms
☐	☐	☐	Irrigation-driven salinity and mineral crusts
☐	☐	☐	Fire pits
☐	☐	☐	Other:
			Estimate % soil disturbance by segment area

Average % Soil Disturbance:

Table A5. Soil Surface Condition Rating	
Rating	**Description**
○ 4	Bare soil areas due to anthropogenic disturbance absent or very limited. No human-caused impervious surfaces or gravel pits are found within the SA. Total disturbance, including erosion, impervious surfaces, fill, or other anthropogenic degradation to the soil surface is less than 1% of the SA.
○ 3	Some amount of bare soil from human causes is present but the extent is limited. Area of impervious surfaces are minimal in extent. Total disturbance, including erosion, impervious surfaces, fill, gravel pits, vehicle tracks or other anthropogenic degradation to the soil surface is between 1% and 5% of the sampling area.
☒ 2	Bare soils from human causes are common. These may include dense livestock trails, vehicle tracks, trails, construction staging areas, mechanical rutting, or irrigation-driven salinity. Soil disturbance, while apparent, is limited to specific areas and not found across the majority of the SA. Total disturbance, including erosion, impervious surfaces, fill, gravel mining, or other anthropogenic degradation to the soil surface is greater than 5% or less than 10% of the SA.
○ 1	Bare soil areas degrade portions of the site because of altered hydrology or other long-lasting impacts. Deep ruts from off-road vehicles or machinery are present. Livestock disturbance or trails are widespread and several inches deep. Water is channeled into rills or ponded. Additional human-caused impervious surfaces or soil compaction are present. Total disturbance, including erosion, impervious surfaces, fill,gravel mining or other anthropogenic degradation to the soil surface is equal to or greater than 10% of the SA.

SA CODE : SF2MI [2] **Date :** 5/15/24

SA Name : Two Mile Pond Reservoir Transect [2] **Surveyor Initials :** DS

rksheet 15. Stressor Checklist. Check off stressors by intensity category that may be affecting wetland ecological condition of the SA and WOI. Assign egories using direct evidence where available or your best professional judgement otherwise. If the presence of the stressor is uncertain, mark as "Unknov nk Major Stressors in Dominant Stressor column(Pick up to 3)

nk	Affect				Stressor Group/Stressor	Comments
	Major	Minor	Absent	Unknown		
					Adverse water management	
	☑	☐	☑	☐	Extended low flow dam releases	
	☐	☐	☑	☐	Timing of flow releases not concordant	
	☐	☐	☑	☐	Extended high flow dam releases	
	☐	☐	☑	☐	Agriculture/Urban flow diversion upstream	
					Adverse sediment management	
	☐	☐	☑	☐	Adverse sediment retention by dams	
	☐	☐	☑	☐	Sediment loss by dredging	
	☐	☐	☑	☐	Adverse sediment input (roads/development)	
					Artificial water additions	
	☐	☐	☑	☐	Sewer treatment effluent	
	☐	☐	☑	☐	Point source urban runoff	
	☐	☐	☑	☐	Factory, feedlot outfall	
	☐	☐	☑	☐	Agricultural irrigation ditch returns	
	☐	☐	☑	☐	Mining waste	
					Ground water pumping	
	☐	☐	☑	☐	Urban depletions	
	☐	☐	☑	☐	Fracking	
	☐	☐	☑	☐	Agriculture irrigation wells	
					Watershed alteration	
	☐	☐	☑	☐	Extensive recent fires in watershed	
	☐	☐	☑	☐	Extensive recent timber harvest	
	☐	☐	☑	☐	Extensive open pit mining in watershed	
	☑	☐	☐	☐	Livestock/wildlife overgrazing	
					Local biodiversity impacts	
	☐	☐	☐	☐	Evidence of excessive grazing (local)	
	☑	☐	☐	☐	Excessive noise affecting wildlife	
	0	0		0	Counts by Intensity	

dditional Comments No Water is going to this Area

ersion Date: 04/25/2022 Schema: Montane 2.5

NMRAM Montane Riverine Wetlands Version 2.5

SA Cover Worksheet					
SA Code SF2MI [2]	SA Name : Two Mile Pond Reservoir		Project : Riparian Assesement		
Code Tsct [2]	AU Name : Transect [2]		WOI : Two Mile Pond Reservoir		
County Santa Fe	HUC 12 Headwaters Santa Fe River	Elevation (ft) 7299	(m) 2224.7	Ecoregion 6.0 NWFM	

SA General Location and Boundary (Rationale, comments)

A riparian system that leads into a pond located on the east side of Santa Fe bordering the Santa Fe National Forest. This reservoir was decommissioned due to safety concerns regarding the reservoir and a water diversion to the area was recently shut down due to lack of water rights.

Driving Directions

Driving to Santa Fe from Albuquerque you head north on Old Pecos Trail. Then head east on Camino Del Monte Sol and right on Canyon Road until you reach the reservoir located to the North.

Ownership The Nature Conservative and The Santa Fe National Forest	Data Sharing Restrictions	Results to client only.	Fish Observed in Wetland?	

Surveyor Role	Surveyor Name	Surveyor Initials
Landscape	Dustin Schwartz	DS
Biotic	Annie McCoy	AM
Abiotic	Dustin Schwartz	DS
Stressors	Dustin Schwartz	DS

Easting (m)	Northing (m)	Zone	Datum	Latitude (DD ft)	Longitude (DD ft)
-105° 53' 24" W	35° 41' 23" N	13	NAD- 83 UTM	35.689722	-105.89
Survey Date	6/11/24	**Start Time**	9:00	**End Time**	15:00

SA Description

SA Landscape Context (summarize the wetland and surrounding landscape; include condition and impacts)

The walking path is a sitting mud pond goes dryish just before channel very wet area. Tracks of animals and humans in mud Water coming out of Pipe below channel.

SA Biotic Condition (vegetation patterns, composition and structure, exotics and invasives, disturbance evidence, fire and herbivory)

Saw a Deer and swallow tail Alder leafs have bumps on leaves Willows are turning green. Spotted towhee Warbling Vireo. grasses filling out same amount of horse tail Meadow grass

SA Abiotic Condition (hydrological alterations (e.g., dams, walls etc.]; flooding characteristics and evidence of overbank flooding; soil disturbance and other site impacts; explain the hydrologic breaks or other factors that define the SA limits)

Sitting water from rain we assume no sign of flow in the channel Old stone dam is a lot faster today.

Assessment Summary (Overall site condition summary and comments after the field data is collected.)

The area is very green and meadow grass is filling up most of the under story. There are large puddles of mud we assume from recent rains but will keep eye out for ground water.

Provisional Field Score 3.04 Rank B Surveyor(s) DS/AM | Final Score 3.04 Rank B Initials DS Date 6/11/24

SA CODE : SF2MI [2]

Date : 6/11/24

SA Name : Two Mile Pond Reservoir Transect [2]

Surveyor Initials : DS/AM

NMRAM - SA Rank Summary Worksheet: Montane Riverine Wetlands 2.5			
Metric Description	Rating	Wt	Final Score
Landscape Context		Σ 1.0	3.25
L1. Buffer Integrity Index	3	0.25	0.75
L2. Riparian Corridor Connectivity	4	0.25	1.0
L3. Relative Wetland Size	4	0.25	1.0
L4. Surrounding Land Use	2	0.25	0.5
Biotic		Σ	
B1. Relative Native Plant Community Composition	4	0.2	
B2. Vegetation Horizontal Patch Structure	2	0.2	
B3. Vegetation Vertical Structure	3	0.2	
B4. Native Riparian Tree Regeneration	4	0.2	
B5. Invasive Exotic Plant Species Cover	4	0.2	
Abiotic		Σ	
A1. Floodplain Hydrologic Connectivity		0.3	
A2. Physical Patch Diversity	1	0.2	
A3. Channel Equilibrium	4	0.2	
A4. Stream Bank Stability and Cover	4	0.2	
A5. Soil Surface Condition	1	0.1	

SA Condition Scoring Summary			
Major Attribute	Score	Wt.	Wt. Score
Landscape Context	3.25	0.3	0.975
Biotic		0.35	
Abiotic		0.35	
SA WETLAND CONDITION SCORE Σ			3.04
SA WETLAND RANK =			B

SA Wetland Rank		
Rank	Score	Description
A	≥3.25 - 4.0	Excellent Condition
B	≥2.5 - <3.25	Good Condition
C	≥1.75 - <2.5	Fair Condition
D	1.0 - <1.75	Poor Condition

Stressor Summary	Major	Minor	Top Three	
	0	0	1	Construction
			2	Trails
			3	Pedestrians

Stressor Comments (Evaluation of risk)

Pedestrians walking through the mud impacts the trail significantly but not really any where else.

SA CODE : SF2MI [2]

Date : 6/11/24

SA Name : Two Mile Pond Reservoir Transect [2]

Surveyor Initials : DS/AM

Landscape Context

- Buffer Integrity Index

Worksheet 1a. Buffer and RCC Checklist. Check off land cover elements within the buffer area or RCC corridors that are either allowed, or are excluded and considered non-buffer elements that disrupt ecosystem connectivity. Indicate the imagery type and date (season and year of imagery).

Imagery	Google Earth KMZ. file	Image Date	6/23

Allowed buffer/RCC land cover elements

Buffer	RCC	
[X]	[X]	Natural or semi-natural vegetation patches
[X]	[X]	Small irrigation ditches without levees
[ ]	[ ]	Old fields, unmaintained
[ ]	[ ]	Open range land
[X]	[X]	Foot trails, horse trails, unpaved bike trails (low intensity)
[X]	[X]	Non-channel open water
[X]	[X]	Non-functioning abandoned vegetated levees, or naturally occurring levees
[ ]	[ ]	unpaved two tracks roads
[ ]	[ ]	Other

Excluded non-buffer/RCC land cover elements

Buffer	RCC	
[X]	[X]	Commercial/residential developments, parking lots, dams, bridges, revetments, and other structures
[ ]	[ ]	Lawns, parks, golf courses, sports fields
[ ]	[ ]	Railroads
[ ]	[ ]	Maintained levees, sediment piles, construction materials, staging areas
[ ]	[ ]	Intensive livestock areas, horse paddocks, feedlots
[ ]	[ ]	Intensive agriculture: maintained pastures, hay fields, row crops, orchards, and vineyards
[X]	[X]	Paved roads or developed second-order unpaved but graded roads
[X]	[X]	Open water bounded by a levee or other manmade structure
[ ]	[ ]	Other

Worksheet 1b. Buffer Percent Sub-metric. Measure or estimate the percentage of the SA perimeter composed of allowed buffer elements and enter into the Buffer Percent Box below. Rate the sub-metric using Table L1a and enter the rating on the Buffer Integrity Summary Worksheet 1d.

Buffer Percent (%)=	85%

Table L1a. Buffer Percent

Rating	Buffer Percent
○ 4	100%
(X) 3	≥80% - <100%
○ 2	≥50% - <80%
○ 1	<50%

Worksheet 1c. Buffer Width Sub-metric. Measure the length of each buffer line in meters in the GIS or on the map. Average the line lengths and rate using Table L1b. Enter the rating on the Buffer Integrity Summary Worksheet 1d.

Line	Buffer Width (m)	Buffer Width (ft)	Line	Buffer Width (m)	Buffer Width (ft)
A	164.26	538.91	E	161.93	531.26
B	125.25	410.92	F	231.48	759.44
C	115.39	378.57	G	121.25	397.80
D	111.07	364.40	H	155.87	511.38
Average	148.31 (m)		486.58	(ft)	

Table L1b. Buffer Width

Rating	Average buffer width
○ 4	≥190m
(X) 3	≥130 - <190m
○ 2	≥65 - <130m
○ 1	<65m

Worksheet 1d. Buffer Integrity Summary. Enter the sub-metric Ratings from Tables L1a and L1b above to calculate the Buffer Integrity Index Score using the formula in the box below. Using the Buffer Integrity Index Score, enter rating for Buffer Integrity in Table L1c and on the SA Summary Worksheet.

Buffer % Rating	+	Buffer Width Rating	/2 =	Buffer Integrity Index Score
3	+	3	/2 =	3

Table L1c. Summary Rating for Buffer Integrity

Rating	Score
○ 4	>3.5
(X) 3	>2.5 - ≤3.5
○ 2	>1.5 - ≤2.5
○ 1	≤1.5

SA CODE : SF2MI [2]

Date : 6/11/24

SA Name : Two Mile Pond Reservoir Transect [2]

Surveyor Initials : DS/AM

L2 - Riparian Corridor Connectivity (RCC)

Worksheet 2. RCC excluded non-buffer elements calculation. Refer to worksheet 1a for excluded non-buffer RCC land cover elements. Following the steps in the Field Guide, enter the summed values in meters for excluded element lengths for each bank within each segment upstream and downstream of the SA. Sum the values for each segment and calculate % Segment Disruption for the upstream side and the downstream side. Add the total disruption for upstream and downstream segments and then calculate the % Total Disruptions for the riparian corridor. Rate Riparian Corridor Connectivity using Table L2 and the data from this worksheet. Enter rating on the SA Summary Worksheet.

Segments	Upstream Segment		Downstream Segment	
Banks	Left Bank	Right Bank	Left Bank	Right Bank
A) Total Bank Disruption (m)	0	0	0	0
B) Total Disruption by Segment (m)	0		0	
C) % Segment Disruption = (B/1000)*100	0		0	
D) Total Disruption both segments	0			
E) % Total Disruptions = (D/2000)*100	Zero disruption noticeable along the banks.			

Table L2. RCC Rating

Rating	Description
(X) 4	**0%** total disruption on both segments combined.
◯ 3	**<15%** total disruption on both segments combined.
◯ 2	**≥15% - <40%** total disruption on both segments combined.
◯ 1	**≥40%** total disruption on both segments combined.

L3 - Relative Wetland Size

Worksheet 3a. Calculate the Relative Size Ratio (RSR) between the current WOI size and the historic WOI size. b. Calculate the Relative Wetland Size Score (RWSI (%)) as (1-RSR)*100. Rate Relative Wetland Size Index using Table L3 and enter rating on the SA Summary Worksheet.

RSR					RWSI						
Current Size	/	Historic Size	=	RSR	1	-	RSR	X	100	=	RWSI (%)
9	/	10	=	0.9	1	-	0.1	X	100	=	10

Table L3. Relative Wetland Size Rating

Rating	RWSI Score	Description
(X) 4	≤10%	Wetland is at or only minimally reduced from its full natural extent
◯ 3	>10% - ≤40%	Wetland remains equal to or more than 60% of its natual size
◯ 2	>40% - ≤70%	Wetland has been reduced by more than 40% its natural size
◯ 1	>70%	Wetland has been reduced by more than 70% its natural size

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L4 - Surrounding Land Use

Worksheet 4. Surrounding Land Use. Enter the percent area occupied by a given Land Use Element in the Land Use Zone (LUZ) surrounding the SA. Calculate the Land Use Index (LUI) Score by element as the product of the element coefficient times the percent of the LUZ Area occupied. (The %LUZ Area must total 100%.) Sum the LUI scores for each element to create the final LUI Score. Rate using Table L4 and enter the rating in the SA Rank Summary Worksheet.

Land Use Element	Coef	% LUZ Area	LUI Score
Paved roads, parking lots, domestic or commercially developed buildings, mining (gravel pit, quarry, open pit, strip mining), railroads	0	0	0
Unpaved roads (e.g., driveway, tractor trail, unpaved parking lots), paddock, dirt lot	0.1	0	0
Dredging, borrow pits, abandoned mines, water-filled artificial impoundments (ponds and reservoirs)	0.1	0	0
Filling or dumping of sediment or soils	0.1	0	0
Intense recreation (all-terrain vehicle use, camping, popular fishing spot, etc.)	0.3	0	0
Rip-rapped channel (highly modified channel with severely limited vegetation zone that is altered by human activities but not a completely concrete channel [that goes under paved roads]), junkyards, trash dumps, disturbed ground (not including roads)	0.3	0	0
Ski area	0.4	0	0
Dam sites and flood-disturbed shorelines around water storage reservoirs	0.5	0	0
Abandoned artificial impoundments (ponds and reservoirs) and associated disturbed flood zones	0.5	10	5
Artificial/Constructed wetlands, irrigation ditches	0.7	20	14
Developed/Managed trail system (high use trail)	0.8	5	4
Agriculture - active tilled crop production	0.2	0	0
Agriculture - permanent crop (vineyards, orchards, nurseries, berry production)	0.3	0	0
Manicured lawns, sport fields, and golf courses; urban manicured parks	0.3	0	0
Old fields and other disturbed fallow lands dominated by ruderal and/or exotic species (e.g., kochia, Russian thistle, mustards, annual vegetation)	0.5	0	0
Mature old fields and other fallow lands with natural composition, introduced hay field and pastures (e.g., perennial vegetation cover)	0.7	0	0
Restoration areas in process to natural conditions (re-conversion in process)	0.8	65	52
Haying of native grassland (e.g., no tillage, haying and baling only)	0.9	0	0
Heavy logging or tree removal with >50% of large trees (e.g., >30 cm diameter at breast height) removed, woodland/shrub vegetation conversion (chaining, cabling, rotochopping)	0.3	0	0
Commercial tree plantation, Christmas tree farms	0.6	0	0
Selective logging or tree removal with <50% of large trees (e.g., >30 cm diameter at breast height) removed	0.8	0	0
Mature restoration areas returned to natural conditions (re-converted)	0.9	0	0
Natural area, land managed for native vegetation - No agriculture, logging, development	1	0	0
LUI Score= Coefficient * % LUZ Area		100	75

Table L4. Surrounding Land Use Rating	
Rating	**LUI Score**
◯ 4	≥95 - 100
◯ 3	≥80 - <95
⊗ 2	≥40 - <80
◯ 1	<40

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Biotic Metrics

Worksheet 5. Vegetation Community Patch Polygon Data for Biotic Metrics B3, B4, and B5 for Polygons from SA Biotic Map. Enter data for each polygon under a unique number assigned from the SA Biotic Map. Each polygon is evaluated with respect to Vegetation Vertical Structure (B3), Native Tree Regeneration (B4), and Invasive Exotic Plant Species Cover (B5) metrics. Enter the Vertical Structure Type (VST) for B3, tree regeneration % cover within the polygon for B4 and the % cover of invasive exotic species for B5. Use the Tables in Appendix B and the Field Guide for metric instructions. Enter the species codes for the invasive exotic species found in the polygon (from NM Noxious Weed List - Appendix D). Use the comments box for documenting and describing vegetation community patch features.

Polygon No	B3 Vertical Structure Type	B4 Tree Regeneration % Cover	B5 Invasive Exotic Species % Cover	Invasive Exotic Species (List Code(s))	Comments
1	IA1				
2	IA2	60%	None seen	None	Area is sprouting many tiny new growths due to recent rain
3	IIA1				
4	IIIB1				
5	IIIC1				
6	IVEI				
7	IVF1				
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

SA COD SF2MI [2]   **SA Name :** Two Mile Pond Reservoir T- -ect [2]   **Date :** 6/11/24   **Surveyor Initials :** M

B1 - Relative Native Plant Community Composition

Worksheet 6. CT Plant Species and Polygon Assignments. Starting with CT A, enter the number of the first polygon from Worksheet 5. Enter the species codes for the two top dominant species in each stratum that appears in the polygon. See footnotes for special instructions. If a species appears in more than one strata, assign the species to the stratum in which it is more abundant. Each polygon is either assigned to the same CT if it has the same composition or a new CT is created for the polygon.

		Tall Woody Stratum 1				Short Woody Stratum 2				Herbaceous/Sparse Stratum 3				CT Score 4		
CT	Polygon Nos.	Species 1	E N	Species 2	E N	Species 3	E N	Species 4	E N	Species 5	E N	Species 6	E N	Raw[4]	% SA[5]	Wt Score[6]
A		Narrowleaf Cottonwood	N	Box Elder	N	Willow Trees	N	Apple Trees	U	Horse-tail	N	Meadow grass	N	4.00	1.00	4.00
B																
C																
D																
E																
F																
G																
H																
I																
J																
K																
L																
M																
N																
O																
													Final Weighted Score[7]			4.00

1. Trees and shrubs > 6 m (20 feet) and > 25% total stratum cover; 2. Trees and shrubs ≤6m (20 feet) and >25% total stratum cover; 3. Herbaceous (graminoids and forbs)>10% total stratum cover. [4]Raw Score is from Table B1a (Appendix B); [5]%SA is the percentage of the SA area covered by the CT and expressed as a decimal number; the total area %SA must equal 1; [6]Wt. Score is the product of the Raw Score * % SA; [7]The Final Weighted Score is the sum of the Wt. Scores. Rate the CT Final Weighted Score on Table B1 and enter the Rating for Relative Native Plant Community Composition on the SA Rank Summary Worksheet.

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Table B1. Relative Native Plant Community Composition Rating		
Rating	CT Final Weighted Score	
X 4	≥ 3.75	<10% non-native
◯ 3	≥ 3.25 and <3.75	10% ≤20% non-native
◯ 2	> 2.0 and <3.25	20% ≤50% non-native
◯ 1	≤2.0	>50% non-native

B2 - Vegetation Horizontal Patch Structure

Worksheet 7. Using Tables B2a and B2c (Appendix B), choose the schematic pattern that best matches the mapped vegetation patch pattern for the SA. Rate using Table B2 and enter rating on the SA Rank Summary Worksheet.

Horizontal Patch Structure pattern A,B,C, or D: ______

Table B2. Rating for Vegetation Horizontal Patch Structure	
Rating	Description
◯ 4	Most closely matches Pattern A. SA has a diverse patch structure (≥4 patch types) and complexity. A dominant patch type would be difficult to determine.
◯ 3	Pattern B. SA has a moderate degree of patch diversity (3 patch types present) and complexity. A single, dominant patch type may be present, although the other patch types would be well represented and have more than one occurrence in the SA.
X 2	Pattern C. SA has a low degree of patch diversity and complexity. Two or three patch types may be present; however, a single, dominant patch type exists with the others occupying a small portion of the SA.
◯ 1	Pattern D. SA has essentially little to no patch diversity or complexity. The SA is dominated by a single patch type. Other patch types, if present, occur infrequently and occupy a small portion of the SA.

B3 - Vegetation Vertical Structure

Worksheet 8. Percentage of SA by vertical structure type (VST). Using the Structure Type from Worksheet 5 and the %SA from Worksheet 6 calculate the total area of the SA occupied by each VST using the formula VST(type) = Sum (%SA for CTs with same VST) x 100. Enter the total %SA for each VST below.

	VST 1 High Structure Forest	VST 2 Low Structure Forest	VST 5 Tall Shrubland	VST 6S Short Shrubland	VST 6W Herbaceous Wetland	VST 6H Herbaceous Vegetation	VST 7 Sparse Vegetation
Total % of SA	50			50			

Table B3. Rating for Vegetation Vertical Structure. Using the data from Worksheet 8 rate the SA based on the criteria in Table B3. Pick the row that best fits the distribution of VSTs in the SA. Each row specifies the required dominant structure type plus co- and sub-dominants. Percentage cover required per co- or sub-dominant is a minimum. The types listed in the columns must be the most common VSTs in the SA for the rating to be applicable (Worksheet 8). VSTs 1 and 2 can be inverted in dominance and the rating is still applicable. Work from the top of the table down. As long as the requirements for one row are met, any other types may or may not co-occur without changing the rating. Enter the rating on the SA Rank Summary Worksheet.

Rating	Dominant VST	Co- or Sub-dominant VST ≥15%	Sub-dominant VST ≥5%
◯ 4	1	5	6W and/or 6H
	1	6W	
	2 or 1 and 2	5	6W and/or 6H
X 3	1		
	2 or 1 and 2	5	
	2 or 1 and 2	6W	
	5	6W	
◯ 2	2 or 1 and 2		
	5		
	6W		
◯ 1	6S		
	6H		
	7		

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B4 - Native Riparian Tree Regeneration

B4. Native Riparian Tree Regeneration rating. Using the polygon percent cover of native tree seedlings, saplings and poles from Worksheet 5, rate the SA based on polygon percent cover and patch density. Enter the rating on the SA Rank Summary Worksheet.

Rating	Description
X 4	Native poles, sapling, and seedlings trees well represented, obvious regeneration, many patches or polygons with >5% cover, typically multiple size (age) classes.
○ 3	Native poles, saplings and/or seedlings common, scattered patches or polygons with 1% -5% cover, size classes few.
○ 2	Native poles, saplings and/or seedlings present but uncommon, restricted to one or two patches or polygons with typically <1% cover, little size class differentiation.
○ 1	Native poles, saplings, and/or seedlings absent (0% cover).

B5 - Invasive Exotic Plant Species Cover

Worksheet 9. Based on Worksheets 5 and 6, calculate or estimate the percentage cover of invasive exotic species for the SA and enter below. Rate using Table B5 and enter the rating on the SA Rank Summary Worksheet.

Rating Method [ ]   Invasive cover (%) [0]   calculate

Table B5. Ratings for Invasive Exotic Plant Species Cover	
Rating	**Invasive Species Cover %**
○ 4 X	0%
○ 3	>0% - <1%
○ 2	≥1% - <10%
○ 1	≥10

Additional CTs and Biotic Metric Comments:

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Abiotic Metrics

A1 - Floodplain Hydrologic Connectivity

Method 1

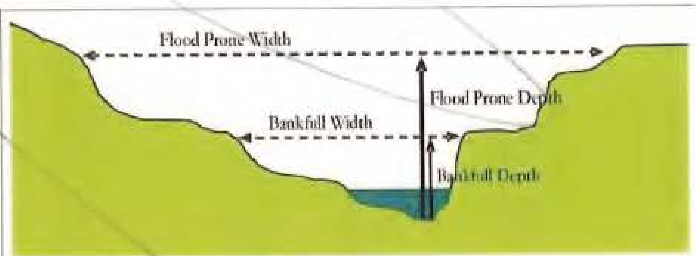
Worksheet 10a. Floodplain Hydrologic Connectivity Measurements. The following six steps are conducted at each of three cross-sections at the approximate mid-points along straight riffles and away from deep pools or meander bends. Use a measuring tape and temporary stakes for horizontal measurements, and a stadia rod or similar measuring stick for vertical measurements. If unavailable, use visual estimates. Where straight channel segments do not occur, or if there is excessive ponding or bankfull indicators are obscured, use the narrative rating approach (Method 2). Enter the rating method in the box below, either meander pool, riffle pool or narrative (Method 2) and choose the corresponding Table (A1a, A1b, or A1c) to rate Floodplain Hydrologic Connectivity. Enter the rating on the SA Rank Summary Worksheet. Photographs of each cross-section are required and recorded in Table A1d.

Steps	Description	Cross-section: 1	2	3
1: Bankfull width	This is a critical step requiring familiarity with field indicators of the bankfull contour. Measure the distance between the right and left bankfull contours with a tape.			
2: Maximum bankfull depth	Keeping the tape level between the right and left bankfull contours, measure the height of the line above the thalweg (the deepest part of the channel). A pocket line level can help here.			
3: Flood-prone depth	Double the estimate of maximum bankfull depth from Step 2.			
4: Flood-prone width	Using a tape, measure the length of a level line at a height equal to the flood prone depth from Step 3 to where it intercepts the right and left banks.			
5: Calculate Entrenchment Ratio	Divide the flood-prone width (Step 4) by the bankfull width (Step 1).			
6: Calculate average ratio	Calculate the average for Step 5 for all three replicate cross-sections. Enter the average here and rate using Table A1a. Enter the rating in the A1 box on the SA Rank Summary Worksheet.			

Rating Method:

Table A1a. Rating for Floodplain Hydrologic Connectivity in meandering single-channel riffle-pool systems

Rating	Description
○ 4	Average entrenchment ratio is ≥ 2.2;
○ 3	Average entrenchment ratio is ≥1.9 - <2.2
○ 2	Average entrenchment ratio is ≥1.5 - <1.9
○ 1	Average entrenchment ratio is < 1.5



Worksheet 10b. Floodplain Hydrologic Connectivity Indicators. Use this Worksheet in conjunction with Table A1c. Check the boxes for all that apply to each segment.

U	M	L	Indicator
☐	☐	☐	Bankful is slightly below bank height
☐	☐	☐	Bankful is well below bank height and channel is incised
☐	☐	☐	Channel widening due to bank failure
☐	☐	☐	Constructed levees preclude floodplain inundation
☐	☐	☐	Stream is straightened/channelized
☐	☐	☐	Inset floodplain formation
☐	☐	☐	Decreased peak flows due to hydrologic modification
☐	☐	☐	Bankfull indicators at point of incipient flooding of the floodplain
☐	☐	☐	Indicators of overbank flow on floodplain
☐	☐	☐	Floodplain inundation due to beaver activity

Table A1b. Rating for Floodplain Hydrologic Connectivity in single-channel step-pool systems

Rating	Description
○ 4	Average entrenchment ratio is ≥ 1.9
○ 3	Average entrenchment ratio is ≥1.4 - <1.9
○ 2	Average entrenchment ratio is ≥1.2 - <1.4
○ 1	Average entrenchment ratio is < 1.2

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Method 2

ble A1c. Narratve Floodplain Hydrologic Connectivity Rating. Select the narrative description that best describes the floodplain hydrologic connectivity. At each cross-section, use Worksheet 10b to record channel incision, bank modification, inset floodplain or other hydrologic evidence that would preclude natural floodplain inundation. Conversely, assess indicators and evidence for overbank flow and floodplain inundation. Record whether beaver activity is obscuring bankful indicators due to inundation of the floodplain. Select a rating from the table below. Use data from Worksheets 10b to help select rating. Enter Rating on SA Summary Worksheet. Photographs are required at each cross-section and recorded in Table A1d.

Rating	Description
◯ 4	Fully connected to the natural floodplain. Indicators of bankfull discharge are at the bank/floodplain transition, with over-bankfull flows likely to inundate a broad area of floodplain. Floodplain supports riparian vegetation and shows signs of overbank sediment deposition. Or beaver ponds inundate the entire, normally active floodplain and preclude the identification of bankfull indicators and the active floodplain width.
◯ 3	Flow access to the floodplain moderately limited by incision, channelization. Less frequent inundation than fully connected streams described above (as noted by bankfull indicators below floodplain transition). Floodplain supports a riparian overstory, but some understory plants may be upland. An inset floodplain supporting riparian vegetation may also be present.
◯ 2	Incised, channelized or modified with an inset floodplain formed, which is regularly inundated and supports riparian vegetation and sediment regimes. Or the stream has minimal access to the natural floodplain due to incision, channelization, or flow modification, and the natural floodplain does not support riparian vegetation except for relatively long-lived phreatophytes (e.g., cottonwood, salt cedar, etc.).
◯ 1	Fully disconnected from floodplain, either through incision, bank modification/channelization, or hydrologic modification (i.e., abandonment of floodplain due to decreased peak flows). Indicators may include upland vegetation and lack of overbank sediment deposits on the floodplain, etc.

T A1d. Photo Point Log for Cross-Section Photographs. For each cross-section record the digital names/numbers of photographs taken looking Upstream and Downstream from the thalweg and looking Bank Right* and Bank Left* across the stream from each side of the cross-section. Leave the cross-section tape and flags indicating bankful in the ground when taking the Bank Right and Bank Left photos. A photo board with SA name and cross-section information is helpful. (*The bank of a stream or river on the right (left) of the observer when facing in the direction of flow or downstream.) See Appendix E for additional details.

Cross Section	Easting (Latitude)	Northing (Longitude)	Upstream	Downstream	Bank Right	Bank Left
1						
2						
3						

Floodplain Hydrologic Connectivity Comments:

Not in JSAI Assessment

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A2 - Physical Patch Complexity

Worksheet 11. Physical Patch Complexity checklist. Check off existing physical patch types for the upper, middle and lower segments of the SA; count the number of unique patch types and rate using Table A2 in combination with the narrative description. Enter the rating on the SA Rank Summary Worksheet.

Upper Segment	Middle Segment	Lower Segment	Field Indicators (check all existing conditions)
☐	☐	☐	Active side channels
☐	☒	☐	Abandoned channels
☐	☐	☐	Backwater/eddy
☐	☐	☐	Riffles or rapids
☐	☐	☐	Shoals, sparely-vegetated bars
☐	☐	☐	Channel boulders
☐	☐	☐	Oxbow lakes/ponds on floodplains
☐	☐	☐	Vegetated island and side bars
☐	☒	☐	Terraces
☐	☐	☐	Channel pools
☐	☐	☐	Beaver ponds
☐	☐	☐	Swales, depressional features on floodplains
☐	☐	☐	Debris jams in channel
☐	☐	☐	Woody wrack piles on the floodplain
☐	☐	☐	Floodplain micro-topography (mounds, pits)
☐	☐	☐	Downed logs
☐	☐	☐	Natural levees
☐	☐	☐	Standing snags
☐	☐	☐	Variegated, convoluted, or crenulated foreshore
☐	☐	☐	Undercut banks in channels
			No. of unique Patch Types

Table A2. Rating for Physical Patch Complexity	
Rating	**Description**
◯ 4	**High** degree of physical patch complexity across the floodplain. There are many floodplain micro-habitats present (mounds and pits, woody wrack piles, etc.), many fluvial geomorphic surfaces (swales, side channels, terraces, side bars, etc.), and there is high in-channel complexity (pools and riffles, large woody debris, undercut banks, etc.). As a guide, 12 or more unique indicators are present and well distributed throughout the SA (most indicators are found on multiple segments).
◯ 3	**Moderate** physical patch complexity scattered across the floodplain. There are several floodplain micro-habitats present, several fluvial geomorphic surfaces, and there is moderate in-channel complexity. As a guide, 9 - 11 indicators are scattered throughout the SA (some on multiple segments).
◯ 2	**Limited** physical patch complexity scattered across the floodplain. There are some floodplain micro-habitats present, some fluvial geomorphic surfaces, and there is limited in-channel complexity. As a guide, on average there are 6 - 8 unique indicators present in the SA (only a few on multiple segments).
☒ 1	**Little** or no physical patch complexity on the floodplain. There are few or no floodplain micro-habitats present, few different fluvial geomorphic surfaces, and there is little or no in-channel complexity. As a guide, ≤ 5 unique indicators are present in the SA.

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A3- Channel Equilibrium

Worksheet 12. Channel Equilibrium Checklist. Check all field indicators that apply to the upper, middle and lower segment of the SA observed at the channel edge of the traverse. Rate using the Table A3 descriptions and based on a preponderance of evidence from this checklist. Enter the rating on the SA Rank Summary Worksheet.

Condition	Upper Segment	Middle Segment	Lower Segment	Field Indicators(check all existing conditions)
Indicators of Channel Equilibrium	☐	☒	☐	The channel has a well-defined bankfull contour that clearly demarcates the point of incipient flooding where moderate frequent flow events spread flow across the floodplain.
	☐	☒	☐	Perennial riparian vegetation is abundant and well established along the bankfull contour, but not below it.
	☐	☒	☐	There is leaf litter, thatch, or wrack in most pools.
	☐	☒	☐	The channel contains embedded woody debris of the size and amount consistent with what is naturally available in the riparian area.
	☐	☒	☐	There is little or no active undercutting or burial of riparian vegetation.
	☐	☐	☐	There are no bars that are densely vegetated with perennial vegetation (neither mid-channel bars or point bars).
	☐	☒	☐	Channel and point-bars consist of well-sorted bed material.
	☐	☒	☐	The channel bed is not planar and without an abundance of fine materials filling the interstitial spaces between larger stream substrate.
	☐	☒	☐	There are channel pools at meander bends and some deep pools within the reach.
Indicators of Active Degradation	☐	☐	☐	The channel is characterized by deeply undercut banks with exposed living roots of trees or shrubs.
	☐	☐	☐	There are abundant bank slides or slumps, or the lower banks are uniformly scoured and not vegetated.
	☐	☐	☐	Bank vegetation is declining in stature or vigor, or many riparian trees and shrubs along the banks are leaning or falling into the channel.
	☐	☐	☐	Channel bed is scoured to large cobbles or boulders and entrained bank material is filling the cobble interstices and pools.
	☐	☐	☐	There are active headcuts within the channel.
	☐	☐	☐	An obvious historical floodplain has recently been abandoned, as indicated by the age structure of its riparian vegetation.
Indicators of Active Aggradation	☐	☐	☐	There is abundant fresh splays of coarse sediment covering the floodplain above the natural point bar elevation.
	☐	☐	☐	There are partially buried living tree trunks or shrubs along the banks.
	☐	☐	☐	The channel bed is planar overall. The stream lacks well-defined channel pools at meander bends, or pools are filled with sediment.
	☐	☐	☐	There are partially buried or sediment-choked culverts.
	☐	☐	☐	There are avulsion channels on the floodplain or adjacent valley floor.

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Table A3. Rating for Channel Equilibrium

Rating	Description
☒ 4	Most of the channel throughout the SA is in equilibrium condition with little evidence of excessive aggradation or degradation based on the field indicators listed in Worksheet 12.
◯ 3	There is some evidence of excessive aggradation or degradation; the channel throughout the SA seems to approach an equilibrium condition. Circle primary process: aggradation or degradation.
◯ 2	There is evidence of severe aggradation or degradation throughout most of the channel through the SA. Circle primary process: aggradation or degradation.
◯ 1	The channel is artificially hardened, channelized, or is concrete throughout most of the SA.

A4- Stream Bank Stability and Cover

Worksheet 13. Bank Soil Stability and Streambank Erosion Potential Checklist. Check the indicator that best describes the condition looking a minimum of 25 m upstream and downstream at the channel edge of the upper, middle and lower segment of the SA. Average the six scores for both Bank Soil Stability and Streambank Erosion Potential. Rate using the Table A4 and enter the rating on the SA Summary Worksheet.

Condition	Upper Segment	Middle Segment	Lower Segment	Field Indicators
Indicators of Bank Soil Stability	☐4	☐4	☐4	Infrequent raw banks, less than 10% of steam bank under stress from trampling, slumping, vegetation removal or active erosion, etc.
	☐3	☐3	☐3	Raw banks and loose soil intermittently and 10%-25% of stream bank under stress from trampling, trail crossing, hoof punching, vegetation removal, erosion etc.
	☐2	☐2	☐2	Significant raw banks and loose soil, 25%-50% of stream bank under stress, trampled, slumping or eroding etc.
	☐1	☐1	☐1	Raw banks almost continuous with greater than 50% of stream bank under stress, loose soil, slumping, trampled or eroding; or channel appear to lack banks due to trampling; or channel that is artificially hardened or concrete along most of its length.
Indicators of Stream Bank Erosion Potential	☐4	☒4	☐4	≥ 80% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by boulders, large cobbles and/or large woody debris that prevent bank erosion.
	☐3	☐3	☐3	≥50% - <80% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those areas not covered by vegetation are protected to allow only minor erosion.
	☐2	☐2	☐2	≥25% - <50% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those area not covered by vegetation or stabilized by roots, are covered by materials or vegetation that give limited protection.
	☐1	☐1	☐1	Less than 25% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those areas not covered by vegetation provide little or no control over erosion and excess shear stress, and the banks are susceptible to erosion by high water flows.

Average Indicator Score	

Table A4. Stream Bank Stability and Cover Rating

Rating	Description
☒ 4	>3.5 - 4.0
◯ 3	>2.5 - ≤3.5
◯ 2	>1.5 - ≤2.5
◯ 1	1.0 - ≤1.5

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A5 - Soil Surface Condition

Worksheet 14. Soil Surface Condition. Check all that apply in the upper , middle and lower SA segments during the field reconnaissance. The absence of these indicators would signify that disturbances are naturally occurring (e.g., flood deposition or low-density wildlife trails). Estimate the percent soil disturbance by segment area and referring to the SA abiotic map. Rate using Table A5 and enter on the SA Rank Summary Worksheet.

Upper Segment	Middle Segment	Lower Segment	Field Indicators (Check all existing conditions)
☐	☐	☐	Active erosion features due to anthropogenic disturbance (eg. rills, gullies, plant pedestals).
☐	☒	☐	Multiple livestock and other (fishing,hiking) trails,
☐	☐	☐	Vehicle tracks including off-road and construction, etc.
☐	☐	☐	Impervious compacted surfaces or pavement
☐	☐	☐	Grading or plowing
☐	☐	☐	Fill
☐	☐	☐	Gravel pits
☐	☐	☐	Anthropogenic levees and berms
☐	☐	☐	Irrigation-driven salinity and mineral crusts
☐	☐	☐	Fire pits
☐	☐	☐	Other:
			Estimate % soil disturbance by segment area

Average % Soil Disturbance:

Table A5. Soil Surface Condition Rating

Rating	Description
○ 4	Bare soil areas due to anthropogenic disturbance absent or very limited. No human-caused impervious surfaces or gravel pits are found within the SA. Total disturbance, including erosion, impervious surfaces, fill, or other anthropogenic degradation to the soil surface is less than 1% of the SA.
○ 3	Some amount of bare soil from human causes is present but the extent is limited. Area of impervious surfaces are minimal in extent. Total disturbance, including erosion, impervious surfaces, fill, gravel pits, vehicle tracks or other anthropogenic degradation to the soil surface is between 1% and 5% of the sampling area.
○ 2	Bare soils from human causes are common. These may include dense livestock trails, vehicle tracks, trails, construction staging areas, mechanical rutting, or irrigation-driven salinity. Soil disturbance, while apparent, is limited to specific areas and not found across the majority of the SA. Total disturbance, including erosion, impervious surfaces, fill, gravel mining, or other anthropogenic degradation to the soil surface is greater than 5% or less than 10% of the SA.
☒ 1	Bare soil areas degrade portions of the site because of altered hydrology or other long-lasting impacts. Deep ruts from off-road vehicles or machinery are present. Livestock disturbance or trails are widespread and several inches deep. Water is channeled into rills or ponded. Additional human-caused impervious surfaces or soil compaction are present. Total disturbance, including erosion, impervious surfaces, fill,gravel mining or other anthropogenic degradation to the soil surface is equal to or greater than 10% of the SA.

Mud is tearing up walking path.

SA CODE : SF2MI [2]

Date : 6/11/24

SA Name : Two Mile Pond Reservoir Transect [2]

Surveyor Initials : DS/AM

Worksheet 15. Stressor Checklist. Check off stressors by intensity category that may be affecting wetland ecological condition of the SA and WOI. Assign categories using direct evidence where available or your best professional judgement otherwise. If the presence of the stressor is uncertain, mark as "Unknown". Rank Major Stressors in Dominant Stressor column(Pick up to 3)

Rank	Affect: Major	Affect: Minor	Affect: Absent	Affect: Unknown	Stressor Group/Stressor	Comments
					Adverse water management	
	[x]	[ ]	[ ]	[ ]	Extended low flow dam releases	
	[ ]	[ ]	[x]	[ ]	Timing of flow releases not concordant	
	[ ]	[ ]	[x]	[ ]	Extended high flow dam releases	
	[ ]	[ ]	[x]	[ ]	Agriculture/Urban flow diversion upstream	
					Adverse sediment management	
	[ ]	[ ]	[x]	[ ]	Adverse sediment retention by dams	
	[ ]	[ ]	[x]	[ ]	Sediment loss by dredging	
	[ ]	[ ]	[x]	[ ]	Adverse sediment input (roads/development)	
					Artificial water additions	
	[ ]	[ ]	[x]	[ ]	Sewer treatment effluent	
	[ ]	[ ]	[x]	[ ]	Point source urban runoff	
	[ ]	[ ]	[x]	[ ]	Factory, feedlot outfall	
	[ ]	[ ]	[x]	[ ]	Agricultural irrigation ditch returns	
	[ ]	[ ]	[x]	[ ]	Mining waste	
					Ground water pumping	
	[ ]	[ ]	[x]	[ ]	Urban depletions	
	[ ]	[ ]	[x]	[ ]	Fracking	
	[ ]	[ ]	[x]	[ ]	Agriculture irrigation wells	
					Watershed alteration	
	[ ]	[ ]	[x]	[ ]	Extensive recent fires in watershed	
	[ ]	[ ]	[x]	[ ]	Extensive recent timber harvest	
	[ ]	[ ]	[x]	[ ]	Extensive open pit mining in watershed	
	[ ]	[ ]	[x]	[ ]	Livestock/wildlife overgrazing	
					Local biodiversity impacts	
	[ ]	[ ]	[x]	[ ]	Evidence of excessive grazing (local)	
	[x]	[ ]	[ ]	[ ]	Excessive noise affecting wildlife	
	0	0		0	Counts by Intensity	

Additional Comments: No water is going to this area

Version Date: 04/25/2022

Schema: Montane 2.5

NMRAM Montane Riverine Wetlands Version 2.5

SA Cover Worksheet

SA Code SF2MI [3]	SA Name : Two Mile Pond Reservoir		Project : Riparian Assesement		
AU Code Tsct [3]	AU Name : Transect [3]		WOI : Two Mile Pond Reservoir		
County Santa Fe	HUC 12 Headwaters Santa Fe River	Elevation (ft) 7299	(m) 2224.7	Ecoregion 6.0 NWFM	

SA General Location and Boundary (Rationale, comments)
A riparian system that leads into a pond located on the east side of Santa Fe bordering the Santa Fe National Forest. This reservoir was decommissioned due to safety concerns regarding the reservoir and a water diversion to the area was recently shut down due to lack of water rights.

Driving Directions
Driving to Santa Fe from Albuquerque you head north on Old Pecos Trail. Then head east on Camino Del Monte Sol and right on Canyon Road until you reach the reservoir located to the North.

Ownership The Nature Conservative and The Santa Fe National Forest	Data Sharing Restrictions	Results to client only.	Fish Observed in Wetland?	

Surveyor Role	Surveyor Name	Surveyor Initials
Landscape	Dustin Schwartz Annie McCoy	DS+AMC
Biotic	" "	" "
Abiotic	" "	" "
Stressors	" "	" "

Easting (m)	Northing (m)	Zone	Datum	Latitude (DD ft)	Longitude (DD ft)
-105° 53' 24" W	35° 41' 23" N	13	NAD- 83 UTM	35.689722	-105.89
Survey Date	4/9/24	**Start Time**		**End Time**	

SA Description

SA Landscape Context (summarize the wetland and surrounding landscape; include condition and impacts)

Area appears still waking up from winter. Some green grasses growing near "beaver dam" lots of dead leaves cover the ground.

SA Biotic Condition (vegetation patterns, composition and structure, exotics and invasives, disturbance evidence, fire and herbivory)

Bee flys and elder bugs currant blooming and buzzing with bees Aside from currant small buds forming on willows and cottonwoods But very beginning of growth

SA Abiotic Condition (hydrological alterations {e.g., dams, walls etc.]; flooding characteristics and evidence of overbank flooding; soil disturbance and other site impacts; explain the hydrologic breaks or other factors that define the SA limits)

The ground is covered in dead leaves and branches. A "beaver dam" still holds the water ≈ 7" above outside ground level

Assessment Summary (Overall site condition summary and comments after the field data is collected.)

Land is still Recovering from winter but bugs are already starting to become prominent in area.

Provisional Field Score ____	Rank ____	Surveyor(s) ____	Final Score ____	Rank A	Initials DCS	Date 4/9/24

SA CODE : SF2MI [3]

Date : 4/9/24

SA Name : Two Mile Pond Reservoir Transect [3]

Surveyor Initials : DCS

NMRAM - SA Rank Summary Worksheet: Montane Riverine Wetlands 2.5

Metric Description	Rating	Wt	Final Score
Landscape Context		Σ 1.0	3.25
L1. Buffer Integrity Index	3	0.25	0.75
L2. Riparian Corridor Connectivity	4	0.25	1.0
L3. Relative Wetland Size	4	0.25	1.0
L4. Surrounding Land Use	2	0.25	0.5
Biotic		Σ	
B1. Relative Native Plant Community Composition	3	0.2	
B2. Vegetation Horizontal Patch Structure	4	0.2	
B3. Vegetation Vertical Structure	3	0.2	
B4. Native Riparian Tree Regeneration	3	0.2	
B5. Invasive Exotic Plant Species Cover	3	0.2	
Abiotic		Σ	
A1. Floodplain Hydrologic Connectivity		0.3	
A2. Physical Patch Diversity	4	0.2	
A3. Channel Equilibrium	4	0.2	
A4. Stream Bank Stability and Cover	4	0.2	
A5. Soil Surface Condition	4	0.1	

SA Condition Scoring Summary			
Major Attribute	Score	Wt.	Wt. Score
Landscape Context	3.25	0.3	0.975
Biotic		0.35	
Abiotic		0.35	
SA WETLAND CONDITION SCORE Σ			
SA WETLAND RANK =			

SA Wetland Rank		
Rank	Score	Description
A	≥3.25 - 4.0	Excellent Condition
B	≥2.5 - <3.25	Good Condition
C	≥1.75 - <2.5	Fair Condition
D	1.0 - <1.75	Poor Condition

Stressor Summary	Major	Minor	Top Three
	0	0	1
			2
			3

Stressor Comments (Evaluation of risk)

SA CODE: SF2MI [3] **Date:** 4/9/24

SA Name: Two Mile Pond Reservoir Transect [3] **Surveyor Initials:** DCS

Landscape Context

L1 - Buffer Integrity Index

Worksheet 1a. Buffer and RCC Checklist. Check off land cover elements within the buffer area or RCC corridors that are either allowed, or are excluded and considered non-buffer elements that disrupt ecosystem connectivity. Indicate the imagery type and date (season and year of imagery).

Imagery	Google Earth KMZ. file	Image Date	6/23

Allowed buffer/RCC land cover elements			Excluded non-buffer/RCC land cover elements		
Buffer	RCC		Buffer	RCC	
[X]	[X]	Natural or semi-natural vegetation patches	[X]	[X]	Commercial/residential developments, parking lots, dams, bridges, revetments, and other structures
[X]	[X]	Small irrigation ditches without levees	[ ]	[ ]	Lawns, parks, golf courses, sports fields
[ ]	[ ]	Old fields, unmaintained	[ ]	[ ]	Railroads
[ ]	[ ]	Open range land	[ ]	[ ]	Maintained levees, sediment piles, construction materials, staging areas
[X]	[X]	Foot trails, horse trails, unpaved bike trails (low intensity)	[ ]	[ ]	Intensive livestock areas, horse paddocks, feedlots
[X]	[X]	Non-channel open water	[ ]	[ ]	Intensive agriculture: maintained pastures, hay fields, row crops, orchards, and vineyards
[X]	[X]	Non-functioning abandoned vegetated levees, or naturally occurring levees	[X]	[X]	Paved roads or developed second-order unpaved but graded roads
[ ]	[ ]	unpaved two tracks roads	[X]	[X]	Open water bounded by a levee or other manmade structure
[ ]	[ ]	Other	[ ]	[ ]	Other

Worksheet 1b. Buffer Percent Sub-metric. Measure or estimate the percentage of the SA perimeter composed of allowed buffer elements and enter into the Buffer Percent Box below. Rate the sub-metric using Table L1a and enter the rating on the Buffer Integrity Summary Worksheet 1d.

Buffer Percent (%)=	85%

Table L1a. Buffer Percent

Rating	Buffer Percent
4	100%
(X) 3	≥80% - <100%
2	≥50% - <80%
1	<50%

Worksheet 1c. Buffer Width Sub-metric. Measure the length of each buffer line in meters in the GIS or on the map. Average the line lengths and rate using Table L1b. Enter the rating on the Buffer Integrity Summary Worksheet 1d.

Line	Buffer Width (m)	Buffer Width (ft)	Line	Buffer Width (m)	Buffer Width (ft)
A	164.26	538.91	E	161.93	531.26
B	125.25	410.92	F	231.48	759.44
C	115.39	378.57	G	121.25	397.80
D	111.07	364.40	H	155.87	511.38
Average	148.31 (m)		486.58 (ft)		

Table L1b. Buffer Width

Rating	Average buffer width
4	≥190m
(X) 3	≥130 - <190m
2	≥65 - <130m
1	<65m

Worksheet 1d. Buffer Integrity Summary. Enter the sub-metric Ratings from Tables L1a and L1b above to calculate the Buffer Integrity Index Score using the formula in the box below. Using the Buffer Integrity Index Score, enter rating for Buffer Integrity in Table L1c on the SA Summary Worksheet.

Buffer % Rating	+	Buffer Width Rating	/2 =	Buffer Integrity Index Score
3	+	3	/2 =	3

Table L1c. Summary Rating for Buffer Integrity

Rating	Score
4	>3.5
(X) 3	>2.5 - ≤3.5
2	>1.5 - ≤2.5
1	≤1.5

SA CODE : SF2MI [3]

Date : 4/9/24

SA Name : Two Mile Pond Reservoir Transect [3]

Surveyor Initials : DCS

L2 - Riparian Corridor Connectivity (RCC)

Worksheet 2. RCC excluded non-buffer elements calculation. Refer to worksheet 1a for excluded non-buffer RCC land cover elements. Following the steps in the Field Guide, enter the summed values in meters for excluded element lengths for each bank within each segment upstream and downstream of the SA. Sum the values for each segment and calculate % Segment Disruption for the upstream side and the downstream side. Add the total disruption for upstream and downstream segments and then calculate the % Total Disruptions for the riparian corridor. Rate Riparian Corridor Connectivity using Table L2 and the data from this worksheet. Enter rating on the SA Summary Worksheet.

Segments	Upstream Segment		Downstream Segment	
Banks	Left Bank	Right Bank	Left Bank	Right Bank
A) Total Bank Disruption (m)	0	0	0	0
B) Total Disruption by Segment (m)	0		0	
C) % Segment Disruption = (B/1000)*100	0		0	
D) Total Disruption both segments	0			
E) % Total Disruptions = (D/2000)*100	Zero disruption noticeable along the banks.			

Table L2. RCC Rating

Rating	Description
(X) 4	**0%** total disruption on both segments combined.
( ) 3	**<15%** total disruption on both segments combined.
( ) 2	**≥15% - <40%** total disruption on both segments combined.
( ) 1	**≥40%** total disruption on both segments combined.

L3 - Relative Wetland Size

Worksheet 3a. Calculate the Relative Size Ratio (RSR) between the current WOI size and the historic WOI size. b. Calculate the Relative Wetland Size Score (RWSI (%)) as (1-RSR)*100. Rate Relative Wetland Size Index using Table L3 and enter rating on the SA Summary Workshe

RSR					RWSI						
Current Size	/	Historic Size	=	RSR	1	-	RSR	X	100	=	RWSI (%)
9	/	10	=	0.9	1	-	0.1	X	100	=	10

Table L3. Relative Wetland Size Rating

Rating	RWSI Score	Description
(X) 4	≤10%	Wetland is at or only minimally reduced from its full natural extent
( ) 3	>10% - ≤40%	Wetland remains equal to or more than 60% of its natual size
( ) 2	>40% - ≤70%	Wetland has been reduced by more than 40% its natural size
( ) 1	>70%	Wetland has been reduced by more than 70% its natural size

SA CODE : SF2MI [3]

Date : 4/9/24

SA Name : Two Mile Pond Reservoir Transect [3]

Surveyor Initials : DCS

L4 - Surrounding Land Use

Worksheet 4. Surrounding Land Use. Enter the percent area occupied by a given Land Use Element in the Land Use Zone (LUZ) surrounding the SA. Calculate the Land Use Index (LUI) Score by element as the product of the element coefficient times the percent of the LUZ Area occupied. (The %LUZ Area must total 100%.) Sum the LUI scores for each element to create the final LUI Score. Rate using Table L4 and enter the rating in the SA Rank Summary Worksheet.

Land Use Element	Coef	% LUZ Area	LUI Score
Paved roads, parking lots, domestic or commercially developed buildings, mining (gravel pit, quarry, open pit, strip mining), railroads	0	0	0
Unpaved roads (e.g., driveway, tractor trail, unpaved parking lots), paddock, dirt lot	0.1	0	0
Dredging, borrow pits, abandoned mines, water-filled artificial impoundments (ponds and reservoirs)	0.1	0	0
Filling or dumping of sediment or soils	0.1	0	0
Intense recreation (all-terrain vehicle use, camping, popular fishing spot, etc.)	0.3	0	0
Rip-rapped channel (highly modified channel with severely limited vegetation zone that is altered by human activities but not a completely concrete channel [that goes under paved roads]), junkyards, trash dumps, disturbed ground (not including roads)	0.3	0	0
Ski area	0.4	0	0
Dam sites and flood-disturbed shorelines around water storage reservoirs	0.5	0	0
Abandoned artificial impoundments (ponds and reservoirs) and associated disturbed flood zones	0.5	10	5
Artificial/Constructed wetlands, irrigation ditches	0.7	20	14
Developed/Managed trail system (high use trail)	0.8	5	4
Agriculture - active tilled crop production	0.2	0	0
Agriculture - permanent crop (vineyards, orchards, nurseries, berry production)	0.3	0	0
Manicured lawns, sport fields, and golf courses; urban manicured parks	0.3	0	0
Old fields and other disturbed fallow lands dominated by ruderal and/or exotic species (e.g., kochia, Russian thistle, mustards, annual vegetation)	0.5	0	0
Mature old fields and other fallow lands with natural composition, introduced hay field and pastures (e.g., perennial vegetation cover)	0.7	0	0
Restoration areas in process to natural conditions (re-conversion in process)	0.8	65	52
Haying of native grassland (e.g., no tillage, haying and baling only)	0.9	0	0
Heavy logging or tree removal with >50% of large trees (e.g., >30 cm diameter at breast height) removed, woodland/shrub vegetation conversion (chaining, cabling, rotochopping)	0.3	0	0
Commercial tree plantation, Christmas tree farms	0.6	0	0
Selective logging or tree removal with <50% of large trees (e.g., >30 cm diameter at breast height) removed	0.8	0	0
Mature restoration areas returned to natural conditions (re-converted)	0.9	0	0
Natural area, land managed for native vegetation - No agriculture, logging, development	1	0	0
LUI Score= Coefficient * % LUZ Area		100	75

Table L4. Surrounding Land Use Rating	
Rating	**LUI Score**
○ 4	≥95 - 100
○ 3	≥80 - <95
⊗ 2	≥40 - <80
○ 1	<40

Biotic Metrics

Worksheet 5. Vegetation Community Patch Polygon Data for Biotic Metrics B3, B4, and B5 for Polygons from SA Biotic Map. Enter data for each polygon under a unique number assigned from the SA Biotic Map. Each polygon is evaluated with respect to Vegetation Vertical Structure (B3), Native Tree Regeneration (B4), and Invasive Exotic Plant Species Cover (B5) metrics. Enter the Vertical Structure Type (VST) for B3, tree regeneration % cover within the polygon for B4 and the % cover of invasive exotic species for B5. Use the Tables in Appendix B and the Field Guide for metric instructions. Enter the species codes for the invasive exotic species found in the polygon (from NM Noxious Weed List - Appendix D). Use the comments box for documenting and describing vegetation community patch features.

Polygon No	B3 Vertical Structure Type	B4 Tree Regeneration % Cover	B5 Invasive Exotic Species % Cover	Invasive Exotic Species (List Code(s))	Comments
1	IA1				
2	IA2	>5%	> 2%	Mullein	Ground full of dead leaves/ branches. Currant growing
3	IIA1	70%	N/A	None	Grasses, currant, elder bugs, owl/like bird?
4	IIIB1				
5	IIIC1				
6	IVEI				
7	IVF1				
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

SA CODE · SF2MI [3]   SA Name : Two Mile Pond Reservoir Transect [3]   Date : 4/9/24   Surveyor Initials : DCS

B1 - Relative Native Plant Community Composition

Worksheet 6. CT Plant Species and Polygon Assignments. Starting with CT A, enter the number of the first polygon from Worksheet 5. Enter the species codes for the two top dominant species in each stratum that appears in the polygon. See footnotes for special instructions. If a species appears in more than one strata, assign the species to the stratum in which it is more abundant. Each polygon is either assigned to the same CT if it has the same composition or a new CT is created for the polygon.

		Tall Woody Stratum 1				Short Woody Stratum 2				Herbaceous/Sparse Stratum 3				CT Score 4		
CT	Polygon Nos.	Species 1	E N	Species 2	E N	Species 3	E N	Species 4	E N	Species 5	E N	Species 6	E N	Raw4	% SA5	Wt Score6
A	2	Elm	4	Birch	N	Willows	N			Mullein	E	Meadow grass	N	2.4	50	1.2
B	3	Cottonwood	N	Birch	N	Willows	N			Cattail	N	Beetgrain	N	2.5	50	1.25
C																
D																
E																
F																
G																
H																
I																
J																
K																
L																
M																
N																
O																
												Final Weighted Score7				2.45

1. Trees and shrubs > 6 m (20 feet) and > 25% total stratum cover; 2. Trees and shrubs ≤6m (20 feet) and >25% total stratum cover; 3. Herbaceous (graminoids and forbs)>10% total stratum cover. 4Raw Score is from Table B1a (Appendix B); 5%SA is the percentage of the SA area covered by the CT and expressed as a decimal number; the total area %SA must equal 1; 6Wt. Score is the product of the Raw Score * % SA; 7The Final Weighted Score is the sum of the Wt. Scores. Rate the CT Final Weighted Score on Table B1 and enter the Rating for Relative Native Plant Community Composition on the SA Rank Summary Worksheet.

SA CODE : SF2MI [3] **Date :** 4/9/24

SA Name : Two Mile Pond Reservoir Transect [3] **Surveyor Initials :** DC

Table B1. Relative Native Plant Community Composition Rating		
Rating	**CT Final Weighted Score**	
4	≥ 3.75	<10% non-native
X 3	≥ 3.25 and <3.75	10% ≤20% non-native
2	> 2.0 and <3.25	20% ≤50% non-native
1	≤2.0	>50% non-native

2 - Vegetation Horizontal Patch Structure

orksheet 7. Using Tables B2a and B2c (Appendix B), choose the schematic pattern that best matches the mapped vegetation patch ttern for the SA. Rate using Table B2 and enter rating on the SA Rank Summary Worksheet.

orizontal Patch Structure pattern A,B,C, or D: A

Table B2. Rating for Vegetation Horizontal Patch Structure	
Rating	**Description**
X 4	Most closely matches Pattern A. SA has a diverse patch structure (≥4 patch types) and complexity. A dominant patch type would be difficult to determine.
3	Pattern B. SA has a moderate degree of patch diversity (3 patch types present) and complexity. A single, dominant patch type may be present, although the other patch types would be well represented and have more than one occurrence in the SA.
2	Pattern C. SA has a low degree of patch diversity and complexity. Two or three patch types may be present; however, a single, dominant patch type exists with the others occupying a small portion of the SA.
1	Pattern D. SA has essentially little to no patch diversity or complexity. The SA is dominated by a single patch type. Other patch types, if present, occur infrequently and occupy a small portion of the SA.

3 - Vegetation Vertical Structure

/orksheet 8. Percentage of SA by vertical structure type (VST). Using the Structure Type from Worksheet 5 and the %SA om Worksheet 6 calculate the total area of the SA occupied by each VST using the formula VST(type) = Sum (%SA for CTs with ame VST) x 100. Enter the total %SA for each VST below.

	VST 1 High Structure Forest	VST 2 Low Structure Forest	VST 5 Tall Shrubland	VST 6S Short Shrubland	VST 6W Herbaceous Wetland	VST 6H Herbaceous Vegetation	VST 7 Sparse Vegetation
Total % of SA	50			50			

able B3. Rating for Vegetation Vertical Structure. Using the data from Worksheet 8 rate the SA based on the criteria in Table B3. Pick the ow that best fits the distribution of VSTs in the SA. Each row specifies the required dominant structure type plus co- and sub-dominants. ercentage cover required per co- or sub-dominant is a minimum. The types listed in the columns must be the most common VSTs in the SA for he rating to be applicable (Worksheet 8). VSTs 1 and 2 can be inverted in dominance and the rating is still applicable. Work from the top of the able down. As long as the requirements for one row are met, any other types may or may not co-occur without changing the rating. Enter the ating on the SA Rank Summary Worksheet.

Rating	**Dominant VST**	**Co- or Sub-dominant VST ≥15%**	**Sub-dominant VST ≥5%**
4	1	5	6W and/or 6H
	1	6W	
	2 or 1 and 2	5	6W and/or 6H
X 3	1		
	2 or 1 and 2	5	
	2 or 1 and 2	6W	
	5	6W	
2	2 or 1 and 2		
	5		
	6W		
1	6S		
	6H		
	7		

SA CODE : SF2MI [3]

Date : 4/9/24

SA Name : Two Mile Pond Reservoir Transect [3]

Surveyor Initials : DCS

B4 - Native Riparian Tree Regeneration

Table B4. Native Riparian Tree Regeneration rating. Using the polygon percent cover of native tree seedlings, saplings and poles from Worksheet 5, rate the SA based on polygon percent cover and patch density. Enter the rating on the SA Rank Summary Worksheet.

Rating	Description
○ 4	Native poles, sapling, and seedlings trees well represented, obvious regeneration, many patches or polygons with >5% cover, typically multiple size (age) classes.
☒ 3	Native poles, saplings and/or seedlings common, scattered patches or polygons with 1% -5% cover, size classes few.
○ 2	Native poles, saplings and/or seedlings present but uncommon, restricted to one or two patches or polygons with typically <1% cover, little size class differentiation.
○ 1	Native poles, saplings, and/or seedlings absent (0% cover).

B5 - Invasive Exotic Plant Species Cover

Worksheet 9. Based on Worksheets 5 and 6, calculate or estimate the percentage cover of invasive exotic species for the SA and enter below. Rate using Table B5 and enter the rating on the SA Rank Summary Worksheet.

Rating Method [ ]

Invasive cover (%) [<1]

calculate

Table B5. Ratings for Invasive Exotic Plant Species Cover	
Rating	**Invasive Species Cover %**
○ 4	0%
○ 3	X >0% - <1%
○ 2	≥1% - <10%
○ 1	≥10

Additional CTs and Biotic Metric Comments:

Bee flys (or bee) and elder bugs seen in area
dam is over flowing causing green grasses
currant has bees.

SA CODE : SF2MI [3] **Date :** 4/9/24

SA Name : Two Mile Pond Reservoir Transect [3] **Surveyor Initials :** DCS

A2 - Physical Patch Complexity

Worksheet 11. Physical Patch Complexity checklist. Check off existing physical patch types for the upper, middle and lower segments of the SA; count the number of unique patch types and rate using Table A2 in combination with the narrative description. Enter the rating on the SA Rank Summary Worksheet.

Upper Segment	Middle Segment	Lower Segment	Field Indicators (check all existing conditions)
☐	☒	☐	Active side channels
☐	☒	☐	Abandoned channels
☐	☒	☐	Backwater/eddy
☐	☐	☐	Riffles or rapids
☐	☒	☐	Shoals, sparely-vegetated bars
☐	☒	☐	Channel boulders
☐	☐	☐	Oxbow lakes/ponds on floodplains
☐	☒	☐	Vegetated island and side bars
☐	☒	☐	Terraces
☐	☒	☐	Channel pools
☐	☒	☐	Beaver ponds
☐	☒	☐	Swales, depressional features on floodplains
☐	☒	☐	Debris jams in channel
☐	☒	☐	Woody wrack piles on the floodplain
☐	☐	☐	Floodplain micro-topography (mounds, pits)
☐	☒	☐	Downed logs
☐	☒	☐	Natural levees
☐	☐	☐	Standing snags
☐	☐	☐	Variegated, convoluted, or crenulated foreshore
☐	☐	☐	Undercut banks in channels
			No. of unique Patch Types

Table A2. Rating for Physical Patch Complexity	
Rating	**Description**
☒ 4	**High** degree of physical patch complexity across the floodplain. There are many floodplain micro-habitats present (mounds and pits, woody wrack piles, etc.), many fluvial geomorphic surfaces (swales, side channels, terraces, side bars, etc.), and there is high in-channel complexity (pools and riffles, large woody debris, undercut banks, etc.). As a guide, 12 or more unique indicators are present and well distributed throughout the SA (most indicators are found on multiple segments).
◯ 3	**Moderate** physical patch complexity scattered across the floodplain. There are several floodplain micro-habitats present, several fluvial geomorphic surfaces, and there is moderate in-channel complexity. As a guide, 9 - 11 indicators are scattered throughout the SA (some on multiple segments).
◯ 2	**Limited** physical patch complexity scattered across the floodplain. There are some floodplain micro-habitats present, some fluvial geomorphic surfaces, and there is limited in-channel complexity. As a guide, on average there are 6 - 8 unique indicators present in the SA (only a few on multiple segments).
◯ 1	**Little** or no physical patch complexity on the floodplain. There are few or no floodplain micro-habitats present, few different fluvial geomorphic surfaces, and there is little or no in-channel complexity. As a guide, ≤ 5 unique indicators are present in the SA.

SA CODE : SF2MI [3] **Date :** 4/9/24

SA Name : Two Mile Pond Reservoir Transect [3] **Surveyor Initials :** DCS

A3- Channel Equilibrium

Worksheet 12. Channel Equilibrium Checklist. Check all field indicators that apply to the upper, middle and lower segment of the SA observed at the channel edge of the traverse. Rate using the Table A3 descriptions and based on a preponderance of evidence from this checklist. Enter the rating on the SA Rank Summary Worksheet.

Condition	Upper Segment	Middle Segment	Lower Segment	Field Indicators(check all existing conditions)
Indicators of Channel Equilibrium	☐	☒	☐	The channel has a well-defined bankfull contour that clearly demarcates the point of incipient flooding where moderate frequent flow events spread flow across the floodplain.
	☐	☒	☐	Perennial riparian vegetation is abundant and well established along the bankfull contour, but not below it.
	☐	☒	☐	There is leaf litter, thatch, or wrack in most pools.
	☐	☒	☐	The channel contains embedded woody debris of the size and amount consistent with what is naturally available in the riparian area.
	☐	☒	☐	There is little or no active undercutting or burial of riparian vegetation.
	☐	☐	☐	There are no bars that are densely vegetated with perennial vegetation (neither mid-channel bars or point bars).
	☐	☒	☐	Channel and point-bars consist of well-sorted bed material.
	☐	☒	☐	The channel bed is not planar and without an abundance of fine materials filling the interstitial spaces between larger stream substrate.
	☐	☒	☐	There are channel pools at meander bends and some deep pools within the reach.
Indicators of Active Degradation	☐	☐	☐	The channel is characterized by deeply undercut banks with exposed living roots of trees or shrubs.
	☐	☐	☐	There are abundant bank slides or slumps, or the lower banks are uniformly scoured and not vegetated.
	☐	☐	☐	Bank vegetation is declining in stature or vigor, or many riparian trees and shrubs along the banks are leaning or falling into the channel.
	☐	☐	☐	Channel bed is scoured to large cobbles or boulders and entrained bank material is filling the cobble interstices and pools.
	☐	☐	☐	There are active headcuts within the channel.
	☐	☐	☐	An obvious historical floodplain has recently been abandoned, as indicated by the age structure of its riparian vegetation.
Indicators of Active Aggradation	☐	☐	☐	There is abundant fresh splays of coarse sediment covering the floodplain above the natural point bar elevation.
	☐	☐	☐	There are partially buried living tree trunks or shrubs along the banks.
	☐	☐	☐	The channel bed is planar overall. The stream lacks well-defined channel pools at meander bends, or pools are filled with sediment.
	☐	☐	☐	There are partially buried or sediment-choked culverts.
	☐	☐	☐	There are avulsion channels on the floodplain or adjacent valley floor.

SA CODE : SF2MI [3] **Date :** 4/9/24

SA Name : Two Mile Pond Reservoir Transect [3] **Surveyor Initials :** DCS

Table A3. Rating for Channel Equilibrium	
Rating	**Description**
☒ 4	Most of the channel throughout the SA is in equilibrium condition with little evidence of excessive aggradation or degradation based on the field indicators listed in Worksheet 12.
◯ 3	There is some evidence of excessive aggradation or degradation; the channel throughout the SA seems to approach an equilibrium condition. Circle primary process: aggradation or degradation.
◯ 2	There is evidence of severe aggradation or degradation throughout most of the channel through the SA. Circle primary process: aggradation or degradation.
◯ 1	The channel is artificially hardened, channelized, or is concrete throughout most of the SA.

A4- Stream Bank Stability and Cover

Worksheet 13. Bank Soil Stability and Streambank Erosion Potential Checklist. Check the indicator that best describes the condition looking a minimum of 25 m upstream and downstream at the channel edge of the upper, middle and lower segment of the SA. Average the six scores for both Bank Soil Stability and Streambank Erosion Potential. Rate using the Table A4 and enter the rating on the SA Summary Worksheet.

Condition	Upper Segment	Middle Segment	Lower Segment	Field Indicators
Indicators of Bank Soil Stability	☐4	☒4	☐4	Infrequent raw banks, less than 10% of steam bank under stress from trampling, slumping, vegetation removal or active erosion, etc.
	☐3	☐3	☐3	Raw banks and loose soil intermittently and 10%-25% of stream bank under stress from trampling, trail crossing, hoof punching, vegetation removal, erosion etc.
	☐2	☐2	☐2	Significant raw banks and loose soil, 25%-50% of stream bank under stress, trampled, slumping or eroding etc.
	☐1	☐1	☐1	Raw banks almost continuous with greater than 50% of stream bank under stress, loose soil, slumping, trampled or eroding; or channel appear to lack banks due to trampling; or channel that is artificially hardened or concrete along most of its length.
Indicators of Stream Bank Erosion Potential	☐4	☒4	☐4	≥ 80% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by boulders, large cobbles and/or large woody debris that prevent bank erosion.
	☐3	☐3	☐3	≥50% - <80% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those areas not covered by vegetation are protected to allow only minor erosion.
	☐2	☐2	☐2	≥25% - <50% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those area not covered by vegetation or stabilized by roots, are covered by materials or vegetation that give limited protection.
	☐1	☐1	☐1	Less than 25% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those areas not covered by vegetation provide little or no control over erosion and excess shear stress, and the banks are susceptible to erosion by high water flows.

Average Indicator Score 4

Table A4. Stream Bank Stability and Cover Rating	
Rating	**Description**
☒ 4	>3.5 - 4.0
◯ 3	>2.5 - ≤3.5
◯ 2	>1.5 - ≤2.5
◯ 1	1.0 - ≤1.5

SA CODE : SF2MI [3]

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SA Name : Two Mile Pond Reservoir Transect [3]

Surveyor Initials : DCS

A5 - Soil Surface Condition

Worksheet 14. Soil Surface Condition. Check all that apply in the upper , middle and lower SA segments during the field reconnaissance. The absence of these indicators would signify that disturbances are naturally occurring (e.g., flood deposition or low-density wildlife trails). Estimate the percent soil disturbance by segment area and referring to the SA abiotic map. Rate using Table A5 and enter on the SA Rank Summary Worksheet.

Upper Segment	Middle Segment	Lower Segment	Field Indicators (Check all existing conditions)
☐	☐	☐	Active erosion features due to anthropogenic disturbance (eg. rills, gullies, plant pedestals).
☐	☒	☐	Multiple livestock and other (fishing,hiking) trails,
☐	☐	☐	Vehicle tracks including off-road and construction, etc.
☐	☐	☐	Impervious compacted surfaces or pavement
☐	☐	☐	Grading or plowing
☐	☐	☐	Fill
☐	☐	☐	Gravel pits
☐	☐	☐	Anthropogenic levees and berms
☐	☐	☐	Irrigation-driven salinity and mineral crusts
☐	☐	☐	Fire pits
☐	☐	☐	Other:
			Estimate % soil disturbance by segment area

Average % Soil Disturbance: <1

Table A5. Soil Surface Condition Rating	
Rating	**Description**
☒ 4	Bare soil areas due to anthropogenic disturbance absent or very limited. No human-caused impervious surfaces or gravel pits are found within the SA. Total disturbance, including erosion, impervious surfaces, fill, or other anthropogenic degradation to the soil surface is less than 1% of the SA.
○ 3	Some amount of bare soil from human causes is present but the extent is limited. Area of impervious surfaces are minimal in extent. Total disturbance, including erosion, impervious surfaces, fill, gravel pits, vehicle tracks or other anthropogenic degradation to the soil surface is between 1% and 5% of the sampling area.
○ 2	Bare soils from human causes are common. These may include dense livestock trails, vehicle tracks, trails, construction staging areas, mechanical rutting, or irrigation-driven salinity. Soil disturbance, while apparent, is limited to specific areas and not found across the majority of the SA. Total disturbance, including erosion, impervious surfaces, fill, gravel mining, or other anthropogenic degradation to the soil surface is greater than 5% or less than 10% of the SA.
○ 1	Bare soil areas degrade portions of the site because of altered hydrology or other long-lasting impacts. Deep ruts from off-road vehicles or machinery are present. Livestock disturbance or trails are widespread and several inches deep. Water is channeled into rills or ponded. Additional human-caused impervious surfaces or soil compaction are present. Total disturbance, including erosion, impervious surfaces, fill,gravel mining or other anthropogenic degradation to the soil surface is equal to or greater than 10% of the SA.

SA CODE : SF2MI [3] **Date :** 4/9/24

SA Name : Two Mile Pond Reservoir Transect [3] **Surveyor Initials :** DCS

orksheet 15. Stressor Checklist. Check off stressors by intensity category that may be affecting wetland ecological condition of the SA and WOI. Assign tegories using direct evidence where available or your best professional judgement otherwise. If the presence of the stressor is uncertain, mark as "Unknov ınk Major Stressors in Dominant Stressor column(Pick up to 3)

ank	Affect				Stressor Group/Stressor	Comments
	Major	Minor	Absent	Unknown		
					Adverse water management	
	☒	☐	☐	☐	Extended low flow dam releases	
	☐	☐	☒	☐	Timing of flow releases not concordant	
	☐	☐	☒	☐	Extended high flow dam releases	
	☐	☐	☒	☐	Agriculture/Urban flow diversion upstream	
					Adverse sediment management	
	☐	☐	☒	☐	Adverse sediment retention by dams	
	☐	☐	☒	☐	Sediment loss by dredging	
	☐	☐	☒	☐	Adverse sediment input (roads/development)	
					Artificial water additions	
	☐	☐	☒	☐	Sewer treatment effluent	
	☐	☐	☒	☐	Point source urban runoff	
	☐	☐	☒	☐	Factory, feedlot outfall	
	☐	☐	☒	☐	Agricultural irrigation ditch returns	
	☐	☐	☒	☐	Mining waste	
					Ground water pumping	
	☐	☐	☒	☐	Urban depletions	
	☐	☐	☒	☐	Fracking	
	☐	☐	☒	☐	Agriculture irrigation wells	
					Watershed alteration	
	☐	☐	☒	☐	Extensive recent fires in watershed	
	☐	☐	☒	☐	Extensive recent timber harvest	
	☐	☐	☒	☐	Extensive open pit mining in watershed	
	☐	☐	☒	☐	Livestock/wildlife overgrazing	
					Local biodiversity impacts	
	☐	☐	☒	☐	Evidence of excessive grazing (local)	
	☐	☐	☒	☐	Excessive noise affecting wildlife	
	0	0		0	Counts by Intensity	

ddditional Comments

NMRAM Montane Riverine Wetlands Version 2.5

SA Cover Worksheet					
SA Code SF2MI [3]	SA Name : Two Mile Pond Reservoir			Project : Riparian Assesement	
A de Tsct [3]	AU Name : Transect [3]			WOI : Two Mile Pond Reservoir	
County Santa Fe	HUC 12 Headwaters Santa Fe River		Elevation (ft) 7299	(m) 2224.7	Ecoregion 6.0 NWFM

SA General Location and Boundary (Rationale, comments)

A riparian system that leads into a pond located on the east side of Santa Fe bordering the Santa Fe National Forest. This reservoir was decommissioned due to safety concerns regarding the reservoir and a water diversion to the area was recently shut down due to lack of water rights.

Driving Directions

Driving to Santa Fe from Albuquerque you head north on Old Pecos Trail. Then head east on Camino Del Monte Sol and right on Canyon Road until you reach the reservoir located to the North.

Ownership The Nature Conservative and The Santa Fe National Forest	Data Sharing Restrictions	Results to client only.	Fish Observed in Wetland?	

Surveyor Role	Surveyor Name	Surveyor Initials
Landscape	Dustin + Annie	DS + AM
Biotic	" "	" "
Abiotic	" "	" "
Stressors	" "	" "

Easting (m)	Northing (m)	Zone	Datum	Latitude (DD ft)	Longitude (DD ft)
-105° 53' 24" W	35° 41' 23" N	13	NAD- 83 UTM	35.689722	-105.89
Survey Date	5/15/24	**Start Time**		**End Time**	

SA Description

SA Landscape Context (summarize the wetland and surrounding landscape; include condition and impacts)

Willow trees, ~~[illegible]~~ and Narrow leaf cotton wood, horse tails sprouting near water currant, mullein rye grass,

SA Biotic Condition (vegetation patterns, composition and structure, exotics and invasives, disturbance evidence, fire and herbivory)

Hummingbird, snakes (garter) seen in area. Some towhees seen flying in trees and horse tails sprouting near beaver pond.

SA Abiotic Condition (hydrological alterations {e.g., dams, walls etc.]; flooding characteristics and evidence of overbank flooding; soil disturbance and other site impacts; explain the hydrologic breaks or other factors that define the SA limits)

Construction in distance. Ground still covered in dead leaves. Beaver dam is slightly over flowing.

Assessment Summary (Overall site condition summary and comments after the field data is collected.)

Habitat is full of life and working as an ideal Riparian Habitat,

Provisional Field Score 3.56	Rank A	Surveyor(s) DS	Final Score 3.56	Rank A	Initials DS	Date

SA CODE : SF2MI [3]

Date : 5/15/24

SA Name : Two Mile Pond Reservoir Transect [3]

Surveyor Initials : DCS

NMRAM - SA Rank Summary Worksheet: Montane Riverine Wetlands 2.5

Metric Description	Rating	Wt	Final Score
Landscape Context		Σ 1.0	3.25
L1. Buffer Integrity Index	3	0.25	0.75
L2. Riparian Corridor Connectivity	4	0.25	1.0
L3. Relative Wetland Size	4	0.25	1.0
L4. Surrounding Land Use	2	0.25	0.5
Biotic		Σ	
B1. Relative Native Plant Community Composition	4	0.2	
B2. Vegetation Horizontal Patch Structure	4	0.2	
B3. Vegetation Vertical Structure	3	0.2	
B4. Native Riparian Tree Regeneration	3	0.2	
B5. Invasive Exotic Plant Species Cover	3	0.2	
Abiotic		Σ	
A1. Floodplain Hydrologic Connectivity		0.3	
A2. Physical Patch Diversity	4	0.2	
A3. Channel Equilibrium	4	0.2	
A4. Stream Bank Stability and Cover	4	0.2	
A5. Soil Surface Condition	4	0.1	

SA Condition Scoring Summary			
Major Attribute	Score	Wt.	Wt. Score
Landscape Context	3.25	0.3	0.975
Biotic	3.4	0.35	
Abiotic	4	0.35	
SA WETLAND CONDITION SCORE Σ			
SA WETLAND RANK =	3.565		

SA Wetland Rank		
Rank	Score	Description
A	≥3.25 - 4.0	Excellent Condition
B	≥2.5 - <3.25	Good Condition
C	≥1.75 - <2.5	Fair Condition
D	1.0 - <1.75	Poor Condition

Stressor Summary	Major	Minor	Top Three	
	0	0	1	
			2	
			3	

Stressor Comments (Evaluation of risk)

SA CODE : SF2MI [3] **Date :** 5/15/24

SA Name : Two Mile Pond Reservoir Transect [3] **Surveyor Initials :** DCS

Landscape Context

L. Buffer Integrity Index

Worksheet 1a. Buffer and RCC Checklist. Check off land cover elements within the buffer area or RCC corridors that are either allowed, or are excluded and considered non-buffer elements that disrupt ecosystem connectivity. Indicate the imagery type and date (season and year of imagery).

Imagery	Google Earth KMZ. file	Image Date	6/23

Allowed buffer/RCC land cover elements			Excluded non-buffer/RCC land cover elements		
Buffer	RCC		Buffer	RCC	
[X]	[X]	Natural or semi-natural vegetation patches	[X]	[X]	Commercial/residential developments, parking lots, dams, bridges, revetments, and other structures
[X]	[X]	Small irrigation ditches without levees	[ ]	[ ]	Lawns, parks, golf courses, sports fields
[ ]	[ ]	Old fields, unmaintained	[ ]	[ ]	Railroads
[ ]	[ ]	Open range land	[ ]	[ ]	Maintained levees, sediment piles, construction materials, staging areas
[X]	[X]	Foot trails, horse trails, unpaved bike trails (low intensity)	[ ]	[ ]	Intensive livestock areas, horse paddocks, feedlots
[X]	[X]	Non-channel open water	[ ]	[ ]	Intensive agriculture: maintained pastures, hay fields, row crops, orchards, and vineyards
[X]	[X]	Non-functioning abandoned vegetated levees, or naturally occurring levees	[X]	[X]	Paved roads or developed second-order unpaved but graded roads
[ ]	[ ]	unpaved two tracks roads	[X]	[X]	Open water bounded by a levee or other manmade structure
[ ]	[ ]	Other	[ ]	[ ]	Other

Worksheet 1b. Buffer Percent Sub-metric. Measure or estimate the percentage of the SA perimeter composed of allowed buffer elements and enter into the Buffer Percent Box below. Rate the sub-metric using Table L1a and enter the rating on the Buffer Integrity Summary Worksheet 1d.

Buffer Percent (%)=	85%

Table L1a. Buffer Percent

Rating	Buffer Percent
◯ 4	100%
(X) 3	≥80% - <100%
◯ 2	≥50% - <80%
◯ 1	<50%

Worksheet 1c. Buffer Width Sub-metric. Measure the length of each buffer line in meters in the GIS or on the map. Average the line lengths and rate using Table L1b. Enter the rating on the Buffer Integrity Summary Worksheet 1d.

Line	Buffer Width (m)	Buffer Width (ft)	Line	Buffer Width (m)	Buffer Width (ft)
A	164.26	538.91	E	161.93	531.26
B	125.25	410.92	F	231.48	759.44
C	115.39	378.57	G	121.25	397.80
D	111.07	364.40	H	155.87	511.38
Average	148.31 (m)		486.58 (ft)		

Table L1b. Buffer Width

Rating	Average buffer width
◯ 4	≥190m
(X) 3	≥130 - <190m
◯ 2	≥65 - <130m
◯ 1	<65m

Worksheet 1d. Buffer Integrity Summary. Enter the sub-metric Ratings from Tables L1a and L1b above to calculate the Buffer Integrity Index Score using the formula in the box below. Using the Buffer Integrity Index Score, enter rating for Buffer Integrity in Table L1c on the SA Summary Worksheet.

Buffer % Rating	+	Buffer Width Rating	/2 =	Buffer Integrity Index Score
3	+	3	/2 =	3

Table L1c. Summary Rating for Buffer Integrity

Rating	Score
◯ 4	>3.5
(X) 3	>2.5 - ≤3.5
◯ 2	>1.5 - ≤2.5
◯ 1	≤1.5

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SA Name : Two Mile Pond Reservoir Transect [3] **Surveyor Initials :** DC?

L2 - Riparian Corridor Connectivity (RCC)

Worksheet 2. RCC excluded non-buffer elements calculation. Refer to worksheet 1a for excluded non-buffer RCC land cover elements. Following the steps in the Field Guide, enter the summed values in meters for excluded element lengths for each bank within each segment upstream and downstream of the SA. Sum the values for each segment and calculate % Segment Disruption for the upstream side and the downstream side. Add the total disruption for upstream and downstream segments and then calculate the % Total Disruptions for the riparian corridor. Rate Riparian Corridor Connectivity using Table L2 and the data from this worksheet. Enter rating on the SA Summary Worksheet.

Segments	Upstream Segment		Downstream Segment	
Banks	Left Bank	Right Bank	Left Bank	Right Bank
A) Total Bank Disruption (m)	0	0	0	0
B) Total Disruption by Segment (m)	0		0	
C) % Segment Disruption = (B/1000)*100	0		0	
D) Total Disruption both segments	0			
E) % Total Disruptions = (D/2000)*100	Zero disruption noticeable along the banks.			

Table L2. RCC Rating	
Rating	Description
(X) 4	**0%** total disruption on both segments combined.
◯ 3	**<15%** total disruption on both segments combined.
◯ 2	**≥15% - <40%** total disruption on both segments combined.
◯ 1	**≥40%** total disruption on both segments combined.

L3 - Relative Wetland Size

Worksheet 3a. Calculate the Relative Size Ratio (RSR) between the current WOI size and the historic WOI size. b. Calculate the Relative Wetland Size Score (RWSI (%)) as (1-RSR)*100. Rate Relative Wetland Size Index using Table L3 and enter rating on the SA Summary Workshe

RSR					RWSI						
Current Size	/	Historic Size	=	RSR	1	-	RSR	X	100	=	RWSI (%)
9	/	10	=	0.9	1	-	0.1	X	100	=	10

Table L3. Relative Wetland Size Rating		
Rating	RWSI Score	Description
(X) 4	≤10%	Wetland is at or only minimally reduced from its full natural extent
◯ 3	>10% - ≤40%	Wetland remains equal to or more than 60% of its natual size
◯ 2	>40% - ≤70%	Wetland has been reduced by more than 40% its natural size
◯ 1	>70%	Wetland has been reduced by more than 70% its natural size

SA CODE: SF2MI [3] **Date:** 5/15/24

SA Name: Two Mile Pond Reservoir Transect [3] **Surveyor Initials:** DCS

L4 - Surrounding Land Use

Worksheet 4. Surrounding Land Use. Enter the percent area occupied by a given Land Use Element in the Land Use Zone (LUZ) surrounding the SA. Calculate the Land Use Index (LUI) Score by element as the product of the element coefficient times the percent of the LUZ Area occupied. (The %LUZ Area must total 100%.) Sum the LUI scores for each element to create the final LUI Score. Rate using Table L4 and enter the rating in the SA Rank Summary Worksheet.

Land Use Element	Coef	% LUZ Area	LUI Score
Paved roads, parking lots, domestic or commercially developed buildings, mining (gravel pit, quarry, open pit, strip mining), railroads	0	0	0
Unpaved roads (e.g., driveway, tractor trail, unpaved parking lots), paddock, dirt lot	0.1	0	0
Dredging, borrow pits, abandoned mines, water-filled artificial impoundments (ponds and reservoirs)	0.1	0	0
Filling or dumping of sediment or soils	0.1	0	0
Intense recreation (all-terrain vehicle use, camping, popular fishing spot, etc.)	0.3	0	0
Rip-rapped channel (highly modified channel with severely limited vegetation zone that is altered by human activities but not a completely concrete channel [that goes under paved roads]), junkyards, trash dumps, disturbed ground (not including roads)	0.3	0	0
Ski area	0.4	0	0
Dam sites and flood-disturbed shorelines around water storage reservoirs	0.5	0	0
Abandoned artificial impoundments (ponds and reservoirs) and associated disturbed flood zones	0.5	10	5
Artificial/Constructed wetlands, irrigation ditches	0.7	20	14
Developed/Managed trail system (high use trail)	0.8	5	4
Agriculture - active tilled crop production	0.2	0	0
Agriculture - permanent crop (vineyards, orchards, nurseries, berry production)	0.3	0	0
Manicured lawns, sport fields, and golf courses; urban manicured parks	0.3	0	0
Old fields and other disturbed fallow lands dominated by ruderal and/or exotic species (e.g., kochia, Russian thistle, mustards, annual vegetation)	0.5	0	0
Mature old fields and other fallow lands with natural composition, introduced hay field and pastures (e.g., perennial vegetation cover)	0.7	0	0
Restoration areas in process to natural conditions (re-conversion in process)	0.8	65	52
Haying of native grassland (e.g., no tillage, haying and baling only)	0.9	0	0
Heavy logging or tree removal with >50% of large trees (e.g., >30 cm diameter at breast height) removed, woodland/shrub vegetation conversion (chaining, cabling, rotochopping)	0.3	0	0
Commercial tree plantation, Christmas tree farms	0.6	0	0
Selective logging or tree removal with <50% of large trees (e.g., >30 cm diameter at breast height) removed	0.8	0	0
Mature restoration areas returned to natural conditions (re-converted)	0.9	0	0
Natural area, land managed for native vegetation - No agriculture, logging, development	1	0	0
LUI Score= Coefficient * % LUZ Area		100	75

Table L4. Surrounding Land Use Rating	
Rating	**LUI Score**
○ 4	≥95 - 100
○ 3	≥80 - <95
⊗ 2	≥40 - <80
○ 1	<40

SA CODE : SF2MI [3] **SA Name :** Two Mile Pond Reservoir Transect [3] **Date :** 5/15/24 **Surveyor Initials :** DCS

Biotic Metrics

Worksheet 5. Vegetation Community Patch Polygon Data for Biotic Metrics B3, B4, and B5 for Polygons from SA Biotic Map. Enter data for each polygon under a unique number assigned from the SA Biotic Map. Each polygon is evaluated with respect to Vegetation Vertical Structure (B3), Native Tree Regeneration (B4), and Invasive Exotic Plant Species Cover (B5) metrics. Enter the Vertical Structure Type (VST) for B3, tree regeneration % cover within the polygon for B4 and the % cover of invasive exotic species for B5. Use the Tables in Appendix B and the Field Guide for metric instructions. Enter the species codes for the invasive exotic species found in the polygon (from NM Noxious Weed List - Appendix D). Use the comments box for documenting and describing vegetation community patch features.

Polygon No	B3 Vertical Structure Type	B4 Tree Regeneration % Cover	B5 Invasive Exotic Species % Cover	Invasive Exotic Species (List Code(s))	Comments
1	IA1				
2	IA2	60%	>2%	Mullein	Currant, ~~thin~~ narrow leafed cotton tails, rye grass
3	IIA1	80%	None	None	Cat tails, Horse tails some willow trees
4	IIIB1				
5	IIIC1				
6	IVEI				
7	IVF1				
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

SA CODE: SF2MI [3]   **SA Name:** Two Mile Pond Reservoir Transect [3]   **Date:** 5/15/24 **Surveyor Initials:** DCS

B1 - Relative Native Plant Community Composition

Worksheet 6. CT Plant Species and Polygon Assignments. Starting with CT A, enter the number of the first polygon from Worksheet 5. Enter the species codes for the two top dominant species in each stratum that appears in the polygon. See footnotes for special instructions. If a species appears in more than one strata, assign the species to the stratum in which it is more abundant. Each polygon is either assigned to the same CT if it has the same composition or a new CT is created for the polygon.

		Tall Woody Stratum 1				Short Woody Stratum 2				Herbaceous/Sparse Stratum 3				CT Score 4		
CT	Polygon Nos.	Species 1	E N	Species 2	E N	Species 3	E N	Species 4	E N	Species 5	E N	Species 6	E N	Raw4	% SA5	Wt Score6
A	2	Narrowleaf Cottonwood	N	Willow trees	N	Willows	N	Currant	N	Mullein	E	Meadow grass	N	3.5	50	1.75
B	3	Cottonwood	N	Willow trees	N	Willows	N			Cattail	N	Horsetail	N	4.0	50	2.00
C																
D																
E																
F																
G																
H																
I																
J																
K																
L																
M																
N																
O																
													Final Weighted Score7			3.75

1. Trees and shrubs > 6 m (20 feet) and > 25% total stratum cover; 2. Trees and shrubs ≤6m (20 feet) and >25% total stratum cover; 3. Herbaceous (graminoids and forbs)>10% total stratum cover. 4Raw Score is from Table B1a (Appendix B); 5%SA is the percentage of the SA area covered by the CT and expressed as a decimal number; the total area %SA must equal 1; 6Wt. Score is the product of the Raw Score * % SA; 7The Final Weighted Score is the sum of the Wt. Scores. Rate the CT Final Weighted Score on Table B1 and enter the Rating for Relative Native Plant Community Composition on the SA Rank Summary Worksheet.

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Table B1. Relative Native Plant Community Composition Rating		
Rating	CT Final Weighted Score	
X 4	≥ 3.75	<10% non-native
3	≥ 3.25 and <3.75	10% ≤20% non-native
2	> 2.0 and <3.25	20% ≤50% non-native
1	≤2.0	>50% non-native

2 - Vegetation Horizontal Patch Structure

orksheet 7. Using Tables B2a and B2c (Appendix B), choose the schematic pattern that best matches the mapped vegetation patch ttern for the SA. Rate using Table B2 and enter rating on the SA Rank Summary Worksheet.

orizontal Patch Structure pattern A,B,C, or D: A

Table B2. Rating for Vegetation Horizontal Patch Structure	
Rating	Description
X 4	Most closely matches Pattern A. SA has a diverse patch structure (≥4 patch types) and complexity. A dominant patch type would be difficult to determine.
3	Pattern B. SA has a moderate degree of patch diversity (3 patch types present) and complexity. A single, dominant patch type may be present, although the other patch types would be well represented and have more than one occurrence in the SA.
2	Pattern C. SA has a low degree of patch diversity and complexity. Two or three patch types may be present; however, a single, dominant patch type exists with the others occupying a small portion of the SA.
1	Pattern D. SA has essentially little to no patch diversity or complexity. The SA is dominated by a single patch type. Other patch types, if present, occur infrequently and occupy a small portion of the SA.

3 - Vegetation Vertical Structure

/orksheet 8. Percentage of SA by vertical structure type (VST). Using the Structure Type from Worksheet 5 and the %SA om Worksheet 6 calculate the total area of the SA occupied by each VST using the formula VST(type) = Sum (%SA for CTs with ame VST) x 100. Enter the total %SA for each VST below.

	VST 1 High Structure Forest	VST 2 Low Structure Forest	VST 5 Tall Shrubland	VST 6S Short Shrubland	VST 6W Herbaceous Wetland	VST 6H Herbaceous Vegetation	VST 7 Sparse Vegetation
Total % of SA	50			50			

able B3. Rating for Vegetation Vertical Structure. Using the data from Worksheet 8 rate the SA based on the criteria in Table B3. Pick the ow that best fits the distribution of VSTs in the SA. Each row specifies the required dominant structure type plus co- and sub-dominants. ercentage cover required per co- or sub-dominant is a minimum. The types listed in the columns must be the most common VSTs in the SA for ne rating to be applicable (Worksheet 8). VSTs 1 and 2 can be inverted in dominance and the rating is still applicable. Work from the top of the able down. As long as the requirements for one row are met, any other types may or may not co-occur without changing the rating. Enter the ating on the SA Rank Summary Worksheet.

Rating	Dominant VST	Co- or Sub-dominant VST ≥15%	Sub-dominant VST ≥5%
4	1	5	6W and/or 6H
	1	6W	
	2 or 1 and 2	5	6W and/or 6H
X 3	1		
	2 or 1 and 2	5	
	2 or 1 and 2	6W	
	5	6W	
2	2 or 1 and 2		
	5		
	6W		
1	6S		
	6H		
	7		

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B4 - Native Riparian Tree Regeneration

Table B4. Native Riparian Tree Regeneration rating. Using the polygon percent cover of native tree seedlings, saplings and poles from Worksheet 5, rate the SA based on polygon percent cover and patch density. Enter the rating on the SA Rank Summary Worksheet.

Rating	Description
○ 4	Native poles, sapling, and seedlings trees well represented, obvious regeneration, many patches or polygons with >5% cover, typically multiple size (age) classes.
⊗ 3	Native poles, saplings and/or seedlings common, scattered patches or polygons with 1% -5% cover, size classes few.
○ 2	Native poles, saplings and/or seedlings present but uncommon, restricted to one or two patches or polygons with typically <1% cover, little size class differentiation.
○ 1	Native poles, saplings, and/or seedlings absent (0% cover).

B5 - Invasive Exotic Plant Species Cover

Worksheet 9. Based on Worksheets 5 and 6, calculate or estimate the percentage cover of invasive exotic species for the SA and enter below. Rate using Table B5 and enter the rating on the SA Rank Summary Worksheet.

Rating Method [ ]

Invasive cover (%) >1%

calculate

Table B5. Ratings for Invasive Exotic Plant Species Cover	
Rating	**Invasive Species Cover %**
○ 4	0%
○ 3 X	>0% - <1%
○ 2	≥1% - <10%
○ 1	≥10

Additional CTs and Biotic Metric Comments:

lots of horse tails sprouting around beaver dam. Some Water striders, Garter Snakes seen (2)

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Abiotic Metrics

A1 - Floodplain Hydrologic Connectivity

Method 1

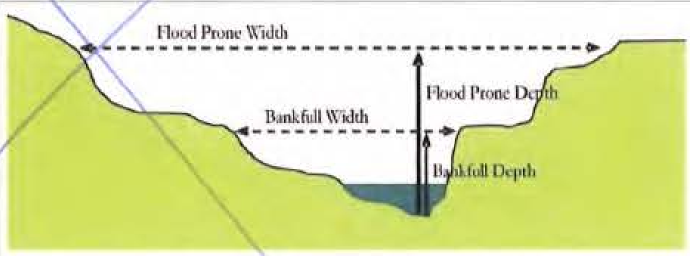
Worksheet 10a. Floodplain Hydrologic Connectivity Measurements. The following six steps are conducted at each of three cross-sections at the approximate mid-points along straight riffles and away from deep pools or meander bends. Use a measuring tape and temporary stakes for horizontal measurements, and a stadia rod or similar measuring stick for vertical measurements. If unavailable, use visual estimates. Where straight channel segments do not occur, or if there is excessive ponding or bankfull indicators are obscured, use the narrative rating approach (Method 2). Enter the rating method in the box below, either meander pool, riffle pool or narrative (Method 2) and choose the corresponding Table (A1a, A1b, or A1c) to rate Floodplain Hydrologic Connectivity. Enter the rating on the SA Rank Summary Worksheet. Photographs of each cross-section are required and recorded in Table A1d.

Steps	Description	Cross-section: 1	2	3
1: Bankfull width	This is a critical step requiring familiarity with field indicators of the bankfull contour. Measure the distance between the right and left bankfull contours with a tape.			
2: Maximum bankfull depth	Keeping the tape level between the right and left bankfull contours, measure the height of the line above the thalweg (the deepest part of the channel). A pocket line level can help here.			
3: Flood-prone depth	Double the estimate of maximum bankfull depth from Step 2.			
4: Flood-prone width	Using a tape, measure the length of a level line at a height equal to the flood prone depth from Step 3 to where it intercepts the right and left banks.			
5: Calculate Entrenchment Ratio	Divide the flood-prone width (Step 4) by the bankfull width (Step 1).			
6: Calculate average ratio	Calculate the average for Step 5 for all three replicate cross-sections. Enter the average here and rate using Table A1a. Enter the rating in the A1 box on the SA Rank Summary Worksheet.			

Rating Method

Table A1a. Rating for Floodplain Hydrologic Connectivity in meandering single-channel riffle-pool systems

Rating	Description
4	Average entrenchment ratio is ≥ 2.2;
3	Average entrenchment ratio is ≥1.9 - <2.2
2	Average entrenchment ratio is ≥1.5 - <1.9
1	Average entrenchment ratio is < 1.5



Worksheet 10b. Floodplain Hydrologic Connectivity Indicators. Use this Worksheet in conjunction with Table A1c. Check the boxes for all that apply to each segment.

U	M	L	Indicator
☐	☐	☐	Bankful is slightly below bank height
☐	☐	☐	Bankful is well below bank height and channel is incised
☐	☐	☐	Channel widening due to bank failure
☐	☐	☐	Constructed levees preclude floodplain inundation
☐	☐	☐	Stream is straightened/channelized
☐	☐	☐	Inset floodplain formation
☐	☐	☐	Decreased peak flows due to hydrologic modification
☐	☐	☐	Bankfull indicators at point of incipient flooding of the floodplain
☐	☐	☐	Indicators of overbank flow on floodplain
☐	☐	☐	Floodplain inundation due to beaver activity

Table A1b. Rating for Floodplain Hydrologic Connectivity in single-channel step-pool systems

Rating	Description
4	Average entrenchment ratio is ≥ 1.9
3	Average entrenchment ratio is ≥1.4 - <1.9
2	Average entrenchment ratio is ≥1.2 - <1.4
1	Average entrenchment ratio is < 1.2

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Method 2

T.. .e A1c. Narratve Floodplain Hydrologic Connectivity Rating. Select the narrative description that best describes the floodplain hydrologic connectivity. At each cross-section, use Worksheet 10b to record channel incision, bank modification, inset floodplain or other hydrologic evidence that would preclude natural floodplain inundation. Conversely, assess indicators and evidence for overbank flow and floodplain inundation. Record whether beaver activity is obscuring bankful indicators due to inundation of the floodplain. Select a rating from the table below. Use data from Worksheets 10b to help select rating. Enter Rating on SA Summary Worksheet. Photographs are required at each cross-section and recorded in Table A1d.

Rating	Description
◯ 4	Fully connected to the natural floodplain. Indicators of bankfull discharge are at the bank/floodplain transition, with over-bankfull flows likely to inundate a broad area of floodplain. Floodplain supports riparian vegetation and shows signs of overbank sediment deposition. Or beaver ponds inundate the entire, normally active floodplain and preclude the identification of bankfull indicators and the active floodplain width.
◯ 3	Flow access to the floodplain moderately limited by incision, channelization. Less frequent inundation than fully connected streams described above (as noted by bankfull indicators below floodplain transition). Floodplain supports a riparian overstory, but some understory plants may be upland. An inset floodplain supporting riparian vegetation may also be present.
◯ 2	Incised, channelized or modified with an inset floodplain formed, which is regularly inundated and supports riparian vegetation and sediment regimes. Or the stream has minimal access to the natural floodplain due to incision, channelization, or flow modification, and the natural floodplain does not support riparian vegetation except for relatively long-lived phreatophytes (e.g., cottonwood, salt cedar, etc.).
◯ 1	Fully disconnected from floodplain, either through incision, bank modification/channelization, or hydrologic modification (i.e., abandonment of floodplain due to decreased peak flows). Indicators may include upland vegetation and lack of overbank sediment deposits on the floodplain, etc.

Ta.. A1d. Photo Point Log for Cross-Section Photographs. For each cross-section record the digital names/numbers of photographs taken looking Upstream and Downstream from the thalweg and looking Bank Right* and Bank Left* across the stream from each side of the cross-section. Leave the cross-section tape and flags indicating bankful in the ground when taking the Bank Right and Bank Left photos. A photo board with SA name and cross-section information is helpful. (*The bank of a stream or river on the right (left) of the observer when facing in the direction of flow or downstream.) See Appendix E for additional details.

Cross Section	Easting (Latitude)	Northing (Longitude)	Upstream	Downstream	Bank Right	Bank Left
1						
2						
3						

Floodplain Hydrologic Connectivity Comments:

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A2 - Physical Patch Complexity

Worksheet 11. Physical Patch Complexity checklist. Check off existing physical patch types for the upper, middle and lower segments of the SA; count the number of unique patch types and rate using Table A2 in combination with the narrative description. Enter the rating on the SA Rank Summary Worksheet.

Upper Segment	Middle Segment	Lower Segment	Field Indicators (check all existing conditions)
☐	☒	☐	Active side channels
☐	☐	☐	Abandoned channels
☐	☒	☐	Backwater/eddy
☐	☐	☐	Riffles or rapids
☐	☒	☐	Shoals, sparely-vegetated bars
☐	☐	☐	Channel boulders
☐	☐	☐	Oxbow lakes/ponds on floodplains
☐	☐	☐	Vegetated island and side bars
☐	☒	☐	Terraces
☐	☒	☐	Channel pools
☐	☒	☐	Beaver ponds
☐	☒	☐	Swales, depressional features on floodplains
☐	☒	☐	Debris jams in channel
☐	☒	☐	Woody wrack piles on the floodplain
☐	☐	☐	Floodplain micro-topography (mounds, pits)
☐	☒	☐	Downed logs
☐	☒	☐	Natural levees
☐	☒	☐	Standing snags
☐	☐	☐	Variegated, convoluted, or crenulated foreshore
☐	☐	☐	Undercut banks in channels
			No. of unique Patch Types

Table A2. Rating for Physical Patch Complexity	
Rating	**Description**
☒ 4	**High** degree of physical patch complexity across the floodplain. There are many floodplain micro-habitats present (mounds and pits, woody wrack piles, etc.), many fluvial geomorphic surfaces (swales, side channels, terraces, side bars, etc.), and there is high in-channel complexity (pools and riffles, large woody debris, undercut banks, etc.). As a guide, 12 or more unique indicators are present and well distributed throughout the SA (most indicators are found on multiple segments).
◯ 3	**Moderate** physical patch complexity scattered across the floodplain. There are several floodplain micro-habitats present, several fluvial geomorphic surfaces, and there is moderate in-channel complexity. As a guide, 9 - 11 indicators are scattered throughout the SA (some on multiple segments).
◯ 2	**Limited** physical patch complexity scattered across the floodplain. There are some floodplain micro-habitats present, some fluvial geomorphic surfaces, and there is limited in-channel complexity. As a guide, on average there are 6 - 8 unique indicators present in the SA (only a few on multiple segments).
◯ 1	**Little** or no physical patch complexity on the floodplain. There are few or no floodplain micro-habitats present, few different fluvial geomorphic surfaces, and there is little or no in-channel complexity. As a guide, ≤ 5 unique indicators are present in the SA.

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A3- Channel Equilibrium

Worksheet 12. Channel Equilibrium Checklist. Check all field indicators that apply to the upper, middle and lower segment of the SA observed at the channel edge of the traverse. Rate using the Table A3 descriptions and based on a preponderance of evidence from this checklist. Enter the rating on the SA Rank Summary Worksheet.

Condition	Upper Segment	Middle Segment	Lower Segment	Field Indicators(check all existing conditions)
Indicators of Channel Equilibrium	☐	☒	☐	The channel has a well-defined bankfull contour that clearly demarcates the point of incipient flooding where moderate frequent flow events spread flow across the floodplain.
	☐	☒	☐	Perennial riparian vegetation is abundant and well established along the bankfull contour, but not below it.
	☐	☒	☐	There is leaf litter, thatch, or wrack in most pools.
	☐	☒	☐	The channel contains embedded woody debris of the size and amount consistent with what is naturally available in the riparian area.
	☐	☒	☐	There is little or no active undercutting or burial of riparian vegetation.
	☐	☐	☐	There are no bars that are densely vegetated with perennial vegetation (neither mid-channel bars or point bars).
	☐	☒	☐	Channel and point-bars consist of well-sorted bed material.
	☐	☐	☐	The channel bed is not planar and without an abundance of fine materials filling the interstitial spaces between larger stream substrate.
	☐	☐	☐	There are channel pools at meander bends and some deep pools within the reach.
Indicators of Active Degradation	☐	☐	☐	The channel is characterized by deeply undercut banks with exposed living roots of trees or shrubs.
	☐	☐	☐	There are abundant bank slides or slumps, or the lower banks are uniformly scoured and not vegetated.
	☐	☐	☐	Bank vegetation is declining in stature or vigor, or many riparian trees and shrubs along the banks are leaning or falling into the channel.
	☐	☐	☐	Channel bed is scoured to large cobbles or boulders and entrained bank material is filling the cobble interstices and pools.
	☐	☐	☐	There are active headcuts within the channel.
	☐	☐	☐	An obvious historical floodplain has recently been abandoned, as indicated by the age structure of its riparian vegetation.
Indicators of Active Aggradation	☐	☐	☐	There is abundant fresh splays of coarse sediment covering the floodplain above the natural point bar elevation.
	☐	☐	☐	There are partially buried living tree trunks or shrubs along the banks.
	☐	☐	☐	The channel bed is planar overall. The stream lacks well-defined channel pools at meander bends, or pools are filled with sediment.
	☐	☐	☐	There are partially buried or sediment-choked culverts.
	☐	☐	☐	There are avulsion channels on the floodplain or adjacent valley floor.

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Table A3. Rating for Channel Equilibrium	
Rating	**Description**
☒ 4	Most of the channel throughout the SA is in equilibrium condition with little evidence of excessive aggradation or degradation based on the field indicators listed in Worksheet 12.
◯ 3	There is some evidence of excessive aggradation or degradation; the channel throughout the SA seems to approach an equilibrium condition. Circle primary process: aggradation or degradation.
◯ 2	There is evidence of severe aggradation or degradation throughout most of the channel through the SA. Circle primary process: aggradation or degradation.
◯ 1	The channel is artificially hardened, channelized, or is concrete throughout most of the SA.

A4- Stream Bank Stability and Cover

Worksheet 13. Bank Soil Stability and Streambank Erosion Potential Checklist. Check the indicator that best describes the condition looking a minimum of 25 m upstream and downstream at the channel edge of the upper, middle and lower segment of the SA. Average the six scores for both Bank Soil Stability and Streambank Erosion Potential. Rate using the Table A4 and enter the rating on the SA Summary Worksheet.

Condition	Upper Segment	Middle Segment	Lower Segment	Field Indicators
Indicators of Bank Soil Stability	☐4	☒4	☐4	Infrequent raw banks, less than 10% of steam bank under stress from trampling, slumping, vegetation removal or active erosion, etc.
	☐3	☐3	☐3	Raw banks and loose soil intermittently and 10%-25% of stream bank under stress from trampling, trail crossing, hoof punching, vegetation removal, erosion etc.
	☐2	☐2	☐2	Significant raw banks and loose soil, 25%-50% of stream bank under stress, trampled, slumping or eroding etc.
	☐1	☐1	☐1	Raw banks almost continuous with greater than 50% of stream bank under stress, loose soil, slumping, trampled or eroding; or channel appear to lack banks due to trampling; or channel that is artificially hardened or concrete along most of its length.
Indicators of Stream Bank Erosion Potential	☐4	☒4	☐4	≥ 80% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by boulders, large cobbles and/or large woody debris that prevent bank erosion.
	☐3	☐3	☐3	≥50% - <80% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those areas not covered by vegetation are protected to allow only minor erosion.
	☐2	☐2	☐2	≥25% - <50% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those area not covered by vegetation or stabilized by roots, are covered by materials or vegetation that give limited protection.
	☐1	☐1	☐1	Less than 25% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those areas not covered by vegetation provide little or no control over erosion and excess shear stress, and the banks are susceptible to erosion by high water flows.

Average Indicator Score	

Table A4. Stream Bank Stability and Cover Rating	
Rating	**Description**
☒ 4	>3.5 - 4.0
◯ 3	>2.5 - ≤3.5
◯ 2	>1.5 - ≤2.5
◯ 1	1.0 - ≤1.5

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A5 - Soil Surface Condition

Worksheet 14. Soil Surface Condition. Check all that apply in the upper, middle and lower SA segments during the field reconnaissance. The absence of these indicators would signify that disturbances are naturally occurring (e.g., flood deposition or low-density wildlife trails). Estimate the percent soil disturbance by segment area and referring to the SA abiotic map. Rate using Table A5 and enter on the SA Rank Summary Worksheet.

Upper Segment	Middle Segment	Lower Segment	Field Indicators (Check all existing conditions)
☐	☒	☐	Active erosion features due to anthropogenic disturbance (eg. rills, gullies, plant pedestals).
☐	☐	☐	Multiple livestock and other (fishing,hiking) trails,
☐	☐	☐	Vehicle tracks including off-road and construction, etc.
☐	☐	☐	Impervious compacted surfaces or pavement
☐	☐	☐	Grading or plowing
☐	☐	☐	Fill
☐	☐	☐	Gravel pits
☐	☐	☐	Anthropogenic levees and berms
☐	☐	☐	Irrigation-driven salinity and mineral crusts
☐	☐	☐	Fire pits
☐	☐	☐	Other:
			Estimate % soil disturbance by segment area

Average % Soil Disturbance:

Table A5. Soil Surface Condition Rating	
Rating	**Description**
☒ 4	Bare soil areas due to anthropogenic disturbance absent or very limited. No human-caused impervious surfaces or gravel pits are found within the SA. Total disturbance, including erosion, impervious surfaces, fill, or other anthropogenic degradation to the soil surface is less than 1% of the SA.
○ 3	Some amount of bare soil from human causes is present but the extent is limited. Area of impervious surfaces are minimal in extent. Total disturbance, including erosion, impervious surfaces, fill, gravel pits, vehicle tracks or other anthropogenic degradation to the soil surface is between 1% and 5% of the sampling area.
○ 2	Bare soils from human causes are common. These may include dense livestock trails, vehicle tracks, trails, construction staging areas, mechanical rutting, or irrigation-driven salinity. Soil disturbance, while apparent, is limited to specific areas and not found across the majority of the SA. Total disturbance, including erosion, impervious surfaces, fill, gravel mining, or other anthropogenic degradation to the soil surface is greater than 5% or less than 10% of the SA.
○ 1	Bare soil areas degrade portions of the site because of altered hydrology or other long-lasting impacts. Deep ruts from off-road vehicles or machinery are present. Livestock disturbance or trails are widespread and several inches deep. Water is channeled into rills or ponded. Additional human-caused impervious surfaces or soil compaction are present. Total disturbance, including erosion, impervious surfaces, fill,gravel mining or other anthropogenic degradation to the soil surface is equal to or greater than 10% of the SA.

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orksheet 15. Stressor Checklist. Check off stressors by intensity category that may be affecting wetland ecological condition of the SA and WOI. Assign tegories using direct evidence where available or your best professional judgement otherwise. If the presence of the stressor is uncertain, mark as "Unknov nk Major Stressors in Dominant Stressor column(Pick up to 3)

ank	Affect				Stressor Group/Stressor	Comments
	Major	Minor	Absent	Unknown		
					Adverse water management	
	☑	☐	☐	☐	Extended low flow dam releases	
	☐	☐	☑	☐	Timing of flow releases not concordant	
	☐	☐	☑	☐	Extended high flow dam releases	
	☐	☐	☑	☐	Agriculture/Urban flow diversion upstream	
					Adverse sediment management	
	☐	☐	☑	☐	Adverse sediment retention by dams	
	☐	☐	☑	☐	Sediment loss by dredging	
	☐	☐	☑	☐	Adverse sediment input (roads/development)	
					Artificial water additions	
	☐	☐	☑	☐	Sewer treatment effluent	
	☐	☐	☑	☐	Point source urban runoff	
	☐	☐	☑	☐	Factory, feedlot outfall	
	☐	☐	☑	☐	Agricultural irrigation ditch returns	
	☐	☐	☑	☐	Mining waste	
					Ground water pumping	
	☐	☐	☑	☐	Urban depletions	
	☐	☐	☑	☐	Fracking	
	☐	☐	☑	☐	Agriculture irrigation wells	
					Watershed alteration	
	☐	☐	☑	☐	Extensive recent fires in watershed	
	☐	☐	☑	☐	Extensive recent timber harvest	
	☐	☐	☑	☐	Extensive open pit mining in watershed	
	☐	☐	☑	☐	Livestock/wildlife overgrazing	
					Local biodiversity impacts	
	☐	☐	☑	☐	Evidence of excessive grazing (local)	
	☐	☑	☐	☐	Excessive noise affecting wildlife	
	0	0		0	Counts by Intensity	

dditional Comments

NMRAM Montane Riverine Wetlands Version 2.5

SA Cover Worksheet				
SA Code SF2MI [3]	SA Name : Two Mile Pond Reservoir		Project : Riparian Assesement	
Code Tsct [3]	AU Name : Transect [3]		WOI : Two Mile Pond Reservoir	
County Santa Fe	HUC 12 Headwaters Santa Fe River	Elevation (ft) 7299	(m) 2224.7	Ecoregion 6.0 NWFM

SA General Location and Boundary (Rationale, comments)

A riparian system that leads into a pond located on the east side of Santa Fe bordering the Santa Fe National Forest. This reservoir was decommissioned due to safety concerns regarding the reservoir and a water diversion to the area was recently shut down due to lack of water rights.

Driving Directions

Driving to Santa Fe from Albuquerque you head north on Old Pecos Trail. Then head east on Camino Del Monte Sol and right on Canyon Road until you reach the reservoir located to the North.

Ownership The Nature Conservative and The Santa Fe National Forest	Data Sharing Restrictions	Results to client only.	Fish Observed in Wetland?	

Surveyor Role	Surveyor Name	Surveyor Initials
Landscape	Dustin Schwartz	DS
Biotic	Annie McCoy	AM
Abiotic	Dustin Schwartz	DS
Stressors	Dustin Schwartz	DS

Easting (m)	Northing (m)	Zone	Datum	Latitude (DD ft)	Longitude (DD ft)
-105° 53' 24" W	35° 41' 23" N	13	NAD- 83 UTM	35.689722	-105.89
Survey Date	6/11/24	**Start Time**	9:00	**End Time**	15:00

SA Description

SA Landscape Context (summarize the wetland and surrounding landscape; include condition and impacts)

Beaver dam is over flowing, water level is higher than it has ever been. New Channels forming. Lots of downed trees and very dense vegetation

SA Biotic Condition (vegetation patterns, composition and structure, exotics and invasives, disturbance evidence, fire and herbivory)

Horse tails taking over riparian area, Willows and cotton woods are filling up willows and cotton woods dropping fuzzy material lots of birds (see app) Mullein is getting big

SA Abiotic Condition (hydrological alterations {e.g., dams, walls etc.]; flooding characteristics and evidence of overbank flooding; soil disturbance and other site impacts; explain the hydrologic breaks or other factors that define the SA limits)

T 10.7°C 193 µS 7.32 pH 7.83 nitr

lots of downed and deteriorating logs. the beaver dam is over flowing

Assessment Summary (Overall site condition summary and comments after the field data is collected.)

Area is filling in and full of life. Water and habitat seems like an ideal Riparian High Forest Habitat.

Provisional Field Score 3.565 Rank A Surveyor(s) DS/AM | Final Score 3.565 Rank A Initials DS Date 6/11/24

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NMRAM - SA Rank Summary Worksheet: Montane Riverine Wetlands 2.5

Metric Description	Rating	Wt	Final Score
		Σ 1.0	3.25
Landscape Context			
L1. Buffer Integrity Index	3	0.25	0.75
L2. Riparian Corridor Connectivity	4	0.25	1.0
L3. Relative Wetland Size	4	0.25	1.0
L4. Surrounding Land Use	2	0.25	0.5
Biotic		Σ	
B1. Relative Native Plant Community Composition	4	0.2	
B2. Vegetation Horizontal Patch Structure	4	0.2	
B3. Vegetation Vertical Structure	3	0.2	
B4. Native Riparian Tree Regeneration	3	0.2	
B5. Invasive Exotic Plant Species Cover	3	0.2	
Abiotic		Σ	
A1. Floodplain Hydrologic Connectivity		0.3	
A2. Physical Patch Diversity	4	0.2	
A3. Channel Equilibrium	4	0.2	
A4. Stream Bank Stability and Cover	4	0.2	
A5. Soil Surface Condition	4	0.1	

SA Condition Scoring Summary			
Major Attribute	Score	Wt.	Wt. Score
Landscape Context	3.25	0.3	0.975
Biotic	3.4	0.35	
Abiotic	4	0.35	
SA WETLAND CONDITION SCORE Σ			
SA WETLAND RANK =			3.565

SA Wetland Rank		
Rank	Score	Description
A	≥3.25 - 4.0	Excellent Condition
B	≥2.5 - <3.25	Good Condition
C	≥1.75 - <2.5	Fair Condition
D	1.0 - <1.75	Poor Condition

Stressor Summary	Major	Minor	Top Three	
	0	0	1	Hiking trails
			2	Over Flowing Dam
			3	

Stressor Comments (Evaluation of risk)

SA CODE : SF2MI [3] **Date :** 6/11/24

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Landscape Context

- Buffer Integrity Index

Worksheet 1a. Buffer and RCC Checklist. Check off land cover elements within the buffer area or RCC corridors that are either allowed, or are excluded and considered non-buffer elements that disrupt ecosystem connectivity. Indicate the imagery type and date (season and year of imagery).

Imagery	Google Earth KMZ. file	Image Date	6/23

Allowed buffer/RCC land cover elements			Excluded non-buffer/RCC land cover elements		
Buffer	RCC		Buffer	RCC	
[X]	[X]	Natural or semi-natural vegetation patches	[X]	[X]	Commercial/residential developments, parking lots, dams, bridges, revetments, and other structures
[X]	[X]	Small irrigation ditches without levees	[ ]	[ ]	Lawns, parks, golf courses, sports fields
[ ]	[ ]	Old fields, unmaintained	[ ]	[ ]	Railroads
[ ]	[ ]	Open range land	[ ]	[ ]	Maintained levees, sediment piles, construction materials, staging areas
[X]	[X]	Foot trails, horse trails, unpaved bike trails (low intensity)	[ ]	[ ]	Intensive livestock areas, horse paddocks, feedlots
[X]	[X]	Non-channel open water	[ ]	[ ]	Intensive agriculture: maintained pastures, hay fields, row crops, orchards, and vineyards
[X]	[X]	Non-functioning abandoned vegetated levees, or naturally occurring levees	[X]	[X]	Paved roads or developed second-order unpaved but graded roads
[ ]	[ ]	unpaved two tracks roads	[X]	[X]	Open water bounded by a levee or other manmade structure
[ ]	[ ]	Other	[ ]	[ ]	Other

Worksheet 1b. Buffer Percent Sub-metric. Measure or estimate the percentage of the SA perimeter composed of allowed buffer elements and enter into the Buffer Percent Box below. Rate the sub-metric using Table L1a and enter the rating on the Buffer Integrity Summary Worksheet 1d.

Buffer Percent (%)=	85%

Table L1a. Buffer Percent

Rating	Buffer Percent
◯ 4	100%
⊗ 3	≥80% - <100%
◯ 2	≥50% - <80%
◯ 1	<50%

Worksheet 1c. Buffer Width Sub-metric. Measure the length of each buffer line in meters in the GIS or on the map. Average the line lengths and rate using Table L1b. Enter the rating on the Buffer Integrity Summary Worksheet 1d.

Line	Buffer Width (m)	Buffer Width (ft)	Line	Buffer Width (m)	Buffer Width (ft)
A	164.26	538.91	E	161.93	531.26
B	125.25	410.92	F	231.48	759.44
C	115.39	378.57	G	121.25	397.80
D	111.07	364.40	H	155.87	511.38
Average	148.31 (m)		486.58	(ft)	

Table L1b. Buffer Width

Rating	Average buffer width
◯ 4	≥190m
⊗ 3	≥130 - <190m
◯ 2	≥65 - <130m
◯ 1	<65m

Worksheet 1d. Buffer Integrity Summary. Enter the sub-metric Ratings from Tables L1a and L1b above to calculate the Buffer Integrity Index Score using the formula in the box below. Using the Buffer Integrity Index Score, enter rating for Buffer Integrity in Table L1c and on the SA Summary Worksheet.

Buffer % Rating	+	Buffer Width Rating	/2 =	Buffer Integrity Index Score
3	+	3	/2 =	3

Table L1c. Summary Rating for Buffer Integrity

Rating	Score
◯ 4	>3.5
⊗ 3	>2.5 - ≤3.5
◯ 2	>1.5 - ≤2.5
◯ 1	≤1.5

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L2 - Riparian Corridor Connectivity (RCC)

Worksheet 2. RCC excluded non-buffer elements calculation. Refer to worksheet 1a for excluded non-buffer RCC land cover elements. Following the steps in the Field Guide, enter the summed values in meters for excluded element lengths for each bank within each segment upstream and downstream of the SA. Sum the values for each segment and calculate % Segment Disruption for the upstream side and the downstream side. Add the total disruption for upstream and downstream segments and then calculate the % Total Disruptions for the riparian corridor. Rate Riparian Corridor Connectivity using Table L2 and the data from this worksheet. Enter rating on the SA Summary Worksheet.

Segments	Upstream Segment		Downstream Segment	
Banks	Left Bank	Right Bank	Left Bank	Right Bank
A) Total Bank Disruption (m)	0	0	0	0
B) Total Disruption by Segment (m)	0		0	
C) % Segment Disruption = (B/1000)*100	0		0	
D) Total Disruption both segments	0			
E) % Total Disruptions = (D/2000)*100	Zero disruption noticeable along the banks.			

Table L2. RCC Rating

Rating	Description
(X) 4	**0%** total disruption on both segments combined.
◯ 3	**<15%** total disruption on both segments combined.
◯ 2	**≥15% - <40%** total disruption on both segments combined.
◯ 1	**≥40%** total disruption on both segments combined.

L3 - Relative Wetland Size

Worksheet 3a. Calculate the Relative Size Ratio (RSR) between the current WOI size and the historic WOI size. b. Calculate the Relative Wetland Size Score (RWSI (%)) as (1-RSR)*100. Rate Relative Wetland Size Index using Table L3 and enter rating on the SA Summary Worksheet.

RSR					RWSI						
Current Size	/	Historic Size	=	RSR	1	-	RSR	X	100	=	RWSI (%)
9	/	10	=	0.9	1	-	0.1	X	100	=	10

Table L3. Relative Wetland Size Rating

Rating	RWSI Score	Description
(X) 4	≤10%	Wetland is at or only minimally reduced from its full natural extent
◯ 3	>10% - ≤40%	Wetland remains equal to or more than 60% of its natual size
◯ 2	>40% - ≤70%	Wetland has been reduced by more than 40% its natural size
◯ 1	>70%	Wetland has been reduced by more than 70% its natural size

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L4 - Surrounding Land Use

Worksheet 4. Surrounding Land Use. Enter the percent area occupied by a given Land Use Element in the Land Use Zone (LUZ) surrounding the SA. Calculate the Land Use Index (LUI) Score by element as the product of the element coefficient times the percent of the LUZ Area occupied. (The %LUZ Area must total 100%.) Sum the LUI scores for each element to create the final LUI Score. Rate using Table L4 and enter the rating in the SA Rank Summary Worksheet.

Land Use Element	Coef	% LUZ Area	LUI Score
Paved roads, parking lots, domestic or commercially developed buildings, mining (gravel pit, quarry, open pit, strip mining), railroads	0	0	0
Unpaved roads (e.g., driveway, tractor trail, unpaved parking lots), paddock, dirt lot	0.1	0	0
Dredging, borrow pits, abandoned mines, water-filled artificial impoundments (ponds and reservoirs)	0.1	0	0
Filling or dumping of sediment or soils	0.1	0	0
Intense recreation (all-terrain vehicle use, camping, popular fishing spot, etc.)	0.3	0	0
Rip-rapped channel (highly modified channel with severely limited vegetation zone that is altered by human activities but not a completely concrete channel [that goes under paved roads]), junkyards, trash dumps, disturbed ground (not including roads)	0.3	0	0
Ski area	0.4	0	0
Dam sites and flood-disturbed shorelines around water storage reservoirs	0.5	0	0
Abandoned artificial impoundments (ponds and reservoirs) and associated disturbed flood zones	0.5	10	5
Artificial/Constructed wetlands, irrigation ditches	0.7	20	14
Developed/Managed trail system (high use trail)	0.8	5	4
Agriculture - active tilled crop production	0.2	0	0
Agriculture - permanent crop (vineyards, orchards, nurseries, berry production)	0.3	0	0
Manicured lawns, sport fields, and golf courses; urban manicured parks	0.3	0	0
Old fields and other disturbed fallow lands dominated by ruderal and/or exotic species (e.g., kochia, Russian thistle, mustards, annual vegetation)	0.5	0	0
Mature old fields and other fallow lands with natural composition, introduced hay field and pastures (e.g., perennial vegetation cover)	0.7	0	0
Restoration areas in process to natural conditions (re-conversion in process)	0.8	65	52
Haying of native grassland (e.g., no tillage, haying and baling only)	0.9	0	0
Heavy logging or tree removal with >50% of large trees (e.g., >30 cm diameter at breast height) removed, woodland/shrub vegetation conversion (chaining, cabling, rotochopping)	0.3	0	0
Commercial tree plantation, Christmas tree farms	0.6	0	0
Selective logging or tree removal with <50% of large trees (e.g., >30 cm diameter at breast height) removed	0.8	0	0
Mature restoration areas returned to natural conditions (re-converted)	0.9	0	0
Natural area, land managed for native vegetation - No agriculture, logging, development	1	0	0
LUI Score= Coefficient * % LUZ Area		100	75

Table L4. Surrounding Land Use Rating	
Rating	**LUI Score**
○ 4	≥95 - 100
○ 3	≥80 - <95
⊗ 2	≥40 - <80
○ 1	<40

Biotic Metrics

Worksheet 5. Vegetation Community Patch Polygon Data for Biotic Metrics B3, B4, and B5 for Polygons from SA Biotic Map. Enter data for each polygon under a unique number assigned from the SA Biotic Map. Each polygon is evaluated with respect to Vegetation Vertical Structure (B3), Native Tree Regeneration (B4), and Invasive Exotic Plant Species Cover (B5) metrics. Enter the Vertical Structure Type (VST) for B3, tree regeneration % cover within the polygon for B4 and the % cover of invasive exotic species for B5. Use the Tables in Appendix B and the Field Guide for metric instructions. Enter the species codes for the invasive exotic species found in the polygon (from NM Noxious Weed List - Appendix D). Use the comments box for documenting and describing vegetation community patch features.

Polygon No	B3 Vertical Structure Type	B4 Tree Regeneration % Cover	B5 Invasive Exotic Species % Cover	Invasive Exotic Species (List Code(s))	Comments
1	IA1				
2	IA2	70%	> 2%	Mullein	Currant Norron leafed cotton wood rye grass
3	IIA1	85%	None	None	Cat tails, Horse tails, Daisys, willow trees
4	IIIB1				
5	IIIC1				
6	IVEI				
7	IVF1				
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

SA CO[illegible] SF2MI [3] **SA Name:** Two Mile Pond Reservoir T[illegible] ect [3] **Date:** 6/11/24 **Surveyor Initials:** [illegible] M

B1 - Relative Native Plant Community Composition

Worksheet 6. CT Plant Species and Polygon Assignments. Starting with CT A, enter the number of the first polygon from Worksheet 5. Enter the species codes for the two top dominant species in each stratum that appears in the polygon. See footnotes for special instructions. If a species appears in more than one strata, assign the species to the stratum in which it is more abundant. Each polygon is either assigned to the same CT if it has the same composition or a new CT is created for the polygon.

		Tall Woody Stratum 1				Short Woody Stratum 2				Herbaceous/Sparse Stratum 3				CT Score 4		
CT	Polygon Nos.	Species 1	E N	Species 2	E N	Species 3	E N	Species 4	E N	Species 5	E N	Species 6	E N	Raw4	% SA5	Wt Score6
A		Narrowleaf Cottonwood	N	willow trees	N	Willows	N	Currant	N	Mullein	E	meadow grass	N	3.5	50	1.75
B		Cottonwood	N	willow trees	N	Willows	N			Cattails	N	Horsetail	N	4.0	50	2.00
C																
D																
E																
F																
G																
H																
I																
J																
K																
L																
M																
N																
O																
													Final Weighted Score7			3.75

1. Trees and shrubs > 6 m (20 feet) and > 25% total stratum cover; 2. Trees and shrubs ≤6m (20 feet) and >25% total stratum cover; 3. Herbaceous (graminoids and forbs)>10% total stratum cover. 4Raw Score is from Table B1a (Appendix B); 5%SA is the percentage of the SA area covered by the CT and expressed as a decimal number; the total area %SA must equal 1; 6Wt. Score is the product of the Raw Score * % SA; 7The Final Weighted Score is the sum of the Wt. Scores. Rate the CT Final Weighted Score on Table B1 and enter the Rating for Relative Native Plant Community Composition on the SA Rank Summary Worksheet.

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Table B1. Relative Native Plant Community Composition Rating		
Rating	CT Final Weighted Score	
X 4	≥ 3.75	<10% non-native
◯ 3	≥ 3.25 and <3.75	10% ≤20% non-native
◯ 2	> 2.0 and <3.25	20% ≤50% non-native
◯ 1	≤2.0	>50% non-native

B2 - Vegetation Horizontal Patch Structure

Worksheet 7. Using Tables B2a and B2c (Appendix B), choose the schematic pattern that best matches the mapped vegetation patch pattern for the SA. Rate using Table B2 and enter rating on the SA Rank Summary Worksheet.

Horizontal Patch Structure pattern A,B,C, or D: A

Table B2. Rating for Vegetation Horizontal Patch Structure	
Rating	**Description**
X 4	Most closely matches Pattern A. SA has a diverse patch structure (≥4 patch types) and complexity. A dominant patch type would be difficult to determine.
◯ 3	Pattern B. SA has a moderate degree of patch diversity (3 patch types present) and complexity. A single, dominant patch type may be present, although the other patch types would be well represented and have more than one occurrence in the SA.
◯ 2	Pattern C. SA has a low degree of patch diversity and complexity. Two or three patch types may be present; however, a single, dominant patch type exists with the others occupying a small portion of the SA.
◯ 1	Pattern D. SA has essentially little to no patch diversity or complexity. The SA is dominated by a single patch type. Other patch types, if present, occur infrequently and occupy a small portion of the SA.

B3 - Vegetation Vertical Structure

Worksheet 8. Percentage of SA by vertical structure type (VST). Using the Structure Type from Worksheet 5 and the %SA from Worksheet 6 calculate the total area of the SA occupied by each VST using the formula VST(type) = Sum (%SA for CTs with same VST) x 100. Enter the total %SA for each VST below.

	VST 1 High Structure Forest	VST 2 Low Structure Forest	VST 5 Tall Shrubland	VST 6S Short Shrubland	VST 6W Herbaceous Wetland	VST 6H Herbaceous Vegetation	VST 7 Sparse Vegetation
Total % of SA	50			50			

Table B3. Rating for Vegetation Vertical Structure. Using the data from Worksheet 8 rate the SA based on the criteria in Table B3. Pick the row that best fits the distribution of VSTs in the SA. Each row specifies the required dominant structure type plus co- and sub-dominants. Percentage cover required per co- or sub-dominant is a minimum. The types listed in the columns must be the most common VSTs in the SA for the rating to be applicable (Worksheet 8). VSTs 1 and 2 can be inverted in dominance and the rating is still applicable. Work from the top of the table down. As long as the requirements for one row are met, any other types may or may not co-occur without changing the rating. Enter the rating on the SA Rank Summary Worksheet.

Rating	Dominant VST	Co- or Sub-dominant VST ≥15%	Sub-dominant VST ≥5%
◯ 4	1	5	6W and/or 6H
	1	6W	
	2 or 1 and 2	5	6W and/or 6H
X 3	1		
	2 or 1 and 2	5	
	2 or 1 and 2	6W	
	5	6W	
◯ 2	2 or 1 and 2		
	5		
	6W		
◯ 1	6S		
	6H		
	7		

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B4 - Native Riparian Tree Regeneration

B4. Native Riparian Tree Regeneration rating. Using the polygon percent cover of native tree seedlings, saplings and poles from Worksheet 5, rate the SA based on polygon percent cover and patch density. Enter the rating on the SA Rank Summary Worksheet.

Rating	Description
4	Native poles, sapling, and seedlings trees well represented, obvious regeneration, many patches or polygons with >5% cover, typically multiple size (age) classes.
X 3	Native poles, saplings and/or seedlings common, scattered patches or polygons with 1% -5% cover, size classes few.
2	Native poles, saplings and/or seedlings present but uncommon, restricted to one or two patches or polygons with typically <1% cover, little size class differentiation.
1	Native poles, saplings, and/or seedlings absent (0% cover).

B5 - Invasive Exotic Plant Species Cover

Worksheet 9. Based on Worksheets 5 and 6, calculate or estimate the percentage cover of invasive exotic species for the SA and enter below. Rate using Table B5 and enter the rating on the SA Rank Summary Worksheet.

Rating Method

Invasive cover (%) >1%

calculate

Table B5. Ratings for Invasive Exotic Plant Species Cover	
Rating	**Invasive Species Cover %**
4	0%
3 X	>0% - <1%
2	≥1% - <10%
1	≥10

Additional CTs and Biotic Metric Comments:

Black-headed Grosbeak, spotted Towhee, American Robin
House finch, Pine Siskin, Yellow-breasted Chat
Warbling Vireo, Lesser Gold, Western Wood Pewee
Cedar Waxwing

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Abiotic Metrics

A1 - Floodplain Hydrologic Connectivity

Method 1

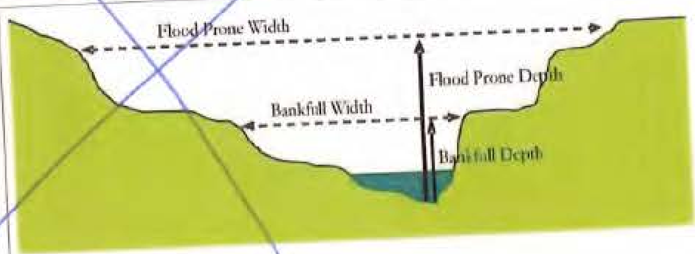
Worksheet 10a. Floodplain Hydrologic Connectivity Measurements. The following six steps are conducted at each of three cross-sections at the approximate mid-points along straight riffles and away from deep pools or meander bends. Use a measuring tape and temporary stakes for horizontal measurements, and a stadia rod or similar measuring stick for vertical measurements. If unavailable, use visual estimates. Where straight channel segments do not occur, or if there is excessive ponding or bankfull indicators are obscured, use the narrative rating approach (Method 2). Enter the rating method in the box below, either meander pool, riffle pool or narrative (Method 2) and choose the corresponding Table (A1a, A1b, or A1c) to rate Floodplain Hydrologic Connectivity. Enter the rating on the SA Rank Summary Worksheet. Photographs of each cross-section are required and recorded in Table A1d.

Steps	Description	Cross-section: 1	2	3
1: Bankfull width	This is a critical step requiring familiarity with field indicators of the bankfull contour. Measure the distance between the right and left bankfull contours with a tape.			
2: Maximum bankfull depth	Keeping the tape level between the right and left bankfull contours, measure the height of the line above the thalweg (the deepest part of the channel). A pocket line level can help here.			
3: Flood-prone depth	Double the estimate of maximum bankfull depth from Step 2.			
4: Flood-prone width	Using a tape, measure the length of a level line at a height equal to the flood prone depth from Step 3 to where it intercepts the right and left banks.			
5: Calculate Entrenchment Ratio	Divide the flood-prone width (Step 4) by the bankfull width (Step 1).			
6: Calculate average ratio	Calculate the average for Step 5 for all three replicate cross-sections. Enter the average here and rate using Table A1a. Enter the rating in the A1 box on the SA Rank Summary Worksheet.			

Rating Method:

Table A1a. Rating for Floodplain Hydrologic Connectivity in meandering single-channel riffle-pool systems

Rating	Description
◯ 4	Average entrenchment ratio is ≥ 2.2;
◯ 3	Average entrenchment ratio is ≥1.9 - <2.2
◯ 2	Average entrenchment ratio is ≥1.5 - <1.9
◯ 1	Average entrenchment ratio is < 1.5



Worksheet 10b. Floodplain Hydrologic Connectivity Indicators. Use this Worksheet in conjunction with Table A1c. Check the boxes for all that apply to each segment.

U	M	L	Indicator
☐	☐	☐	Bankful is slightly below bank height
☐	☐	☐	Bankful is well below bank height and channel is incised
☐	☐	☐	Channel widening due to bank failure
☐	☐	☐	Constructed levees preclude floodplain inundation
☐	☐	☐	Stream is straightened/channelized
☐	☐	☐	Inset floodplain formation
☐	☐	☐	Decreased peak flows due to hydrologic modification
☐	☐	☐	Bankfull indicators at point of incipient flooding of the floodplain
☐	☐	☐	Indicators of overbank flow on floodplain
☐	☐	☐	Floodplain inundation due to beaver activity

Table A1b. Rating for Floodplain Hydrologic Connectivity in single-channel step-pool systems

Rating	Description
◯ 4	Average entrenchment ratio is ≥ 1.9
◯ 3	Average entrenchment ratio is ≥1.4 - <1.9
◯ 2	Average entrenchment ratio is ≥1.2 - <1.4
◯ 1	Average entrenchment ratio is < 1.2

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Method 2

le A1c. Narratve Floodplain Hydrologic Connectivity Rating. Select the narrative description that best describes the floodplain hydrologic connectivity. At each cross-section, use Worksheet 10b to record channel incision, bank modification, inset floodplain or other hydrologic evidence that would preclude natural floodplain inundation. Conversely, assess indicators and evidence for overbank flow and floodplain inundation. Record whether beaver activity is obscuring bankful indicators due to inundation of the floodplain. Select a rating from the table below. Use data from Worksheets 10b to help select rating. Enter Rating on SA Summary Worksheet. Photographs are required at each cross-section and recorded in Table A1d.

Rating	Description
○ 4	Fully connected to the natural floodplain. Indicators of bankfull discharge are at the bank/floodplain transition, with over-bankfull flows likely to inundate a broad area of floodplain. Floodplain supports riparian vegetation and shows signs of overbank sediment deposition. Or beaver ponds inundate the entire, normally active floodplain and preclude the identification of bankfull indicators and the active floodplain width.
○ 3	Flow access to the floodplain moderately limited by incision, channelization. Less frequent inundation than fully connected streams described above (as noted by bankfull indicators below floodplain transition). Floodplain supports a riparian overstory, but some understory plants may be upland. An inset floodplain supporting riparian vegetation may also be present.
○ 2	Incised, channelized or modified with an inset floodplain formed, which is regularly inundated and supports riparian vegetation and sediment regimes. Or the stream has minimal access to the natural floodplain due to incision, channelization, or flow modification, and the natural floodplain does not support riparian vegetation except for relatively long-lived phreatophytes (e.g., cottonwood, salt cedar, etc.).
○ 1	Fully disconnected from floodplain, either through incision, bank modification/channelization, or hydrologic modification (i.e., abandonment of floodplain due to decreased peak flows). Indicators may include upland vegetation and lack of overbank sediment deposits on the floodplain, etc.

T A1d. Photo Point Log for Cross-Section Photographs. For each cross-section record the digital names/numbers of photographs taken looking Upstream and Downstream from the thalweg and looking Bank Right* and Bank Left* across the stream from each side of the cross-section. Leave the cross-section tape and flags indicating bankful in the ground when taking the Bank Right and Bank Left photos. A photo board with SA name and cross-section information is helpful. (*The bank of a stream or river on the right (left) of the observer when facing in the direction of flow or downstream.) See Appendix E for additional details.

Cross Section	Easting (Latitude)	Northing (Longitude)	Upstream	Downstream	Bank Right	Bank Left
1						
2						
3						

Floodplain Hydrologic Connectivity Comments:

Date : 6/11/24

SA CODE : SF2MI [3]

Surveyor Initials : DS/AM

SA Name : Two Mile Pond Reservoir Transect [3]

A2 - Physical Patch Complexity

Worksheet 11. Physical Patch Complexity checklist. Check off existing physical patch types for the upper, middle and lower segments of the SA; count the number of unique patch types and rate using Table A2 in combination with the narrative description. Enter the rating on the SA Rank Summary Worksheet.

Upper Segment	Middle Segment	Lower Segment	Field Indicators (check all existing conditions)
☐	☒	☐	Active side channels
☐	☐	☐	Abandoned channels
☐	☒	☐	Backwater/eddy
☐	☐	☐	Riffles or rapids
☐	☒	☐	Shoals, sparely-vegetated bars
☐	☐	☐	Channel boulders
☐	☐	☐	Oxbow lakes/ponds on floodplains
☐	☐	☐	Vegetated island and side bars
☐	☒	☐	Terraces
☐	☒	☐	Channel pools
☐	☒	☐	Beaver ponds
☐	☒	☐	Swales, depressional features on floodplains
☐	☒	☐	Debris jams in channel
☐	☒	☐	Woody wrack piles on the floodplain
☐	☐	☐	Floodplain micro-topography (mounds, pits)
☐	☒	☐	Downed logs
☐	☒	☐	Natural levees
☐	☒	☐	Standing snags
☐	☐	☐	Variegated, convoluted, or crenulated foreshore
☐	☐	☐	Undercut banks in channels
			No. of unique Patch Types

Table A2. Rating for Physical Patch Complexity

Rating	Description
☒ 4	**High** degree of physical patch complexity across the floodplain. There are many floodplain micro-habitats present (mounds and pits, woody wrack piles, etc.), many fluvial geomorphic surfaces (swales, side channels, terraces, side bars, etc.), and there is high in-channel complexity (pools and riffles, large woody debris, undercut banks, etc.). As a guide, 12 or more unique indicators are present and well distributed throughout the SA (most indicators are found on multiple segments).
○ 3	**Moderate** physical patch complexity scattered across the floodplain. There are several floodplain micro-habitats present, several fluvial geomorphic surfaces, and there is moderate in-channel complexity. As a guide, 9 - 11 indicators are scattered throughout the SA (some on multiple segments).
○ 2	**Limited** physical patch complexity scattered across the floodplain. There are some floodplain micro-habitats present, some fluvial geomorphic surfaces, and there is limited in-channel complexity. As a guide, on average there are 6 - 8 unique indicators present in the SA (only a few on multiple segments).
○ 1	**Little** or no physical patch complexity on the floodplain. There are few or no floodplain micro-habitats present, few different fluvial geomorphic surfaces, and there is little or no in-channel complexity. As a guide, ≤ 5 unique indicators are present in the SA.

SA CODE : SF2MI [3]

Date : 6/11/24

SA Name : Two Mile Pond Reservoir Transect [3]

Surveyor Initials : DS/AM

A3- Channel Equilibrium

Worksheet 12. Channel Equilibrium Checklist. Check all field indicators that apply to the upper, middle and lower segment of the SA observed at the channel edge of the traverse. Rate using the Table A3 descriptions and based on a preponderance of evidence from this checklist. Enter the rating on the SA Rank Summary Worksheet.

Condition	Upper Segment	Middle Segment	Lower Segment	Field Indicators(check all existing conditions)
Indicators of Channel Equilibrium	☐	☒	☐	The channel has a well-defined bankfull contour that clearly demarcates the point of incipient flooding where moderate frequent flow events spread flow across the floodplain.
	☐	☒	☐	Perennial riparian vegetation is abundant and well established along the bankfull contour, but not below it.
	☐	☒	☐	There is leaf litter, thatch, or wrack in most pools.
	☐	☒	☐	The channel contains embedded woody debris of the size and amount consistent with what is naturally available in the riparian area.
	☐	☒	☐	There is little or no active undercutting or burial of riparian vegetation.
	☐	☐	☐	There are no bars that are densely vegetated with perennial vegetation (neither mid-channel bars or point bars).
	☐	☒	☐	Channel and point-bars consist of well-sorted bed material.
	☐	☐	☐	The channel bed is not planar and without an abundance of fine materials filling the interstitial spaces between larger stream substrate.
	☐	☐	☐	There are channel pools at meander bends and some deep pools within the reach.
Indicators of Active Degradation	☐	☐	☐	The channel is characterized by deeply undercut banks with exposed living roots of trees or shrubs.
	☐	☐	☐	There are abundant bank slides or slumps, or the lower banks are uniformly scoured and not vegetated.
	☐	☐	☐	Bank vegetation is declining in stature or vigor, or many riparian trees and shrubs along the banks are leaning or falling into the channel.
	☐	☐	☐	Channel bed is scoured to large cobbles or boulders and entrained bank material is filling the cobble interstices and pools.
	☐	☐	☐	There are active headcuts within the channel.
	☐	☐	☐	An obvious historical floodplain has recently been abandoned, as indicated by the age structure of its riparian vegetation.
Indicators of Active Aggradation	☐	☐	☐	There is abundant fresh splays of coarse sediment covering the floodplain above the natural point bar elevation.
	☐	☐	☐	There are partially buried living tree trunks or shrubs along the banks.
	☐	☐	☐	The channel bed is planar overall. The stream lacks well-defined channel pools at meander bends, or pools are filled with sediment.
	☐	☐	☐	There are partially buried or sediment-choked culverts.
	☐	☐	☐	There are avulsion channels on the floodplain or adjacent valley floor.

SA CODE : SF2MI [3] **Date :** 6/11/24

SA Name : Two Mile Pond Reservoir Transect [3] **Surveyor Initials :** DS/AM

Table A3. Rating for Channel Equilibrium

Rating	Description
☒ 4	Most of the channel throughout the SA is in equilibrium condition with little evidence of excessive aggradation or degradation based on the field indicators listed in Worksheet 12.
◯ 3	There is some evidence of excessive aggradation or degradation; the channel throughout the SA seems to approach an equilibrium condition. Circle primary process: aggradation or degradation.
◯ 2	There is evidence of severe aggradation or degradation throughout most of the channel through the SA. Circle primary process: aggradation or degradation.
◯ 1	The channel is artificially hardened, channelized, or is concrete throughout most of the SA.

A4- Stream Bank Stability and Cover

Worksheet 13. Bank Soil Stability and Streambank Erosion Potential Checklist. Check the indicator that best describes the condition looking a minimum of 25 m upstream and downstream at the channel edge of the upper, middle and lower segment of the SA. Average the six scores for both Bank Soil Stability and Streambank Erosion Potential. Rate using the Table A4 and enter the rating on the SA Summary Worksheet.

Condition	Upper Segment	Middle Segment	Lower Segment	Field Indicators
Indicators of Bank Soil Stability	☐4	☒4	☐4	Infrequent raw banks, less than 10% of steam bank under stress from trampling, slumping, vegetation removal or active erosion, etc.
	☐3	☐3	☐3	Raw banks and loose soil intermittently and 10%-25% of stream bank under stress from trampling, trail crossing, hoof punching, vegetation removal, erosion etc.
	☐2	☐2	☐2	Significant raw banks and loose soil, 25%-50% of stream bank under stress, trampled, slumping or eroding etc.
	☐1	☐1	☐1	Raw banks almost continuous with greater than 50% of stream bank under stress, loose soil, slumping, trampled or eroding; or channel appear to lack banks due to trampling; or channel that is artificially hardened or concrete along most of its length.
Indicators of Stream Bank Erosion Potential	☐4	☒4	☐4	≥ 80% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by boulders, large cobbles and/or large woody debris that prevent bank erosion.
	☐3	☐3	☐3	≥50% - <80% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those areas not covered by vegetation are protected to allow only minor erosion.
	☐2	☐2	☐2	≥25% - <50% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those area not covered by vegetation or stabilized by roots, are covered by materials or vegetation that give limited protection.
	☐1	☐1	☐1	Less than 25% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those areas not covered by vegetation provide little or no control over erosion and excess shear stress, and the banks are susceptible to erosion by high water flows.

Average Indicator Score ☐

Table A4. Stream Bank Stability and Cover Rating

Rating	Description
☒ 4	>3.5 - 4.0
◯ 3	>2.5 - ≤3.5
◯ 2	>1.5 - ≤2.5
◯ 1	1.0 - ≤1.5

SA CODE : SF2MI [3]

Date : 6/11/24

SA Name : Two Mile Pond Reservoir Transect [3]

Surveyor Initials : DS/AM

A5 - Soil Surface Condition

Worksheet 14. Soil Surface Condition. Check all that apply in the upper , middle and lower SA segments during the field reconnaissance. The absence of these indicators would signify that disturbances are naturally occurring (e.g., flood deposition or low-density wildlife trails). Estimate the percent soil disturbance by segment area and referring to the SA abiotic map. Rate using Table A5 and enter on the SA Rank Summary Worksheet.

Upper Segment	Middle Segment	Lower Segment	Field Indicators (Check all existing conditions)
☐	☒	☐	Active erosion features due to anthropogenic disturbance (eg. rills, gullies, plant pedestals).
☐	☐	☐	Multiple livestock and other (fishing,hiking) trails,
☐	☐	☐	Vehicle tracks including off-road and construction, etc.
☐	☐	☐	Impervious compacted surfaces or pavement
☐	☐	☐	Grading or plowing
☐	☐	☐	Fill
☐	☐	☐	Gravel pits
☐	☐	☐	Anthropogenic levees and berms
☐	☐	☐	Irrigation-driven salinity and mineral crusts
☐	☐	☐	Fire pits
☐	☐	☐	Other:
			Estimate % soil disturbance by segment area

Average % Soil Disturbance:

Table A5. Soil Surface Condition Rating	
Rating	**Description**
☒ 4	Bare soil areas due to anthropogenic disturbance absent or very limited. No human-caused impervious surfaces or gravel pits are found within the SA. Total disturbance, including erosion, impervious surfaces, fill, or other anthropogenic degradation to the soil surface is less than 1% of the SA.
○ 3	Some amount of bare soil from human causes is present but the extent is limited. Area of impervious surfaces are minimal in extent. Total disturbance, including erosion, impervious surfaces, fill, gravel pits, vehicle tracks or other anthropogenic degradation to the soil surface is between 1% and 5% of the sampling area.
○ 2	Bare soils from human causes are common. These may include dense livestock trails, vehicle tracks, trails, construction staging areas, mechanical rutting, or irrigation-driven salinity. Soil disturbance, while apparent, is limited to specific areas and not found across the majority of the SA. Total disturbance, including erosion, impervious surfaces, fill, gravel mining, or other anthropogenic degradation to the soil surface is greater than 5% or less than 10% of the SA.
○ 1	Bare soil areas degrade portions of the site because of altered hydrology or other long-lasting impacts. Deep ruts from off-road vehicles or machinery are present. Livestock disturbance or trails are widespread and several inches deep. Water is channeled into rills or ponded. Additional human-caused impervious surfaces or soil compaction are present. Total disturbance, including erosion, impervious surfaces, fill,gravel mining or other anthropogenic degradation to the soil surface is equal to or greater than 10% of the SA.

SA CODE : SF2MI [3]

Date : 6/11/24

Surveyor Initials : DS/AM

SA Name : Two Mile Pond Reservoir Transect [3]

rksheet 15. Stressor Checklist. Check off stressors by intensity category that may be affecting wetland ecological condition of the SA and WOI. Assign egories using direct evidence where available or your best professional judgement otherwise. If the presence of the stressor is uncertain, mark as "Unkno..." nk Major Stressors in Dominant Stressor column(Pick up to 3)

ank	Affect: Major	Minor	Absent	Unknown	Stressor Group/Stressor	Comments
					Adverse water management	
	☑	☐	☐	☐	Extended low flow dam releases	
	☐	☐	☑	☐	Timing of flow releases not concordant	
	☐	☐	☑	☐	Extended high flow dam releases	
	☐	☐	☑	☐	Agriculture/Urban flow diversion upstream	
					Adverse sediment management	
	☐	☐	☑	☐	Adverse sediment retention by dams	
	☐	☐	☑	☐	Sediment loss by dredging	
	☐	☐	☑	☐	Adverse sediment input (roads/development)	
					Artificial water additions	
	☐	☐	☑	☐	Sewer treatment effluent	
	☐	☐	☑	☐	Point source urban runoff	
	☐	☐	☑	☐	Factory, feedlot outfall	
	☐	☐	☑	☐	Agricultural irrigation ditch returns	
	☐	☐	☑	☐	Mining waste	
					Ground water pumping	
	☐	☐	☑	☐	Urban depletions	
	☐	☐	☑	☐	Fracking	
	☐	☐	☑	☐	Agriculture irrigation wells	
					Watershed alteration	
	☐	☐	☑	☐	Extensive recent fires in watershed	
	☐	☐	☑	☐	Extensive recent timber harvest	
	☐	☐	☑	☐	Extensive open pit mining in watershed	
	☐	☑	☐	☐	Livestock/wildlife overgrazing	
					Local biodiversity impacts	
	☐	☐	☐	☐	Evidence of excessive grazing (local)	
	☐	☐	☐	☐	Excessive noise affecting wildlife	
	0	0		0	Counts by Intensity	

Additional Comments

Schema: Montane 2.5

Version Date: 04/25/2022

NMRAM Montane Riverine Wetlands Version 2.5

SA Cover Worksheet					
SA Code SF2MI [4]	SA Name : Two Mile Pond Reservoir		Project : Riparian Assesement		
AU Code Tsct [4]	AU Name : Transect [4]		WOI : Two Mile Pond Reservoir		
County Santa Fe	HUC 12 Headwaters Santa Fe River	Elevation (ft) 7299	(m) 2224.7	Ecoregion 6.0 NWFM	

SA General Location and Boundary (Rationale, comments)
A riparian system that leads into a pond located on the east side of Santa Fe bordering the Santa Fe National Forest. This reservoir was decommissioned due to safety concerns regarding the reservoir and a water diversion to the area was recently shut down due to lack of water rights.

Driving Directions
Driving to Santa Fe from Albuquerque you head north on Old Pecos Trail. Then head east on Camino Del Monte Sol and right on Canyon Road until you reach the reservoir located to the North.

Ownership The Nature Conservative and The Santa Fe National Forest	Data Sharing Restrictions	Results to client only.	Fish Observed in Wetland?	

Surveyor Role	Surveyor Name	Surveyor Initials
Landscape	Dustin	DS
Biotic	Annie	AM
Abiotic	Dustin	DS
Stressors	Both	DS

Easting (m)	Northing (m)	Zone	Datum	Latitude (DD ft)	Longitude (DD ft)
-105° 53' 24" W	35° 41' 23" N	13	NAD- 83 UTM	35.689722	-105.89
Survey Date	4/9/24	**Start Time**		**End Time**	

SA Description

SA Landscape Context (summarize the wetland and surrounding landscape; include condition and impacts)

Area Appears to still be recovering From the winter Seep appears to be dry

SA Biotic Condition (vegetation patterns, composition and structure, exotics and invasives, disturbance evidence, fire and herbivory)

Willows Still arent Flowering / budding yet in recovery from winter. No Noticeable birds in this particular area Currant starting to turn green.

SA Abiotic Condition (hydrological alterations [e.g., dams, walls etc.]; flooding characteristics and evidence of overbank flooding; soil disturbance and other site impacts; explain the hydrologic breaks or other factors that define the SA limits)

Seep is a dry cracked area. Area is all still recovering

Assessment Summary (Overall site condition summary and comments after the field data is collected.)

Area is still waking up from dormant River

Provisional Field Score 3.478	Rank 3.478	Surveyor(s) DS	Final Score 3.478	Rank A	Initials DS	Date 4/9/24

SA CODE : SF2MI [4]

SA Name : Two Mile Pond Reservoir Transect [4]

Date : 4/9/24

Surveyor Initials : DS

NMRAM - SA Rank Summary Worksheet: Montane Riverine Wetlands 2.5

Metric Description	Rating	Wt	Final Score
Landscape Context		Σ 1.0	3.25
L1. Buffer Integrity Index	3	0.25	0.75
L2. Riparian Corridor Connectivity	4	0.25	1.0
L3. Relative Wetland Size	4	0.25	1.0
L4. Surrounding Land Use	2	0.25	0.5
Biotic		Σ	
B1. Relative Native Plant Community Composition	4	0.2	
B2. Vegetation Horizontal Patch Structure	3	0.2	
B3. Vegetation Vertical Structure	3	0.2	
B4. Native Riparian Tree Regeneration	4	0.2	
B5. Invasive Exotic Plant Species Cover	3	0.2	
Abiotic		Σ	
A1. Floodplain Hydrologic Connectivity		0.3	
A2. Physical Patch Diversity	3	0.2	
A3. Channel Equilibrium	4	0.2	
A4. Stream Bank Stability and Cover	4	0.2	
A5. Soil Surface Condition	4	0.1	

SA Condition Scoring Summary			
Major Attribute	Score	Wt.	Wt. Score
Landscape Context	3.25	0.3	0.975
Biotic	3.4	0.35	
Abiotic	3.75	0.35	
SA WETLAND CONDITION SCORE Σ			3.478
SA WETLAND RANK =			A

SA Wetland Rank		
Rank	Score	Description
A	≥3.25 - 4.0	Excellent Condition
B	≥2.5 - <3.25	Good Condition
C	≥1.75 - <2.5	Fair Condition
D	1.0 - <1.75	Poor Condition

Stressor Summary	Major	Minor	Top Three	
	0	0	1	Recovery from winter
			2	less water
			3	steep edge

Stressor Comments (Evaluation of risk)

No water coming from seep

SA CODE : SF2MI [4]

Date : 4/9/24

SA Name : Two Mile Pond Reservoir Transect [4]

Surveyor Initials : DS

Landscape Context

L1 - Buffer Integrity Index

Worksheet 1a. Buffer and RCC Checklist. Check off land cover elements within the buffer area or RCC corridors that are either allowed, or are excluded and considered non-buffer elements that disrupt ecosystem connectivity. Indicate the imagery type and date (season and year of imagery).

Imagery	Google Earth KMZ. file	Image Date	6/23

Allowed buffer/RCC land cover elements			Excluded non-buffer/RCC land cover elements		
Buffer	RCC		Buffer	RCC	
[X]	[X]	Natural or semi-natural vegetation patches	[X]	[X]	Commercial/residential developments, parking lots, dams, bridges, revetments, and other structures
[X]	[X]	Small irrigation ditches without levees	[ ]	[ ]	Lawns, parks, golf courses, sports fields
[ ]	[ ]	Old fields, unmaintained	[ ]	[ ]	Railroads
[ ]	[ ]	Open range land	[ ]	[ ]	Maintained levees, sediment piles, construction materials, staging areas
[X]	[X]	Foot trails, horse trails, unpaved bike trails (low intensity)	[ ]	[ ]	Intensive livestock areas, horse paddocks, feedlots
[X]	[X]	Non-channel open water	[ ]	[ ]	Intensive agriculture: maintained pastures, hay fields, row crops, orchards, and vineyards
[X]	[X]	Non-functioning abandoned vegetated levees, or naturally occurring levees	[X]	[X]	Paved roads or developed second-order unpaved but graded roads
[ ]	[ ]	unpaved two tracks roads	[X]	[X]	Open water bounded by a levee or other manmade structure
[ ]	[ ]	Other	[ ]	[ ]	Other

Worksheet 1b. Buffer Percent Sub-metric. Measure or estimate the percentage of the SA perimeter composed of allowed buffer elements and enter into the Buffer Percent Box below. Rate the sub-metric using Table L1a and enter the rating on the Buffer Integrity Summary Worksheet 1d.

Buffer Percent (%)=	85%

Table L1a. Buffer Percent

Rating	Buffer Percent
4	100%
(X) 3	≥80% - <100%
2	≥50% - <80%
1	<50%

Worksheet 1c. Buffer Width Sub-metric. Measure the length of each buffer line in meters in the GIS or on the map. Average the line lengths and rate using Table L1b. Enter the rating on the Buffer Integrity Summary Worksheet 1d.

Line	Buffer Width (m)	Buffer Width (ft)	Line	Buffer Width (m)	Buffer Width (ft)
A	164.26	538.91	E	161.93	531.26
B	125.25	410.92	F	231.48	759.44
C	115.39	378.57	G	121.25	397.80
D	111.07	364.40	H	155.87	511.38
Average	148.31	(m)		486.58	(ft)

Table L1b. Buffer Width

Rating	Average buffer width
4	≥190m
(X) 3	≥130 - <190m
2	≥65 - <130m
1	<65m

Worksheet 1d. Buffer Integrity Summary. Enter the sub-metric Ratings from Tables L1a and L1b above to calculate the Buffer Integrity Index Score using the formula in the box below. Using the Buffer Integrity Index Score, enter rating for Buffer Integrity in Table L1c on the SA Summary Worksheet.

Buffer % Rating	+	Buffer Width Rating	/2 =	Buffer Integrity Index Score
3	+	3	/2 =	3

Table L1c. Summary Rating for Buffer Integrity

Rating	Score
4	>3.5
(X) 3	>2.5 - ≤3.5
2	>1.5 - ≤2.5
1	≤1.5

SA CODE: SF2MI [4] **Date:** 4/9/24

SA Name: Two Mile Pond Reservoir Transect [4] **Surveyor Initials:** DS

L2 - Riparian Corridor Connectivity (RCC)

Worksheet 2. RCC excluded non-buffer elements calculation. Refer to worksheet 1a for excluded non-buffer RCC land cover elements. Following the steps in the Field Guide, enter the summed values in meters for excluded element lengths for each bank within each segment upstream and downstream of the SA. Sum the values for each segment and calculate % Segment Disruption for the upstream side and the downstream side. Add the total disruption for upstream and downstream segments and then calculate the % Total Disruptions for the riparian corridor. Rate Riparian Corridor Connectivity using Table L2 and the data from this worksheet. Enter rating on the SA Summary Worksheet.

Segments	Upstream Segment		Downstream Segment	
Banks	Left Bank	Right Bank	Left Bank	Right Bank
A) Total Bank Disruption (m)	0	0	0	0
B) Total Disruption by Segment (m)	0		0	
C) % Segment Disruption = (B/1000)*100	0		0	
D) Total Disruption both segments	0			
E) % Total Disruptions = (D/2000)*100	Zero disruption noticeable along the banks.			

Table L2. RCC Rating

Rating	Description
(X) 4	**0%** total disruption on both segments combined.
( ) 3	**<15%** total disruption on both segments combined.
( ) 2	**≥15% - <40%** total disruption on both segments combined.
( ) 1	**≥40%** total disruption on both segments combined.

L3 - Relative Wetland Size

Worksheet 3a. Calculate the Relative Size Ratio (RSR) between the current WOI size and the historic WOI size. b. Calculate the Relative Wetland Size Score (RWSI (%)) as (1-RSR)*100. Rate Relative Wetland Size Index using Table L3 and enter rating on the SA Summary Worksh

RSR					RWSI						
Current Size	/	Historic Size	=	RSR	1	-	RSR	X	100	=	RWSI (%)
9	/	10	=	0.9	1	-	0.1	X	100	=	10

Table L3. Relative Wetland Size Rating

Rating	RWSI Score	Description
(X) 4	≤10%	Wetland is at or only minimally reduced from its full natural extent
( ) 3	>10% - ≤40%	Wetland remains equal to or more than 60% of its natual size
( ) 2	>40% - ≤70%	Wetland has been reduced by more than 40% its natural size
( ) 1	>70%	Wetland has been reduced by more than 70% its natural size

SA CODE : SF2MI [4] **Date :** 4/9/24

SA Name : Two Mile Pond Reservoir Transect [4] **Surveyor Initials :** DJ

L4 - Surrounding Land Use

orksheet 4. Surrounding Land Use. Enter the percent area occupied by a given Land Use Element in the Land Use Zone (LUZ) surrounding the SA. Calculate the Land Use Index (LUI) Score by element as the product of the element coefficient times the percent of the LUZ Area occupied. (The %LUZ Area must total 100%.) Sum the LUI scores for each element to create the final LUI Score. Rate using Table L4 and enter the rating in the SA Rank Summary Worksheet.

Land Use Element	Coef	% LUZ Area	LUI Score
Paved roads, parking lots, domestic or commercially developed buildings, mining (gravel pit, quarry, open pit, strip mining), railroads	0	0	0
Unpaved roads (e.g., driveway, tractor trail, unpaved parking lots), paddock, dirt lot	0.1	0	0
Dredging, borrow pits, abandoned mines, water-filled artificial impoundments (ponds and reservoirs)	0.1	0	0
Filling or dumping of sediment or soils	0.1	0	0
Intense recreation (all-terrain vehicle use, camping, popular fishing spot, etc.)	0.3	0	0
Rip-rapped channel (highly modified channel with severely limited vegetation zone that is altered by human activities but not a completely concrete channel [that goes under paved roads]), junkyards, trash dumps, disturbed ground (not including roads)	0.3	0	0
Ski area	0.4	0	0
Dam sites and flood-disturbed shorelines around water storage reservoirs	0.5	0	0
Abandoned artificial impoundments (ponds and reservoirs) and associated disturbed flood zones	0.5	10	5
Artificial/Constructed wetlands, irrigation ditches	0.7	20	14
Developed/Managed trail system (high use trail)	0.8	5	4
Agriculture - active tilled crop production	0.2	0	0
griculture - permanent crop (vineyards, orchards, nurseries, berry production)	0.3	0	0
Manicured lawns, sport fields, and golf courses; urban manicured parks	0.3	0	0
Old fields and other disturbed fallow lands dominated by ruderal and/or exotic species (e.g., kochia, Russian thistle, mustards, annual vegetation)	0.5	0	0
Mature old fields and other fallow lands with natural composition, introduced hay field and pastures (e.g., perennial vegetation cover)	0.7	0	0
Restoration areas in process to natural conditions (re-conversion in process)	0.8	65	52
Haying of native grassland (e.g., no tillage, haying and baling only)	0.9	0	0
Heavy logging or tree removal with >50% of large trees (e.g., >30 cm diameter at breast height) removed, woodland/shrub vegetation conversion (chaining, cabling, rotochopping)	0.3	0	0
Commercial tree plantation, Christmas tree farms	0.6	0	0
Selective logging or tree removal with <50% of large trees (e.g., >30 cm diameter at breast height) removed	0.8	0	0
Mature restoration areas returned to natural conditions (re-converted)	0.9	0	0
Natural area, land managed for native vegetation - No agriculture, logging, development	1	0	0
LUI Score= Coefficient * % LUZ Area		100	75

Table L4. Surrounding Land Use Rating	
Rating	**LUI Score**
◯ 4	≥95 - 100
◯ 3	≥80 - <95
⊗ 2	≥40 - <80
◯ 1	<40

SA CODE: SF2MI [9] **SA Name:** Two Mile Pond Reservoir Transect [9] **Date:** 4/9/24 **Surveyor Initials:** DS

Biotic Metrics

Worksheet 5. Vegetation Community Patch Polygon Data for Biotic Metrics B3, B4, and B5 for Polygons from SA Biotic Map. Enter data for each polygon under a unique number assigned from the SA Biotic Map. Each polygon is evaluated with respect to Vegetation Vertical Structure (B3), Native Tree Regeneration (B4), and Invasive Exotic Plant Species Cover (B5) metrics. Enter the Vertical Structure Type (VST) for B3, tree regeneration % cover within the polygon for B4 and the % cover of invasive exotic species for B5. Use the Tables in Appendix B and the Field Guide for metric instructions. Enter the species codes for the invasive exotic species found in the polygon (from NM Noxious Weed List - Appendix D). Use the comments box for documenting and describing vegetation community patch features.

Polygon No	B3 Vertical Structure Type	B4 Tree Regeneration % Cover	B5 Invasive Exotic Species % Cover	Invasive Exotic Species (List Code(s))	Comments
1	IA1				
2	IA2				
3	IIA1				
4	IIIB1	60%	None	None	Currant seen growing not as many birds
5	IIIC1	40%	≈ 10%	Mustard/Mullein	Some Junipers / Salt bush / Chimisa
6	IVEI				
7	IVF1				
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

SA CODE SF2MI [4] **SA Name :** Two Mile Pond Reservoir Transect [4] **Date :** 4/09/24 **Surveyor Initials :** DS

B1 - Relative Native Plant Community Composition

Worksheet 6. CT Plant Species and Polygon Assignments. Starting with CT A, enter the number of the first polygon from Worksheet 5. Enter the species codes for the two top dominant species in each stratum that appears in the polygon. See footnotes for special instructions. If a species appears in more than one strata, assign the species to the stratum in which it is more abundant. Each polygon is either assigned to the same CT if it has the same composition or a new CT is created for the polygon.

		Tall Woody Stratum 1				Short Woody Stratum 2				Herbaceous/Sparse Stratum 3				CT Score 4		
CT	Polygon Nos.	Species 1	E N	Species 2	E N	Species 3	E N	Species 4	E N	Species 5	E N	Species 6	E N	Raw4	% SA5	Wt Score6
A	5					Saltbus	N	Chimisa	N	Meadow	N	bluestem	N	4.0	10%	
B	4					Willow	N	Cattail	N	Cattail				4.0	90%	
C																
D																
E																
F																
G																
H																
I																
J																
K																
L																
M																
N																
O																
													Final Weighted Score7			4.0

1. Trees and shrubs > 6 m (20 feet) and > 25% total stratum cover; 2. Trees and shrubs ≤6m (20 feet) and >25% total stratum cover; 3. Herbaceous (graminoids and forbs)>10% total stratum cover. 4Raw Score is from Table B1a (Appendix B); 5%SA is the percentage of the SA area covered by the CT and expressed as a decimal number; the total area %SA must equal 1; 6Wt. Score is the product of the Raw Score * % SA; 7The Final Weighted Score is the sum of the Wt. Scores. Rate the CT Final Weighted Score on Table B1 and enter the Rating for Relative Native Plant Community Composition on the SA Rank Summary Worksheet.

SA CODE: SF2MI [4] **Date:** 4/9/24

SA Name: Two Mile Pond Reservoir Transect [4] **Surveyor Initials:** DS

Table B1. Relative Native Plant Community Composition Rating		
Rating	CT Final Weighted Score	
X 4	≥ 3.75	<10% non-native
3	≥ 3.25 and <3.75	10% ≤20% non-native
2	> 2.0 and <3.25	20% ≤50% non-native
1	≤2.0	>50% non-native

2 - Vegetation Horizontal Patch Structure

orksheet 7. Using Tables B2a and B2c (Appendix B), choose the schematic pattern that best matches the mapped vegetation patch attern for the SA. Rate using Table B2 and enter rating on the SA Rank Summary Worksheet.

orizontal Patch Structure pattern A,B,C, or D: B

Table B2. Rating for Vegetation Horizontal Patch Structure	
Rating	Description
4	Most closely matches Pattern A. SA has a diverse patch structure (≥4 patch types) and complexity. A dominant patch type would be difficult to determine.
X 3	Pattern B. SA has a moderate degree of patch diversity (3 patch types present) and complexity. A single, dominant patch type may be present, although the other patch types would be well represented and have more than one occurrence in the SA.
2	Pattern C. SA has a low degree of patch diversity and complexity. Two or three patch types may be present; however, a single, dominant patch type exists with the others occupying a small portion of the SA.
1	Pattern D. SA has essentially little to no patch diversity or complexity. The SA is dominated by a single patch type. Other patch types, if present, occur infrequently and occupy a small portion of the SA.

3 - Vegetation Vertical Structure

orksheet 8. Percentage of SA by vertical structure type (VST). Using the Structure Type from Worksheet 5 and the %SA om Worksheet 6 calculate the total area of the SA occupied by each VST using the formula VST(type) = Sum (%SA for CTs with ame VST) x 100. Enter the total %SA for each VST below.

	VST 1 High Structure Forest	VST 2 Low Structure Forest	VST 5 Tall Shrubland	VST 6S Short Shrubland	VST 6W Herbaceous Wetland	VST 6H Herbaceous Vegetation	VST 7 Sparse Vegetation
Total % of SA			50		50		

able B3. Rating for Vegetation Vertical Structure. Using the data from Worksheet 8 rate the SA based on the criteria in Table B3. Pick the ow that best fits the distribution of VSTs in the SA. Each row specifies the required dominant structure type plus co- and sub-dominants. ercentage cover required per co- or sub-dominant is a minimum. The types listed in the columns must be the most common VSTs in the SA for he rating to be applicable (Worksheet 8). VSTs 1 and 2 can be inverted in dominance and the rating is still applicable. Work from the top of the able down. As long as the requirements for one row are met, any other types may or may not co-occur without changing the rating. Enter the ating on the SA Rank Summary Worksheet.

Rating	Dominant VST	Co- or Sub-dominant VST ≥15%	Sub-dominant VST ≥5%
4	1	5	6W and/or 6H
	1	6W	
	2 or 1 and 2	5	6W and/or 6H
X 3	1		
	2 or 1 and 2	5	
	2 or 1 and 2	6W	
	5	6W	
2	2 or 1 and 2		
	5		
	6W		
1	6S		
	6H		
	7		

SA CODE: SF2MI [4]

Date: 4/9/24

SA Name: Two Mile Pond Reservoir Transect [4]

Surveyor Initials: DS

B4 - Native Riparian Tree Regeneration

Table B4. Native Riparian Tree Regeneration rating. Using the polygon percent cover of native tree seedlings, saplings and poles from Worksheet 5, rate the SA based on polygon percent cover and patch density. Enter the rating on the SA Rank Summary Worksheet.

Rating	Description
X 4	Native poles, sapling, and seedlings trees well represented, obvious regeneration, many patches or polygons with >5% cover, typically multiple size (age) classes.
3	Native poles, saplings and/or seedlings common, scattered patches or polygons with 1% -5% cover, size classes few.
2	Native poles, saplings and/or seedlings present but uncommon, restricted to one or two patches or polygons with typically <1% cover, little size class differentiation.
1	Native poles, saplings, and/or seedlings absent (0% cover).

B5 - Invasive Exotic Plant Species Cover

Worksheet 9. Based on Worksheets 5 and 6, calculate or estimate the percentage cover of invasive exotic species for the SA and enter below. Rate using Table B5 and enter the rating on the SA Rank Summary Worksheet.

Rating Method [ ]

Invasive cover (%) [<1]

calculate

Table B5. Ratings for Invasive Exotic Plant Species Cover	
Rating	**Invasive Species Cover %**
4	0%
3 X	>0% - <1%
2	≥1% - <10%
1	≥10

Additional CTs and Biotic Metric Comments:

Currant growing down by water. mugworts seen in transect. Shady sid of hill very moist.

SA CODE : SF2MI [4] **Date :** 4/9/24

SA Name : Two Mile Pond Reservoir Transect [4] **Surveyor Initials :** DS

A2 - Physical Patch Complexity

Worksheet 11. Physical Patch Complexity checklist. Check off existing physical patch types for the upper, middle and lower segments of the SA; count the number of unique patch types and rate using Table A2 in combination with the narrative description. Enter the rating on the SA Rank Summary Worksheet.

Upper Segment	Middle Segment	Lower Segment	Field Indicators (check all existing conditions)
☐	☒	☐	Active side channels
☐	☐	☐	Abandoned channels
☐	☐	☐	Backwater/eddy
☐	☐	☐	Riffles or rapids
☐	☒	☐	Shoals, sparely-vegetated bars
☐	☒	☐	Channel boulders
☐	☐	☐	Oxbow lakes/ponds on floodplains
☐	☐	☐	Vegetated island and side bars
☐	☒	☐	Terraces
☐	☐	☐	Channel pools
☐	☒	☐	Beaver ponds
☐	☐	☐	Swales, depressional features on floodplains
☐	☒	☐	Debris jams in channel
☐	☐	☐	Woody wrack piles on the floodplain
☐	☐	☐	Floodplain micro-topography (mounds, pits)
☐	☐	☐	Downed logs
☐	☒	☐	Natural levees
☐	☐	☐	Standing snags
☐	☐	☐	Variegated, convoluted, or crenulated foreshore
☐	☐	☐	Undercut banks in channels
			No. of unique Patch Types

Table A2. Rating for Physical Patch Complexity	
Rating	**Description**
○ 4	**High** degree of physical patch complexity across the floodplain. There are many floodplain micro-habitats present (mounds and pits, woody wrack piles, etc.), many fluvial geomorphic surfaces (swales, side channels, terraces, side bars, etc.), and there is high in-channel complexity (pools and riffles, large woody debris, undercut banks, etc.). As a guide, 12 or more unique indicators are present and well distributed throughout the SA (most indicators are found on multiple segments).
☒ 3	**Moderate** physical patch complexity scattered across the floodplain. There are several floodplain micro-habitats present, several fluvial geomorphic surfaces, and there is moderate in-channel complexity. As a guide, 9 - 11 indicators are scattered throughout the SA (some on multiple segments).
○ 2	**Limited** physical patch complexity scattered across the floodplain. There are some floodplain micro-habitats present, some fluvial geomorphic surfaces, and there is limited in-channel complexity. As a guide, on average there are 6 - 8 unique indicators present in the SA (only a few on multiple segments).
○ 1	**Little** or no physical patch complexity on the floodplain. There are few or no floodplain micro-habitats present, few different fluvial geomorphic surfaces, and there is little or no in-channel complexity. As a guide, ≤ 5 unique indicators are present in the SA.

SA CODE : SF2MI [4] **Date :** 4/9/24

SA Name : Two Mile Pond Reservoir Transect [4] **Surveyor Initials :** DS

A3- Channel Equilibrium

Worksheet 12. Channel Equilibrium Checklist. Check all field indicators that apply to the upper, middle and lower segment of the SA observed at the channel edge of the traverse. Rate using the Table A3 descriptions and based on a preponderance of evidence from this checklist. Enter the rating on the SA Rank Summary Worksheet.

Condition	Upper Segment	Middle Segment	Lower Segment	Field Indicators(check all existing conditions)
Indicators of Channel Equilibrium	☐	☒	☐	The channel has a well-defined bankfull contour that clearly demarcates the point of incipient flooding where moderate frequent flow events spread flow across the floodplain.
	☐	☒	☐	Perennial riparian vegetation is abundant and well established along the bankfull contour, but not below it.
	☐	☒	☐	There is leaf litter, thatch, or wrack in most pools.
	☐	☒	☐	The channel contains embedded woody debris of the size and amount consistent with what is naturally available in the riparian area.
	☐	☒	☐	There is little or no active undercutting or burial of riparian vegetation.
	☐	☐	☐	There are no bars that are densely vegetated with perennial vegetation (neither mid-channel bars or point bars).
	☐	☒	☐	Channel and point-bars consist of well-sorted bed material.
	☐	☒	☐	The channel bed is not planar and without an abundance of fine materials filling the interstitial spaces between larger stream substrate.
	☐	☒	☐	There are channel pools at meander bends and some deep pools within the reach.
Indicators of Active Degradation	☐	☐	☐	The channel is characterized by deeply undercut banks with exposed living roots of trees or shrubs.
	☐	☐	☐	There are abundant bank slides or slumps, or the lower banks are uniformly scoured and not vegetated.
	☐	☐	☐	Bank vegetation is declining in stature or vigor, or many riparian trees and shrubs along the banks are leaning or falling into the channel.
	☐	☐	☐	Channel bed is scoured to large cobbles or boulders and entrained bank material is filling the cobble interstices and pools.
	☐	☐	☐	There are active headcuts within the channel.
	☐	☐	☐	An obvious historical floodplain has recently been abandoned, as indicated by the age structure of its riparian vegetation.
Indicators of Active Aggradation	☐	☐	☐	There is abundant fresh splays of coarse sediment covering the floodplain above the natural point bar elevation.
	☐	☐	☐	There are partially buried living tree trunks or shrubs along the banks.
	☐	☐	☐	The channel bed is planar overall. The stream lacks well-defined channel pools at meander bends, or pools are filled with sediment.
	☐	☐	☐	There are partially buried or sediment-choked culverts.
	☐	☐	☐	There are avulsion channels on the floodplain or adjacent valley floor.

SA CODE : SF2MI [4] **Date :** 4/9/24

SA Name : Two Mile Pond Reservoir Transect [4] **Surveyor Initials :** DS

Table A3. Rating for Channel Equilibrium	
Rating	**Description**
☒ 4	Most of the channel throughout the SA is in equilibrium condition with little evidence of excessive aggradation or degradation based on the field indicators listed in Worksheet 12.
◯ 3	There is some evidence of excessive aggradation or degradation; the channel throughout the SA seems to approach an equilibrium condition. Circle primary process: aggradation or degradation.
◯ 2	There is evidence of severe aggradation or degradation throughout most of the channel through the SA. Circle primary process: aggradation or degradation.
◯ 1	The channel is artificially hardened, channelized, or is concrete throughout most of the SA.

A4- Stream Bank Stability and Cover

Worksheet 13. Bank Soil Stability and Streambank Erosion Potential Checklist. Check the indicator that best describes the condition looking a minimum of 25 m upstream and downstream at the channel edge of the upper, middle and lower segment of the SA. Average the six scores for both Bank Soil Stability and Streambank Erosion Potential. Rate using the Table A4 and enter the rating on the SA Summary Worksheet.

Condition	Upper Segment	Middle Segment	Lower Segment	Field Indicators
Indicators of Bank Soil Stability	☐4	☒4	☐4	Infrequent raw banks, less than 10% of steam bank under stress from trampling, slumping, vegetation removal or active erosion, etc.
	☐3	☐3	☐3	Raw banks and loose soil intermittently and 10%-25% of stream bank under stress from trampling, trail crossing, hoof punching, vegetation removal, erosion etc.
	☐2	☐2	☐2	Significant raw banks and loose soil, 25%-50% of stream bank under stress, trampled, slumping or eroding etc.
	☐1	☐1	☐1	Raw banks almost continuous with greater than 50% of stream bank under stress, loose soil, slumping, trampled or eroding; or channel appear to lack banks due to trampling; or channel that is artificially hardened or concrete along most of its length.
Indicators of Stream Bank Erosion Potential	☐4	☒4	☐4	≥ 80% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by boulders, large cobbles and/or large woody debris that prevent bank erosion.
	☐3	☐3	☐3	≥50% - <80% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those areas not covered by vegetation are protected to allow only minor erosion.
	☐2	☐2	☐2	≥25% - <50% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those area not covered by vegetation or stabilized by roots, are covered by materials or vegetation that give limited protection.
	☐1	☐1	☐1	Less than 25% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those areas not covered by vegetation provide little or no control over erosion and excess shear stress, and the banks are susceptible to erosion by high water flows.

Average Indicator Score	

Table A4. Stream Bank Stability and Cover Rating	
Rating	**Description**
☒ 4	>3.5 - 4.0
◯ 3	>2.5 - ≤3.5
◯ 2	>1.5 - ≤2.5
◯ 1	1.0 - ≤1.5

SA CODE : SF2MI [4] **Date :** 4/9/24

SA Name : Two Mile Pond Reservoir Transect [4] **Surveyor Initials :** DS

A5 - Soil Surface Condition

Worksheet 14. Soil Surface Condition. Check all that apply in the upper , middle and lower SA segments during the field reconnaissance. The absence of these indicators would signify that disturbances are naturally occurring (e.g., flood deposition or low-density wildlife trails). Estimate the percent soil disturbance by segment area and referring to the SA abiotic map. Rate using Table A5 and enter on the SA Rank Summary Worksheet.			
Upper Segment	**Middle Segment**	**Lower Segment**	**Field Indicators (Check all existing conditions)**
☐	☐	☐	Active erosion features due to anthropogenic disturbance (eg. rills, gullies, plant pedestals).
☐	☒	☐	Multiple livestock and other (fishing,hiking) trails,
☐	☐	☐	Vehicle tracks including off-road and construction, etc.
☐	☐	☐	Impervious compacted surfaces or pavement
☐	☐	☐	Grading or plowing
☐	☐	☐	Fill
☐	☐	☐	Gravel pits
☐	☐	☐	Anthropogenic levees and berms
☐	☐	☐	Irrigation-driven salinity and mineral crusts
☐	☐	☐	Fire pits
☐	☐	☐	Other:
			Estimate % soil disturbance by segment area

Average % Soil Disturbance: < 1%

Table A5. Soil Surface Condition Rating	
Rating	**Description**
☒ 4	Bare soil areas due to anthropogenic disturbance absent or very limited. No human-caused impervious surfaces or gravel pits are found within the SA. Total disturbance, including erosion, impervious surfaces, fill, or other anthropogenic degradation to the soil surface is less than 1% of the SA.
○ 3	Some amount of bare soil from human causes is present but the extent is limited. Area of impervious surfaces are minimal in extent. Total disturbance, including erosion, impervious surfaces, fill, gravel pits, vehicle tracks or other anthropogenic degradation to the soil surface is between 1% and 5% of the sampling area.
○ 2	Bare soils from human causes are common. These may include dense livestock trails, vehicle tracks, trails, construction staging areas, mechanical rutting, or irrigation-driven salinity. Soil disturbance, while apparent, is limited to specific areas and not found across the majority of the SA. Total disturbance, including erosion, impervious surfaces, fill, gravel mining, or other anthropogenic degradation to the soil surface is greater than 5% or less than 10% of the SA.
○ 1	Bare soil areas degrade portions of the site because of altered hydrology or other long-lasting impacts. Deep ruts from off-road vehicles or machinery are present. Livestock disturbance or trails are widespread and several inches deep. Water is channeled into rills or ponded. Additional human-caused impervious surfaces or soil compaction are present. Total disturbance, including erosion, impervious surfaces, fill,gravel mining or other anthropogenic degradation to the soil surface is equal to or greater than 10% of the SA.

SA CODE : SF2MI [4] **Date :** 4/9/24

SA Name : Two Mile Pond Reservoir Transect [4] **Surveyor Initials :** DS

orksheet 15. Stressor Checklist. Check off stressors by intensity category that may be affecting wetland ecological condition of the SA and WOI. Assign
tegories using direct evidence where available or your best professional judgement otherwise. If the presence of the stressor is uncertain, mark as "Unknov
ank Major Stressors in Dominant Stressor column(Pick up to 3)

ank	Affect				Stressor Group/Stressor	Comments
	Major	Minor	Absent	Unknown		
					Adverse water management	
	☒	☐	☐	☐	Extended low flow dam releases	
	☐	☐	☒	☐	Timing of flow releases not concordant	
	☐	☐	☒	☐	Extended high flow dam releases	
	☐	☐	☒	☐	Agriculture/Urban flow diversion upstream	
					Adverse sediment management	
	☐	☐	☒	☐	Adverse sediment retention by dams	
	☐	☐	☒	☐	Sediment loss by dredging	
	☐	☐	☒	☐	Adverse sediment input (roads/development)	
					Artificial water additions	
	☐	☐	☒	☐	Sewer treatment effluent	
	☐	☐	☒	☐	Point source urban runoff	
	☐	☐	☒	☐	Factory, feedlot outfall	
	☐	☐	☒	☐	Agricultural irrigation ditch returns	
	☐	☐	☒	☐	Mining waste	
					Ground water pumping	
	☐	☐	☒	☐	Urban depletions	
	☐	☐	☒	☐	Fracking	
	☐	☐	☒	☐	Agriculture irrigation wells	
					Watershed alteration	
	☐	☐	☒	☐	Extensive recent fires in watershed	
	☐	☐	☒	☐	Extensive recent timber harvest	
	☐	☐	☒	☐	Extensive open pit mining in watershed	
	☐	☐	☒	☐	Livestock/wildlife overgrazing	
					Local biodiversity impacts	
	☐	☐	☒	☐	Evidence of excessive grazing (local)	
	☐	☐	☒	☐	Excessive noise affecting wildlife	
	0	0		0	Counts by Intensity	

ditional Comments

rsion Date: 04/25/2022

Schema: Montane 2.5

NMRAM Montane Riverine Wetlands Version 2.5

SA Cover Worksheet

SA Code SF2MI [4]	SA Name : Two Mile Pond Reservoir		Project : Riparian Assesement	
[illegible]ode Tsct [4]	AU Name : Transect [4]		WOI : Two Mile Pond Reservoir	
County Santa Fe	HUC 12 Headwaters Santa Fe River	Elevation (ft) 7299	(m) 2224.7	Ecoregion 6.0 NWFM

SA General Location and Boundary (Rationale, comments)

A riparian system that leads into a pond located on the east side of Santa Fe bordering the Santa Fe National Forest. This reservoir was decommissioned due to safety concerns regarding the reservoir and a water diversion to the area was recently shut down due to lack of water rights.

Driving Directions

Driving to Santa Fe from Albuquerque you head north on Old Pecos Trail. Then head east on Camino Del Monte Sol and right on Canyon Road until you reach the reservoir located to the North.

Ownership The Nature Conservative and The Santa Fe National Forest	Data Sharing Restrictions	Results to client only.	Fish Observed in Wetland?	

Surveyor Role	Surveyor Name	Surveyor Initials
Landscape	Dustin	DS
Biotic	Annie + Dustin	DS
Abiotic	Dustin	DS
Stressors	Both	DS

Easting (m)	Northing (m)	Zone	Datum	Latitude (DD ft)	Longitude (DD ft)
-105° 53' 24" W	35° 41' 23" N	13	NAD- 83 UTM	35.689722	-105.89
Survey Date	5/15/24	**Start Time**		**End Time**	

SA Description

SA Landscape Context (summarize the wetland and surrounding landscape; include condition and impacts)

land is starting to recover from winter with leaves budding and animals arriving in more numbers

SA Biotic Condition (vegetation patterns, composition and structure, exotics and invasives, disturbance evidence, fire and herbivory)

Currant full of leaves, Box elder showing leaves, Blue stem grass sprouting Spotted Towhee, Stink bug, Red winged black bird, American Robin June bugs by pond

SA Abiotic Condition (hydrological alterations [e.g., dams, walls etc.]; flooding characteristics and evidence of overbank flooding; soil disturbance and other site impacts; explain the hydrologic breaks or other factors that define the SA limits)

The area here is slightly moist on the shaded side of the hill

Assessment Summary (Overall site condition summary and comments after the field data is collected.)

Provisional Field Score	3.4	Rank	3.4	Surveyor(s)	DS	Final Score	3.40	Rank	A	Initials	DS	Date 5/15/24

SA CODE : SF2MI [4]

Date : 5/15/24

SA Name : Two Mile Pond Reservoir Transect [4]

Surveyor Initials : DS

NMRAM - SA Rank Summary Worksheet: Montane Riverine Wetlands 2.5

Metric Description	Rating	Wt	Final Score
Landscape Context		Σ 1.0	3.25
L1. Buffer Integrity Index	3	0.25	0.75
L2. Riparian Corridor Connectivity	4	0.25	1.0
L3. Relative Wetland Size	4	0.25	1.0
L4. Surrounding Land Use	2	0.25	0.5
Biotic		Σ	
B1. Relative Native Plant Community Composition	4	0.2	
B2. Vegetation Horizontal Patch Structure	3	0.2	
B3. Vegetation Vertical Structure	3	0.2	
B4. Native Riparian Tree Regeneration	3	0.2	
B5. Invasive Exotic Plant Species Cover	3	0.2	
Abiotic		Σ	
A1. Floodplain Hydrologic Connectivity		0.3	
A2. Physical Patch Diversity	3	0.2	
A3. Channel Equilibrium	4	0.2	
A4. Stream Bank Stability and Cover	4	0.2	
A5. Soil Surface Condition	4	0.1	

SA Condition Scoring Summary			
Major Attribute	Score	Wt.	Wt. Score
Landscape Context	3.25	0.3	0.975
Biotic	3.2	0.35	
Abiotic	3.75	0.35	
SA WETLAND CONDITION SCORE Σ			3.40
SA WETLAND RANK =			A

SA Wetland Rank		
Rank	Score	Description
A	≥3.25 - 4.0	Excellent Condition
B	≥2.5 - <3.25	Good Condition
C	≥1.75 - <2.5	Fair Condition
D	1.0 - <1.75	Poor Condition

Stressor Summary	Major	Minor	Top Three	
	0	0	1	Not as much water
			2	
			3	

Stressor Comments (Evaluation of risk)

Still no water from seep but plants budding around it.

SA CODE : SF2MI [4]

Date : 5/15/24

SA Name : Two Mile Pond Reservoir Transect [4]

Surveyor Initials : DS

Landscape Context

L. Buffer Integrity Index

Worksheet 1a. Buffer and RCC Checklist. Check off land cover elements within the buffer area or RCC corridors that are either allowed, or are excluded and considered non-buffer elements that disrupt ecosystem connectivity. Indicate the imagery type and date (season and year of imagery).

Imagery	Google Earth KMZ. file	Image Date	6/23

Allowed buffer/RCC land cover elements			Excluded non-buffer/RCC land cover elements		
Buffer	RCC		Buffer	RCC	
[X]	[X]	Natural or semi-natural vegetation patches	[X]	[X]	Commercial/residential developments, parking lots, dams, bridges, revetments, and other structures
[X]	[X]	Small irrigation ditches without levees	[ ]	[ ]	Lawns, parks, golf courses, sports fields
[ ]	[ ]	Old fields, unmaintained	[ ]	[ ]	Railroads
[ ]	[ ]	Open range land	[ ]	[ ]	Maintained levees, sediment piles, construction materials, staging areas
[X]	[X]	Foot trails, horse trails, unpaved bike trails (low intensity)	[ ]	[ ]	Intensive livestock areas, horse paddocks, feedlots
[X]	[X]	Non-channel open water	[ ]	[ ]	Intensive agriculture: maintained pastures, hay fields, row crops, orchards, and vineyards
[X]	[X]	Non-functioning abandoned vegetated levees, or naturally occurring levees	[X]	[X]	Paved roads or developed second-order unpaved but graded roads
[ ]	[ ]	unpaved two tracks roads	[X]	[X]	Open water bounded by a levee or other manmade structure
[ ]	[ ]	Other	[ ]	[ ]	Other

Worksheet 1b. Buffer Percent Sub-metric. Measure or estimate the percentage of the SA perimeter composed of allowed buffer elements and enter into the Buffer Percent Box below. Rate the sub-metric using Table L1a and enter the rating on the Buffer Integrity Summary Worksheet 1d.

Buffer Percent (%)=	85%

Table L1a. Buffer Percent

Rating	Buffer Percent
◯ 4	100%
(X) 3	≥80% - <100%
◯ 2	≥50% - <80%
◯ 1	<50%

Worksheet 1c. Buffer Width Sub-metric. Measure the length of each buffer line in meters in the GIS or on the map. Average the line lengths and rate using Table L1b. Enter the rating on the Buffer Integrity Summary Worksheet 1d.

Line	Buffer Width (m)	Buffer Width (ft)	Line	Buffer Width (m)	Buffer Width (ft)
A	164.26	538.91	E	161.93	531.26
B	125.25	410.92	F	231.48	759.44
C	115.39	378.57	G	121.25	397.80
D	111.07	364.40	H	155.87	511.38
Average	148.31 (m)		486.58	(ft)	

Table L1b. Buffer Width

Rating	Average buffer width
◯ 4	≥190m
(X) 3	≥130 - <190m
◯ 2	≥65 - <130m
◯ 1	<65m

Worksheet 1d. Buffer Integrity Summary. Enter the sub-metric Ratings from Tables L1a and L1b above to calculate the Buffer Integrity Index Score using the formula in the box below. Using the Buffer Integrity Index Score, enter rating for Buffer Integrity in Table L1c on the SA Summary Worksheet.

Buffer % Rating	+	Buffer Width Rating	/2 =	Buffer Integrity Index Score
3	+	3	/2 =	3

Table L1c. Summary Rating for Buffer Integrity

Rating	Score
◯ 4	>3.5
(X) 3	>2.5 - ≤3.5
◯ 2	>1.5 - ≤2.5
◯ 1	≤1.5

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L2 - Riparian Corridor Connectivity (RCC)

Worksheet 2. RCC excluded non-buffer elements calculation. Refer to worksheet 1a for excluded non-buffer RCC land cover elements. Following the steps in the Field Guide, enter the summed values in meters for excluded element lengths for each bank within each segment upstream and downstream of the SA. Sum the values for each segment and calculate % Segment Disruption for the upstream side and the downstream side. Add the total disruption for upstream and downstream segments and then calculate the % Total Disruptions for the riparian corridor. Rate Riparian Corridor Connectivity using Table L2 and the data from this worksheet. Enter rating on the SA Summary Worksheet.

Segments	Upstream Segment		Downstream Segment	
Banks	Left Bank	Right Bank	Left Bank	Right Bank
A) Total Bank Disruption (m)	0	0	0	0
B) Total Disruption by Segment (m)	0		0	
C) % Segment Disruption = (B/1000)*100	0		0	
D) Total Disruption both segments	0			
E) % Total Disruptions = (D/2000)*100	Zero disruption noticeable along the banks.			

Table L2. RCC Rating	
Rating	Description
(X) 4	**0%** total disruption on both segments combined.
( ) 3	**<15%** total disruption on both segments combined.
( ) 2	**≥15% - <40%** total disruption on both segments combined.
( ) 1	**≥40%** total disruption on both segments combined.

L3 - Relative Wetland Size

Worksheet 3a. Calculate the Relative Size Ratio (RSR) between the current WOI size and the historic WOI size. b. Calculate the Relative Wetland Size Score (RWSI (%)) as (1-RSR)*100. Rate Relative Wetland Size Index using Table L3 and enter rating on the SA Summary Workshe

RSR					RWSI						
Current Size	/	Historic Size	=	RSR	1	-	RSR	X	100	=	RWSI (%)
9	/	10	=	0.9	1	-	0.1	X	100	=	10

Table L3. Relative Wetland Size Rating		
Rating	RWSI Score	Description
(X) 4	≤10%	Wetland is at or only minimally reduced from its full natural extent
( ) 3	>10% - ≤40%	Wetland remains equal to or more than 60% of its natual size
( ) 2	>40% - ≤70%	Wetland has been reduced by more than 40% its natural size
( ) 1	>70%	Wetland has been reduced by more than 70% its natural size

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L4 - Surrounding Land Use

Worksheet 4. Surrounding Land Use. Enter the percent area occupied by a given Land Use Element in the Land Use Zone (LUZ) surrounding the SA. Calculate the Land Use Index (LUI) Score by element as the product of the element coefficient times the percent of the LUZ Area occupied. (The %LUZ Area must total 100%.) Sum the LUI scores for each element to create the final LUI Score. Rate using Table L4 and enter the rating in the SA Rank Summary Worksheet.

Land Use Element	Coef	% LUZ Area	LUI Score
Paved roads, parking lots, domestic or commercially developed buildings, mining (gravel pit, quarry, open pit, strip mining), railroads	0	0	0
Unpaved roads (e.g., driveway, tractor trail, unpaved parking lots), paddock, dirt lot	0.1	0	0
Dredging, borrow pits, abandoned mines, water-filled artificial impoundments (ponds and reservoirs)	0.1	0	0
Filling or dumping of sediment or soils	0.1	0	0
Intense recreation (all-terrain vehicle use, camping, popular fishing spot, etc.)	0.3	0	0
Rip-rapped channel (highly modified channel with severely limited vegetation zone that is altered by human activities but not a completely concrete channel [that goes under paved roads]), junkyards, trash dumps, disturbed ground (not including roads)	0.3	0	0
Ski area	0.4	0	0
Dam sites and flood-disturbed shorelines around water storage reservoirs	0.5	0	0
Abandoned artificial impoundments (ponds and reservoirs) and associated disturbed flood zones	0.5	10	5
Artificial/Constructed wetlands, irrigation ditches	0.7	20	14
Developed/Managed trail system (high use trail)	0.8	5	4
Agriculture - active tilled crop production	0.2	0	0
Agriculture - permanent crop (vineyards, orchards, nurseries, berry production)	0.3	0	0
Manicured lawns, sport fields, and golf courses; urban manicured parks	0.3	0	0
Old fields and other disturbed fallow lands dominated by ruderal and/or exotic species (e.g., kochia, Russian thistle, mustards, annual vegetation)	0.5	0	0
Mature old fields and other fallow lands with natural composition, introduced hay field and pastures (e.g., perennial vegetation cover)	0.7	0	0
Restoration areas in process to natural conditions (re-conversion in process)	0.8	65	52
Haying of native grassland (e.g., no tillage, haying and baling only)	0.9	0	0
Heavy logging or tree removal with >50% of large trees (e.g., >30 cm diameter at breast height) removed, woodland/shrub vegetation conversion (chaining, cabling, rotochopping)	0.3	0	0
Commercial tree plantation, Christmas tree farms	0.6	0	0
Selective logging or tree removal with <50% of large trees (e.g., >30 cm diameter at breast height) removed	0.8	0	0
Mature restoration areas returned to natural conditions (re-converted)	0.9	0	0
Natural area, land managed for native vegetation - No agriculture, logging, development	1	0	0
LUI Score= Coefficient * % LUZ Area		100	75

Table L4. Surrounding Land Use Rating	
Rating	**LUI Score**
○ 4	≥95 - 100
○ 3	≥80 - <95
⊗ 2	≥40 - <80
○ 1	<40

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Biotic Metrics

Worksheet 5. Vegetation Community Patch Polygon Data for Biotic Metrics B3, B4, and B5 for Polygons from SA Biotic Map. Enter data for each polygon under a unique number assigned from the SA Biotic Map. Each polygon is evaluated with respect to Vegetation Vertical Structure (B3), Native Tree Regeneration (B4), and Invasive Exotic Plant Species Cover (B5) metrics. Enter the Vertical Structure Type (VST) for B3, tree regeneration % cover within the polygon for B4 and the % cover of invasive exotic species for B5. Use the Tables in Appendix B and the Field Guide for metric instructions. Enter the species codes for the invasive exotic species found in the polygon (from NM Noxious Weed List - Appendix D). Use the comments box for documenting and describing vegetation community patch features.

Polygon No	B3 Vertical Structure Type	B4 Tree Regeneration % Cover	B5 Invasive Exotic Species % Cover	Invasive Exotic Species (List Code(s))	Comments
1	IA1				
2	IA2				
3	IIA1				
4	IIIB1	65%	None	None	Cat tails starting to grow around edge
5	IIIC1	40%	None Alive	None	Not much new life but getting greener.
6	IVEI				
7	IVF1				
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

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B1 - Relative Native Plant Community Composition

Worksheet 6. CT Plant Species and Polygon Assignments. Starting with CT A, enter the number of the first polygon from Worksheet 5. Enter the species codes for the two top dominant species in each stratum that appears in the polygon. See footnotes for special instructions. If a species appears in more than one strata, assign the species to the stratum in which it is more abundant. Each polygon is either assigned to the same CT if it has the same composition or a new CT is created for the polygon.

		Tall Woody Stratum 1				Short Woody Stratum 2				Herbaceous/Sparse Stratum 3				CT Score 4		
CT	Polygon Nos.	Species 1	E N	Species 2	E N	Species 3	E N	Species 4	E N	Species 5	E N	Species 6	E N	Raw4	% SA5	Wt Score6
A	5			Box Elder	N	Saltbush	N	Chimisa	N	Meadow grass	N	bluestem	N	4.0	10	
B	4					Willow	N	Cattail	N	Cattail	N	Currant	N	4.0	90	
C																
D																
E																
F																
G																
H																
I																
J																
K																
L																
M																
N																
O																
													Final Weighted Score7			4.0

1. Trees and shrubs > 6 m (20 feet) and > 25% total stratum cover; 2. Trees and shrubs ≤6m (20 feet) and >25% total stratum cover; 3. Herbaceous (graminoids and forbs)>10% total stratum cover. 4Raw Score is from Table B1a (Appendix B); 5%SA is the percentage of the SA area covered by the CT and expressed as a decimal number; the total area %SA must equal 1; 6Wt. Score is the product of the Raw Score * % SA; 7The Final Weighted Score is the sum of the Wt. Scores. Rate the CT Final Weighted Score on Table B1 and enter the Rating for Relative Native Plant Community Composition on the SA Rank Summary Worksheet.

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Table B1. Relative Native Plant Community Composition Rating		
Rating	**CT Final Weighted Score**	
4	≥ 3.75	<10% non-native
3	≥ 3.25 and <3.75	10% ≤20% non-native
2	> 2.0 and <3.25	20% ≤50% non-native
1	≤2.0	>50% non-native

2 - Vegetation Horizontal Patch Structure

orksheet 7. Using Tables B2a and B2c (Appendix B), choose the schematic pattern that best matches the mapped vegetation patch attern for the SA. Rate using Table B2 and enter rating on the SA Rank Summary Worksheet.

orizontal Patch Structure pattern A,B,C, or D:

Table B2. Rating for Vegetation Horizontal Patch Structure	
Rating	**Description**
4	Most closely matches Pattern A. SA has a diverse patch structure (≥4 patch types) and complexity. A dominant patch type would be difficult to determine.
X 3	Pattern B. SA has a moderate degree of patch diversity (3 patch types present) and complexity. A single, dominant patch type may be present, although the other patch types would be well represented and have more than one occurrence in the SA.
2	Pattern C. SA has a low degree of patch diversity and complexity. Two or three patch types may be present; however, a single, dominant patch type exists with the others occupying a small portion of the SA.
1	Pattern D. SA has essentially little to no patch diversity or complexity. The SA is dominated by a single patch type. Other patch types, if present, occur infrequently and occupy a small portion of the SA.

3 - Vegetation Vertical Structure

/orksheet 8. Percentage of SA by vertical structure type (VST). Using the Structure Type from Worksheet 5 and the %SA om Worksheet 6 calculate the total area of the SA occupied by each VST using the formula VST(type) = Sum (%SA for CTs with ame VST) x 100. Enter the total %SA for each VST below.

	VST 1 High Structure Forest	VST 2 Low Structure Forest	VST 5 Tall Shrubland	VST 6S Short Shrubland	VST 6W Herbaceous Wetland	VST 6H Herbaceous Vegetation	VST 7 Sparse Vegetation
Total % of SA			50		50		

able B3. Rating for Vegetation Vertical Structure. Using the data from Worksheet 8 rate the SA based on the criteria in Table B3. Pick the ow that best fits the distribution of VSTs in the SA. Each row specifies the required dominant structure type plus co- and sub-dominants. ercentage cover required per co- or sub-dominant is a minimum. The types listed in the columns must be the most common VSTs in the SA for ne rating to be applicable (Worksheet 8). VSTs 1 and 2 can be inverted in dominance and the rating is still applicable. Work from the top of the able down. As long as the requirements for one row are met, any other types may or may not co-occur without changing the rating. Enter the ating on the SA Rank Summary Worksheet.

Rating	**Dominant VST**	**Co- or Sub-dominant VST ≥15%**	**Sub-dominant VST ≥5%**
4	1	5	6W and/or 6H
	1	6W	
	2 or 1 and 2	5	6W and/or 6H
X 3	1		
	2 or 1 and 2	5	
	2 or 1 and 2	6W	
	5	6W	
2	2 or 1 and 2		
	5		
	6W		
1	6S		
	6H		
	7		

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B4 - Native Riparian Tree Regeneration

Table B4. Native Riparian Tree Regeneration rating. Using the polygon percent cover of native tree seedlings, saplings and poles from Worksheet 5, rate the SA based on polygon percent cover and patch density. Enter the rating on the SA Rank Summary Worksheet.

Rating	Description
○ 4	Native poles, sapling, and seedlings trees well represented, obvious regeneration, many patches or polygons with >5% cover, typically multiple size (age) classes.
⊗ 3	Native poles, saplings and/or seedlings common, scattered patches or polygons with 1% -5% cover, size classes few.
○ 2	Native poles, saplings and/or seedlings present but uncommon, restricted to one or two patches or polygons with typically <1% cover, little size class differentiation.
○ 1	Native poles, saplings, and/or seedlings absent (0% cover).

B5 - Invasive Exotic Plant Species Cover

Worksheet 9. Based on Worksheets 5 and 6, calculate or estimate the percentage cover of invasive exotic species for the SA and enter below. Rate using Table B5 and enter the rating on the SA Rank Summary Worksheet.

Rating Method [ ]   Invasive cover (%) [<1]   calculate

Table B5. Ratings for Invasive Exotic Plant Species Cover	
Rating	**Invasive Species Cover %**
○ 4	0%
○ 3 +	>0% - <1%
○ 2	≥1% - <10%
○ 1	≥10

Additional CTs and Biotic Metric Comments:

Currant is full of green leaves same as box elder

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Abiotic Metrics

A1 - Floodplain Hydrologic Connectivity

Method 1

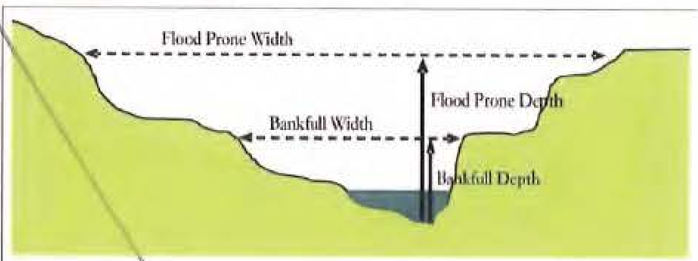
Worksheet 10a. Floodplain Hydrologic Connectivity Measurements. The following six steps are conducted at each of three cross-sections at the approximate mid-points along straight riffles and away from deep pools or meander bends. Use a measuring tape and temporary stakes for horizontal measurements, and a stadia rod or similar measuring stick for vertical measurements. If unavailable, use visual estimates. Where straight channel segments do not occur, or if there is excessive ponding or bankfull indicators are obscured, use the narrative rating approach (Method 2). Enter the rating method in the box below, either meander pool, riffle pool or narrative (Method 2) and choose the corresponding Table (A1a, A1b, or A1c) to rate Floodplain Hydrologic Connectivity. Enter the rating on the SA Rank Summary Worksheet. Photographs of each cross-section are required and recorded in Table A1d.

Steps	Description	Cross-section: 1	2	3
1: Bankfull width	This is a critical step requiring familiarity with field indicators of the bankfull contour. Measure the distance between the right and left bankfull contours with a tape.			
2: Maximum bankfull depth	Keeping the tape level between the right and left bankfull contours, measure the height of the line above the thalweg (the deepest part of the channel). A pocket line level can help here.			
3: Flood-prone depth	Double the estimate of maximum bankfull depth from Step 2.			
4: Flood-prone width	Using a tape, measure the length of a level line at a height equal to the flood prone depth from Step 3 to where it intercepts the right and left banks.			
5: Calculate Entrenchment Ratio	Divide the flood-prone width (Step 4) by the bankfull width (Step 1).			
6: Calculate average ratio	Calculate the average for Step 5 for all three replicate cross-sections. Enter the average here and rate using Table A1a. Enter the rating in the A1 box on the SA Rank Summary Worksheet.			

Rating Method [ ]

Table A1a. Rating for Floodplain Hydrologic Connectivity in meandering single-channel riffle-pool systems

Rating	Description
◯ 4	Average entrenchment ratio is ≥ 2.2;
◯ 3	Average entrenchment ratio is ≥1.9 - <2.2
◯ 2	Average entrenchment ratio is ≥1.5 - <1.9
◯ 1	Average entrenchment ratio is < 1.5



Worksheet 10b. Floodplain Hydrologic Connectivity Indicators. Use this Worksheet in conjunction with Table A1c. Check the boxes for all that apply to each segment.

U	M	L	Indicator
☐	☐	☐	Bankful is slightly below bank height
☐	☐	☐	Bankful is well below bank height and channel is incised
☐	☐	☐	Channel widening due to bank failure
☐	☐	☐	Constructed levees preclude floodplain inundation
☐	☐	☐	Stream is straightened/channelized
☐	☐	☐	Inset floodplain formation
☐	☐	☐	Decreased peak flows due to hydrologic modification
☐	☐	☐	Bankfull indicators at point of incipient flooding of the floodplain
☐	☐	☐	Indicators of overbank flow on floodplain
☐	☐	☐	Floodplain inundation due to beaver activity

Table A1b. Rating for Floodplain Hydrologic Connectivity in single-channel step-pool systems

Rating	Description
◯ 4	Average entrenchment ratio is ≥ 1.9
◯ 3	Average entrenchment ratio is ≥1.4 - <1.9
◯ 2	Average entrenchment ratio is ≥1.2 - <1.4
◯ 1	Average entrenchment ratio is < 1.2

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Method 2

Table A1c. Narratve Floodplain Hydrologic Connectivity Rating. Select the narrative description that best describes the floodplain hydrologic connectivity. At each cross-section, use Worksheet 10b to record channel incision, bank modification, inset floodplain or other hydrologic evidence that would preclude natural floodplain inundation. Conversely, assess indicators and evidence for overbank flow and floodplain inundation. Record whether beaver activity is obscuring bankful indicators due to inundation of the floodplain. Select a rating from the table below. Use data from Worksheets 10b to help select rating. Enter Rating on SA Summary Worksheet. Photographs are required at each cross-section and recorded in Table A1d.	
Rating	**Description**
◯ 4	Fully connected to the natural floodplain. Indicators of bankfull discharge are at the bank/floodplain transition, with over-bankfull flows likely to inundate a broad area of floodplain. Floodplain supports riparian vegetation and shows signs of overbank sediment deposition. Or beaver ponds inundate the entire, normally active floodplain and preclude the identification of bankfull indicators and the active floodplain width.
◯ 3	Flow access to the floodplain moderately limited by incision, channelization. Less frequent inundation than fully connected streams described above (as noted by bankfull indicators below floodplain transition). Floodplain supports a riparian overstory, but some understory plants may be upland. An inset floodplain supporting riparian vegetation may also be present.
◯ 2	Incised, channelized or modified with an inset floodplain formed, which is regularly inundated and supports riparian vegetation and sediment regimes. Or the stream has minimal access to the natural floodplain due to incision, channelization, or flow modification, and the natural floodplain does not support riparian vegetation except for relatively long-lived phreatophytes (e.g., cottonwood, salt cedar, etc.).
◯ 1	Fully disconnected from floodplain, either through incision, bank modification/channelization, or hydrologic modification (i.e., abandonment of floodplain due to decreased peak flows). Indicators may include upland vegetation and lack of overbank sediment deposits on the floodplain, etc.

Table A1d. Photo Point Log for Cross-Section Photographs. For each cross-section record the digital names/numbers of photographs taken looking Upstream and Downstream from the thalweg and looking Bank Right* and Bank Left* across the stream from each side of the cross-section. Leave the cross-section tape and flags indicating bankful in the ground when taking the Bank Right and Bank Left photos. A photo board with SA name and cross-section information is helpful. (*The bank of a stream or river on the right (left) of the observer when facing in the direction of flow or downstream.) See Appendix E for additional details.

Cross Section	Easting (Latitude)	Northing (Longitude)	Upstream	Downstream	Bank Right	Bank Left
1						
2						
3						

Floodplain Hydrologic Connectivity Comments:

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A2 - Physical Patch Complexity

Worksheet 11. Physical Patch Complexity checklist. Check off existing physical patch types for the upper, middle and lower segments of the SA; count the number of unique patch types and rate using Table A2 in combination with the narrative description. Enter the rating on the SA Rank Summary Worksheet.

Upper Segment	Middle Segment	Lower Segment	Field Indicators (check all existing conditions)
☐	☒	☐	Active side channels
☐	☐	☐	Abandoned channels
☐	☐	☐	Backwater/eddy
☐	☐	☐	Riffles or rapids
☐	☒	☐	Shoals, sparely-vegetated bars
☐	☒	☐	Channel boulders
☐	☐	☐	Oxbow lakes/ponds on floodplains
☐	☐	☐	Vegetated island and side bars
☐	☒	☐	Terraces
☐	☐	☐	Channel pools
☐	☒	☐	Beaver ponds
☐	☐	☐	Swales, depressional features on floodplains
☐	☐	☐	Debris jams in channel
☐	☐	☐	Woody wrack piles on the floodplain
☐	☐	☐	Floodplain micro-topography (mounds, pits)
☐	☐	☐	Downed logs
☐	☒	☐	Natural levees
☐	☐	☐	Standing snags
☐	☐	☐	Variegated, convoluted, or crenulated foreshore
☐	☐	☐	Undercut banks in channels
			No. of unique Patch Types

Table A2. Rating for Physical Patch Complexity

Rating	Description
○ 4	**High** degree of physical patch complexity across the floodplain. There are many floodplain micro-habitats present (mounds and pits, woody wrack piles, etc.), many fluvial geomorphic surfaces (swales, side channels, terraces, side bars, etc.), and there is high in-channel complexity (pools and riffles, large woody debris, undercut banks, etc.). As a guide, 12 or more unique indicators are present and well distributed throughout the SA (most indicators are found on multiple segments).
☒ 3	**Moderate** physical patch complexity scattered across the floodplain. There are several floodplain micro-habitats present, several fluvial geomorphic surfaces, and there is moderate in-channel complexity. As a guide, 9 - 11 indicators are scattered throughout the SA (some on multiple segments).
○ 2	**Limited** physical patch complexity scattered across the floodplain. There are some floodplain micro-habitats present, some fluvial geomorphic surfaces, and there is limited in-channel complexity. As a guide, on average there are 6 - 8 unique indicators present in the SA (only a few on multiple segments).
○ 1	**Little** or no physical patch complexity on the floodplain. There are few or no floodplain micro-habitats present, few different fluvial geomorphic surfaces, and there is little or no in-channel complexity. As a guide, ≤ 5 unique indicators are present in the SA.

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A3- Channel Equilibrium

Worksheet 12. Channel Equilibrium Checklist. Check all field indicators that apply to the upper, middle and lower segment of the SA observed at the channel edge of the traverse. Rate using the Table A3 descriptions and based on a preponderance of evidence from this checklist. Enter the rating on the SA Rank Summary Worksheet.

Condition	Upper Segment	Middle Segment	Lower Segment	Field Indicators(check all existing conditions)
Indicators of Channel Equilibrium	☐	☒	☐	The channel has a well-defined bankfull contour that clearly demarcates the point of incipient flooding where moderate frequent flow events spread flow across the floodplain.
	☐	☒	☐	Perennial riparian vegetation is abundant and well established along the bankfull contour, but not below it.
	☐	☒	☐	There is leaf litter, thatch, or wrack in most pools.
	☐	☒	☐	The channel contains embedded woody debris of the size and amount consistent with what is naturally available in the riparian area.
	☐	☐	☐	There is little or no active undercutting or burial of riparian vegetation.
	☐	☒	☐	There are no bars that are densely vegetated with perennial vegetation (neither mid-channel bars or point bars).
	☐	☒	☐	Channel and point-bars consist of well-sorted bed material.
	☐	☒	☐	The channel bed is not planar and without an abundance of fine materials filling the interstitial spaces between larger stream substrate.
	☐	☒	☐	There are channel pools at meander bends and some deep pools within the reach.
Indicators of Active Degradation	☐	☐	☐	The channel is characterized by deeply undercut banks with exposed living roots of trees or shrubs.
	☐	☐	☐	There are abundant bank slides or slumps, or the lower banks are uniformly scoured and not vegetated.
	☐	☐	☐	Bank vegetation is declining in stature or vigor, or many riparian trees and shrubs along the banks are leaning or falling into the channel.
	☐	☐	☐	Channel bed is scoured to large cobbles or boulders and entrained bank material is filling the cobble interstices and pools.
	☐	☐	☐	There are active headcuts within the channel.
	☐	☐	☐	An obvious historical floodplain has recently been abandoned, as indicated by the age structure of its riparian vegetation.
Indicators of Active Aggradation	☐	☐	☐	There is abundant fresh splays of coarse sediment covering the floodplain above the natural point bar elevation.
	☐	☐	☐	There are partially buried living tree trunks or shrubs along the banks.
	☐	☐	☐	The channel bed is planar overall. The stream lacks well-defined channel pools at meander bends, or pools are filled with sediment.
	☐	☐	☐	There are partially buried or sediment-choked culverts.
	☐	☐	☐	There are avulsion channels on the floodplain or adjacent valley floor.

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Table A3. Rating for Channel Equilibrium

Rating	Description
☒ 4	Most of the channel throughout the SA is in equilibrium condition with little evidence of excessive aggradation or degradation based on the field indicators listed in Worksheet 12.
○ 3	There is some evidence of excessive aggradation or degradation; the channel throughout the SA seems to approach an equilibrium condition. Circle primary process: aggradation or degradation.
○ 2	There is evidence of severe aggradation or degradation throughout most of the channel through the SA. Circle primary process: aggradation or degradation.
○ 1	The channel is artificially hardened, channelized, or is concrete throughout most of the SA.

A4- Stream Bank Stability and Cover

Worksheet 13. Bank Soil Stability and Streambank Erosion Potential Checklist. Check the indicator that best describes the condition looking a minimum of 25 m upstream and downstream at the channel edge of the upper, middle and lower segment of the SA. Average the six scores for both Bank Soil Stability and Streambank Erosion Potential. Rate using the Table A4 and enter the rating on the SA Summary Worksheet.

Condition	Upper Segment	Middle Segment	Lower Segment	Field Indicators
Indicators of Bank Soil Stability	☐4	☒4	☐4	Infrequent raw banks, less than 10% of steam bank under stress from trampling, slumping, vegetation removal or active erosion, etc.
	☐3	☐3	☐3	Raw banks and loose soil intermittently and 10%-25% of stream bank under stress from trampling, trail crossing, hoof punching, vegetation removal, erosion etc.
	☐2	☐2	☐2	Significant raw banks and loose soil, 25%-50% of stream bank under stress, trampled, slumping or eroding etc.
	☐1	☐1	☐1	Raw banks almost continuous with greater than 50% of stream bank under stress, loose soil, slumping, trampled or eroding; or channel appear to lack banks due to trampling; or channel that is artificially hardened or concrete along most of its length.
Indicators of Stream Bank Erosion Potential	☐4	☐4	☐4	≥ 80% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by boulders, large cobbles and/or large woody debris that prevent bank erosion.
	☐3	☐3	☐3	≥50% - <80% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those areas not covered by vegetation are protected to allow only minor erosion.
	☐2	☐2	☐2	≥25% - <50% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those area not covered by vegetation or stabilized by roots, are covered by materials or vegetation that give limited protection.
	☐1	☐1	☐1	Less than 25% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those areas not covered by vegetation provide little or no control over erosion and excess shear stress, and the banks are susceptible to erosion by high water flows.

Average Indicator Score	

Table A4. Stream Bank Stability and Cover Rating

Rating	Description
☒ 4	>3.5 - 4.0
○ 3	>2.5 - ≤3.5
○ 2	>1.5 - ≤2.5
○ 1	1.0 - ≤1.5

SA CODE : SF2MI [4]

Date : 5/15/24

SA Name : Two Mile Pond Reservoir Transect [4]

Surveyor Initials : DCS

A5 - Soil Surface Condition

Worksheet 14. Soil Surface Condition. Check all that apply in the upper , middle and lower SA segments during the field reconnaissance. The absence of these indicators would signify that disturbances are naturally occurring (e.g., flood deposition or low-density wildlife trails). Estimate the percent soil disturbance by segment area and referring to the SA abiotic map. Rate using Table A5 and enter on the SA Rank Summary Worksheet.

Upper Segment	Middle Segment	Lower Segment	Field Indicators (Check all existing conditions)
☐	☐	☐	Active erosion features due to anthropogenic disturbance (eg. rills, gullies, plant pedestals).
☐	☒	☐	Multiple livestock and other (fishing,hiking) trails,
☐	☐	☐	Vehicle tracks including off-road and construction, etc.
☐	☐	☐	Impervious compacted surfaces or pavement
☐	☐	☐	Grading or plowing
☐	☐	☐	Fill
☐	☐	☐	Gravel pits
☐	☐	☐	Anthropogenic levees and berms
☐	☐	☐	Irrigation-driven salinity and mineral crusts
☐	☐	☐	Fire pits
☐	☐	☐	Other:
			Estimate % soil disturbance by segment area

Average % Soil Disturbance: > 1

Table A5. Soil Surface Condition Rating	
Rating	**Description**
◯ 4	Bare soil areas due to anthropogenic disturbance absent or very limited. No human-caused impervious surfaces or gravel pits are found within the SA. Total disturbance, including erosion, impervious surfaces, fill, or other anthropogenic degradation to the soil surface is less than 1% of the SA.
◯ 3	Some amount of bare soil from human causes is present but the extent is limited. Area of impervious surfaces are minimal in extent. Total disturbance, including erosion, impervious surfaces, fill, gravel pits, vehicle tracks or other anthropogenic degradation to the soil surface is between 1% and 5% of the sampling area.
◯ 2	Bare soils from human causes are common. These may include dense livestock trails, vehicle tracks, trails, construction staging areas, mechanical rutting, or irrigation-driven salinity. Soil disturbance, while apparent, is limited to specific areas and not found across the majority of the SA. Total disturbance, including erosion, impervious surfaces, fill, gravel mining, or other anthropogenic degradation to the soil surface is greater than 5% or less than 10% of the SA.
◯ 1	Bare soil areas degrade portions of the site because of altered hydrology or other long-lasting impacts. Deep ruts from off-road vehicles or machinery are present. Livestock disturbance or trails are widespread and several inches deep. Water is channeled into rills or ponded. Additional human-caused impervious surfaces or soil compaction are present. Total disturbance, including erosion, impervious surfaces, fill,gravel mining or other anthropogenic degradation to the soil surface is equal to or greater than 10% of the SA.

SA CODE : SF2MI [4]

Date : 5/15/24

SA Name : Two Mile Pond Reservoir Transect [4]

Surveyor Initials : DCS

Worksheet 15. Stressor Checklist. Check off stressors by intensity category that may be affecting wetland ecological condition of the SA and WOI. Assign categories using direct evidence where available or your best professional judgement otherwise. If the presence of the stressor is uncertain, mark as "Unknown". Rank Major Stressors in Dominant Stressor column(Pick up to 3)

Rank	Affect: Major	Affect: Minor	Affect: Absent	Affect: Unknown	Stressor Group/Stressor	Comments
					Adverse water management	
	☐	☐	☐	☐	Extended low flow dam releases	
	☐	☐	☐	☐	Timing of flow releases not concordant	
	☐	☐	☐	☐	Extended high flow dam releases	
	☐	☐	☐	☐	Agriculture/Urban flow diversion upstream	
					Adverse sediment management	
	☐	☐	☐	☐	Adverse sediment retention by dams	
	☐	☐	☐	☐	Sediment loss by dredging	
	☐	☐	☐	☐	Adverse sediment input (roads/development)	
					Artificial water additions	
	☐	☐	☐	☐	Sewer treatment effluent	
	☐	☐	☐	☐	Point source urban runoff	
	☐	☐	☐	☐	Factory, feedlot outfall	
	☐	☐	☐	☐	Agricultural irrigation ditch returns	
	☐	☐	☐	☐	Mining waste	
					Ground water pumping	
	☐	☐	☐	☐	Urban depletions	
	☐	☐	☐	☐	Fracking	
	☐	☐	☐	☐	Agriculture irrigation wells	
					Watershed alteration	
	☐	☐	☐	☐	Extensive recent fires in watershed	
	☐	☐	☐	☐	Extensive recent timber harvest	
	☐	☐	☐	☐	Extensive open pit mining in watershed	
	☐	☐	☐	☐	Livestock/wildlife overgrazing	
					Local biodiversity impacts	
	☐	☐	☐	☐	Evidence of excessive grazing (local)	
	☐	☐	☐	☐	Excessive noise affecting wildlife	
	0	0		0	Counts by Intensity	

Additional Comments

NMRAM Montane Riverine Wetlands Version 2.5

SA Cover Worksheet					
SA Code SF2MI [4]	SA Name : Two Mile Pond Reservoir		Project : Riparian Assesement		
Code Tsct [4]	AU Name : Transect [4]		WOI : Two Mile Pond Reservoir		
County Santa Fe	HUC 12 Headwaters Santa Fe River	Elevation (ft) 7299	(m) 2224.7	Ecoregion 6.0 NWFM	

SA General Location and Boundary (Rationale, comments)

A riparian system that leads into a pond located on the east side of Santa Fe bordering the Santa Fe National Forest. This reservoir was decommissioned due to safety concerns regarding the reservoir and a water diversion to the area was recently shut down due to lack of water rights.

Driving Directions

Driving to Santa Fe from Albuquerque you head north on Old Pecos Trail. Then head east on Camino Del Monte Sol and right on Canyon Road until you reach the reservoir located to the North.

Ownership The Nature Conservative and The Santa Fe National Forest	Data Sharing Restrictions	Results to client only.	Fish Observed in Wetland?	

Surveyor Role	Surveyor Name	Surveyor Initials
Landscape	Dustin Schwartz	DS
Biotic	Annie McCoy	AM
Abiotic	Dustin Schwartz	DS
Stressors	Dustin Schwartz	DS

Easting (m)	Northing (m)	Zone	Datum	Latitude (DD ft)	Longitude (DD ft)
-105° 53' 24" W	35° 41' 23" N	13	NAD- 83 UTM	35.689722	-105.89
Survey Date	6/11/24	**Start Time**	9:00	**End Time**	15:00

SA Description

SA Landscape Context (summarize the wetland and surrounding landscape; include condition and impacts)

Moist from Rain a lot greener near the pond
High desert has a little more blue stem then last time
Some construction

SA Biotic Condition (vegetation patterns, composition and structure, exotics and invasives, disturbance evidence, fire and herbivory)

Red wing black bird wheat grass chimisa rye, lots of bug life ants and lizards ground coverage is about 70%
"Brome" Bee fly

SA Abiotic Condition (hydrological alterations {e.g., dams, walls etc.]; flooding characteristics and evidence of overbank flooding; soil disturbance and other site impacts; explain the hydrologic breaks or other factors that define the SA limits)

Access to water is getting denser

Assessment Summary (Overall site condition summary and comments after the field data is collected.)

A good pond like environment full of cat tails

Provisional Field Score 3.33	Rank A	Surveyor(s) DS/AM	Final Score 3.33	Rank A	Initials DS	Date 6/11/24

SA CODE : SF2MI [4]

SA Name : Two Mile Pond Reservoir Transect [4]

Date : 6/11/24

Surveyor Initials : DS/AM

NMRAM - SA Rank Summary Worksheet: Montane Riverine Wetlands 2.5

Metric Description	Rating	Wt	Final Score
Landscape Context		Σ 1.0	3.25
L1. Buffer Integrity Index	3	0.25	0.75
L2. Riparian Corridor Connectivity	4	0.25	1.0
L3. Relative Wetland Size	4	0.25	1.0
L4. Surrounding Land Use	2	0.25	0.5
Biotic		Σ	
B1. Relative Native Plant Community Composition	4	0.2	
B2. Vegetation Horizontal Patch Structure	3	0.2	
B3. Vegetation Vertical Structure	3	0.2	
B4. Native Riparian Tree Regeneration	2	0.2	
B5. Invasive Exotic Plant Species Cover	3	0.2	
Abiotic		Σ	
A1. Floodplain Hydrologic Connectivity		0.3	
A2. Physical Patch Diversity	3	0.2	
A3. Channel Equilibrium	4	0.2	
A4. Stream Bank Stability and Cover	4	0.2	
A5. Soil Surface Condition	4	0.1	

SA Condition Scoring Summary			
Major Attribute	Score	Wt.	Wt. Score
Landscape Context	3.25	0.3	0.975
Biotic	3	0.35	
Abiotic	3.75	0.35	
SA WETLAND CONDITION SCORE Σ			3.33
SA WETLAND RANK =			A

SA Wetland Rank		
Rank	Score	Description
A	≥3.25 - 4.0	Excellent Condition
B	≥2.5 - <3.25	Good Condition
C	≥1.75 - <2.5	Fair Condition
D	1.0 - <1.75	Poor Condition

Stressor Summary	Major	Minor	Top Three	
	0	0	1	Not as much water
			2	
			3	

Stressor Comments (Evaluation of risk)

SA CODE : SF2MI [4] **Date :** 6/11/24

SA Name : Two Mile Pond Reservoir Transect [4] **Surveyor Initials :** DS/AM

Landscape Context

- Buffer Integrity Index

Worksheet 1a. Buffer and RCC Checklist. Check off land cover elements within the buffer area or RCC corridors that are either allowed, or are excluded and considered non-buffer elements that disrupt ecosystem connectivity. Indicate the imagery type and date (season and year of imagery).

Imagery	Google Earth KMZ. file	Image Date	6/23

Allowed buffer/RCC land cover elements			Excluded non-buffer/RCC land cover elements		
Buffer	RCC		Buffer	RCC	
[X]	[X]	Natural or semi-natural vegetation patches	[X]	[X]	Commercial/residential developments, parking lots, dams, bridges, revetments, and other structures
[X]	[X]	Small irrigation ditches without levees	[ ]	[ ]	Lawns, parks, golf courses, sports fields
[ ]	[ ]	Old fields, unmaintained	[ ]	[ ]	Railroads
[ ]	[ ]	Open range land	[ ]	[ ]	Maintained levees, sediment piles, construction materials, staging areas
[X]	[X]	Foot trails, horse trails, unpaved bike trails (low intensity)	[ ]	[ ]	Intensive livestock areas, horse paddocks, feedlots
[X]	[X]	Non-channel open water	[ ]	[ ]	Intensive agriculture: maintained pastures, hay fields, row crops, orchards, and vineyards
[X]	[X]	Non-functioning abandoned vegetated levees, or naturally occurring levees	[X]	[X]	Paved roads or developed second-order unpaved but graded roads
[ ]	[ ]	unpaved two tracks roads	[X]	[X]	Open water bounded by a levee or other manmade structure
[ ]	[ ]	Other	[ ]	[ ]	Other

Worksheet 1b. Buffer Percent Sub-metric. Measure or estimate the percentage of the SA perimeter composed of allowed buffer elements and enter into the Buffer Percent Box below. Rate the sub-metric using Table L1a and enter the rating on the Buffer Integrity Summary Worksheet 1d.

Buffer Percent (%)=	85%

Table L1a. Buffer Percent

Rating	Buffer Percent
○ 4	100%
⊗ 3	≥80% - <100%
○ 2	≥50% - <80%
○ 1	<50%

Worksheet 1c. Buffer Width Sub-metric. Measure the length of each buffer line in meters in the GIS or on the map. Average the line lengths and rate using Table L1b. Enter the rating on the Buffer Integrity Summary Worksheet 1d.

Line	Buffer Width (m)	Buffer Width (ft)	Line	Buffer Width (m)	Buffer Width (ft)
A	164.26	538.91	E	161.93	531.26
B	125.25	410.92	F	231.48	759.44
C	115.39	378.57	G	121.25	397.80
D	111.07	364.40	H	155.87	511.38
Average	148.31 (m)			486.58	(ft)

Table L1b. Buffer Width

Rating	Average buffer width
○ 4	≥190m
⊗ 3	≥130 - <190m
○ 2	≥65 - <130m
○ 1	<65m

Worksheet 1d. Buffer Integrity Summary. Enter the sub-metric Ratings from Tables L1a and L1b above to calculate the Buffer Integrity Index Score using the formula in the box below. Using the Buffer Integrity Index Score, enter rating for Buffer Integrity in Table L1c and on the SA Summary Worksheet.

Buffer % Rating	+	Buffer Width Rating	/2 =	Buffer Integrity Index Score
3	+	3	/2 =	3

Table L1c. Summary Rating for Buffer Integrity

Rating	Score
○ 4	>3.5
⊗ 3	>2.5 - ≤3.5
○ 2	>1.5 - ≤2.5
○ 1	≤1.5

SA CODE : SF2MI [4] **Date :** 6/11/24

SA Name : Two Mile Pond Reservoir Transect [4] **Surveyor Initials :** DS/AM

L2 - Riparian Corridor Connectivity (RCC)

Worksheet 2. RCC excluded non-buffer elements calculation. Refer to worksheet 1a for excluded non-buffer RCC land cover elements. Following the steps in the Field Guide, enter the summed values in meters for excluded element lengths for each bank within each segment upstream and downstream of the SA. Sum the values for each segment and calculate % Segment Disruption for the upstream side and the downstream side. Add the total disruption for upstream and downstream segments and then calculate the % Total Disruptions for the riparian corridor. Rate Riparian Corridor Connectivity using Table L2 and the data from this worksheet. Enter rating on the SA Summary Worksheet.

Segments	Upstream Segment		Downstream Segment	
Banks	Left Bank	Right Bank	Left Bank	Right Bank
A) Total Bank Disruption (m)	0	0	0	0
B) Total Disruption by Segment (m)	0		0	
C) % Segment Disruption = (B/1000)*100	0		0	
D) Total Disruption both segments	0			
E) % Total Disruptions = (D/2000)*100	Zero disruption noticeable along the banks.			

Table L2. RCC Rating

Rating	Description
(X) 4	**0%** total disruption on both segments combined.
◯ 3	**<15%** total disruption on both segments combined.
◯ 2	**≥15% - <40%** total disruption on both segments combined.
◯ 1	**≥40%** total disruption on both segments combined.

L3 - Relative Wetland Size

Worksheet 3a. Calculate the Relative Size Ratio (RSR) between the current WOI size and the historic WOI size. b. Calculate the Relative Wetland Size Score (RWSI (%)) as (1-RSR)*100. Rate Relative Wetland Size Index using Table L3 and enter rating on the SA Summary Worksheet.

RSR					RWSI						
Current Size	/	Historic Size	=	RSR	1	-	RSR	X	100	=	RWSI (%)
9	/	10	=	0.9	1	-	0.1	X	100	=	10

Table L3. Relative Wetland Size Rating

Rating	RWSI Score	Description
(X) 4	≤10%	Wetland is at or only minimally reduced from its full natural extent
◯ 3	>10% - ≤40%	Wetland remains equal to or more than 60% of its natual size
◯ 2	>40% - ≤70%	Wetland has been reduced by more than 40% its natural size
◯ 1	>70%	Wetland has been reduced by more than 70% its natural size

SA CODE: SF2MI [4] **Date:** 6/11/24

SA Name: Two Mile Pond Reservoir Transect [4] **Surveyor Initials:** DS/AM

L4 - Surrounding Land Use

Worksheet 4. Surrounding Land Use. Enter the percent area occupied by a given Land Use Element in the Land Use Zone (LUZ) surrounding the SA. Calculate the Land Use Index (LUI) Score by element as the product of the element coefficient times the percent of the LUZ Area occupied. (The %LUZ Area must total 100%.) Sum the LUI scores for each element to create the final LUI Score. Rate using Table L4 and enter the rating in the SA Rank Summary Worksheet.

Land Use Element	Coef	% LUZ Area	LUI Score
Paved roads, parking lots, domestic or commercially developed buildings, mining (gravel pit, quarry, open pit, strip mining), railroads	0	0	0
Unpaved roads (e.g., driveway, tractor trail, unpaved parking lots), paddock, dirt lot	0.1	0	0
Dredging, borrow pits, abandoned mines, water-filled artificial impoundments (ponds and reservoirs)	0.1	0	0
Filling or dumping of sediment or soils	0.1	0	0
Intense recreation (all-terrain vehicle use, camping, popular fishing spot, etc.)	0.3	0	0
Rip-rapped channel (highly modified channel with severely limited vegetation zone that is altered by human activities but not a completely concrete channel [that goes under paved roads]), junkyards, trash dumps, disturbed ground (not including roads)	0.3	0	0
Ski area	0.4	0	0
Dam sites and flood-disturbed shorelines around water storage reservoirs	0.5	0	0
Abandoned artificial impoundments (ponds and reservoirs) and associated disturbed flood zones	0.5	10	5
Artificial/Constructed wetlands, irrigation ditches	0.7	20	14
Developed/Managed trail system (high use trail)	0.8	5	4
Agriculture - active tilled crop production	0.2	0	0
Agriculture - permanent crop (vineyards, orchards, nurseries, berry production)	0.3	0	0
Manicured lawns, sport fields, and golf courses; urban manicured parks	0.3	0	0
Old fields and other disturbed fallow lands dominated by ruderal and/or exotic species (e.g., kochia, Russian thistle, mustards, annual vegetation)	0.5	0	0
Mature old fields and other fallow lands with natural composition, introduced hay field and pastures (e.g., perennial vegetation cover)	0.7	0	0
Restoration areas in process to natural conditions (re-conversion in process)	0.8	65	52
Haying of native grassland (e.g., no tillage, haying and baling only)	0.9	0	0
Heavy logging or tree removal with >50% of large trees (e.g., >30 cm diameter at breast height) removed, woodland/shrub vegetation conversion (chaining, cabling, rotochopping)	0.3	0	0
Commercial tree plantation, Christmas tree farms	0.6	0	0
Selective logging or tree removal with <50% of large trees (e.g., >30 cm diameter at breast height) removed	0.8	0	0
Mature restoration areas returned to natural conditions (re-converted)	0.9	0	0
Natural area, land managed for native vegetation - No agriculture, logging, development	1	0	0
LUI Score= Coefficient * % LUZ Area		100	75

Table L4. Surrounding Land Use Rating	
Rating	**LUI Score**
○ 4	≥95 - 100
○ 3	≥80 - <95
⊗ 2	≥40 - <80
○ 1	<40

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Biotic Metrics

Worksheet 5. Vegetation Community Patch Polygon Data for Biotic Metrics B3, B4, and B5 for Polygons from SA Biotic Map. Enter data for each polygon under a unique number assigned from the SA Biotic Map. Each polygon is evaluated with respect to Vegetation Vertical Structure (B3), Native Tree Regeneration (B4), and Invasive Exotic Plant Species Cover (B5) metrics. Enter the Vertical Structure Type (VST) for B3, tree regeneration % cover within the polygon for B4 and the % cover of invasive exotic species for B5. Use the Tables in Appendix B and the Field Guide for metric instructions. Enter the species codes for the invasive exotic species found in the polygon (from NM Noxious Weed List - Appendix D). Use the comments box for documenting and describing vegetation community patch features.

Polygon No	B3 Vertical Structure Type	B4 Tree Regeneration % Cover	B5 Invasive Exotic Species % Cover	Invasive Exotic Species (List Code(s))	Comments
1	IA1				
2	IA2				
3	IIA1				
4	IIIB1	70%	None	None	Cat tails filling in around all waters edges
5	IIIC1	40%	None Alive	None	Looks basically the same wheat grass, chimisa, and rye
6	IVEI				
7	IVF1				
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

SA CO[illegible] SF2MI [4]   **SA Name :** Two Mile Pond Reservoir T[illegible]ect [4]   **Date :** 6/11/24   **Surveyor Initials :** [illegible]M

B1 - Relative Native Plant Community Composition

Worksheet 6. CT Plant Species and Polygon Assignments. Starting with CT A, enter the number of the first polygon from Worksheet 5. Enter the species codes for the two top dominant species in each stratum that appears in the polygon. See footnotes for special instructions. If a species appears in more than one strata, assign the species to the stratum in which it is more abundant. Each polygon is either assigned to the same CT if it has the same composition or a new CT is created for the polygon.

		Tall Woody Stratum 1				Short Woody Stratum 2				Herbaceous/Sparse Stratum 3				CT Score 4		
CT	Polygon Nos.	Species 1	E N	Species 2	E N	Species 3	E N	Species 4	E N	Species 5	E N	Species 6	E N	Raw4	% SA5	Wt Score6
A	5			Box Elder	N	Saltbush	N	Chinse	N	Meadow	N	bluestem	N	4.0	10	
B	4					Willow	N	Cattail	N	Cattail	N	Currant	N	4.0	90	
C																
D																
E																
F																
G																
H																
I																
J																
K																
L																
M																
N																
O																
													Final Weighted Score7			4.0

1. Trees and shrubs > 6 m (20 feet) and > 25% total stratum cover; 2. Trees and shrubs ≤6m (20 feet) and >25% total stratum cover; 3. Herbaceous (graminoids and forbs)>10% total stratum cover. 4Raw Score is from Table B1a (Appendix B); 5%SA is the percentage of the SA area covered by the CT and expressed as a decimal number; the total area %SA must equal 1; 6Wt. Score is the product of the Raw Score * % SA; 7The Final Weighted Score is the sum of the Wt. Scores. Rate the CT Final Weighted Score on Table B1 and enter the Rating for Relative Native Plant Community Composition on the SA Rank Summary Worksheet.

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Table B1. Relative Native Plant Community Composition Rating		
Rating	CT Final Weighted Score	
◯ 4	≥ 3.75	<10% non-native
◯ 3	≥ 3.25 and <3.75	10% ≤20% non-native
◯ 2	> 2.0 and <3.25	20% ≤50% non-native
◯ 1	≤2.0	>50% non-native

B2 - Vegetation Horizontal Patch Structure

Worksheet 7. Using Tables B2a and B2c (Appendix B), choose the schematic pattern that best matches the mapped vegetation patch pattern for the SA. Rate using Table B2 and enter rating on the SA Rank Summary Worksheet.

Horizontal Patch Structure pattern A,B,C, or D:

Table B2. Rating for Vegetation Horizontal Patch Structure	
Rating	Description
◯ 4	Most closely matches Pattern A. SA has a diverse patch structure (≥4 patch types) and complexity. A dominant patch type would be difficult to determine.
X 3	Pattern B. SA has a moderate degree of patch diversity (3 patch types present) and complexity. A single, dominant patch type may be present, although the other patch types would be well represented and have more than one occurrence in the SA.
◯ 2	Pattern C. SA has a low degree of patch diversity and complexity. Two or three patch types may be present; however, a single, dominant patch type exists with the others occupying a small portion of the SA.
◯ 1	Pattern D. SA has essentially little to no patch diversity or complexity. The SA is dominated by a single patch type. Other patch types, if present, occur infrequently and occupy a small portion of the SA.

B3 - Vegetation Vertical Structure

Worksheet 8. Percentage of SA by vertical structure type (VST). Using the Structure Type from Worksheet 5 and the %SA from Worksheet 6 calculate the total area of the SA occupied by each VST using the formula VST(type) = Sum (%SA for CTs with same VST) x 100. Enter the total %SA for each VST below.

	VST 1 High Structure Forest	VST 2 Low Structure Forest	VST 5 Tall Shrubland	VST 6S Short Shrubland	VST 6W Herbaceous Wetland	VST 6H Herbaceous Vegetation	VST 7 Sparse Vegetation
Total % of SA			50		50		

Table B3. Rating for Vegetation Vertical Structure. Using the data from Worksheet 8 rate the SA based on the criteria in Table B3. Pick the row that best fits the distribution of VSTs in the SA. Each row specifies the required dominant structure type plus co- and sub-dominants. Percentage cover required per co- or sub-dominant is a minimum. The types listed in the columns must be the most common VSTs in the SA for the rating to be applicable (Worksheet 8). VSTs 1 and 2 can be inverted in dominance and the rating is still applicable. Work from the top of the table down. As long as the requirements for one row are met, any other types may or may not co-occur without changing the rating. Enter the rating on the SA Rank Summary Worksheet.

Rating	Dominant VST	Co- or Sub-dominant VST ≥15%	Sub-dominant VST ≥5%
◯ 4	1	5	6W and/or 6H
	1	6W	
	2 or 1 and 2	5	6W and/or 6H
X 3	1		
	2 or 1 and 2	5	
	2 or 1 and 2	6W	
	5	6W	
◯ 2	2 or 1 and 2		
	5		
	6W		
◯ 1	6S		
	6H		
	7		

SA CODE : SF2MI [ ] **Date :** 6/11/24

SA Name : Two Mile Pond Reservoir Transect [ ] **Surveyor Initials :** DS/AM

B4 - Native Riparian Tree Regeneration

B4. Native Riparian Tree Regeneration rating. Using the polygon percent cover of native tree seedlings, saplings and poles from Worksheet 5, rate the SA based on polygon percent cover and patch density. Enter the rating on the SA Rank Summary Worksheet.

Rating	Description
4	Native poles, sapling, and seedlings trees well represented, obvious regeneration, many patches or polygons with >5% cover, typically multiple size (age) classes.
3	Native poles, saplings and/or seedlings common, scattered patches or polygons with 1% -5% cover, size classes few.
~~2~~	Native poles, saplings and/or seedlings present but uncommon, restricted to one or two patches or polygons with typically <1% cover, little size class differentiation.
1	Native poles, saplings, and/or seedlings absent (0% cover).

B5 - Invasive Exotic Plant Species Cover

Worksheet 9. Based on Worksheets 5 and 6, calculate or estimate the percentage cover of invasive exotic species for the SA and enter below. Rate using Table B5 and enter the rating on the SA Rank Summary Worksheet.

Rating Method [ ] Invasive cover (%) <1 calculate

Table B5. Ratings for Invasive Exotic Plant Species Cover	
Rating	**Invasive Species Cover %**
4	0%
3 X	>0% - <1%
2	≥1% - <10%
1	≥10

Additional CTs and Biotic Metric Comments:

Red wing black bird, bug life, and Lizards are very prominent

SA CODE : SF2MI [ ] **Date :** 6/11/24

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Abiotic Metrics

A1 - Floodplain Hydrologic Connectivity

Method 1

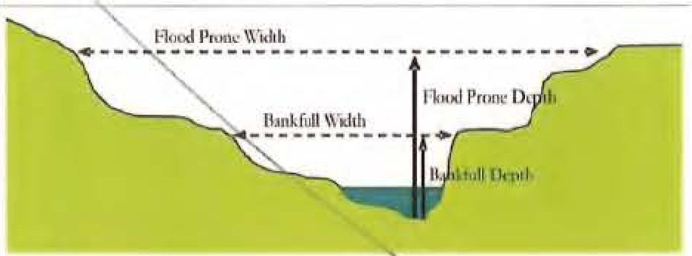
Worksheet 10a. Floodplain Hydrologic Connectivity Measurements. The following six steps are conducted at each of three cross-sections at the approximate mid-points along straight riffles and away from deep pools or meander bends. Use a measuring tape and temporary stakes for horizontal measurements, and a stadia rod or similar measuring stick for vertical measurements. If unavailable, use visual estimates. Where straight channel segments do not occur, or if there is excessive ponding or bankfull indicators are obscured, use the narrative rating approach (Method 2). Enter the rating method in the box below, either meander pool, riffle pool or narrative (Method 2) and choose the corresponding Table (A1a, A1b, or A1c) to rate Floodplain Hydrologic Connectivity. Enter the rating on the SA Rank Summary Worksheet. Photographs of each cross-section are required and recorded in Table A1d.

Steps	Description	Cross-section: 1	2	3
1: Bankfull width	This is a critical step requiring familiarity with field indicators of the bankfull contour. Measure the distance between the right and left bankfull contours with a tape.			
2: Maximum bankfull depth	Keeping the tape level between the right and left bankfull contours, measure the height of the line above the thalweg (the deepest part of the channel). A pocket line level can help here.			
3: Flood-prone depth	Double the estimate of maximum bankfull depth from Step 2.			
4: Flood-prone width	Using a tape, measure the length of a level line at a height equal to the flood prone depth from Step 3 to where it intercepts the right and left banks.			
5: Calculate Entrenchment Ratio	Divide the flood-prone width (Step 4) by the bankfull width (Step 1).			
6: Calculate average ratio	Calculate the average for Step 5 for all three replicate cross-sections. Enter the average here and rate using Table A1a. Enter the rating in the A1 box on the SA Rank Summary Worksheet.			

Rating Method:

Table A1a. Rating for Floodplain Hydrologic Connectivity in meandering single-channel riffle-pool systems

Rating	Description
○ 4	Average entrenchment ratio is ≥ 2.2;
○ 3	Average entrenchment ratio is ≥1.9 - <2.2
○ 2	Average entrenchment ratio is ≥1.5 - <1.9
○ 1	Average entrenchment ratio is < 1.5



Worksheet 10b. Floodplain Hydrologic Connectivity Indicators. Use this Worksheet in conjunction with Table A1c. Check the boxes for all that apply to each segment.

U	M	L	Indicator
☐	☐	☐	Bankful is slightly below bank height
☐	☐	☐	Bankful is well below bank height and channel is incised
☐	☐	☐	Channel widening due to bank failure
☐	☐	☐	Constructed levees preclude floodplain inundation
☐	☐	☐	Stream is straightened/channelized
☐	☐	☐	Inset floodplain formation
☐	☐	☐	Decreased peak flows due to hydrologic modification
☐	☐	☐	Bankfull indicators at point of incipient flooding of the floodplain
☐	☐	☐	Indicators of overbank flow on floodplain
☐	☐	☐	Floodplain inundation due to beaver activity

Table A1b. Rating for Floodplain Hydrologic Connectivity in single-channel step-pool systems

Rating	Description
○ 4	Average entrenchment ratio is ≥ 1.9
○ 3	Average entrenchment ratio is ≥1.4 - <1.9
○ 2	Average entrenchment ratio is ≥1.2 - <1.4
○ 1	Average entrenchment ratio is < 1.2

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Method 2

ble A1c. Narratve Floodplain Hydrologic Connectivity Rating. Select the narrative description that best describes the floodplain hydrologic connectivity. At each cross-section, use Worksheet 10b to record channel incision, bank modification, inset floodplain or other hydrologic evidence that would preclude natural floodplain inundation. Conversely, assess indicators and evidence for overbank flow and floodplain inundation. Record whether beaver activity is obscuring bankful indicators due to inundation of the floodplain. Select a rating from the table below. Use data from Worksheets 10b to help select rating. Enter Rating on SA Summary Worksheet. Photographs are required at each cross-section and recorded in Table A1d.

Rating	Description
◯ 4	Fully connected to the natural floodplain. Indicators of bankfull discharge are at the bank/floodplain transition, with over-bankfull flows likely to inundate a broad area of floodplain. Floodplain supports riparian vegetation and shows signs of overbank sediment deposition. Or beaver ponds inundate the entire, normally active floodplain and preclude the identification of bankful indicators and the active floodplain width.
◯ 3	Flow access to the floodplain moderately limited by incision, channelization. Less frequent inundation than fully connected streams described above (as noted by bankfull indicators below floodplain transition). Floodplain supports a riparian overstory, but some understory plants may be upland. An inset floodplain supporting riparian vegetation may also be present.
◯ 2	Incised, channelized or modified with an inset floodplain formed, which is regularly inundated and supports riparian vegetation and sediment regimes. Or the stream has minimal access to the natural floodplain due to incision, channelization, or flow modification, and the natural floodplain does not support riparian vegetation except for relatively long-lived phreatophytes (e.g., cottonwood, salt cedar, etc.).
◯ 1	Fully disconnected from floodplain, either through incision, bank modification/channelization, or hydrologic modification (i.e., abandonment of floodplain due to decreased peak flows). Indicators may include upland vegetation and lack of overbank sediment deposits on the floodplain, etc.

T A1d. Photo Point Log for Cross-Section Photographs. For each cross-section record the digital names/numbers of photographs taken looking Upstream and Downstream from the thalweg and looking Bank Right* and Bank Left* across the stream from each side of the cross-section. Leave the cross-section tape and flags indicating bankful in the ground when taking the Bank Right and Bank Left photos. A photo board with SA name and cross-section information is helpful. (*The bank of a stream or river on the right (left) of the observer when facing in the direction of flow or downstream.) See Appendix E for additional details.

Cross Section	Easting (Latitude)	Northing (Longitude)	Upstream	Downstream	Bank Right	Bank Left
1						
2						
3						

Floodplain Hydrologic Connectivity Comments:

SA CODE : SF2MI [ ]　　**Date :** 6/11/24

SA Name : Two Mile Pond Reservoir Transect [ ]　　**Surveyor Initials :** DS/AM

A2 - Physical Patch Complexity

Worksheet 11. Physical Patch Complexity checklist. Check off existing physical patch types for the upper, middle and lower segments of the SA; count the number of unique patch types and rate using Table A2 in combination with the narrative description. Enter the rating on the SA Rank Summary Worksheet.

Upper Segment	Middle Segment	Lower Segment	Field Indicators (check all existing conditions)
☐	☒	☐	Active side channels
☐	☐	☐	Abandoned channels
☐	☐	☐	Backwater/eddy
☐	☐	☐	Riffles or rapids
☐	☒	☐	Shoals, sparely-vegetated bars
☐	☒	☐	Channel boulders
☐	☐	☐	Oxbow lakes/ponds on floodplains
☐	☐	☐	Vegetated island and side bars
☐	☒	☐	Terraces
☐	☐	☐	Channel pools
☐	☒	☐	Beaver ponds
☐	☐	☐	Swales, depressional features on floodplains
☐	☐	☐	Debris jams in channel
☐	☐	☐	Woody wrack piles on the floodplain
☐	☐	☐	Floodplain micro-topography (mounds, pits)
☐	☐	☐	Downed logs
☐	☒	☐	Natural levees
☐	☐	☐	Standing snags
☐	☐	☐	Variegated, convoluted, or crenulated foreshore
☐	☐	☐	Undercut banks in channels
			No. of unique Patch Types

Table A2. Rating for Physical Patch Complexity	
Rating	**Description**
◯ 4	**High** degree of physical patch complexity across the floodplain. There are many floodplain micro-habitats present (mounds and pits, woody wrack piles, etc.), many fluvial geomorphic surfaces (swales, side channels, terraces, side bars, etc.), and there is high in-channel complexity (pools and riffles, large woody debris, undercut banks, etc.). As a guide, 12 or more unique indicators are present and well distributed throughout the SA (most indicators are found on multiple segments).
☒ 3	**Moderate** physical patch complexity scattered across the floodplain. There are several floodplain micro-habitats present, several fluvial geomorphic surfaces, and there is moderate in-channel complexity. As a guide, 9 - 11 indicators are scattered throughout the SA (some on multiple segments).
◯ 2	**Limited** physical patch complexity scattered across the floodplain. There are some floodplain micro-habitats present, some fluvial geomorphic surfaces, and there is limited in-channel complexity. As a guide, on average there are 6 - 8 unique indicators present in the SA (only a few on multiple segments).
◯ 1	**Little** or no physical patch complexity on the floodplain. There are few or no floodplain micro-habitats present, few different fluvial geomorphic surfaces, and there is little or no in-channel complexity. As a guide, ≤ 5 unique indicators are present in the SA.

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A3- Channel Equilibrium

Worksheet 12. Channel Equilibrium Checklist. Check all field indicators that apply to the upper, middle and lower segment of the SA observed at the channel edge of the traverse. Rate using the Table A3 descriptions and based on a preponderance of evidence from this checklist. Enter the rating on the SA Rank Summary Worksheet.

Condition	Upper Segment	Middle Segment	Lower Segment	Field Indicators(check all existing conditions)
Indicators of Channel Equilibrium	☐	☑	☐	The channel has a well-defined bankfull contour that clearly demarcates the point of incipient flooding where moderate frequent flow events spread flow across the floodplain.
	☐	☑	☐	Perennial riparian vegetation is abundant and well established along the bankfull contour, but not below it.
	☐	☑	☐	There is leaf litter, thatch, or wrack in most pools.
	☐	☑	☐	The channel contains embedded woody debris of the size and amount consistent with what is naturally available in the riparian area.
	☐	☑	☐	There is little or no active undercutting or burial of riparian vegetation.
	☐	☐	☐	There are no bars that are densely vegetated with perennial vegetation (neither mid-channel bars or point bars).
	☐	☑	☐	Channel and point-bars consist of well-sorted bed material.
	☐	☑	☐	The channel bed is not planar and without an abundance of fine materials filling the interstitial spaces between larger stream substrate.
	☐	☑	☐	There are channel pools at meander bends and some deep pools within the reach.
Indicators of Active Degradation	☐	☐	☐	The channel is characterized by deeply undercut banks with exposed living roots of trees or shrubs.
	☐	☐	☐	There are abundant bank slides or slumps, or the lower banks are uniformly scoured and not vegetated.
	☐	☐	☐	Bank vegetation is declining in stature or vigor, or many riparian trees and shrubs along the banks are leaning or falling into the channel.
	☐	☐	☐	Channel bed is scoured to large cobbles or boulders and entrained bank material is filling the cobble interstices and pools.
	☐	☐	☐	There are active headcuts within the channel.
	☐	☐	☐	An obvious historical floodplain has recently been abandoned, as indicated by the age structure of its riparian vegetation.
Indicators of Active Aggradation	☐	☐	☐	There is abundant fresh splays of coarse sediment covering the floodplain above the natural point bar elevation.
	☐	☐	☐	There are partially buried living tree trunks or shrubs along the banks.
	☐	☐	☐	The channel bed is planar overall. The stream lacks well-defined channel pools at meander bends, or pools are filled with sediment.
	☐	☐	☐	There are partially buried or sediment-choked culverts.
	☐	☐	☐	There are avulsion channels on the floodplain or adjacent valley floor.

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Table A3. Rating for Channel Equilibrium	
Rating	**Description**
☒ 4	Most of the channel throughout the SA is in equilibrium condition with little evidence of excessive aggradation or degradation based on the field indicators listed in Worksheet 12.
◯ 3	There is some evidence of excessive aggradation or degradation; the channel throughout the SA seems to approach an equilibrium condition. Circle primary process: aggradation or degradation.
◯ 2	There is evidence of severe aggradation or degradation throughout most of the channel through the SA. Circle primary process: aggradation or degradation.
◯ 1	The channel is artificially hardened, channelized, or is concrete throughout most of the SA.

A4- Stream Bank Stability and Cover

Worksheet 13. Bank Soil Stability and Streambank Erosion Potential Checklist. Check the indicator that best describes the condition looking a minimum of 25 m upstream and downstream at the channel edge of the upper, middle and lower segment of the SA. Average the six scores for both Bank Soil Stability and Streambank Erosion Potential. Rate using the Table A4 and enter the rating on the SA Summary Worksheet.

Condition	Upper Segment	Middle Segment	Lower Segment	Field Indicators
Indicators of Bank Soil Stability	☐4	☒4	☐4	Infrequent raw banks, less than 10% of steam bank under stress from trampling, slumping, vegetation removal or active erosion, etc.
	☐3	☐3	☐3	Raw banks and loose soil intermittently and 10%-25% of stream bank under stress from trampling, trail crossing, hoof punching, vegetation removal, erosion etc.
	☐2	☐2	☐2	Significant raw banks and loose soil, 25%-50% of stream bank under stress, trampled, slumping or eroding etc.
	☐1	☐1	☐1	Raw banks almost continuous with greater than 50% of stream bank under stress, loose soil, slumping, trampled or eroding; or channel appear to lack banks due to trampling; or channel that is artificially hardened or concrete along most of its length.
Indicators of Stream Bank Erosion Potential	☐4	☐4	☐4	≥ 80% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by boulders, large cobbles and/or large woody debris that prevent bank erosion.
	☐3	☐3	☐3	≥50% - <80% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those areas not covered by vegetation are protected to allow only minor erosion.
	☐2	☐2	☐2	≥25% - <50% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those area not covered by vegetation or stabilized by roots, are covered by materials or vegetation that give limited protection.
	☐1	☐1	☐1	Less than 25% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those areas not covered by vegetation provide little or no control over erosion and excess shear stress, and the banks are susceptible to erosion by high water flows.

Average Indicator Score [ ]

Table A4. Stream Bank Stability and Cover Rating	
Rating	**Description**
☒ 4	>3.5 - 4.0
◯ 3	>2.5 - ≤3.5
◯ 2	>1.5 - ≤2.5
◯ 1	1.0 - ≤1.5

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Surveyor Initials : DS/AM

A5 - Soil Surface Condition

Worksheet 14. Soil Surface Condition. Check all that apply in the upper , middle and lower SA segments during the field reconnaissance. The absence of these indicators would signify that disturbances are naturally occurring (e.g., flood deposition or low-density wildlife trails). Estimate the percent soil disturbance by segment area and referring to the SA abiotic map. Rate using Table A5 and enter on the SA Rank Summary Worksheet.

Upper Segment	Middle Segment	Lower Segment	Field Indicators (Check all existing conditions)
☐	☐	☐	Active erosion features due to anthropogenic disturbance (eg. rills, gullies, plant pedestals).
☐	☒	☐	Multiple livestock and other (fishing,hiking) trails,
☐	☐	☐	Vehicle tracks including off-road and construction, etc.
☐	☐	☐	Impervious compacted surfaces or pavement
☐	☐	☐	Grading or plowing
☐	☐	☐	Fill
☐	☐	☐	Gravel pits
☐	☐	☐	Anthropogenic levees and berms
☐	☐	☐	Irrigation-driven salinity and mineral crusts
☐	☐	☐	Fire pits
☐	☐	☐	Other:
			Estimate % soil disturbance by segment area

Average % Soil Disturbance: 7%

Table A5. Soil Surface Condition Rating	
Rating	**Description**
○ 4	Bare soil areas due to anthropogenic disturbance absent or very limited. No human-caused impervious surfaces or gravel pits are found within the SA. Total disturbance, including erosion, impervious surfaces, fill, or other anthropogenic degradation to the soil surface is less than 1% of the SA.
○ 3	Some amount of bare soil from human causes is present but the extent is limited. Area of impervious surfaces are minimal in extent. Total disturbance, including erosion, impervious surfaces, fill, gravel pits, vehicle tracks or other anthropogenic degradation to the soil surface is between 1% and 5% of the sampling area.
○ 2	Bare soils from human causes are common. These may include dense livestock trails, vehicle tracks, trails, construction staging areas, mechanical rutting, or irrigation-driven salinity. Soil disturbance, while apparent, is limited to specific areas and not found across the majority of the SA. Total disturbance, including erosion, impervious surfaces, fill, gravel mining, or other anthropogenic degradation to the soil surface is greater than 5% or less than 10% of the SA.
○ 1	Bare soil areas degrade portions of the site because of altered hydrology or other long-lasting impacts. Deep ruts from off-road vehicles or machinery are present. Livestock disturbance or trails are widespread and several inches deep. Water is channeled into rills or ponded. Additional human-caused impervious surfaces or soil compaction are present. Total disturbance, including erosion, impervious surfaces, fill,gravel mining or other anthropogenic degradation to the soil surface is equal to or greater than 10% of the SA.

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Surveyor Initials : DS/AM

Worksheet 15. Stressor Checklist. Check off stressors by intensity category that may be affecting wetland ecological condition of the SA and WOI. Assign categories using direct evidence where available or your best professional judgement otherwise. If the presence of the stressor is uncertain, mark as "Unknown". Rank Major Stressors in Dominant Stressor column(Pick up to 3)

Rank	Affect: Major	Affect: Minor	Affect: Absent	Affect: Unknown	Stressor Group/Stressor	Comments
					Adverse water management	
	☐	☐	☐	☐	Extended low flow dam releases	
	☐	☐	☐	☐	Timing of flow releases not concordant	
	☐	☐	☐	☐	Extended high flow dam releases	
	☐	☐	☐	☐	Agriculture/Urban flow diversion upstream	
					Adverse sediment management	
	☐	☐	☐	☐	Adverse sediment retention by dams	
	☐	☐	☐	☐	Sediment loss by dredging	
	☐	☐	☐	☐	Adverse sediment input (roads/development)	
					Artificial water additions	
	☐	☐	☐	☐	Sewer treatment effluent	
	☐	☐	☐	☐	Point source urban runoff	
	☐	☐	☐	☐	Factory, feedlot outfall	
	☐	☐	☐	☐	Agricultural irrigation ditch returns	
	☐	☐	☐	☐	Mining waste	
					Ground water pumping	
	☐	☐	☐	☐	Urban depletions	
	☐	☐	☐	☐	Fracking	
	☐	☐	☐	☐	Agriculture irrigation wells	
					Watershed alteration	
	☐	☐	☐	☐	Extensive recent fires in watershed	
	☐	☐	☐	☐	Extensive recent timber harvest	
	☐	☐	☐	☐	Extensive open pit mining in watershed	
	☐	☐	☐	☐	Livestock/wildlife overgrazing	
					Local biodiversity impacts	
	☐	☐	☐	☐	Evidence of excessive grazing (local)	
	☐	☐	☐	☐	Excessive noise affecting wildlife	
	0	0		0	Counts by Intensity	

Additional Comments

NMRAM Montane Riverine Wetlands Version 2.5

SA Cover Worksheet					
SA Code SF2MI [5]	SA Name : Two Mile Pond Reservoir		Project : Riparian Assesement 4/9/24		
A de Tsct [5]	AU Name : Transect [5]		WOI : Two Mile Pond Reservoir		
County Santa Fe	HUC 12 Headwaters Santa Fe River	Elevation (ft) 7299	(m) 2224.7	Ecoregion 6.0 NWFM	

SA General Location and Boundary (Rationale, comments)

A riparian system that leads into a pond located on the east side of Santa Fe bordering the Santa Fe National Forest. This reservoir was decommissioned due to safety concerns regarding the reservoir and a water diversion to the area was recently shut down due to lack of water rights.

Driving Directions

Driving to Santa Fe from Albuquerque you head north on Old Pecos Trail. Then head east on Camino Del Monte Sol and right on Canyon Road until you reach the reservoir located to the North.

Ownership The Nature Conservative and The Santa Fe National Forest	Data Sharing Restrictions	Results to client only.	Fish Observed in Wetland?	

Surveyor Role	Surveyor Name	Surveyor Initials
Landscape	Dustin	DS
Biotic	Annie + Dustin	DS
Abiotic	Dustin	DS
Stressors	Both	DS

Easting (m)	Northing (m)	Zone	Datum	Latitude (DD ft)	Longitude (DD ft)
-105° 53' 24" W	35° 41' 23" N	13	NAD- 83 UTM	35.689722	-105.89
Survey Date	4/9/24	**Start Time**		**End Time**	

SA Description

SA Landscape Context (summarize the wetland and surrounding landscape; include condition and impacts)

Very Very dry area still dormant from winter. Area looks like it is full based on plant remains

SA Biotic Condition (vegetation patterns, composition and structure, exotics and invasives, disturbance evidence, fire and herbivory)

No Biotic activity except some rye and Meadow grasses which are popping up and willows yellowing

SA Abiotic Condition (hydrological alterations (e.g., dams, walls etc.]; flooding characteristics and evidence of overbank flooding; soil disturbance and other site impacts; explain the hydrologic breaks or other factors that define the SA limits)

Land still very dry and ground is full of large cobbles which make it hard to moisture test

Assessment Summary (Overall site condition summary and comments after the field data is collected.)

Land is out of the way and seems primed to recover from winter,

Provisional Field Score	3.5	Rank	A	Surveyor(s)	DS	Final Score	3.5	Rank	A	Initials	DS	Date	4/9/24

SA CODE : SF2MI [5] **Date :** 4/9/24

SA Name : Two Mile Pond Reservoir Transect [5] **Surveyor Initials :** DS

NMRAM - SA Rank Summary Worksheet: Montane Riverine Wetlands 2.5

Metric Description	Rating	Wt	Final Score
Landscape Context		Σ 1.0	3.25
L1. Buffer Integrity Index	3	0.25	0.75
L2. Riparian Corridor Connectivity	4	0.25	1.0
L3. Relative Wetland Size	4	0.25	1.0
L4. Surrounding Land Use	2	0.25	0.5
Biotic		Σ	
B1. Relative Native Plant Community Composition	4	0.2	
B2. Vegetation Horizontal Patch Structure	3	0.2	
B3. Vegetation Vertical Structure	3	0.2	
B4. Native Riparian Tree Regeneration	4	0.2	
B5. Invasive Exotic Plant Species Cover	3	0.2	
Abiotic		Σ	
A1. Floodplain Hydrologic Connectivity		0.3	
A2. Physical Patch Diversity	3	0.2	
A3. Channel Equilibrium	4	0.2	
A4. Stream Bank Stability and Cover	4	0.2	
A5. Soil Surface Condition	4	0.1	

SA Condition Scoring Summary

Major Attribute	Score	Wt.	Wt. Score
Landscape Context	3.25	0.3	0.975
Biotic	3.4	0.35	
Abiotic	3.8	0.35	
SA WETLAND CONDITION SCORE Σ			
SA WETLAND RANK =			3.5

SA Wetland Rank

Rank	Score	Description
A	≥3.25 - 4.0	Excellent Condition
B	≥2.5 - <3.25	Good Condition
C	≥1.75 - <2.5	Fair Condition
D	1.0 - <1.75	Poor Condition

Stressor Summary	Major	Minor	Top Three	
	0	0	1	Water Management
			2	
			3	

Stressor Comments (Evaluation of risk)

Not Many stressors along this transect,

SA CODE : SF2MI [5] **Date :** 4/9/24

SA Name : Two Mile Pond Reservoir Transect [5] **Surveyor Initials :** DS

Landscape Context

L1 - Buffer Integrity Index

Worksheet 1a. Buffer and RCC Checklist. Check off land cover elements within the buffer area or RCC corridors that are either allowed, or are excluded and considered non-buffer elements that disrupt ecosystem connectivity. Indicate the imagery type and date (season and year of imagery).

Imagery	Google Earth KMZ. file	Image Date	6/23

Allowed buffer/RCC land cover elements			Excluded non-buffer/RCC land cover elements		
Buffer	RCC		Buffer	RCC	
[X]	[X]	Natural or semi-natural vegetation patches	[X]	[X]	Commercial/residential developments, parking lots, dams, bridges, revetments, and other structures
[X]	[X]	Small irrigation ditches without levees	[ ]	[ ]	Lawns, parks, golf courses, sports fields
[ ]	[ ]	Old fields, unmaintained	[ ]	[ ]	Railroads
[ ]	[ ]	Open range land	[ ]	[ ]	Maintained levees, sediment piles, construction materials, staging areas
[X]	[X]	Foot trails, horse trails, unpaved bike trails (low intensity)	[ ]	[ ]	Intensive livestock areas, horse paddocks, feedlots
[X]	[X]	Non-channel open water	[ ]	[ ]	Intensive agriculture: maintained pastures, hay fields, row crops, orchards, and vineyards
[X]	[X]	Non-functioning abandoned vegetated levees, or naturally occurring levees	[X]	[X]	Paved roads or developed second-order unpaved but graded roads
[ ]	[ ]	unpaved two tracks roads	[X]	[X]	Open water bounded by a levee or other manmade structure
[ ]	[ ]	Other	[ ]	[ ]	Other

Worksheet 1b. Buffer Percent Sub-metric. Measure or estimate the percentage of the SA perimeter composed of allowed buffer elements and enter into the Buffer Percent Box below. Rate the sub-metric using Table L1a and enter the rating on the Buffer Integrity Summary Worksheet 1d.

Buffer Percent (%)=	85%

Table L1a. Buffer Percent

Rating	Buffer Percent
4	100%
(X) 3	≥80% - <100%
2	≥50% - <80%
1	<50%

Worksheet 1c. Buffer Width Sub-metric. Measure the length of each buffer line in meters in the GIS or on the map. Average the line lengths and rate using Table L1b. Enter the rating on the Buffer Integrity Summary Worksheet 1d.

Line	Buffer Width (m)	Buffer Width (ft)	Line	Buffer Width (m)	Buffer Width (ft)
A	164.26	538.91	E	161.93	531.26
B	125.25	410.92	F	231.48	759.44
C	115.39	378.57	G	121.25	397.80
D	111.07	364.40	H	155.87	511.38
Average	148.31	**(m)**		486.58	**(ft)**

Table L1b. Buffer Width

Rating	Average buffer width
4	≥190m
(X) 3	≥130 - <190m
2	≥65 - <130m
1	<65m

Worksheet 1d. Buffer Integrity Summary. Enter the sub-metric Ratings from Tables L1a and L1b above to calculate the Buffer Integrity Index Score using the formula in the box below. Using the Buffer Integrity Index Score, enter rating for Buffer Integrity in Table L1c on the SA Summary Worksheet.

Buffer % Rating	+	Buffer Width Rating	/2 =	Buffer Integrity Index Score
3	+	3	/2 =	3

Table L1c. Summary Rating for Buffer Integrity

Rating	Score
4	>3.5
(X) 3	>2.5 - ≤3.5
2	>1.5 - ≤2.5
1	≤1.5

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L2 - Riparian Corridor Connectivity (RCC)

Worksheet 2. RCC excluded non-buffer elements calculation. Refer to worksheet 1a for excluded non-buffer RCC land cover elements. Following the steps in the Field Guide, enter the summed values in meters for excluded element lengths for each bank within each segment upstream and downstream of the SA. Sum the values for each segment and calculate % Segment Disruption for the upstream side and the downstream side. Add the total disruption for upstream and downstream segments and then calculate the % Total Disruptions for the riparian corridor. Rate Riparian Corridor Connectivity using Table L2 and the data from this worksheet. Enter rating on the SA Summary Worksheet.

Segments	Upstream Segment		Downstream Segment	
Banks	**Left Bank**	**Right Bank**	**Left Bank**	**Right Bank**
A) Total Bank Disruption (m)	0	0	0	0
B) Total Disruption by Segment (m)	0		0	
C) % Segment Disruption = (B/1000)*100	0		0	
D) Total Disruption both segments	0			
E) % Total Disruptions = (D/2000)*100	Zero disruption noticeable along the banks.			

Table L2. RCC Rating

Rating	Description
(X) 4	**0%** total disruption on both segments combined.
( ) 3	**<15%** total disruption on both segments combined.
( ) 2	**≥15% - <40%** total disruption on both segments combined.
( ) 1	**≥40%** total disruption on both segments combined.

L3 - Relative Wetland Size

Worksheet 3a. Calculate the Relative Size Ratio (RSR) between the current WOI size and the historic WOI size. b. Calculate the Relative Wetland Size Score (RWSI (%)) as (1-RSR)*100. Rate Relative Wetland Size Index using Table L3 and enter rating on the SA Summary Worksh

RSR					RWSI						
Current Size	/	Historic Size	=	RSR	1	-	RSR	X	100	=	RWSI (%)
9	/	10	=	0.9	1	-	0.1	X	100	=	10

Table L3. Relative Wetland Size Rating

Rating	RWSI Score	Description
(X) 4	≤10%	Wetland is at or only minimally reduced from its full natural extent
( ) 3	>10% - ≤40%	Wetland remains equal to or more than 60% of its natual size
( ) 2	>40% - ≤70%	Wetland has been reduced by more than 40% its natural size
( ) 1	>70%	Wetland has been reduced by more than 70% its natural size

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L4 - Surrounding Land Use

orksheet 4. Surrounding Land Use. Enter the percent area occupied by a given Land Use Element in the Land Use Zone (LUZ) surrounding the SA. Calculate the Land Use Index (LUI) Score by element as the product of the element coefficient times the percent of the LUZ Area occupied. (The %LUZ Area must total 100%.) Sum the LUI scores for each element to create the final LUI Score. Rate using Table L4 and enter the rating in the SA Rank Summary Worksheet.

Land Use Element	Coef	% LUZ Area	LUI Score
Paved roads, parking lots, domestic or commercially developed buildings, mining (gravel pit, quarry, open pit, strip mining), railroads	0	0	0
Unpaved roads (e.g., driveway, tractor trail, unpaved parking lots), paddock, dirt lot	0.1	0	0
Dredging, borrow pits, abandoned mines, water-filled artificial impoundments (ponds and reservoirs)	0.1	0	0
Filling or dumping of sediment or soils	0.1	0	0
Intense recreation (all-terrain vehicle use, camping, popular fishing spot, etc.)	0.3	0	0
Rip-rapped channel (highly modified channel with severely limited vegetation zone that is altered by human activities but not a completely concrete channel [that goes under paved roads]), junkyards, trash dumps, disturbed ground (not including roads)	0.3	0	0
Ski area	0.4	0	0
Dam sites and flood-disturbed shorelines around water storage reservoirs	0.5	0	0
Abandoned artificial impoundments (ponds and reservoirs) and associated disturbed flood zones	0.5	10	5
Artificial/Constructed wetlands, irrigation ditches	0.7	20	14
Developed/Managed trail system (high use trail)	0.8	5	4
Agriculture - active tilled crop production	0.2	0	0
jriculture - permanent crop (vineyards, orchards, nurseries, berry production)	0.3	0	0
Manicured lawns, sport fields, and golf courses; urban manicured parks	0.3	0	0
Old fields and other disturbed fallow lands dominated by ruderal and/or exotic species (e.g., kochia, Russian thistle, mustards, annual vegetation)	0.5	0	0
Mature old fields and other fallow lands with natural composition, introduced hay field and pastures (e.g., perennial vegetation cover)	0.7	0	0
Restoration areas in process to natural conditions (re-conversion in process)	0.8	65	52
Haying of native grassland (e.g., no tillage, haying and baling only)	0.9	0	0
Heavy logging or tree removal with >50% of large trees (e.g., >30 cm diameter at breast height) removed, woodland/shrub vegetation conversion (chaining, cabling, rotochopping)	0.3	0	0
Commercial tree plantation, Christmas tree farms	0.6	0	0
Selective logging or tree removal with <50% of large trees (e.g., >30 cm diameter at breast height) removed	0.8	0	0
Mature restoration areas returned to natural conditions (re-converted)	0.9	0	0
Natural area, land managed for native vegetation - No agriculture, logging, development	1	0	0
LUI Score= Coefficient * % LUZ Area		100	75

Table L4. Surrounding Land Use Rating	
Rating	**LUI Score**
◯ 4	≥95 - 100
◯ 3	≥80 - <95
⊗ 2	≥40 - <80
◯ 1	<40

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Biotic Metrics

Worksheet 5. Vegetation Community Patch Polygon Data for Biotic Metrics B3, B4, and B5 for Polygons from SA Biotic Map. Enter data for each polygon under a unique number assigned from the SA Biotic Map. Each polygon is evaluated with respect to Vegetation Vertical Structure (B3), Native Tree Regeneration (B4), and Invasive Exotic Plant Species Cover (B5) metrics. Enter the Vertical Structure Type (VST) for B3, tree regeneration % cover within the polygon for B4 and the % cover of invasive exotic species for B5. Use the Tables in Appendix B and the Field Guide for metric instructions. Enter the species codes for the invasive exotic species found in the polygon (from NM Noxious Weed List - Appendix D). Use the comments box for documenting and describing vegetation community patch features.

Polygon No	B3 Vertical Structure Type	B4 Tree Regeneration % Cover	B5 Invasive Exotic Species % Cover	Invasive Exotic Species (List Code(s))	Comments
1	IA1				
2	IA2				
3	IIA1				
4	IIIB1	80%	Mullein	Mullein some Mustard	Steep edge down to cat tails Stabling in willows
5	IIIC1				
6	IVEI				
7	IVF1				
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

B1 - Relative Native Plant Community Composition

Worksheet 6. CT Plant Species and Polygon Assignments. Starting with CT A, enter the number of the first polygon from Worksheet 5. Enter the species codes for the two top dominant species in each stratum that appears in the polygon. See footnotes for special instructions. If a species appears in more than one strata, assign the species to the stratum in which it is more abundant. Each polygon is either assigned to the same CT if it has the same composition or a new CT is created for the polygon.

		Tall Woody Stratum 1				Short Woody Stratum 2				Herbaceous/Sparse Stratum 3				CT Score 4		
CT	Polygon Nos.	Species 1	E N	Species 2	E N	Species 3	E N	Species 4	E N	Species 5	E N	Species 6	E N	Raw4	% SA5	Wt Score6
A	4					Willow	N	Cattail	N	Mullein	E	Meadow Grass	N	3.75	100	
B																
C																
D																
E																
F																
G																
H																
I																
J																
K																
L																
M																
N																
O																
													Final Weighted Score7			3.75

1. Trees and shrubs > 6 m (20 feet) and > 25% total stratum cover; 2. Trees and shrubs ≤6m (20 feet) and >25% total stratum cover; 3. Herbaceous (graminoids and forbs)>10% total stratum cover. 4Raw Score is from Table B1a (Appendix B); 5%SA is the percentage of the SA area covered by the CT and expressed as a decimal number; the total area %SA must equal 1; 6Wt. Score is the product of the Raw Score * % SA; 7The Final Weighted Score is the sum of the Wt. Scores. Rate the CT Final Weighted Score on Table B1 and enter the Rating for Relative Native Plant Community Composition on the SA Rank Summary Worksheet.

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Table B1. Relative Native Plant Community Composition Rating

Rating	CT Final Weighted Score	
X 4	≥ 3.75	<10% non-native
3	≥ 3.25 and <3.75	10% ≤20% non-native
2	> 2.0 and <3.25	20% ≤50% non-native
1	≤2.0	>50% non-native

2 - Vegetation Horizontal Patch Structure

Worksheet 7. Using Tables B2a and B2c (Appendix B), choose the schematic pattern that best matches the mapped vegetation patch pattern for the SA. Rate using Table B2 and enter rating on the SA Rank Summary Worksheet.

Horizontal Patch Structure pattern A,B,C, or D: B

Table B2. Rating for Vegetation Horizontal Patch Structure

Rating	Description
4	Most closely matches Pattern A. SA has a diverse patch structure (≥4 patch types) and complexity. A dominant patch type would be difficult to determine.
X 3	Pattern B. SA has a moderate degree of patch diversity (3 patch types present) and complexity. A single, dominant patch type may be present, although the other patch types would be well represented and have more than one occurrence in the SA.
2	Pattern C. SA has a low degree of patch diversity and complexity. Two or three patch types may be present; however, a single, dominant patch type exists with the others occupying a small portion of the SA.
1	Pattern D. SA has essentially little to no patch diversity or complexity. The SA is dominated by a single patch type. Other patch types, if present, occur infrequently and occupy a small portion of the SA.

3 - Vegetation Vertical Structure

Worksheet 8. Percentage of SA by vertical structure type (VST). Using the Structure Type from Worksheet 5 and the %SA from Worksheet 6 calculate the total area of the SA occupied by each VST using the formula VST(type) = Sum (%SA for CTs with same VST) x 100. Enter the total %SA for each VST below.

	VST 1 High Structure Forest	VST 2 Low Structure Forest	VST 5 Tall Shrubland	VST 6S Short Shrubland	VST 6W Herbaceous Wetland	VST 6H Herbaceous Vegetation	VST 7 Sparse Vegetation
Total % of SA			80%		20%		

Table B3. Rating for Vegetation Vertical Structure. Using the data from Worksheet 8 rate the SA based on the criteria in Table B3. Pick the row that best fits the distribution of VSTs in the SA. Each row specifies the required dominant structure type plus co- and sub-dominants. Percentage cover required per co- or sub-dominant is a minimum. The types listed in the columns must be the most common VSTs in the SA for the rating to be applicable (Worksheet 8). VSTs 1 and 2 can be inverted in dominance and the rating is still applicable. Work from the top of the table down. As long as the requirements for one row are met, any other types may or may not co-occur without changing the rating. Enter the rating on the SA Rank Summary Worksheet.

Rating	Dominant VST	Co- or Sub-dominant VST ≥15%	Sub-dominant VST ≥5%
4	1	5	6W and/or 6H
	1	6W	
	2 or 1 and 2	5	6W and/or 6H
X 3	1		
	2 or 1 and 2	5	
	2 or 1 and 2	6W	
	5	6W	
2	2 or 1 and 2		
	5		
	6W		
1	6S		
	6H		
	7		

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B4 - Native Riparian Tree Regeneration

Table B4. Native Riparian Tree Regeneration rating. Using the polygon percent cover of native tree seedlings, saplings and poles from Worksheet 5, rate the SA based on polygon percent cover and patch density. Enter the rating on the SA Rank Summary Worksheet.

Rating	Description
X 4	Native poles, sapling, and seedlings trees well represented, obvious regeneration, many patches or polygons with >5% cover, typically multiple size (age) classes.
3	Native poles, saplings and/or seedlings common, scattered patches or polygons with 1% -5% cover, size classes few.
2	Native poles, saplings and/or seedlings present but uncommon, restricted to one or two patches or polygons with typically <1% cover, little size class differentiation.
1	Native poles, saplings, and/or seedlings absent (0% cover).

B5 - Invasive Exotic Plant Species Cover

Worksheet 9. Based on Worksheets 5 and 6, calculate or estimate the percentage cover of invasive exotic species for the SA and enter below. Rate using Table B5 and enter the rating on the SA Rank Summary Worksheet.

Rating Method: <1%

Invasive cover (%): <1%

calculate

Table B5. Ratings for Invasive Exotic Plant Species Cover	
Rating	**Invasive Species Cover %**
4	0%
3 X	>0% - <1%
2	≥1% - <10%
1	≥10

Additional CTs and Biotic Metric Comments:

Still dry but some grasses coming back Rye, Meadow, Rush grasses seen. Willows turning yellow

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A2 - Physical Patch Complexity

Worksheet 11. Physical Patch Complexity checklist. Check off existing physical patch types for the upper, middle and lower segments of the SA; count the number of unique patch types and rate using Table A2 in combination with the narrative description. Enter the rating on the SA Rank Summary Worksheet.

Upper Segment	Middle Segment	Lower Segment	Field Indicators (check all existing conditions)
☐	☒	☐	Active side channels
☐	☐	☐	Abandoned channels
☐	☐	☐	Backwater/eddy
☐	☐	☐	Riffles or rapids
☐	☒	☐	Shoals, sparely-vegetated bars
☐	☐	☐	Channel boulders
☐	☐	☐	Oxbow lakes/ponds on floodplains
☐	☒	☐	Vegetated island and side bars
☐	☒	☐	Terraces
☐	☒	☐	Channel pools
☐	☒	☐	Beaver ponds
☐	☐	☐	Swales, depressional features on floodplains
☐	☒	☐	Debris jams in channel
☐	☒	☐	Woody wrack piles on the floodplain
☐	☐	☐	Floodplain micro-topography (mounds, pits)
☐	☐	☐	Downed logs
☐	☐	☐	Natural levees
☐	☐	☐	Standing snags
☐	☐	☐	Variegated, convoluted, or crenulated foreshore
☐	☐	☐	Undercut banks in channels
			No. of unique Patch Types

Table A2. Rating for Physical Patch Complexity	
Rating	**Description**
○ 4	**High** degree of physical patch complexity across the floodplain. There are many floodplain micro-habitats present (mounds and pits, woody wrack piles, etc.), many fluvial geomorphic surfaces (swales, side channels, terraces, side bars, etc.), and there is high in-channel complexity (pools and riffles, large woody debris, undercut banks, etc.). As a guide, 12 or more unique indicators are present and well distributed throughout the SA (most indicators are found on multiple segments).
☒ 3	**Moderate** physical patch complexity scattered across the floodplain. There are several floodplain micro-habitats present, several fluvial geomorphic surfaces, and there is moderate in-channel complexity. As a guide, 9 - 11 indicators are scattered throughout the SA (some on multiple segments).
○ 2	**Limited** physical patch complexity scattered across the floodplain. There are some floodplain micro-habitats present, some fluvial geomorphic surfaces, and there is limited in-channel complexity. As a guide, on average there are 6 - 8 unique indicators present in the SA (only a few on multiple segments).
○ 1	**Little** or no physical patch complexity on the floodplain. There are few or no floodplain micro-habitats present, few different fluvial geomorphic surfaces, and there is little or no in-channel complexity. As a guide, ≤ 5 unique indicators are present in the SA.

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A3- Channel Equilibrium

Worksheet 12. Channel Equilibrium Checklist. Check all field indicators that apply to the upper, middle and lower segment of the SA observed at the channel edge of the traverse. Rate using the Table A3 descriptions and based on a preponderance of evidence from this checklist. Enter the rating on the SA Rank Summary Worksheet.

Condition	Upper Segment	Middle Segment	Lower Segment	Field Indicators(check all existing conditions)
Indicators of Channel Equilibrium	☐	☒	☐	The channel has a well-defined bankfull contour that clearly demarcates the point of incipient flooding where moderate frequent flow events spread flow across the floodplain.
	☐	☒	☐	Perennial riparian vegetation is abundant and well established along the bankfull contour, but not below it.
	☐	☒	☐	There is leaf litter, thatch, or wrack in most pools.
	☐	☒	☐	The channel contains embedded woody debris of the size and amount consistent with what is naturally available in the riparian area.
	☐	☒	☐	There is little or no active undercutting or burial of riparian vegetation.
	☐	☐	☐	There are no bars that are densely vegetated with perennial vegetation (neither mid-channel bars or point bars).
	☐	☒	☐	Channel and point-bars consist of well-sorted bed material.
	☐	☒	☐	The channel bed is not planar and without an abundance of fine materials filling the interstitial spaces between larger stream substrate.
	☐	☒	☐	There are channel pools at meander bends and some deep pools within the reach.
Indicators of Active Degradation	☐	☐	☐	The channel is characterized by deeply undercut banks with exposed living roots of trees or shrubs.
	☐	☐	☐	There are abundant bank slides or slumps, or the lower banks are uniformly scoured and not vegetated.
	☐	☐	☐	Bank vegetation is declining in stature or vigor, or many riparian trees and shrubs along the banks are leaning or falling into the channel.
	☐	☐	☐	Channel bed is scoured to large cobbles or boulders and entrained bank material is filling the cobble interstices and pools.
	☐	☐	☐	There are active headcuts within the channel.
	☐	☐	☐	An obvious historical floodplain has recently been abandoned, as indicated by the age structure of its riparian vegetation.
Indicators of Active Aggradation	☐	☐	☐	There is abundant fresh splays of coarse sediment covering the floodplain above the natural point bar elevation.
	☐	☐	☐	There are partially buried living tree trunks or shrubs along the banks.
	☐	☐	☐	The channel bed is planar overall. The stream lacks well-defined channel pools at meander bends, or pools are filled with sediment.
	☐	☐	☐	There are partially buried or sediment-choked culverts.
	☐	☐	☐	There are avulsion channels on the floodplain or adjacent valley floor.

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Table A3. Rating for Channel Equilibrium	
Rating	**Description**
☒ 4	Most of the channel throughout the SA is in equilibrium condition with little evidence of excessive aggradation or degradation based on the field indicators listed in Worksheet 12.
◯ 3	There is some evidence of excessive aggradation or degradation; the channel throughout the SA seems to approach an equilibrium condition. Circle primary process: aggradation or degradation.
◯ 2	There is evidence of severe aggradation or degradation throughout most of the channel through the SA. Circle primary process: aggradation or degradation.
◯ 1	The channel is artificially hardened, channelized, or is concrete throughout most of the SA.

A4- Stream Bank Stability and Cover

Worksheet 13. Bank Soil Stability and Streambank Erosion Potential Checklist. Check the indicator that best describes the condition looking a minimum of 25 m upstream and downstream at the channel edge of the upper, middle and lower segment of the SA. Average the six scores for both Bank Soil Stability and Streambank Erosion Potential. Rate using the Table A4 and enter the rating on the SA Summary Worksheet.

Condition	Upper Segment	Middle Segment	Lower Segment	Field Indicators
Indicators of Bank Soil Stability	☐4	☒4	☐4	Infrequent raw banks, less than 10% of steam bank under stress from trampling, slumping, vegetation removal or active erosion, etc.
	☐3	☐3	☐3	Raw banks and loose soil intermittently and 10%-25% of stream bank under stress from trampling, trail crossing, hoof punching, vegetation removal, erosion etc.
	☐2	☐2	☐2	Significant raw banks and loose soil, 25%-50% of stream bank under stress, trampled, slumping or eroding etc.
	☐1	☐1	☐1	Raw banks almost continuous with greater than 50% of stream bank under stress, loose soil, slumping, trampled or eroding; or channel appear to lack banks due to trampling; or channel that is artificially hardened or concrete along most of its length.
Indicators of Stream Bank Erosion Potential	☐4	☒4	☐4	≥ 80% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by boulders, large cobbles and/or large woody debris that prevent bank erosion.
	☐3	☐3	☐3	≥50% - <80% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those areas not covered by vegetation are protected to allow only minor erosion.
	☐2	☐2	☐2	≥25% - <50% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those area not covered by vegetation or stabilized by roots, are covered by materials or vegetation that give limited protection.
	☐1	☐1	☐1	Less than 25% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those areas not covered by vegetation provide little or no control over erosion and excess shear stress, and the banks are susceptible to erosion by high water flows.

Average Indicator Score 4

Table A4. Stream Bank Stability and Cover Rating	
Rating	**Description**
☒ 4	>3.5 - 4.0
◯ 3	>2.5 - ≤3.5
◯ 2	>1.5 - ≤2.5
◯ 1	1.0 - ≤1.5

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A5 - Soil Surface Condition

..orksheet 14. Soil Surface Condition. Check all that apply in the upper , middle and lower SA segments during the field reconnaissance. The absence of these indicators would signify that disturbances are naturally occurring (e.g., flood deposition or low-density wildlife trails). Estimate the percent soil disturbance by segment area and referring to the SA abiotic map. Rate using Table A5 and enter on the SA Rank Summary Worksheet.			
Upper Segment	**Middle Segment**	**Lower Segment**	**Field Indicators (Check all existing conditions)**
☐	☐	☐	Active erosion features due to anthropogenic disturbance (eg. rills, gullies, plant pedestals).
☐	☒	☐	Multiple livestock and other (fishing,hiking) trails,
☐	☐	☐	Vehicle tracks including off-road and construction, etc.
☐	☐	☐	Impervious compacted surfaces or pavement
☐	☐	☐	Grading or plowing
☐	☐	☐	Fill
☐	☐	☐	Gravel pits
☐	☐	☐	Anthropogenic levees and berms
☐	☐	☐	Irrigation-driven salinity and mineral crusts
☐	☐	☐	Fire pits
☐	☐	☐	Other:
			Estimate % soil disturbance by segment area

Average % Soil Disturbance:

Table A5. Soil Surface Condition Rating	
Rating	**Description**
☒ 4	Bare soil areas due to anthropogenic disturbance absent or very limited. No human-caused impervious surfaces or gravel pits are found within the SA. Total disturbance, including erosion, impervious surfaces, fill, or other anthropogenic degradation to the soil surface is less than 1% of the SA.
○ 3	Some amount of bare soil from human causes is present but the extent is limited. Area of impervious surfaces are minimal in extent. Total disturbance, including erosion, impervious surfaces, fill, gravel pits, vehicle tracks or other anthropogenic degradation to the soil surface is between 1% and 5% of the sampling area.
○ 2	Bare soils from human causes are common. These may include dense livestock trails, vehicle tracks, trails, construction staging areas, mechanical rutting, or irrigation-driven salinity. Soil disturbance, while apparent, is limited to specific areas and not found across the majority of the SA. Total disturbance, including erosion, impervious surfaces, fill, gravel mining, or other anthropogenic degradation to the soil surface is greater than 5% or less than 10% of the SA.
○ 1	Bare soil areas degrade portions of the site because of altered hydrology or other long-lasting impacts. Deep ruts from off-road vehicles or machinery are present. Livestock disturbance or trails are widespread and several inches deep. Water is channeled into rills or ponded. Additional human-caused impervious surfaces or soil compaction are present. Total disturbance, including erosion, impervious surfaces, fill,gravel mining or other anthropogenic degradation to the soil surface is equal to or greater than 10% of the SA.

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Vorksheet 15. Stressor Checklist. Check off stressors by intensity category that may be affecting wetland ecological condition of the SA and WOI. Assign ategories using direct evidence where available or your best professional judgement otherwise. If the presence of the stressor is uncertain, mark as "Unknov ank Major Stressors in Dominant Stressor column(Pick up to 3)

Rank	Affect: Major	Affect: Minor	Affect: Absent	Affect: Unknown	Stressor Group/Stressor	Comments
					Adverse water management	
	[x]	[ ]	[ ]	[ ]	Extended low flow dam releases	
	[ ]	[ ]	[ ]	[x]	Timing of flow releases not concordant	
	[ ]	[ ]	[ ]	[x]	Extended high flow dam releases	
	[ ]	[ ]	[ ]	[x]	Agriculture/Urban flow diversion upstream	
					Adverse sediment management	
	[ ]	[ ]	[ ]	[x]	Adverse sediment retention by dams	
	[ ]	[ ]	[ ]	[x]	Sediment loss by dredging	
	[ ]	[ ]	[ ]	[x]	Adverse sediment input (roads/development)	
					Artificial water additions	
	[ ]	[ ]	[ ]	[x]	Sewer treatment effluent	
	[ ]	[ ]	[ ]	[x]	Point source urban runoff	
	[ ]	[ ]	[ ]	[x]	Factory, feedlot outfall	
	[ ]	[ ]	[ ]	[x]	Agricultural irrigation ditch returns	
	[ ]	[ ]	[ ]	[x]	Mining waste	
					Ground water pumping	
	[ ]	[ ]	[ ]	[x]	Urban depletions	
	[ ]	[ ]	[ ]	[x]	Fracking	
	[ ]	[ ]	[ ]	[x]	Agriculture irrigation wells	
					Watershed alteration	
	[ ]	[ ]	[ ]	[x]	Extensive recent fires in watershed	
	[ ]	[ ]	[ ]	[x]	Extensive recent timber harvest	
	[ ]	[ ]	[ ]	[x]	Extensive open pit mining in watershed	
	[ ]	[ ]	[ ]	[x]	Livestock/wildlife overgrazing	
					Local biodiversity impacts	
	[ ]	[ ]	[ ]	[x]	Evidence of excessive grazing (local)	
	[ ]	[ ]	[ ]	[x]	Excessive noise affecting wildlife	
	0	0		0	Counts by Intensity	

ditional Comments

NMRAM Montane Riverine Wetlands Version 2.5

SA Cover Worksheet					
SA Code SF2MI [5]	SA Name : Two Mile Pond Reservoir		Project : Riparian Assesement		
[illegible]ode Tsct [5]	AU Name : Transect [5]		WOI : Two Mile Pond Reservoir		
County Santa Fe	HUC 12 Headwaters Santa Fe River	Elevation (ft) 7299	(m) 2224.7	Ecoregion 6.0 NWFM	

SA General Location and Boundary (Rationale, comments)

A riparian system that leads into a pond located on the east side of Santa Fe bordering the Santa Fe National Forest. This reservoir was decommissioned due to safety concerns regarding the reservoir and a water diversion to the area was recently shut down due to lack of water rights.

Driving Directions

Driving to Santa Fe from Albuquerque you head north on Old Pecos Trail. Then head east on Camino Del Monte Sol and right on Canyon Road until you reach the reservoir located to the North.

Ownership The Nature Conservative and The Santa Fe National Forest	Data Sharing Restrictions	Results to client only.	Fish Observed in Wetland?	

Surveyor Role	Surveyor Name	Surveyor Initials
Landscape	Dustin	DS
Biotic	Annie + Dustin	DS
Abiotic	Dustin	DS
Stressors	Both	DS

Easting (m)	Northing (m)	Zone	Datum	Latitude (DD ft)	Longitude (DD ft)
-105° 53' 24" W	35° 41' 23" N	13	NAD- 83 UTM	35.689722	-105.89
Survey Date	5/15/24	**Start Time**		**End Time**	

SA Description

SA Landscape Context (summarize the wetland and surrounding landscape; include condition and impacts)

Land still seems pretty dry but some green branches of willow coming in

SA Biotic Condition (vegetation patterns, composition and structure, exotics and invasives, disturbance evidence, fire and herbivory)

Green willows coming up. Chickoree, some grass willows starting to green.

SA Abiotic Condition (hydrological alterations [e.g., dams, walls etc.]; flooding characteristics and evidence of overbank flooding; soil disturbance and other site impacts; explain the hydrologic breaks or other factors that define the SA limits)

Pond filling in with new cat tails

Assessment Summary (Overall site condition summary and comments after the field data is collected.)

Site seems well but very [illegible]

Provisional Field Score 3.2	Rank B	Surveyor(s) DS	Final Score 3.2	Rank B	Initials DS	Date 5/15/24

SA CODE : SF2MI [5]

Date : 5/15/24

SA Name : Two Mile Pond Reservoir Transect [5]

Surveyor Initials : DS

NMRAM - SA Rank Summary Worksheet: Montane Riverine Wetlands 2.5

Metric Description	Rating	Wt	Final Score
Landscape Context		Σ 1.0	3.25
L1. Buffer Integrity Index	3	0.25	0.75
L2. Riparian Corridor Connectivity	4	0.25	1.0
L3. Relative Wetland Size	4	0.25	1.0
L4. Surrounding Land Use	2	0.25	0.5
Biotic		Σ	
B1. Relative Native Plant Community Composition	2	0.2	
B2. Vegetation Horizontal Patch Structure	3	0.2	
B3. Vegetation Vertical Structure	3	0.2	
B4. Native Riparian Tree Regeneration	2	0.2	
B5. Invasive Exotic Plant Species Cover	3	0.2	
Abiotic		Σ	
A1. Floodplain Hydrologic Connectivity		0.3	
A2. Physical Patch Diversity	3	0.2	
A3. Channel Equilibrium	4	0.2	
A4. Stream Bank Stability and Cover	4	0.2	
A5. Soil Surface Condition	4	0.1	

SA Condition Scoring Summary			
Major Attribute	Score	Wt.	Wt. Score
Landscape Context	3.25	0.3	0.975
Biotic	2.6	0.35	
Abiotic	3.8	0.35	
SA WETLAND CONDITION SCORE Σ			
SA WETLAND RANK =			3.2

SA Wetland Rank		
Rank	Score	Description
A	≥3.25 - 4.0	Excellent Condition
B	≥2.5 - <3.25	Good Condition
C	≥1.75 - <2.5	Fair Condition
D	1.0 - <1.75	Poor Condition

Stressor Summary	Major	Minor	Top Three	
	0	0	1	Seems like soil drainded
			2	Doesn't get enough H2O
			3	

Stressor Comments (Evaluation of risk)

SA CODE : SF2MI [5]

Date : 5/15/24

SA Name : Two Mile Pond Reservoir Transect [5]

Surveyor Initials : DS

Landscape Context

L. - Buffer Integrity Index

Worksheet 1a. Buffer and RCC Checklist. Check off land cover elements within the buffer area or RCC corridors that are either allowed, or are excluded and considered non-buffer elements that disrupt ecosystem connectivity. Indicate the imagery type and date (season and year of imagery).

Imagery	Google Earth KMZ. file	Image Date	6/23

Allowed buffer/RCC land cover elements			Excluded non-buffer/RCC land cover elements		
Buffer	RCC		Buffer	RCC	
☒	☒	Natural or semi-natural vegetation patches	☒	☒	Commercial/residential developments, parking lots, dams, bridges, revetments, and other structures
☒	☒	Small irrigation ditches without levees	☐	☐	Lawns, parks, golf courses, sports fields
☐	☐	Old fields, unmaintained	☐	☐	Railroads
☐	☐	Open range land	☐	☐	Maintained levees, sediment piles, construction materials, staging areas
☒	☒	Foot trails, horse trails, unpaved bike trails (low intensity)	☐	☐	Intensive livestock areas, horse paddocks, feedlots
☒	☒	Non-channel open water	☐	☐	Intensive agriculture: maintained pastures, hay fields, row crops, orchards, and vineyards
☒	☒	Non-functioning abandoned vegetated levees, or naturally occurring levees	☒	☒	Paved roads or developed second-order unpaved but graded roads
☐	☐	unpaved two tracks roads	☒	☒	Open water bounded by a levee or other manmade structure
☐	☐	Other	☐	☐	Other

Worksheet 1b. Buffer Percent Sub-metric. Measure or estimate the percentage of the SA perimeter composed of allowed buffer elements and enter into the Buffer Percent Box below. Rate the sub-metric using Table L1a and enter the rating on the Buffer Integrity Summary Worksheet 1d.

Buffer Percent (%)=	85%

Table L1a. Buffer Percent

Rating	Buffer Percent
○ 4	100%
⊗ 3	≥80% - <100%
○ 2	≥50% - <80%
○ 1	<50%

Worksheet 1c. Buffer Width Sub-metric. Measure the length of each buffer line in meters in the GIS or on the map. Average the line lengths and rate using Table L1b. Enter the rating on the Buffer Integrity Summary Worksheet 1d.

Line	Buffer Width (m)	Buffer Width (ft)	Line	Buffer Width (m)	Buffer Width (ft)
A	164.26	538.91	E	161.93	531.26
B	125.25	410.92	F	231.48	759.44
C	115.39	378.57	G	121.25	397.80
D	111.07	364.40	H	155.87	511.38
Average	148.31 (m)			486.58	(ft)

Table L1b. Buffer Width

Rating	Average buffer width
○ 4	≥190m
⊗ 3	≥130 - <190m
○ 2	≥65 - <130m
○ 1	<65m

Worksheet 1d. Buffer Integrity Summary. Enter the sub-metric Ratings from Tables L1a and L1b above to calculate the Buffer Integrity Index Score using the formula in the box below. Using the Buffer Integrity Index Score, enter rating for Buffer Integrity in Table L1c on the SA Summary Worksheet.

Buffer % Rating	+	Buffer Width Rating	/2 =	Buffer Integrity Index Score
3	+	3	/2 =	3

Table L1c. Summary Rating for Buffer Integrity

Rating	Score
○ 4	>3.5
⊗ 3	>2.5 - ≤3.5
○ 2	>1.5 - ≤2.5
○ 1	≤1.5

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.2 - Riparian Corridor Connectivity (RCC)

Vorksheet 2. RCC excluded non-buffer elements calculation. Refer to worksheet 1a for excluded non-buffer RCC land cover elements. Following the steps in the Field Guide, enter the summed values in meters for excluded element lengths for each bank within each segment upstream and downstream of the SA. Sum the values for each segment and calculate % Segment Disruption for the upstream side and the downstream side. Add the total disruption for upstream and downstream segments and then calculate the % Total Disruptions for the riparian corridor. Rate Riparian Corridor Connectivity using Table L2 and the data from this worksheet. Enter rating on the SA Summary Worksheet.

Segments	Upstream Segment		Downstream Segment	
Banks	Left Bank	Right Bank	Left Bank	Right Bank
A) Total Bank Disruption (m)	0	0	0	0
B) Total Disruption by Segment (m)	0		0	
C) % Segment Disruption = (B/1000)*100	0		0	
D) Total Disruption both segments	0			
E) % Total Disruptions = (D/2000)*100	Zero disruption noticeable along the banks.			

Table L2. RCC Rating

Rating	Description
(X) 4	**0%** total disruption on both segments combined.
◯ 3	**<15%** total disruption on both segments combined.
◯ 2	**≥15% - <40%** total disruption on both segments combined.
◯ 1	**≥40%** total disruption on both segments combined.

L3 - Relative Wetland Size

Worksheet 3a. Calculate the Relative Size Ratio (RSR) between the current WOI size and the historic WOI size. b. Calculate the Relative Wetland Size Score (RWSI (%)) as (1-RSR)*100. Rate Relative Wetland Size Index using Table L3 and enter rating on the SA Summary Workshe

RSR					RWSI							
Current Size	/	Historic Size	=	RSR	1	-	RSR	X	100	=	RWSI (%)
9	/	10	=	0.9	1	-	0.1	X	100	=	10

Table L3. Relative Wetland Size Rating

Rating	RWSI Score	Description
(X) 4	≤10%	Wetland is at or only minimally reduced from its full natural extent
◯ 3	>10% - ≤40%	Wetland remains equal to or more than 60% of its natual size
◯ 2	>40% - ≤70%	Wetland has been reduced by more than 40% its natural size
◯ 1	>70%	Wetland has been reduced by more than 70% its natural size

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L4 - Surrounding Land Use

Worksheet 4. Surrounding Land Use. Enter the percent area occupied by a given Land Use Element in the Land Use Zone (LUZ) surrounding the SA. Calculate the Land Use Index (LUI) Score by element as the product of the element coefficient times the percent of the LUZ Area occupied. (The %LUZ Area must total 100%.) Sum the LUI scores for each element to create the final LUI Score. Rate using Table L4 and enter the rating in the SA Rank Summary Worksheet.

Land Use Element	Coef	% LUZ Area	LUI Score
Paved roads, parking lots, domestic or commercially developed buildings, mining (gravel pit, quarry, open pit, strip mining), railroads	0	0	0
Unpaved roads (e.g., driveway, tractor trail, unpaved parking lots), paddock, dirt lot	0.1	0	0
Dredging, borrow pits, abandoned mines, water-filled artificial impoundments (ponds and reservoirs)	0.1	0	0
Filling or dumping of sediment or soils	0.1	0	0
Intense recreation (all-terrain vehicle use, camping, popular fishing spot, etc.)	0.3	0	0
Rip-rapped channel (highly modified channel with severely limited vegetation zone that is altered by human activities but not a completely concrete channel [that goes under paved roads]), junkyards, trash dumps, disturbed ground (not including roads)	0.3	0	0
Ski area	0.4	0	0
Dam sites and flood-disturbed shorelines around water storage reservoirs	0.5	0	0
Abandoned artificial impoundments (ponds and reservoirs) and associated disturbed flood zones	0.5	10	5
Artificial/Constructed wetlands, irrigation ditches	0.7	20	14
Developed/Managed trail system (high use trail)	0.8	5	4
Agriculture - active tilled crop production	0.2	0	0
Agriculture - permanent crop (vineyards, orchards, nurseries, berry production)	0.3	0	0
Manicured lawns, sport fields, and golf courses; urban manicured parks	0.3	0	0
Old fields and other disturbed fallow lands dominated by ruderal and/or exotic species (e.g., kochia, Russian thistle, mustards, annual vegetation)	0.5	0	0
Mature old fields and other fallow lands with natural composition, introduced hay field and pastures (e.g., perennial vegetation cover)	0.7	0	0
Restoration areas in process to natural conditions (re-conversion in process)	0.8	65	52
Haying of native grassland (e.g., no tillage, haying and baling only)	0.9	0	0
Heavy logging or tree removal with >50% of large trees (e.g., >30 cm diameter at breast height) removed, woodland/shrub vegetation conversion (chaining, cabling, rotochopping)	0.3	0	0
Commercial tree plantation, Christmas tree farms	0.6	0	0
Selective logging or tree removal with <50% of large trees (e.g., >30 cm diameter at breast height) removed	0.8	0	0
Mature restoration areas returned to natural conditions (re-converted)	0.9	0	0
Natural area, land managed for native vegetation - No agriculture, logging, development	1	0	0
LUI Score= Coefficient * % LUZ Area		100	75

Table L4. Surrounding Land Use Rating	
Rating	**LUI Score**
◯ 4	≥95 - 100
◯ 3	≥80 - <95
⊗ 2	≥40 - <80
◯ 1	<40

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Biotic Metrics

Worksheet 5. Vegetation Community Patch Polygon Data for Biotic Metrics B3, B4, and B5 for Polygons from SA Biotic Map. Enter data for each polygon under a unique number assigned from the SA Biotic Map. Each polygon is evaluated with respect to Vegetation Vertical Structure (B3), Native Tree Regeneration (B4), and Invasive Exotic Plant Species Cover (B5) metrics. Enter the Vertical Structure Type (VST) for B3, tree regeneration % cover within the polygon for B4 and the % cover of invasive exotic species for B5. Use the Tables in Appendix B and the Field Guide for metric instructions. Enter the species codes for the invasive exotic species found in the polygon (from NM Noxious Weed List - Appendix D). Use the comments box for documenting and describing vegetation community patch features.

Polygon No	B3 Vertical Structure Type	B4 Tree Regeneration % Cover	B5 Invasive Exotic Species % Cover	Invasive Exotic Species (List Code(s))	Comments
1	IA1				
2	IA2				
3	IIA1				
4	IIIB1	60%	N/A	No mullein growing	Willow trees until water line, then cat tails.
5	IIIC1				
6	IVEI				
7	IVF1				
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

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B1 - Relative Native Plant Community Composition

Worksheet 6. CT Plant Species and Polygon Assignments. Starting with CT A, enter the number of the first polygon from Worksheet 5. Enter the species codes for the two top dominant species in each stratum that appears in the polygon. See footnotes for special instructions. If a species appears in more than one strata, assign the species to the stratum in which it is more abundant. Each polygon is either assigned to the same CT if it has the same composition or a new CT is created for the polygon.

		Tall Woody Stratum 1				Short Woody Stratum 2				Herbaceous/Sparse Stratum 3				CT Score 4		
CT	Polygon Nos.	Species 1	E N	Species 2	E N	Species 3	E N	Species 4	E N	Species 5	E N	Species 6	E N	Raw[4]	% SA[5]	Wt Score[6]
A	4					Willow	N	Cattail	N	Mullein	E	Meadow grass	N	3.5	90	3.15
B																
C																
D																
E																
F																
G																
H																
I																
J																
K																
L																
M																
N																
O																
														Final Weighted Score[7]		3.15

1. Trees and shrubs > 6 m (20 feet) and > 25% total stratum cover; 2. Trees and shrubs ≤6m (20 feet) and >25% total stratum cover; 3. Herbaceous (graminoids and forbs)>10% total stratum cover. [4]Raw Score is from Table B1a (Appendix B); [5]%SA is the percentage of the SA area covered by the CT and expressed as a decimal number; the total area %SA must equal 1; [6]Wt. Score is the product of the Raw Score * % SA; [7]The Final Weighted Score is the sum of the Wt. Scores. Rate the CT Final Weighted Score on Table B1 and enter the Rating for Relative Native Plant Community Composition on the SA Rank Summary Worksheet.

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Table B1. Relative Native Plant Community Composition Rating		
Rating	CT Final Weighted Score	
4	≥ 3.75	<10% non-native
3	≥ 3.25 and <3.75	10% ≤20% non-native
X 2	> 2.0 and <3.25	20% ≤50% non-native
1	≤2.0	>50% non-native

2 - Vegetation Horizontal Patch Structure

Worksheet 7. Using Tables B2a and B2c (Appendix B), choose the schematic pattern that best matches the mapped vegetation patch pattern for the SA. Rate using Table B2 and enter rating on the SA Rank Summary Worksheet.

Horizontal Patch Structure pattern A,B,C, or D:

Table B2. Rating for Vegetation Horizontal Patch Structure	
Rating	Description
4	Most closely matches Pattern A. SA has a diverse patch structure (≥4 patch types) and complexity. A dominant patch type would be difficult to determine.
X 3	Pattern B. SA has a moderate degree of patch diversity (3 patch types present) and complexity. A single, dominant patch type may be present, although the other patch types would be well represented and have more than one occurrence in the SA.
2	Pattern C. SA has a low degree of patch diversity and complexity. Two or three patch types may be present; however, a single, dominant patch type exists with the others occupying a small portion of the SA.
1	Pattern D. SA has essentially little to no patch diversity or complexity. The SA is dominated by a single patch type. Other patch types, if present, occur infrequently and occupy a small portion of the SA.

3 - Vegetation Vertical Structure

Worksheet 8. Percentage of SA by vertical structure type (VST). Using the Structure Type from Worksheet 5 and the %SA from Worksheet 6 calculate the total area of the SA occupied by each VST using the formula VST(type) = Sum (%SA for CTs with same VST) x 100. Enter the total %SA for each VST below.

	VST 1 High Structure Forest	VST 2 Low Structure Forest	VST 5 Tall Shrubland	VST 6S Short Shrubland	VST 6W Herbaceous Wetland	VST 6H Herbaceous Vegetation	VST 7 Sparse Vegetation
Total % of SA			80			20	

Table B3. Rating for Vegetation Vertical Structure. Using the data from Worksheet 8 rate the SA based on the criteria in Table B3. Pick the row that best fits the distribution of VSTs in the SA. Each row specifies the required dominant structure type plus co- and sub-dominants. Percentage cover required per co- or sub-dominant is a minimum. The types listed in the columns must be the most common VSTs in the SA for the rating to be applicable (Worksheet 8). VSTs 1 and 2 can be inverted in dominance and the rating is still applicable. Work from the top of the table down. As long as the requirements for one row are met, any other types may or may not co-occur without changing the rating. Enter the rating on the SA Rank Summary Worksheet.

Rating	Dominant VST	Co- or Sub-dominant VST ≥15%	Sub-dominant VST ≥5%
4	1	5	6W and/or 6H
	1	6W	
	2 or 1 and 2	5	6W and/or 6H
X 3	1		
	2 or 1 and 2	5	
	2 or 1 and 2	6W	
	5	6W	
2	2 or 1 and 2		
	5		
	6W		
1	6S		
	6H		
	7		

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B4 - Native Riparian Tree Regeneration

Table B4. Native Riparian Tree Regeneration rating. Using the polygon percent cover of native tree seedlings, saplings and poles from Worksheet 5, rate the SA based on polygon percent cover and patch density. Enter the rating on the SA Rank Summary Worksheet.

Rating	Description
○ 4	Native poles, sapling, and seedlings trees well represented, obvious regeneration, many patches or polygons with >5% cover, typically multiple size (age) classes.
○ 3	Native poles, saplings and/or seedlings common, scattered patches or polygons with 1% -5% cover, size classes few.
X 2	Native poles, saplings and/or seedlings present but uncommon, restricted to one or two patches or polygons with typically <1% cover, little size class differentiation.
○ 1	Native poles, saplings, and/or seedlings absent (0% cover).

B5 - Invasive Exotic Plant Species Cover

Worksheet 9. Based on Worksheets 5 and 6, calculate or estimate the percentage cover of invasive exotic species for the SA and enter below. Rate using Table B5 and enter the rating on the SA Rank Summary Worksheet.

Rating Method [ ]

Invasive cover (%) [71]

calculate

Table B5. Ratings for Invasive Exotic Plant Species Cover	
Rating	**Invasive Species Cover %**
○ 4	0%
○ 3 X	>0% - <1%
○ 2	≥1% - <10%
○ 1	≥10

Additional CTs and Biotic Metric Comments:

Area has mullein but no sign of New life

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Surveyor Initials : DS

Abiotic Metrics

A1 - Floodplain Hydrologic Connectivity

Method 1

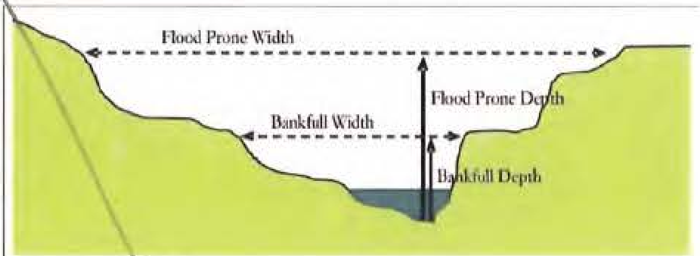
Worksheet 10a. Floodplain Hydrologic Connectivity Measurements. The following six steps are conducted at each of three cross-sections at the approximate mid-points along straight riffles and away from deep pools or meander bends. Use a measuring tape and temporary stakes for horizontal measurements, and a stadia rod or similar measuring stick for vertical measurements. If unavailable, use visual estimates. Where straight channel segments do not occur, or if there is excessive ponding or bankfull indicators are obscured, use the narrative rating approach (Method 2). Enter the rating method in the box below, either meander pool, riffle pool or narrative (Method 2) and choose the corresponding Table (A1a, A1b, or A1c) to rate Floodplain Hydrologic Connectivity. Enter the rating on the SA Rank Summary Worksheet. Photographs of each cross-section are required and recorded in Table A1d.

Steps	Description	Cross-section: 1	2	3
1: Bankfull width	This is a critical step requiring familiarity with field indicators of the bankfull contour. Measure the distance between the right and left bankfull contours with a tape.			
2: Maximum bankfull depth	Keeping the tape level between the right and left bankfull contours, measure the height of the line above the thalweg (the deepest part of the channel). A pocket line level can help here.			
3: Flood-prone depth	Double the estimate of maximum bankfull depth from Step 2.			
4: Flood-prone width	Using a tape, measure the length of a level line at a height equal to the flood prone depth from Step 3 to where it intercepts the right and left banks.			
5: Calculate Entrenchment Ratio	Divide the flood-prone width (Step 4) by the bankfull width (Step 1).			
6: Calculate average ratio	Calculate the average for Step 5 for all three replicate cross-sections. Enter the average here and rate using Table A1a. Enter the rating in the A1 box on the SA Rank Summary Worksheet.			

Rating Method

Table A1a. Rating for Floodplain Hydrologic Connectivity in meandering single-channel riffle-pool systems

Rating	Description
◯ 4	Average entrenchment ratio is ≥ 2.2;
◯ 3	Average entrenchment ratio is ≥1.9 - <2.2
◯ 2	Average entrenchment ratio is ≥1.5 - <1.9
◯ 1	Average entrenchment ratio is < 1.5



Worksheet 10b. Floodplain Hydrologic Connectivity Indicators. Use this Worksheet in conjunction with Table A1c. Check the boxes for all that apply to each segment.

U	M	L	Indicator
☐	☐	☐	Bankful is slightly below bank height
☐	☐	☐	Bankful is well below bank height and channel is incised
☐	☐	☐	Channel widening due to bank failure
☐	☐	☐	Constructed levees preclude floodplain inundation
☐	☐	☐	Stream is straightened/channelized
☐	☐	☐	Inset floodplain formation
☐	☐	☐	Decreased peak flows due to hydrologic modification
☐	☐	☐	Bankfull indicators at point of incipient flooding of the floodplain
☐	☐	☐	Indicators of overbank flow on floodplain
☐	☐	☐	Floodplain inundation due to beaver activity

Table A1b. Rating for Floodplain Hydrologic Connectivity in single-channel step-pool systems

Rating	Description
◯ 4	Average entrenchment ratio is ≥ 1.9
◯ 3	Average entrenchment ratio is ≥1.4 - <1.9
◯ 2	Average entrenchment ratio is ≥1.2 - <1.4
◯ 1	Average entrenchment ratio is < 1.2

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SA Name : Two Mile Pond Reservoir Transect [5] **Surveyor Initials :** DS

Method 2

Table A1c. Narratve Floodplain Hydrologic Connectivity Rating. Select the narrative description that best describes the floodplain hydrologic connectivity. At each cross-section, use Worksheet 10b to record channel incision, bank modification, inset floodplain or other hydrologic evidence that would preclude natural floodplain inundation. Conversely, assess indicators and evidence for overbank flow and floodplain inundation. Record whether beaver activity is obscuring bankful indicators due to inundation of the floodplain. Select a rating from the table below. Use data from Worksheets 10b to help select rating. Enter Rating on SA Summary Worksheet. Photographs are required at each cross-section and recorded in Table A1d.	
Rating	**Description**
○ 4	Fully connected to the natural floodplain. Indicators of bankfull discharge are at the bank/floodplain transition, with over-bankfull flows likely to inundate a broad area of floodplain. Floodplain supports riparian vegetation and shows signs of overbank sediment deposition. Or beaver ponds inundate the entire, normally active floodplain and preclude the identification of bankfull indicators and the active floodplain width.
○ 3	Flow access to the floodplain moderately limited by incision, channelization. Less frequent inundation than fully connected streams described above (as noted by bankfull indicators below floodplain transition). Floodplain supports a riparian overstory, but some understory plants may be upland. An inset floodplain supporting riparian vegetation may also be present.
○ 2	Incised, channelized or modified with an inset floodplain formed, which is regularly inundated and supports riparian vegetation and sediment regimes. Or the stream has minimal access to the natural floodplain due to incision, channelization, or flow modification, and the natural floodplain does not support riparian vegetation except for relatively long-lived phreatophytes (e.g., cottonwood, salt cedar, etc.).
○ 1	Fully disconnected from floodplain, either through incision, bank modification/channelization, or hydrologic modification (i.e., abandonment of floodplain due to decreased peak flows). Indicators may include upland vegetation and lack of overbank sediment deposits on the floodplain, etc.

Table A1d. Photo Point Log for Cross-Section Photographs. For each cross-section record the digital names/numbers of photographs taken looking Upstream and Downstream from the thalweg and looking Bank Right* and Bank Left* across the stream from each side of the cross-section. Leave the cross-section tape and flags indicating bankful in the ground when taking the Bank Right and Bank Left photos. A photo board with SA name and cross-section information is helpful. (*The bank of a stream or river on the right (left) of the observer when facing in the direction of flow or downstream.) See Appendix E for additional details.

Cross Section	Easting (Latitude)	Northing (Longitude)	Upstream	Downstream	Bank Right	Bank Left
1						
2						
3						

Floodplain Hydrologic Connectivity Comments:

SA CODE : SF2MI [5] **Date :** 5/15/24

SA Name : Two Mile Pond Reservoir Transect [5] **Surveyor Initials :** DS

A2 - Physical Patch Complexity

Worksheet 11. Physical Patch Complexity checklist. Check off existing physical patch types for the upper, middle and lower segments of the SA; count the number of unique patch types and rate using Table A2 in combination with the narrative description. Enter the rating on the SA Rank Summary Worksheet.

Upper Segment	Middle Segment	Lower Segment	Field Indicators (check all existing conditions)
☐	☐	☐	Active side channels
☐	☐	☐	Abandoned channels
☐	☐	☐	Backwater/eddy
☐	☐	☐	Riffles or rapids
☐	☒	☐	Shoals, sparely-vegetated bars
☐	☐	☐	Channel boulders
☐	☐	☐	Oxbow lakes/ponds on floodplains
☐	☐	☐	Vegetated island and side bars
☐	☐	☐	Terraces
☐	☒	☐	Channel pools
☐	☒	☐	Beaver ponds
☐	☐	☐	Swales, depressional features on floodplains
☐	☒	☐	Debris jams in channel
☐	☐	☐	Woody wrack piles on the floodplain
☐	☐	☐	Floodplain micro-topography (mounds, pits)
☐	☐	☐	Downed logs
☐	☐	☐	Natural levees
☐	☐	☐	Standing snags
☐	☐	☐	Variegated, convoluted, or crenulated foreshore
☐	☐	☐	Undercut banks in channels
			No. of unique Patch Types

Table A2. Rating for Physical Patch Complexity

Rating	Description
○ 4	**High** degree of physical patch complexity across the floodplain. There are many floodplain micro-habitats present (mounds and pits, woody wrack piles, etc.), many fluvial geomorphic surfaces (swales, side channels, terraces, side bars, etc.), and there is high in-channel complexity (pools and riffles, large woody debris, undercut banks, etc.). As a guide, 12 or more unique indicators are present and well distributed throughout the SA (most indicators are found on multiple segments).
☒ 3	**Moderate** physical patch complexity scattered across the floodplain. There are several floodplain micro-habitats present, several fluvial geomorphic surfaces, and there is moderate in-channel complexity. As a guide, 9 - 11 indicators are scattered throughout the SA (some on multiple segments).
○ 2	**Limited** physical patch complexity scattered across the floodplain. There are some floodplain micro-habitats present, some fluvial geomorphic surfaces, and there is limited in-channel complexity. As a guide, on average there are 6 - 8 unique indicators present in the SA (only a few on multiple segments).
○ 1	**Little** or no physical patch complexity on the floodplain. There are few or no floodplain micro-habitats present, few different fluvial geomorphic surfaces, and there is little or no in-channel complexity. As a guide, ≤ 5 unique indicators are present in the SA.

SA CODE : SF2MI [5] **Date :** 5/15/24

SA Name : Two Mile Pond Reservoir Transect [5] **Surveyor Initials :** DS

A3- Channel Equilibrium

Worksheet 12. Channel Equilibrium Checklist. Check all field indicators that apply to the upper, middle and lower segment of the SA observed at the channel edge of the traverse. Rate using the Table A3 descriptions and based on a preponderance of evidence from this checklist. Enter the rating on the SA Rank Summary Worksheet.

Condition	Upper Segment	Middle Segment	Lower Segment	Field Indicators(check all existing conditions)
Indicators of Channel Equilibrium	☐	☒	☐	The channel has a well-defined bankfull contour that clearly demarcates the point of incipient flooding where moderate frequent flow events spread flow across the floodplain.
	☐	☒	☐	Perennial riparian vegetation is abundant and well established along the bankfull contour, but not below it.
	☐	☒	☐	There is leaf litter, thatch, or wrack in most pools.
	☐	☒	☐	The channel contains embedded woody debris of the size and amount consistent with what is naturally available in the riparian area.
	☐	☐	☐	There is little or no active undercutting or burial of riparian vegetation.
	☐	☒	☐	There are no bars that are densely vegetated with perennial vegetation (neither mid-channel bars or point bars).
	☐	☐	☐	Channel and point-bars consist of well-sorted bed material.
	☐	☐	☐	The channel bed is not planar and without an abundance of fine materials filling the interstitial spaces between larger stream substrate.
	☐	☐	☐	There are channel pools at meander bends and some deep pools within the reach.
Indicators of Active Degradation	☐	☐	☐	The channel is characterized by deeply undercut banks with exposed living roots of trees or shrubs.
	☐	☐	☐	There are abundant bank slides or slumps, or the lower banks are uniformly scoured and not vegetated.
	☐	☐	☐	Bank vegetation is declining in stature or vigor, or many riparian trees and shrubs along the banks are leaning or falling into the channel.
	☐	☐	☐	Channel bed is scoured to large cobbles or boulders and entrained bank material is filling the cobble interstices and pools.
	☐	☐	☐	There are active headcuts within the channel.
	☐	☐	☐	An obvious historical floodplain has recently been abandoned, as indicated by the age structure of its riparian vegetation.
Indicators of Active Aggradation	☐	☐	☐	There is abundant fresh splays of coarse sediment covering the floodplain above the natural point bar elevation.
	☐	☐	☐	There are partially buried living tree trunks or shrubs along the banks.
	☐	☐	☐	The channel bed is planar overall. The stream lacks well-defined channel pools at meander bends, or pools are filled with sediment.
	☐	☐	☐	There are partially buried or sediment-choked culverts.
	☐	☐	☐	There are avulsion channels on the floodplain or adjacent valley floor.

SA CODE : SF2MI [5]

Date : 5/15/24

SA Name : Two Mile Pond Reservoir Transect [5]

Surveyor Initials : DS

Table A3. Rating for Channel Equilibrium	
Rating	**Description**
☒ 4	Most of the channel throughout the SA is in equilibrium condition with little evidence of excessive aggradation or degradation based on the field indicators listed in Worksheet 12.
◯ 3	There is some evidence of excessive aggradation or degradation; the channel throughout the SA seems to approach an equilibrium condition. Circle primary process: aggradation or degradation.
◯ 2	There is evidence of severe aggradation or degradation throughout most of the channel through the SA. Circle primary process: aggradation or degradation.
◯ 1	The channel is artificially hardened, channelized, or is concrete throughout most of the SA.

A4- Stream Bank Stability and Cover

Worksheet 13. Bank Soil Stability and Streambank Erosion Potential Checklist. Check the indicator that best describes the condition looking a minimum of 25 m upstream and downstream at the channel edge of the upper, middle and lower segment of the SA. Average the six scores for both Bank Soil Stability and Streambank Erosion Potential. Rate using the Table A4 and enter the rating on the SA Summary Worksheet.

Condition	Upper Segment	Middle Segment	Lower Segment	Field Indicators
Indicators of Bank Soil Stability	☐4	☒4	☐4	Infrequent raw banks, less than 10% of steam bank under stress from trampling, slumping, vegetation removal or active erosion, etc.
	☐3	☐3	☐3	Raw banks and loose soil intermittently and 10%-25% of stream bank under stress from trampling, trail crossing, hoof punching, vegetation removal, erosion etc.
	☐2	☐2	☐2	Significant raw banks and loose soil, 25%-50% of stream bank under stress, trampled, slumping or eroding etc.
	☐1	☐1	☐1	Raw banks almost continuous with greater than 50% of stream bank under stress, loose soil, slumping, trampled or eroding; or channel appear to lack banks due to trampling; or channel that is artificially hardened or concrete along most of its length.
Indicators of Stream Bank Erosion Potential	☐4	☒4	☐4	≥ 80% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by boulders, large cobbles and/or large woody debris that prevent bank erosion.
	☐3	☐3	☐3	≥50% - <80% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those areas not covered by vegetation are protected to allow only minor erosion.
	☐2	☐2	☐2	≥25% - <50% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those area not covered by vegetation or stabilized by roots, are covered by materials or vegetation that give limited protection.
	☐1	☐1	☐1	Less than 25% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those areas not covered by vegetation provide little or no control over erosion and excess shear stress, and the banks are susceptible to erosion by high water flows.

Average Indicator Score	

Table A4. Stream Bank Stability and Cover Rating	
Rating	**Description**
☒ 4	>3.5 - 4.0
◯ 3	>2.5 - ≤3.5
◯ 2	>1.5 - ≤2.5
◯ 1	1.0 - ≤1.5

SA CODE : SF2MI [5]

Date : 5/15/24

SA Name : Two Mile Pond Reservoir Transect [5]

Surveyor Initials : DS

A5 - Soil Surface Condition

orksheet 14. Soil Surface Condition. Check all that apply in the upper , middle and lower SA segments during the field reconnaissance. The absence of these indicators would signify that disturbances are naturally occurring (e.g., flood deposition or low-density wildlife trails). Estimate the percent soil disturbance by segment area and referring to the SA abiotic map. Rate using Table A5 and enter on the SA Rank Summary Worksheet.

Upper Segment	Middle Segment	Lower Segment	Field Indicators (Check all existing conditions)
☐	☐	☐	Active erosion features due to anthropogenic disturbance (eg. rills, gullies, plant pedestals).
☐	☒	☐	Multiple livestock and other (fishing,hiking) trails,
☐	☐	☐	Vehicle tracks including off-road and construction, etc.
☐	☐	☐	Impervious compacted surfaces or pavement
☐	☐	☐	Grading or plowing
☐	☐	☐	Fill
☐	☐	☐	Gravel pits
☐	☐	☐	Anthropogenic levees and berms
☐	☐	☐	Irrigation-driven salinity and mineral crusts
☐	☐	☐	Fire pits
☐	☐	☐	Other:
			Estimate % soil disturbance by segment area

Average % Soil Disturbance: > 1%

Table A5. Soil Surface Condition Rating

Rating	Description
☒ 4	Bare soil areas due to anthropogenic disturbance absent or very limited. No human-caused impervious surfaces or gravel pits are found within the SA. Total disturbance, including erosion, impervious surfaces, fill, or other anthropogenic degradation to the soil surface is less than 1% of the SA.
○ 3	Some amount of bare soil from human causes is present but the extent is limited. Area of impervious surfaces are minimal in extent. Total disturbance, including erosion, impervious surfaces, fill, gravel pits, vehicle tracks or other anthropogenic degradation to the soil surface is between 1% and 5% of the sampling area.
○ 2	Bare soils from human causes are common. These may include dense livestock trails, vehicle tracks, trails, construction staging areas, mechanical rutting, or irrigation-driven salinity. Soil disturbance, while apparent, is limited to specific areas and not found across the majority of the SA. Total disturbance, including erosion, impervious surfaces, fill, gravel mining, or other anthropogenic degradation to the soil surface is greater than 5% or less than 10% of the SA.
○ 1	Bare soil areas degrade portions of the site because of altered hydrology or other long-lasting impacts. Deep ruts from off-road vehicles or machinery are present. Livestock disturbance or trails are widespread and several inches deep. Water is channeled into rills or ponded. Additional human-caused impervious surfaces or soil compaction are present. Total disturbance, including erosion, impervious surfaces, fill,gravel mining or other anthropogenic degradation to the soil surface is equal to or greater than 10% of the SA.

SA CODE : SF2MI [5] **Date :** 5/15/24

SA Name : Two Mile Pond Reservoir Transect [5] **Surveyor Initials :** DS

Worksheet 15. Stressor Checklist. Check off stressors by intensity category that may be affecting wetland ecological condition of the SA and WOI. Assign categories using direct evidence where available or your best professional judgement otherwise. If the presence of the stressor is uncertain, mark as "Unkno
Rank Major Stressors in Dominant Stressor column(Pick up to 3)

Rank	Affect				Stressor Group/Stressor	Comments
	Major	Minor	Absent	Unknown		
					Adverse water management	
	☐	☑	☐	☐	Extended low flow dam releases	
	☐	☐	☑	☐	Timing of flow releases not concordant	
	☐	☐	☑	☐	Extended high flow dam releases	
	☐	☐	☑	☐	Agriculture/Urban flow diversion upstream	
					Adverse sediment management	
	☐	☐	☑	☐	Adverse sediment retention by dams	
	☐	☐	☑	☐	Sediment loss by dredging	
	☐	☐	☑	☐	Adverse sediment input (roads/development)	
					Artificial water additions	
	☐	☐	☑	☐	Sewer treatment effluent	
	☐	☐	☑	☐	Point source urban runoff	
	☐	☐	☑	☐	Factory, feedlot outfall	
	☐	☐	☑	☐	Agricultural irrigation ditch returns	
	☐	☐	☑	☐	Mining waste	
					Ground water pumping	
	☐	☐	☑	☐	Urban depletions	
	☐	☐	☑	☐	Fracking	
	☐	☐	☑	☐	Agriculture irrigation wells	
					Watershed alteration	
	☐	☐	☑	☐	Extensive recent fires in watershed	
	☐	☐	☑	☐	Extensive recent timber harvest	
	☐	☐	☑	☐	Extensive open pit mining in watershed	
	☐	☐	☑	☐	Livestock/wildlife overgrazing	
					Local biodiversity impacts	
	☐	☐	☑	☐	Evidence of excessive grazing (local)	
	☐	☐	☑	☐	Excessive noise affecting wildlife	
	0	0		0	Counts by Intensity	

ditional Comments

sion Date: 04/25/2022

Schema: Montane 2.5

NMRAM Montane Riverine Wetlands Version 2.5

SA Cover Worksheet					
SA Code SF2MI [5]	SA Name : Two Mile Pond Reservoir		Project : Riparian Assesement		
Code Tsct [5]	AU Name : Transect [5]		WOI : Two Mile Pond Reservoir		
County Santa Fe	HUC 12 Headwaters Santa Fe River	Elevation (ft) 7299	(m) 2224.7	Ecoregion 6.0 NWFM	

SA General Location and Boundary (Rationale, comments)

A riparian system that leads into a pond located on the east side of Santa Fe bordering the Santa Fe National Forest. This reservoir was decommissioned due to safety concerns regarding the reservoir and a water diversion to the area was recently shut down due to lack of water rights.

Driving Directions

Driving to Santa Fe from Albuquerque you head north on Old Pecos Trail. Then head east on Camino Del Monte Sol and right on Canyon Road until you reach the reservoir located to the North.

Ownership The Nature Conservative and The Santa Fe National Forest	Data Sharing Restrictions	Results to client only.	Fish Observed in Wetland?	

Surveyor Role	Surveyor Name	Surveyor Initials
Landscape	Dustin Schwartz	DS
Biotic	Annie McCoy	AM
Abiotic	Dustin Schwartz	DS
Stressors	Dustin Schwartz	DS

Easting (m)	Northing (m)	Zone	Datum	Latitude (DD ft)	Longitude (DD ft)
-105° 53' 24" W	35° 41' 23" N	13	NAD- 83 UTM	35.689722	-105.89
Survey Date	6/11/24	**Start Time**	9:00	**End Time**	15:00

SA Description

SA Landscape Context (summarize the wetland and surrounding landscape; include condition and impacts)

Looks very similar to last event but ground is moist
Spotted towhee and Red wing black bird

SA Biotic Condition (vegetation patterns, composition and structure, exotics and invasives, disturbance evidence, fire and herbivory)

All grass is still brown Hawkbit, Hawks beard, Willows
still recovering catt tails in pond coming back substantially

SA Abiotic Condition (hydrological alterations {e.g., dams, walls etc.]; flooding characteristics and evidence of overbank flooding; soil disturbance and other site impacts; explain the hydrologic breaks or other factors that define the SA limits)

Assessment Summary (Overall site condition summary and comments after the field data is collected.)

Provisional Field Score 3.11	Rank B	Surveyor(s) DS/AM	Final Score 3.11	Rank B	Initials DS	Date 6/11/24

SA CODE : SF2MI [5] **Date :** 6/11/24

SA Name : Two Mile Pond Reservoir Transect [5] **Surveyor Initials :** DS/AM

NMRAM - SA Rank Summary Worksheet: Montane Riverine Wetlands 2.5			
Metric Description	Rating	Wt	Final Score
Landscape Context		Σ 1.0	3.25
L1. Buffer Integrity Index	3	0.25	0.75
L2. Riparian Corridor Connectivity	4	0.25	1.0
L3. Relative Wetland Size	4	0.25	1.0
L4. Surrounding Land Use	2	0.25	0.5
Biotic		Σ	
B1. Relative Native Plant Community Composition	2	0.2	
B2. Vegetation Horizontal Patch Structure	3	0.2	
B3. Vegetation Vertical Structure	3	0.2	
B4. Native Riparian Tree Regeneration	2	0.2	
B5. Invasive Exotic Plant Species Cover	3	0.2	
Abiotic		Σ	
A1. Floodplain Hydrologic Connectivity		0.3	
A2. Physical Patch Diversity	3	0.2	
A3. Channel Equilibrium	3	0.2	
A4. Stream Bank Stability and Cover	4	0.2	
A5. Soil Surface Condition	4	0.1	

SA Condition Scoring Summary			
Major Attribute	Score	Wt.	Wt. Score
Landscape Context	3.25	0.3	0.975
Biotic	2.6	0.35	
Abiotic	3.5	0.35	
SA WETLAND CONDITION SCORE Σ			
SA WETLAND RANK =			3.11

SA Wetland Rank		
Rank	Score	Description
A	≥3.25 - 4.0	Excellent Condition
B	≥2.5 - <3.25	Good Condition
C	≥1.75 - <2.5	Fair Condition
D	1.0 - <1.75	Poor Condition

Stressor Summary	Major	Minor	Top Three	
	0	0	1	Seems Dry
			2	Doesn't get same water,
			3	

Stressor Comments (Evaluation of risk)

SA CODE : SF2MI [5]

Date : 6/11/24

SA Name : Two Mile Pond Reservoir Transect [5]

Surveyor Initials : DS/AM

Landscape Context

- Buffer Integrity Index

Worksheet 1a. Buffer and RCC Checklist. Check off land cover elements within the buffer area or RCC corridors that are either allowed, or are excluded and considered non-buffer elements that disrupt ecosystem connectivity. Indicate the imagery type and date (season and year of imagery).

Imagery	Google Earth KMZ. file	Image Date	6/23

Allowed buffer/RCC land cover elements			Excluded non-buffer/RCC land cover elements		
Buffer	RCC		Buffer	RCC	
[X]	[X]	Natural or semi-natural vegetation patches	[X]	[X]	Commercial/residential developments, parking lots, dams, bridges, revetments, and other structures
[X]	[X]	Small irrigation ditches without levees	[ ]	[ ]	Lawns, parks, golf courses, sports fields
[ ]	[ ]	Old fields, unmaintained	[ ]	[ ]	Railroads
[ ]	[ ]	Open range land	[ ]	[ ]	Maintained levees, sediment piles, construction materials, staging areas
[X]	[X]	Foot trails, horse trails, unpaved bike trails (low intensity)	[ ]	[ ]	Intensive livestock areas, horse paddocks, feedlots
[X]	[X]	Non-channel open water	[ ]	[ ]	Intensive agriculture: maintained pastures, hay fields, row crops, orchards, and vineyards
[X]	[X]	Non-functioning abandoned vegetated levees, or naturally occurring levees	[X]	[X]	Paved roads or developed second-order unpaved but graded roads
[ ]	[ ]	unpaved two tracks roads	[X]	[X]	Open water bounded by a levee or other manmade structure
[ ]	[ ]	Other	[ ]	[ ]	Other

Worksheet 1b. Buffer Percent Sub-metric. Measure or estimate the percentage of the SA perimeter composed of allowed buffer elements and enter into the Buffer Percent Box below. Rate the sub-metric using Table L1a and enter the rating on the Buffer Integrity Summary Worksheet 1d.

Buffer Percent (%)=	85%

Table L1a. Buffer Percent

Rating	Buffer Percent
○ 4	100%
(X) 3	≥80% - <100%
○ 2	≥50% - <80%
○ 1	<50%

Worksheet 1c. Buffer Width Sub-metric. Measure the length of each buffer line in meters in the GIS or on the map. Average the line lengths and rate using Table L1b. Enter the rating on the Buffer Integrity Summary Worksheet 1d.

Line	Buffer Width (m)	Buffer Width (ft)	Line	Buffer Width (m)	Buffer Width (ft)
A	164.26	538.91	E	161.93	531.26
B	125.25	410.92	F	231.48	759.44
C	115.39	378.57	G	121.25	397.80
D	111.07	364.40	H	155.87	511.38
Average		148.31 (m)		486.58	(ft)

Table L1b. Buffer Width

Rating	Average buffer width
○ 4	≥190m
(X) 3	≥130 - <190m
○ 2	≥65 - <130m
○ 1	<65m

Worksheet 1d. Buffer Integrity Summary. Enter the sub-metric Ratings from Tables L1a and L1b above to calculate the Buffer Integrity Index Score using the formula in the box below. Using the Buffer Integrity Index Score, enter rating for Buffer Integrity in Table L1c and on the SA Summary Worksheet.

Buffer % Rating	+	Buffer Width Rating	/2 =	Buffer Integrity Index Score
3	+	3	/2 =	3

Table L1c. Summary Rating for Buffer Integrity

Rating	Score
○ 4	>3.5
(X) 3	>2.5 - ≤3.5
○ 2	>1.5 - ≤2.5
○ 1	≤1.5

SA CODE : SF2MI [5]

Date : 6/11/24

SA Name : Two Mile Pond Reservoir Transect [5]

Surveyor Initials : DS/AM

L2 - Riparian Corridor Connectivity (RCC)

Worksheet 2. RCC excluded non-buffer elements calculation. Refer to worksheet 1a for excluded non-buffer RCC land cover elements. Following the steps in the Field Guide, enter the summed values in meters for excluded element lengths for each bank within each segment upstream and downstream of the SA. Sum the values for each segment and calculate % Segment Disruption for the upstream side and the downstream side. Add the total disruption for upstream and downstream segments and then calculate the % Total Disruptions for the riparian corridor. Rate Riparian Corridor Connectivity using Table L2 and the data from this worksheet. Enter rating on the SA Summary Worksheet.

Segments	Upstream Segment		Downstream Segment	
Banks	Left Bank	Right Bank	Left Bank	Right Bank
A) Total Bank Disruption (m)	0	0	0	0
B) Total Disruption by Segment (m)	0		0	
C) % Segment Disruption = (B/1000)*100	0		0	
D) Total Disruption both segments	0			
E) % Total Disruptions = (D/2000)*100	Zero disruption noticeable along the banks.			

Table L2. RCC Rating

Rating	Description
(X) 4	**0%** total disruption on both segments combined.
◯ 3	**<15%** total disruption on both segments combined.
◯ 2	**≥15% - <40%** total disruption on both segments combined.
◯ 1	**≥40%** total disruption on both segments combined.

L3 - Relative Wetland Size

Worksheet 3a. Calculate the Relative Size Ratio (RSR) between the current WOI size and the historic WOI size. b. Calculate the Relative Wetland Size Score (RWSI (%)) as (1-RSR)*100. Rate Relative Wetland Size Index using Table L3 and enter rating on the SA Summary Worksheet.

RSR					RWSI						
Current Size	/	Historic Size	=	RSR	1	-	RSR	X	100	=	RWSI (%)
9	/	10	=	0.9	1	-	0.1	X	100	=	10

Table L3. Relative Wetland Size Rating

Rating	RWSI Score	Description
(X) 4	≤10%	Wetland is at or only minimally reduced from its full natural extent
◯ 3	>10% - ≤40%	Wetland remains equal to or more than 60% of its natual size
◯ 2	>40% - ≤70%	Wetland has been reduced by more than 40% its natural size
◯ 1	>70%	Wetland has been reduced by more than 70% its natural size

SA CODE: SF2MI [5] **Date:** 6/11/24

SA Name: Two Mile Pond Reservoir Transect [5] **Surveyor Initials:** DS/AM

L4 - Surrounding Land Use

Worksheet 4. Surrounding Land Use. Enter the percent area occupied by a given Land Use Element in the Land Use Zone (LUZ) surrounding the SA. Calculate the Land Use Index (LUI) Score by element as the product of the element coefficient times the percent of the LUZ Area occupied. (The %LUZ Area must total 100%.) Sum the LUI scores for each element to create the final LUI Score. Rate using Table L4 and enter the rating in the SA Rank Summary Worksheet.

Land Use Element	Coef	% LUZ Area	LUI Score
Paved roads, parking lots, domestic or commercially developed buildings, mining (gravel pit, quarry, open pit, strip mining), railroads	0	0	0
Unpaved roads (e.g., driveway, tractor trail, unpaved parking lots), paddock, dirt lot	0.1	0	0
Dredging, borrow pits, abandoned mines, water-filled artificial impoundments (ponds and reservoirs)	0.1	0	0
Filling or dumping of sediment or soils	0.1	0	0
Intense recreation (all-terrain vehicle use, camping, popular fishing spot, etc.)	0.3	0	0
Rip-rapped channel (highly modified channel with severely limited vegetation zone that is altered by human activities but not a completely concrete channel [that goes under paved roads]), junkyards, trash dumps, disturbed ground (not including roads)	0.3	0	0
Ski area	0.4	0	0
Dam sites and flood-disturbed shorelines around water storage reservoirs	0.5	0	0
Abandoned artificial impoundments (ponds and reservoirs) and associated disturbed flood zones	0.5	10	5
Artificial/Constructed wetlands, irrigation ditches	0.7	20	14
Developed/Managed trail system (high use trail)	0.8	5	4
Agriculture - active tilled crop production	0.2	0	0
Agriculture - permanent crop (vineyards, orchards, nurseries, berry production)	0.3	0	0
Manicured lawns, sport fields, and golf courses; urban manicured parks	0.3	0	0
Old fields and other disturbed fallow lands dominated by ruderal and/or exotic species (e.g., kochia, Russian thistle, mustards, annual vegetation)	0.5	0	0
Mature old fields and other fallow lands with natural composition, introduced hay field and pastures (e.g., perennial vegetation cover)	0.7	0	0
Restoration areas in process to natural conditions (re-conversion in process)	0.8	65	52
Haying of native grassland (e.g., no tillage, haying and baling only)	0.9	0	0
Heavy logging or tree removal with >50% of large trees (e.g., >30 cm diameter at breast height) removed, woodland/shrub vegetation conversion (chaining, cabling, rotochopping)	0.3	0	0
Commercial tree plantation, Christmas tree farms	0.6	0	0
Selective logging or tree removal with <50% of large trees (e.g., >30 cm diameter at breast height) removed	0.8	0	0
Mature restoration areas returned to natural conditions (re-converted)	0.9	0	0
Natural area, land managed for native vegetation - No agriculture, logging, development	1	0	0
LUI Score= Coefficient * % LUZ Area		100	75

Table L4. Surrounding Land Use Rating	
Rating	**LUI Score**
◯ 4	≥95 - 100
◯ 3	≥80 - <95
⊗ 2	≥40 - <80
◯ 1	<40

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Biotic Metrics

Worksheet 5. Vegetation Community Patch Polygon Data for Biotic Metrics B3, B4, and B5 for Polygons from SA Biotic Map. Enter data for each polygon under a unique number assigned from the SA Biotic Map. Each polygon is evaluated with respect to Vegetation Vertical Structure (B3), Native Tree Regeneration (B4), and Invasive Exotic Plant Species Cover (B5) metrics. Enter the Vertical Structure Type (VST) for B3, tree regeneration % cover within the polygon for B4 and the % cover of invasive exotic species for B5. Use the Tables in Appendix B and the Field Guide for metric instructions. Enter the species codes for the invasive exotic species found in the polygon (from NM Noxious Weed List - Appendix D). Use the comments box for documenting and describing vegetation community patch features.

Polygon No	B3 Vertical Structure Type	B4 Tree Regeneration % Cover	B5 Invasive Exotic Species % Cover	Invasive Exotic Species (List Code(s))	Comments
1	IA1				
2	IA2				
3	IIA1				
4	IIIB1	50%	None	—	Willows ar yellowing and weak cat tails starting
5	IIIC1				
6	IVEI				
7	IVF1				
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

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B1 - Relative Native Plant Community Composition

Worksheet 6. CT Plant Species and Polygon Assignments. Starting with CT A, enter the number of the first polygon from Worksheet 5. Enter the species codes for the two top dominant species in each stratum that appears in the polygon. See footnotes for special instructions. If a species appears in more than one strata, assign the species to the stratum in which it is more abundant. Each polygon is either assigned to the same CT if it has the same composition or a new CT is created for the polygon.

		Tall Woody Stratum [1]				Short Woody Stratum [2]				Herbaceous/Sparse Stratum [3]				CT Score [4]		
CT	Polygon Nos.	Species 1	E N	Species 2	E N	Species 3	E N	Species 4	E N	Species 5	E N	Species 6	E N	Raw[4]	% SA[5]	Wt Score[6]
A						Willow	N	Cattail	N	Mullein	E	Meadow grass	N	3.75	80	3
B																
C																
D																
E																
F																
G																
H																
I																
J																
K																
L																
M																
N																
O																
													Final Weighted Score[7]			3

1. Trees and shrubs > 6 m (20 feet) and > 25% total stratum cover; 2. Trees and shrubs ≤6m (20 feet) and >25% total stratum cover; 3. Herbaceous (graminoids and forbs)>10% total stratum cover. [4]Raw Score is from Table B1a (Appendix B); [5]%SA is the percentage of the SA area covered by the CT and expressed as a decimal number; the total area %SA must equal 1; [6]Wt. Score is the product of the Raw Score * % SA; [7]The Final Weighted Score is the sum of the Wt. Scores. Rate the CT Final Weighted Score on Table B1 and enter the Rating for Relative Native Plant Community Composition on the SA Rank Summary Worksheet.

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Table B1. Relative Native Plant Community Composition Rating		
Rating	**CT Final Weighted Score**	
◯ 4	≥ 3.75	<10% non-native
◯ 3	≥ 3.25 and <3.75	10% ≤20% non-native
☒ 2	> 2.0 and <3.25	20% ≤50% non-native
◯ 1	≤2.0	>50% non-native

B2 - Vegetation Horizontal Patch Structure

Worksheet 7. Using Tables B2a and B2c (Appendix B), choose the schematic pattern that best matches the mapped vegetation patch pattern for the SA. Rate using Table B2 and enter rating on the SA Rank Summary Worksheet.

Horizontal Patch Structure pattern A,B,C, or D:

Table B2. Rating for Vegetation Horizontal Patch Structure	
Rating	**Description**
◯ 4	Most closely matches Pattern A. SA has a diverse patch structure (≥4 patch types) and complexity. A dominant patch type would be difficult to determine.
☒ 3	Pattern B. SA has a moderate degree of patch diversity (3 patch types present) and complexity. A single, dominant patch type may be present, although the other patch types would be well represented and have more than one occurrence in the SA.
◯ 2	Pattern C. SA has a low degree of patch diversity and complexity. Two or three patch types may be present; however, a single, dominant patch type exists with the others occupying a small portion of the SA.
◯ 1	Pattern D. SA has essentially little to no patch diversity or complexity. The SA is dominated by a single patch type. Other patch types, if present, occur infrequently and occupy a small portion of the SA.

B3 - Vegetation Vertical Structure

Worksheet 8. Percentage of SA by vertical structure type (VST). Using the Structure Type from Worksheet 5 and the %SA from Worksheet 6 calculate the total area of the SA occupied by each VST using the formula VST(type) = Sum (%SA for CTs with same VST) x 100. Enter the total %SA for each VST below.

	VST 1 High Structure Forest	VST 2 Low Structure Forest	VST 5 Tall Shrubland	VST 6S Short Shrubland	VST 6W Herbaceous Wetland	VST 6H Herbaceous Vegetation	VST 7 Sparse Vegetation
Total % of SA			80			20	

Table B3. Rating for Vegetation Vertical Structure. Using the data from Worksheet 8 rate the SA based on the criteria in Table B3. Pick the row that best fits the distribution of VSTs in the SA. Each row specifies the required dominant structure type plus co- and sub-dominants. Percentage cover required per co- or sub-dominant is a minimum. The types listed in the columns must be the most common VSTs in the SA for the rating to be applicable (Worksheet 8). VSTs 1 and 2 can be inverted in dominance and the rating is still applicable. Work from the top of the table down. As long as the requirements for one row are met, any other types may or may not co-occur without changing the rating. Enter the rating on the SA Rank Summary Worksheet.

Rating	Dominant VST	Co- or Sub-dominant VST ≥15%	Sub-dominant VST ≥5%
◯ 4	1	5	6W and/or 6H
	1	6W	
	2 or 1 and 2	5	6W and/or 6H
☒ 3	1		
	2 or 1 and 2	5	
	2 or 1 and 2	6W	
	5	6W	
◯ 2	2 or 1 and 2		
	5		
	6W		
◯ 1	6S		
	6H		
	7		

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B4 - Native Riparian Tree Regeneration

B4. Native Riparian Tree Regeneration rating. Using the polygon percent cover of native tree seedlings, saplings and poles from Worksheet 5, rate the SA based on polygon percent cover and patch density. Enter the rating on the SA Rank Summary Worksheet.

Rating	Description
4	Native poles, sapling, and seedlings trees well represented, obvious regeneration, many patches or polygons with >5% cover, typically multiple size (age) classes.
3	Native poles, saplings and/or seedlings common, scattered patches or polygons with 1% -5% cover, size classes few.
X 2	Native poles, saplings and/or seedlings present but uncommon, restricted to one or two patches or polygons with typically <1% cover, little size class differentiation.
1	Native poles, saplings, and/or seedlings absent (0% cover).

B5 - Invasive Exotic Plant Species Cover

Worksheet 9. Based on Worksheets 5 and 6, calculate or estimate the percentage cover of invasive exotic species for the SA and enter below. Rate using Table B5 and enter the rating on the SA Rank Summary Worksheet.

Rating Method [ ]

Invasive cover (%) [>1]

calculate

Table B5. Ratings for Invasive Exotic Plant Species Cover	
Rating	**Invasive Species Cover %**
4	0%
3 X	>0% - <1%
2	≥1% - <10%
1	≥10

Additional CTs and Biotic Metric Comments:

Willows Are starting

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Abiotic Metrics

A1 - Floodplain Hydrologic Connectivity

Method 1

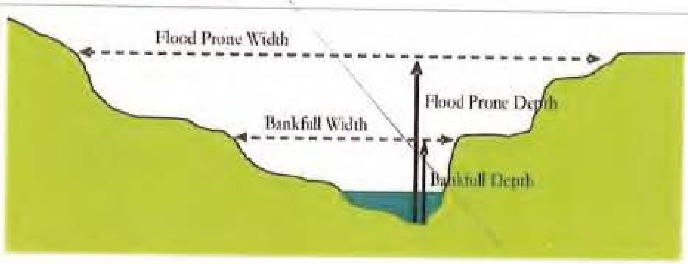
Worksheet 10a. Floodplain Hydrologic Connectivity Measurements. The following six steps are conducted at each of three cross-sections at the approximate mid-points along straight riffles and away from deep pools or meander bends. Use a measuring tape and temporary stakes for horizontal measurements, and a stadia rod or similar measuring stick for vertical measurements. If unavailable, use visual estimates. Where straight channel segments do not occur, or if there is excessive ponding or bankfull indicators are obscured, use the narrative rating approach (Method 2). Enter the rating method in the box below, either meander pool, riffle pool or narrative (Method 2) and choose the corresponding Table (A1a, A1b, or A1c) to rate Floodplain Hydrologic Connectivity. Enter the rating on the SA Rank Summary Worksheet. Photographs of each cross-section are required and recorded in Table A1d.

Steps	Description	Cross-section: 1	2	3
1: Bankfull width	This is a critical step requiring familiarity with field indicators of the bankfull contour. Measure the distance between the right and left bankfull contours with a tape.			
2: Maximum bankfull depth	Keeping the tape level between the right and left bankfull contours, measure the height of the line above the thalweg (the deepest part of the channel). A pocket line level can help here.			
3: Flood-prone depth	Double the estimate of maximum bankfull depth from Step 2.			
4: Flood-prone width	Using a tape, measure the length of a level line at a height equal to the flood prone depth from Step 3 to where it intercepts the right and left banks.			
5: Calculate Entrenchment Ratio	Divide the flood-prone width (Step 4) by the bankfull width (Step 1).			
6: Calculate average ratio	Calculate the average for Step 5 for all three replicate cross-sections. Enter the average here and rate using Table A1a. Enter the rating in the A1 box on the SA Rank Summary Worksheet.			

Rating Method	

Table A1a. Rating for Floodplain Hydrologic Connectivity in meandering single-channel riffle-pool systems

Rating	Description
◯ 4	Average entrenchment ratio is ≥ 2.2;
◯ 3	Average entrenchment ratio is ≥1.9 - <2.2
◯ 2	Average entrenchment ratio is ≥1.5 - <1.9
◯ 1	Average entrenchment ratio is < 1.5



Worksheet 10b. Floodplain Hydrologic Connectivity Indicators. Use this Worksheet in conjunction with Table A1c. Check the boxes for all that apply to each segment.

U	M	L	Indicator
☐	☐	☐	Bankful is slightly below bank height
☐	☐	☐	Bankful is well below bank height and channel is incised
☐	☐	☐	Channel widening due to bank failure
☐	☐	☐	Constructed levees preclude floodplain inundation
☐	☐	☐	Stream is straightened/channelized
☐	☐	☐	Inset floodplain formation
☐	☐	☐	Decreased peak flows due to hydrologic modification
☐	☐	☐	Bankfull indicators at point of incipient flooding of the floodplain
☐	☐	☐	Indicators of overbank flow on floodplain
☐	☐	☐	Floodplain inundation due to beaver activity

Table A1b. Rating for Floodplain Hydrologic Connectivity in single-channel step-pool systems

Rating	Description
◯ 4	Average entrenchment ratio is ≥ 1.9
◯ 3	Average entrenchment ratio is ≥1.4 - <1.9
◯ 2	Average entrenchment ratio is ≥1.2 - <1.4
◯ 1	Average entrenchment ratio is < 1.2

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Method 2

ble A1c. Narratve Floodplain Hydrologic Connectivity Rating. Select the narrative description that best describes the floodplain hydrologic connectivity. At each cross-section, use Worksheet 10b to record channel incision, bank modification, inset floodplain or other hydrologic evidence that would preclude natural floodplain inundation. Conversely, assess indicators and evidence for overbank flow and floodplain inundation. Record whether beaver activity is obscuring bankful indicators due to inundation of the floodplain. Select a rating from the table below. Use data from Worksheets 10b to help select rating. Enter Rating on SA Summary Worksheet. Photographs are required at each cross-section and recorded in Table A1d.

Rating	Description
○ 4	Fully connected to the natural floodplain. Indicators of bankfull discharge are at the bank/floodplain transition, with over-bankfull flows likely to inundate a broad area of floodplain. Floodplain supports riparian vegetation and shows signs of overbank sediment deposition. Or beaver ponds inundate the entire, normally active floodplain and preclude the identification of bankfull indicators and the active floodplain width.
○ 3	Flow access to the floodplain moderately limited by incision, channelization. Less frequent inundation than fully connected streams described above (as noted by bankfull indicators below floodplain transition). Floodplain supports a riparian overstory, but some understory plants may be upland. An inset floodplain supporting riparian vegetation may also be present.
○ 2	Incised, channelized or modified with an inset floodplain formed, which is regularly inundated and supports riparian vegetation and sediment regimes. Or the stream has minimal access to the natural floodplain due to incision, channelization, or flow modification, and the natural floodplain does not support riparian vegetation except for relatively long-lived phreatophytes (e.g., cottonwood, salt cedar, etc.).
○ 1	Fully disconnected from floodplain, either through incision, bank modification/channelization, or hydrologic modification (i.e., abandonment of floodplain due to decreased peak flows). Indicators may include upland vegetation and lack of overbank sediment deposits on the floodplain, etc.

T A1d. Photo Point Log for Cross-Section Photographs. For each cross-section record the digital names/numbers of photographs taken looking Upstream and Downstream from the thalweg and looking Bank Right* and Bank Left* across the stream from each side of the cross-section. Leave the cross-section tape and flags indicating bankful in the ground when taking the Bank Right and Bank Left photos. A photo board with SA name and cross-section information is helpful. (*The bank of a stream or river on the right (left) of the observer when facing in the direction of flow or downstream.) See Appendix E for additional details.

Cross Section	Easting (Latitude)	Northing (Longitude)	Upstream	Downstream	Bank Right	Bank Left
1						
2						
3						

Floodplain Hydrologic Connectivity Comments:

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A2 - Physical Patch Complexity

Worksheet 11. Physical Patch Complexity checklist. Check off existing physical patch types for the upper, middle and lower segments of the SA; count the number of unique patch types and rate using Table A2 in combination with the narrative description. Enter the rating on the SA Rank Summary Worksheet.

Upper Segment	Middle Segment	Lower Segment	Field Indicators (check all existing conditions)
☐	☐	☐	Active side channels
☐	☐	☐	Abandoned channels
☐	☐	☐	Backwater/eddy
☐	☐	☐	Riffles or rapids
☐	☐	☐	Shoals, sparely-vegetated bars
☐	☒	☐	Channel boulders
☐	☐	☐	Oxbow lakes/ponds on floodplains
☐	☐	☐	Vegetated island and side bars
☐	☐	☐	Terraces
☐	☐	☐	Channel pools
☐	☐	☐	Beaver ponds
☐	☐	☐	Swales, depressional features on floodplains
☐	☐	☐	Debris jams in channel
☐	☐	☐	Woody wrack piles on the floodplain
☐	☐	☐	Floodplain micro-topography (mounds, pits)
☐	☐	☐	Downed logs
☐	☐	☐	Natural levees
☐	☐	☐	Standing snags
☐	☐	☐	Variegated, convoluted, or crenulated foreshore
☐	☐	☐	Undercut banks in channels
			No. of unique Patch Types

Table A2. Rating for Physical Patch Complexity

Rating	Description
◯ 4	**High** degree of physical patch complexity across the floodplain. There are many floodplain micro-habitats present (mounds and pits, woody wrack piles, etc.), many fluvial geomorphic surfaces (swales, side channels, terraces, side bars, etc.), and there is high in-channel complexity (pools and riffles, large woody debris, undercut banks, etc.). As a guide, 12 or more unique indicators are present and well distributed throughout the SA (most indicators are found on multiple segments).
X 3	**Moderate** physical patch complexity scattered across the floodplain. There are several floodplain micro-habitats present, several fluvial geomorphic surfaces, and there is moderate in-channel complexity. As a guide, 9 - 11 indicators are scattered throughout the SA (some on multiple segments).
◯ 2	**Limited** physical patch complexity scattered across the floodplain. There are some floodplain micro-habitats present, some fluvial geomorphic surfaces, and there is limited in-channel complexity. As a guide, on average there are 6 - 8 unique indicators present in the SA (only a few on multiple segments).
◯ 1	**Little** or no physical patch complexity on the floodplain. There are few or no floodplain micro-habitats present, few different fluvial geomorphic surfaces, and there is little or no in-channel complexity. As a guide, ≤ 5 unique indicators are present in the SA.

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A3- Channel Equilibrium

Worksheet 12. Channel Equilibrium Checklist. Check all field indicators that apply to the upper, middle and lower segment of the SA observed at the channel edge of the traverse. Rate using the Table A3 descriptions and based on a preponderance of evidence from this checklist. Enter the rating on the SA Rank Summary Worksheet.

Condition	Upper Segment	Middle Segment	Lower Segment	Field Indicators(check all existing conditions)
Indicators of Channel Equilibrium	☐	☒	☐	The channel has a well-defined bankfull contour that clearly demarcates the point of incipient flooding where moderate frequent flow events spread flow across the floodplain.
	☐	☒	☐	Perennial riparian vegetation is abundant and well established along the bankfull contour, but not below it.
	☐	☒	☐	There is leaf litter, thatch, or wrack in most pools.
	☐	☒	☐	The channel contains embedded woody debris of the size and amount consistent with what is naturally available in the riparian area.
	☐	☐	☐	There is little or no active undercutting or burial of riparian vegetation.
	☐	☒	☐	There are no bars that are densely vegetated with perennial vegetation (neither mid-channel bars or point bars).
	☐	☐	☐	Channel and point-bars consist of well-sorted bed material.
	☐	☐	☐	The channel bed is not planar and without an abundance of fine materials filling the interstitial spaces between larger stream substrate.
	☐	☐	☐	There are channel pools at meander bends and some deep pools within the reach.
Indicators of Active Degradation	☐	☐	☐	The channel is characterized by deeply undercut banks with exposed living roots of trees or shrubs.
	☐	☐	☐	There are abundant bank slides or slumps, or the lower banks are uniformly scoured and not vegetated.
	☐	☐	☐	Bank vegetation is declining in stature or vigor, or many riparian trees and shrubs along the banks are leaning or falling into the channel.
	☐	☐	☐	Channel bed is scoured to large cobbles or boulders and entrained bank material is filling the cobble interstices and pools.
	☐	☐	☐	There are active headcuts within the channel.
	☐	☐	☐	An obvious historical floodplain has recently been abandoned, as indicated by the age structure of its riparian vegetation.
Indicators of Active Aggradation	☐	☐	☐	There is abundant fresh splays of coarse sediment covering the floodplain above the natural point bar elevation.
	☐	☐	☐	There are partially buried living tree trunks or shrubs along the banks.
	☐	☐	☐	The channel bed is planar overall. The stream lacks well-defined channel pools at meander bends, or pools are filled with sediment.
	☐	☐	☐	There are partially buried or sediment-choked culverts.
	☐	☐	☐	There are avulsion channels on the floodplain or adjacent valley floor.

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Table A3. Rating for Channel Equilibrium	
Rating	**Description**
☒ 4	Most of the channel throughout the SA is in equilibrium condition with little evidence of excessive aggradation or degradation based on the field indicators listed in Worksheet 12.
◯ 3	There is some evidence of excessive aggradation or degradation; the channel throughout the SA seems to approach an equilibrium condition. Circle primary process: aggradation or degradation.
◯ 2	There is evidence of severe aggradation or degradation throughout most of the channel through the SA. Circle primary process: aggradation or degradation.
◯ 1	The channel is artificially hardened, channelized, or is concrete throughout most of the SA.

A4- Stream Bank Stability and Cover

Worksheet 13. Bank Soil Stability and Streambank Erosion Potential Checklist. Check the indicator that best describes the condition looking a minimum of 25 m upstream and downstream at the channel edge of the upper, middle and lower segment of the SA. Average the six scores for both Bank Soil Stability and Streambank Erosion Potential. Rate using the Table A4 and enter the rating on the SA Summary Worksheet.

Condition	Upper Segment	Middle Segment	Lower Segment	Field Indicators
Indicators of Bank Soil Stability	☐4	☑4	☐4	Infrequent raw banks, less than 10% of steam bank under stress from trampling, slumping, vegetation removal or active erosion, etc.
	☐3	☐3	☐3	Raw banks and loose soil intermittently and 10%-25% of stream bank under stress from trampling, trail crossing, hoof punching, vegetation removal, erosion etc.
	☐2	☐2	☐2	Significant raw banks and loose soil, 25%-50% of stream bank under stress, trampled, slumping or eroding etc.
	☐1	☐1	☐1	Raw banks almost continuous with greater than 50% of stream bank under stress, loose soil, slumping, trampled or eroding; or channel appear to lack banks due to trampling; or channel that is artificially hardened or concrete along most of its length.
Indicators of Stream Bank Erosion Potential	☐4	☐4	☐4	≥ 80% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by boulders, large cobbles and/or large woody debris that prevent bank erosion.
	☐3	☐3	☐3	≥50% - <80% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those areas not covered by vegetation are protected to allow only minor erosion.
	☐2	☑2	☐2	≥25% - <50% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those area not covered by vegetation or stabilized by roots, are covered by materials or vegetation that give limited protection.
	☐1	☐1	☐1	Less than 25% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those areas not covered by vegetation provide little or no control over erosion and excess shear stress, and the banks are susceptible to erosion by high water flows.

Average Indicator Score	

Table A4. Stream Bank Stability and Cover Rating	
Rating	**Description**
☒ 4	>3.5 - 4.0
◯ 3	>2.5 - ≤3.5
◯ 2	>1.5 - ≤2.5
◯ 1	1.0 - ≤1.5

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A5 - Soil Surface Condition

Worksheet 14. Soil Surface Condition. Check all that apply in the upper , middle and lower SA segments during the field reconnaissance. The absence of these indicators would signify that disturbances are naturally occurring (e.g., flood deposition or low-density wildlife trails). Estimate the percent soil disturbance by segment area and referring to the SA abiotic map. Rate using Table A5 and enter on the SA Rank Summary Worksheet.

Upper Segment	Middle Segment	Lower Segment	Field Indicators (Check all existing conditions)
☐	☐	☐	Active erosion features due to anthropogenic disturbance (eg. rills, gullies, plant pedestals).
☐	☑	☐	Multiple livestock and other (fishing,hiking) trails,
☐	☐	☐	Vehicle tracks including off-road and construction, etc.
☐	☐	☐	Impervious compacted surfaces or pavement
☐	☐	☐	Grading or plowing
☐	☐	☐	Fill
☐	☐	☐	Gravel pits
☐	☐	☐	Anthropogenic levees and berms
☐	☐	☐	Irrigation-driven salinity and mineral crusts
☐	☐	☐	Fire pits
☐	☐	☐	Other:
			Estimate % soil disturbance by segment area

Average % Soil Disturbance: 2%

Table A5. Soil Surface Condition Rating	
Rating	**Description**
● 4	Bare soil areas due to anthropogenic disturbance absent or very limited. No human-caused impervious surfaces or gravel pits are found within the SA. Total disturbance, including erosion, impervious surfaces, fill, or other anthropogenic degradation to the soil surface is less than 1% of the SA.
○ 3	Some amount of bare soil from human causes is present but the extent is limited. Area of impervious surfaces are minimal in extent. Total disturbance, including erosion, impervious surfaces, fill, gravel pits, vehicle tracks or other anthropogenic degradation to the soil surface is between 1% and 5% of the sampling area.
○ 2	Bare soils from human causes are common. These may include dense livestock trails, vehicle tracks, trails, construction staging areas, mechanical rutting, or irrigation-driven salinity. Soil disturbance, while apparent, is limited to specific areas and not found across the majority of the SA. Total disturbance, including erosion, impervious surfaces, fill, gravel mining, or other anthropogenic degradation to the soil surface is greater than 5% or less than 10% of the SA.
○ 1	Bare soil areas degrade portions of the site because of altered hydrology or other long-lasting impacts. Deep ruts from off-road vehicles or machinery are present. Livestock disturbance or trails are widespread and several inches deep. Water is channeled into rills or ponded. Additional human-caused impervious surfaces or soil compaction are present. Total disturbance, including erosion, impervious surfaces, fill,gravel mining or other anthropogenic degradation to the soil surface is equal to or greater than 10% of the SA.

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Worksheet 15. Stressor Checklist. Check off stressors by intensity category that may be affecting wetland ecological condition of the SA and WOI. Assign categories using direct evidence where available or your best professional judgement otherwise. If the presence of the stressor is uncertain, mark as "Unknown" Rank Major Stressors in Dominant Stressor column(Pick up to 3)

Rank	Affect: Major	Affect: Minor	Affect: Absent	Affect: Unknown	Stressor Group/Stressor	Comments
					Adverse water management	
	☐	☒	☐	☐	Extended low flow dam releases	
	☐	☐	☒	☐	Timing of flow releases not concordant	
	☐	☐	☒	☐	Extended high flow dam releases	
	☐	☐	☒	☐	Agriculture/Urban flow diversion upstream	
					Adverse sediment management	
	☐	☐	☒	☐	Adverse sediment retention by dams	
	☐	☐	☒	☐	Sediment loss by dredging	
	☐	☐	☒	☐	Adverse sediment input (roads/development)	
					Artificial water additions	
	☐	☐	☒	☐	Sewer treatment effluent	
	☐	☐	☒	☐	Point source urban runoff	
	☐	☐	☒	☐	Factory, feedlot outfall	
	☐	☐	☒	☐	Agricultural irrigation ditch returns	
	☐	☐	☒	☐	Mining waste	
					Ground water pumping	
	☐	☐	☒	☐	Urban depletions	
	☐	☐	☒	☐	Fracking	
	☐	☐	☒	☐	Agriculture irrigation wells	
					Watershed alteration	
	☐	☐	☒	☐	Extensive recent fires in watershed	
	☐	☐	☒	☐	Extensive recent timber harvest	
	☐	☐	☒	☐	Extensive open pit mining in watershed	
	☐	☐	☒	☐	Livestock/wildlife overgrazing	
					Local biodiversity impacts	
	☐	☐	☐	☐	Evidence of excessive grazing (local)	
	☐	☐	☐	☐	Excessive noise affecting wildlife	
	0	0		0	Counts by Intensity	

Additional Comments

Version Date: 04/25/2022 Schema: Montane 2.5

NMRAM Montane Riverine Wetlands Version 2.5

SA Cover Worksheet					
SA Code SF2MI [6]	SA Name : Two Mile Pond Reservoir		Project : Riparian Assesement		
A de Tsct [6]	AU Name : Transect [6]		WOI : Two Mile Pond Reservoir		
County Santa Fe	HUC 12 Headwaters Santa Fe River	Elevation (ft) 7299	(m) 2224.7	Ecoregion 6.0 NWFM	

SA General Location and Boundary (Rationale, comments)
A riparian system that leads into a pond located on the east side of Santa Fe bordering the Santa Fe National Forest. This reservoir was decommissioned due to safety concerns regarding the reservoir and a water diversion to the area was recently shut down due to lack of water rights.

Driving Directions
Driving to Santa Fe from Albuquerque you head north on Old Pecos Trail. Then head east on Camino Del Monte Sol and right on Canyon Road until you reach the reservoir located to the North.

Ownership The Nature Conservative and The Santa Fe National Forest	Data Sharing Restrictions	Results to client only.	Fish Observed in Wetland?	

Surveyor Role	Surveyor Name	Surveyor Initials
Landscape	Dustin	DS
Biotic	Annie	DS
Abiotic	Dustin	DS
Stressors	Both	DS

Easting (m)	Northing (m)	Zone	Datum	Latitude (DD ft)	Longitude (DD ft)
-105° 53' 24" W	35° 41' 23" N	13	NAD- 83 UTM	35.689722	-105.89
Survey Date	4/9/24	**Start Time**		**End Time**	

SA Description

SA Landscape Context (summarize the wetland and surrounding landscape; include condition and impacts)

Still dry and recovering from winter.

SA Biotic Condition (vegetation patterns, composition and structure, exotics and invasives, disturbance evidence, fire and herbivory)

Some bladder wort growing on the pond

SA Abiotic Condition (hydrological alterations {e.g., dams, walls etc.]; flooding characteristics and evidence of overbank flooding; soil disturbance and other site impacts; explain the hydrologic breaks or other factors that define the SA limits)

Area is still very dry and recovering from winter

Assessment Summary (Overall site condition summary and comments after the field data is collected.)

Area is Still recovering from winter
Not much new life yet.

Provisional Field Score 3.11	Rank B	Surveyor(s) DS	Final Score 3.111	Rank B	Initials DS	Date 4/9/24

SA CODE : SF2MI [6]

Date : 4/9/24

SA Name : Two Mile Pond Reservoir Transect [6]

Surveyor Initials : DS

NMRAM - SA Rank Summary Worksheet: Montane Riverine Wetlands 2.5			
Metric Description	Rating	Wt	Final Score
Landscape Context		Σ 1.0	3.25
L1. Buffer Integrity Index	3	0.25	0.75
L2. Riparian Corridor Connectivity	4	0.25	1.0
L3. Relative Wetland Size	4	0.25	1.0
L4. Surrounding Land Use	2	0.25	0.5
Biotic		Σ	
B1. Relative Native Plant Community Composition	2	0.2	
B2. Vegetation Horizontal Patch Structure	3	0.2	
B3. Vegetation Vertical Structure	2	0.2	
B4. Native Riparian Tree Regeneration	4	0.2	
B5. Invasive Exotic Plant Species Cover	2	0.2	
Abiotic		Σ	
A1. Floodplain Hydrologic Connectivity		0.3	
A2. Physical Patch Diversity	2	0.2	
A3. Channel Equilibrium	4	0.2	
A4. Stream Bank Stability and Cover	4	0.2	
A5. Soil Surface Condition	4	0.1	

SA Condition Scoring Summary			
Major Attribute	Score	Wt.	Wt. Score
Landscape Context	3.25	0.3	0.975
Biotic	2.6	0.35	
Abiotic	3.5	0.35	
SA WETLAND CONDITION SCORE Σ			
SA WETLAND RANK =			3.11

SA Wetland Rank		
Rank	Score	Description
A	≥3.25 - 4.0	Excellent Condition
B	≥2.5 - <3.25	Good Condition
C	≥1.75 - <2.5	Fair Condition
D	1.0 - <1.75	Poor Condition

Stressor Summary	Major	Minor	Top Three	
	0	0	1	Not Many Stressors Present here
			2	Less Water
			3	

Stressor Comments (Evaluation of risk)

Good Area chance of changes from less water

SA CODE : SF2MI [6] **Date :** 4/9/24

SA Name : Two Mile Pond Reservoir Transect [6] **Surveyor Initials :** DS

Landscape Context

L1 - Buffer Integrity Index

Worksheet 1a. Buffer and RCC Checklist. Check off land cover elements within the buffer area or RCC corridors that are either allowed, or are excluded and considered non-buffer elements that disrupt ecosystem connectivity. Indicate the imagery type and date (season and year of imagery).

Imagery	Google Earth KMZ. file	Image Date	6/23

Allowed buffer/RCC land cover elements			Excluded non-buffer/RCC land cover elements		
Buffer	RCC		Buffer	RCC	
[X]	[X]	Natural or semi-natural vegetation patches	[X]	[X]	Commercial/residential developments, parking lots, dams, bridges, revetments, and other structures
[X]	[X]	Small irrigation ditches without levees	[ ]	[ ]	Lawns, parks, golf courses, sports fields
[ ]	[ ]	Old fields, unmaintained	[ ]	[ ]	Railroads
[ ]	[ ]	Open range land	[ ]	[ ]	Maintained levees, sediment piles, construction materials, staging areas
[X]	[X]	Foot trails, horse trails, unpaved bike trails (low intensity)	[ ]	[ ]	Intensive livestock areas, horse paddocks, feedlots
[X]	[X]	Non-channel open water	[ ]	[ ]	Intensive agriculture: maintained pastures, hay fields, row crops, orchards, and vineyards
[X]	[X]	Non-functioning abandoned vegetated levees, or naturally occurring levees	[X]	[X]	Paved roads or developed second-order unpaved but graded roads
[ ]	[ ]	unpaved two tracks roads	[X]	[X]	Open water bounded by a levee or other manmade structure
[ ]	[ ]	Other	[ ]	[ ]	Other

Worksheet 1b. Buffer Percent Sub-metric. Measure or estimate the percentage of the SA perimeter composed of allowed buffer elements and enter into the Buffer Percent Box below. Rate the sub-metric using Table L1a and enter the rating on the Buffer Integrity Summary Worksheet 1d.

Buffer Percent (%)=	85%

Table L1a. Buffer Percent

Rating	Buffer Percent
◯ 4	100%
(X) 3	≥80% - <100%
◯ 2	≥50% - <80%
◯ 1	<50%

Worksheet 1c. Buffer Width Sub-metric. Measure the length of each buffer line in meters in the GIS or on the map. Average the line lengths and rate using Table L1b. Enter the rating on the Buffer Integrity Summary Worksheet 1d.

Line	Buffer Width (m)	Buffer Width (ft)	Line	Buffer Width (m)	Buffer Width (ft)
A	164.26	538.91	E	161.93	531.26
B	125.25	410.92	F	231.48	759.44
C	115.39	378.57	G	121.25	397.80
D	111.07	364.40	H	155.87	511.38
Average	148.31 (m)		486.58 (ft)		

Table L1b. Buffer Width

Rating	Average buffer width
◯ 4	≥190m
(X) 3	≥130 - <190m
◯ 2	≥65 - <130m
◯ 1	<65m

Worksheet 1d. Buffer Integrity Summary. Enter the sub-metric Ratings from Tables L1a and L1b above to calculate the Buffer Integrity Index Score using the formula in the box below. Using the Buffer Integrity Index Score, enter rating for Buffer Integrity in Table L1c on the SA Summary Worksheet.

Buffer % Rating	+	Buffer Width Rating	/2 =	Buffer Integrity Index Score
3	+	3	/2 =	3

Table L1c. Summary Rating for Buffer Integrity

Rating	Score
◯ 4	>3.5
(X) 3	>2.5 - ≤3.5
◯ 2	>1.5 - ≤2.5
◯ 1	≤1.5

SA CODE : SF2MI [6]

Date : 4/9/24

SA Name : Two Mile Pond Reservoir Transect [6]

Surveyor Initials : DS

L2 - Riparian Corridor Connectivity (RCC)

Worksheet 2. RCC excluded non-buffer elements calculation. Refer to worksheet 1a for excluded non-buffer RCC land cover elements. Following the steps in the Field Guide, enter the summed values in meters for excluded element lengths for each bank within each segment upstream and downstream of the SA. Sum the values for each segment and calculate % Segment Disruption for the upstream side and the downstream side. Add the total disruption for upstream and downstream segments and then calculate the % Total Disruptions for the riparian corridor. Rate Riparian Corridor Connectivity using Table L2 and the data from this worksheet. Enter rating on the SA Summary Worksheet.

Segments	Upstream Segment		Downstream Segment	
Banks	Left Bank	Right Bank	Left Bank	Right Bank
A) Total Bank Disruption (m)	0	0	0	0
B) Total Disruption by Segment (m)	0		0	
C) % Segment Disruption = (B/1000)*100	0		0	
D) Total Disruption both segments	0			
E) % Total Disruptions = (D/2000)*100	Zero disruption noticeable along the banks.			

Table L2. RCC Rating	
Rating	**Description**
(X) 4	**0%** total disruption on both segments combined.
( ) 3	**<15%** total disruption on both segments combined.
( ) 2	**≥15%** - **<40%** total disruption on both segments combined.
( ) 1	**≥40%** total disruption on both segments combined.

L3 - Relative Wetland Size

Worksheet 3a. Calculate the Relative Size Ratio (RSR) between the current WOI size and the historic WOI size. b. Calculate the Relative Wetland Size Score (RWSI (%)) as (1-RSR)*100. Rate Relative Wetland Size Index using Table L3 and enter rating on the SA Summary Workshe

RSR					RWSI						
Current Size	/	Historic Size	=	RSR	1	-	RSR	X	100	=	RWSI (%)
9	/	10	=	0.9	1	-	0.1	X	100	=	10

Table L3. Relative Wetland Size Rating		
Rating	**RWSI Score**	**Description**
(X) 4	≤10%	Wetland is at or only minimally reduced from its full natural extent
( ) 3	>10% - ≤40%	Wetland remains equal to or more than 60% of its natual size
( ) 2	>40% - ≤70%	Wetland has been reduced by more than 40% its natural size
( ) 1	>70%	Wetland has been reduced by more than 70% its natural size

SA CODE : SF2MI [6] **Date :** 4/9/24

SA Name : Two Mile Pond Reservoir Transect [6] **Surveyor Initials :** DS

L4 - Surrounding Land Use

Worksheet 4. Surrounding Land Use. Enter the percent area occupied by a given Land Use Element in the Land Use Zone (LUZ) surrounding the SA. Calculate the Land Use Index (LUI) Score by element as the product of the element coefficient times the percent of the LUZ Area occupied. (The %LUZ Area must total 100%.) Sum the LUI scores for each element to create the final LUI Score. Rate using Table L4 and enter the rating in the SA Rank Summary Worksheet.

Land Use Element	Coef	% LUZ Area	LUI Score
Paved roads, parking lots, domestic or commercially developed buildings, mining (gravel pit, quarry, open pit, strip mining), railroads	0	0	0
Unpaved roads (e.g., driveway, tractor trail, unpaved parking lots), paddock, dirt lot	0.1	0	0
Dredging, borrow pits, abandoned mines, water-filled artificial impoundments (ponds and reservoirs)	0.1	0	0
Filling or dumping of sediment or soils	0.1	0	0
Intense recreation (all-terrain vehicle use, camping, popular fishing spot, etc.)	0.3	0	0
Rip-rapped channel (highly modified channel with severely limited vegetation zone that is altered by human activities but not a completely concrete channel [that goes under paved roads]), junkyards, trash dumps, disturbed ground (not including roads)	0.3	0	0
Ski area	0.4	0	0
Dam sites and flood-disturbed shorelines around water storage reservoirs	0.5	0	0
Abandoned artificial impoundments (ponds and reservoirs) and associated disturbed flood zones	0.5	10	5
Artificial/Constructed wetlands, irrigation ditches	0.7	20	14
Developed/Managed trail system (high use trail)	0.8	5	4
Agriculture - active tilled crop production	0.2	0	0
Agriculture - permanent crop (vineyards, orchards, nurseries, berry production)	0.3	0	0
Manicured lawns, sport fields, and golf courses; urban manicured parks	0.3	0	0
Old fields and other disturbed fallow lands dominated by ruderal and/or exotic species (e.g., kochia, Russian thistle, mustards, annual vegetation)	0.5	0	0
Mature old fields and other fallow lands with natural composition, introduced hay field and pastures (e.g., perennial vegetation cover)	0.7	0	0
Restoration areas in process to natural conditions (re-conversion in process)	0.8	65	52
Haying of native grassland (e.g., no tillage, haying and baling only)	0.9	0	0
Heavy logging or tree removal with >50% of large trees (e.g., >30 cm diameter at breast height) removed, woodland/shrub vegetation conversion (chaining, cabling, rotochopping)	0.3	0	0
Commercial tree plantation, Christmas tree farms	0.6	0	0
Selective logging or tree removal with <50% of large trees (e.g., >30 cm diameter at breast height) removed	0.8	0	0
Mature restoration areas returned to natural conditions (re-converted)	0.9	0	0
Natural area, land managed for native vegetation - No agriculture, logging, development	1	0	0
LUI Score= Coefficient * % LUZ Area		100	75

Table L4. Surrounding Land Use Rating	
Rating	**LUI Score**
○ 4	≥95 - 100
○ 3	≥80 - <95
⊗ 2	≥40 - <80
○ 1	<40

SA CODE: SF2MI [6] **SA Name:** Two Mile Pond Reservoir Transect [6] **Date:** 4/9/24 **Surveyor Initials:** BS

Biotic Metrics

Worksheet 5. Vegetation Community Patch Polygon Data for Biotic Metrics B3, B4, and B5 for Polygons from SA Biotic Map. Enter data for each polygon under a unique number assigned from the SA Biotic Map. Each polygon is evaluated with respect to Vegetation Vertical Structure (B3), Native Tree Regeneration (B4), and Invasive Exotic Plant Species Cover (B5) metrics. Enter the Vertical Structure Type (VST) for B3, tree regeneration % cover within the polygon for B4 and the % cover of invasive exotic species for B5. Use the Tables in Appendix B and the Field Guide for metric instructions. Enter the species codes for the invasive exotic species found in the polygon (from NM Noxious Weed List - Appendix D). Use the comments box for documenting and describing vegetation community patch features.

Polygon No	B3 Vertical Structure Type	B4 Tree Regeneration % Cover	B5 Invasive Exotic Species % Cover	Invasive Exotic Species (List Code(s))	Comments
1	IA1				
2	IA2				
3	IIA1				
4	IIIB1	60%	< 5%	Mullein	Still dry No New life of willow/cattails
5	IIIC1	60-70%	≈ 20%	Mustard/Cheatgrass	Alot of cheat grass, lots of New small life
6	IVEI				
7	IVF1				
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

SA CODE: SF2MI [6] SA Name: Two Mile Pond Reservoir Transect [6] Date: 4/9/24 Surveyor Initials: DS

B1 - Relative Native Plant Community Composition

Worksheet 6. CT Plant Species and Polygon Assignments. Starting with CT A, enter the number of the first polygon from Worksheet 5. Enter the species codes for the two top dominant species in each stratum that appears in the polygon. See footnotes for special instructions. If a species appears in more than one strata, assign the species to the stratum in which it is more abundant. Each polygon is either assigned to the same CT if it has the same composition or a new CT is created for the polygon.

		Tall Woody Stratum 1				Short Woody Stratum 2				Herbaceous/Sparse Stratum 3				CT Score 4		
CT	Polygon Nos.	Species 1	E N	Species 2	E N	Species 3	E N	Species 4	E N	Species 5	E N	Species 6	E N	Raw4	% SA5	Wt Score6
A	4					Saltbush	N	Chamisa	N	cheat grass	E	rye grass	N	2.0	60%	
B	5					Willow	N	cattail	N	Mullein	E	cheat grass	N	4.0	40%	
C												bluestem				
D																
E																
F																
G																
H																
I																
J																
K																
L																
M																
N																
O																
													Final Weighted Score7			2.8

1. Trees and shrubs > 6 m (20 feet) and > 25% total stratum cover; 2. Trees and shrubs ≤6m (20 feet) and >25% total stratum cover; 3. Herbaceous (graminoids and forbs)>10% total stratum cover. 4Raw Score is from Table B1a (Appendix B); 5%SA is the percentage of the SA area covered by the CT and expressed as a decimal number; the total area %SA must equal 1; 6Wt. Score is the product of the Raw Score * % SA; 7The Final Weighted Score is the sum of the Wt. Scores. Rate the CT Final Weighted Score on Table B1 and enter the Rating for Relative Native Plant Community Composition on the SA Rank Summary Worksheet.

SA CODE : SF2MI [6]　　　　**Date :** 4/9/24

SA Name : Two Mile Pond Reservoir Transect [6]　　　　**Surveyor Initials :** DS

Table B1. Relative Native Plant Community Composition Rating		
Rating	**CT Final Weighted Score**	
4	≥ 3.75	<10% non-native
3	≥ 3.25 and <3.75	10% ≤20% non-native
2	> 2.0 and <3.25	20% ≤50% non-native
1	≤2.0	>50% non-native

2 - Vegetation Horizontal Patch Structure

/orksheet 7. Using Tables B2a and B2c (Appendix B), choose the schematic pattern that best matches the mapped vegetation patch attern for the SA. Rate using Table B2 and enter rating on the SA Rank Summary Worksheet.

orizontal Patch Structure pattern A,B,C, or D: B

Table B2. Rating for Vegetation Horizontal Patch Structure	
Rating	**Description**
4	Most closely matches Pattern A. SA has a diverse patch structure (≥4 patch types) and complexity. A dominant patch type would be difficult to determine.
3	Pattern B. SA has a moderate degree of patch diversity (3 patch types present) and complexity. A single, dominant patch type may be present, although the other patch types would be well represented and have more than one occurrence in the SA.
2	Pattern C. SA has a low degree of patch diversity and complexity. Two or three patch types may be present; however, a single, dominant patch type exists with the others occupying a small portion of the SA.
1	Pattern D. SA has essentially little to no patch diversity or complexity. The SA is dominated by a single patch type. Other patch types, if present, occur infrequently and occupy a small portion of the SA.

3 - Vegetation Vertical Structure

/orksheet 8. Percentage of SA by vertical structure type (VST). Using the Structure Type from Worksheet 5 and the %SA om Worksheet 6 calculate the total area of the SA occupied by each VST using the formula VST(type) = Sum (%SA for CTs with ame VST) x 100. Enter the total %SA for each VST below.

	VST 1 High Structure Forest	VST 2 Low Structure Forest	VST 5 Tall Shrubland	VST 6S Short Shrubland	VST 6W Herbaceous Wetland	VST 6H Herbaceous Vegetation	VST 7 Sparse Vegetation
Total % of SA				50%		50%	

able B3. Rating for Vegetation Vertical Structure. Using the data from Worksheet 8 rate the SA based on the criteria in Table B3. Pick the ow that best fits the distribution of VSTs in the SA. Each row specifies the required dominant structure type plus co- and sub-dominants. ercentage cover required per co- or sub-dominant is a minimum. The types listed in the columns must be the most common VSTs in the SA for e rating to be applicable (Worksheet 8). VSTs 1 and 2 can be inverted in dominance and the rating is still applicable. Work from the top of the able down. As long as the requirements for one row are met, any other types may or may not co-occur without changing the rating. Enter the ting on the SA Rank Summary Worksheet.

Rating	Dominant VST	Co- or Sub-dominant VST ≥15%	Sub-dominant VST ≥5%
4	1	5	6W and/or 6H
	1	6W	
	2 or 1 and 2	5	6W and/or 6H
3	1		
	2 or 1 and 2	5	
	2 or 1 and 2	6W	
	5	6W	
2	2 or 1 and 2		
	5		
	6W		
1	6S		
	6H		
	7		

SA CODE : SF2MI [6]

Date : 4/9/24

SA Name : Two Mile Pond Reservoir Transect [6]

Surveyor Initials : DS

B4 - Native Riparian Tree Regeneration

Table B4. Native Riparian Tree Regeneration rating. Using the polygon percent cover of native tree seedlings, saplings and poles from Worksheet 5, rate the SA based on polygon percent cover and patch density. Enter the rating on the SA Rank Summary Worksheet.

Rating	Description
X 4	Native poles, sapling, and seedlings trees well represented, obvious regeneration, many patches or polygons with >5% cover, typically multiple size (age) classes.
3	Native poles, saplings and/or seedlings common, scattered patches or polygons with 1% -5% cover, size classes few.
2	Native poles, saplings and/or seedlings present but uncommon, restricted to one or two patches or polygons with typically <1% cover, little size class differentiation.
1	Native poles, saplings, and/or seedlings absent (0% cover).

B5 - Invasive Exotic Plant Species Cover

Worksheet 9. Based on Worksheets 5 and 6, calculate or estimate the percentage cover of invasive exotic species for the SA and enter below. Rate using Table B5 and enter the rating on the SA Rank Summary Worksheet.

Rating Method: < 5%

Invasive cover (%): < 5%

calculate

Table B5. Ratings for Invasive Exotic Plant Species Cover	
Rating	**Invasive Species Cover %**
4	0%
3	>0% - <1%
2 X	≥1% - <10%
1	≥10

Additional CTs and Biotic Metric Comments:

Duck on pond. lots of new green grasses and herbacios cover but mostly dry

Chimiga greening up

SA CODE : SF2MI [6]

Date : 4/9/24

SA Name : Two Mile Pond Reservoir Transect [6]

Surveyor Initials : DS

A2 - Physical Patch Complexity

Worksheet 11. Physical Patch Complexity checklist. Check off existing physical patch types for the upper, middle and lower segments of the SA; count the number of unique patch types and rate using Table A2 in combination with the narrative description. Enter the rating on the SA Rank Summary Worksheet.

Upper Segment	Middle Segment	Lower Segment	Field Indicators (check all existing conditions)
☐	☐	☐	Active side channels
☐	☐	☐	Abandoned channels
☐	☐	☐	Backwater/eddy
☐	☐	☐	Riffles or rapids
☐	☐	☐	Shoals, sparely-vegetated bars
☐	☐	☐	Channel boulders
☐	☐	☐	Oxbow lakes/ponds on floodplains
☐	☐	☐	Vegetated island and side bars
☐	☒	☐	Terraces
☐	☒	☐	Channel pools
☐	☐	☐	Beaver ponds
☐	☐	☐	Swales, depressional features on floodplains
☐	☐	☐	Debris jams in channel
☐	☐	☐	Woody wrack piles on the floodplain
☐	☐	☐	Floodplain micro-topography (mounds, pits)
☐	☐	☐	Downed logs
☐	☒	☐	Natural levees
☐	☐	☐	Standing snags
☐	☐	☐	Variegated, convoluted, or crenulated foreshore
☐	☐	☐	Undercut banks in channels
			No. of unique Patch Types

Table A2. Rating for Physical Patch Complexity

Rating	Description
◯ 4	**High** degree of physical patch complexity across the floodplain. There are many floodplain micro-habitats present (mounds and pits, woody wrack piles, etc.), many fluvial geomorphic surfaces (swales, side channels, terraces, side bars, etc.), and there is high in-channel complexity (pools and riffles, large woody debris, undercut banks, etc.). As a guide, 12 or more unique indicators are present and well distributed throughout the SA (most indicators are found on multiple segments).
◯ 3	**Moderate** physical patch complexity scattered across the floodplain. There are several floodplain micro-habitats present, several fluvial geomorphic surfaces, and there is moderate in-channel complexity. As a guide, 9 - 11 indicators are scattered throughout the SA (some on multiple segments).
☒ 2	**Limited** physical patch complexity scattered across the floodplain. There are some floodplain micro-habitats present, some fluvial geomorphic surfaces, and there is limited in-channel complexity. As a guide, on average there are 6 - 8 unique indicators present in the SA (only a few on multiple segments).
◯ 1	**Little** or no physical patch complexity on the floodplain. There are few or no floodplain micro-habitats present, few different fluvial geomorphic surfaces, and there is little or no in-channel complexity. As a guide, ≤ 5 unique indicators are present in the SA.

SA CODE : SF2MI [6] Date : 4/9/24

SA Name : Two Mile Pond Reservoir Transect [6] Surveyor Initials : DS

A3- Channel Equilibrium

Worksheet 12. Channel Equilibrium Checklist. Check all field indicators that apply to the upper, middle and lower segment of the SA observed at the channel edge of the traverse. Rate using the Table A3 descriptions and based on a preponderance of evidence from this checklist. Enter the rating on the SA Rank Summary Worksheet.

Condition	Upper Segment	Middle Segment	Lower Segment	Field Indicators(check all existing conditions)
Indicators of Channel Equilibrium	☐	☒	☐	The channel has a well-defined bankfull contour that clearly demarcates the point of incipient flooding where moderate frequent flow events spread flow across the floodplain.
	☐	☒	☐	Perennial riparian vegetation is abundant and well established along the bankfull contour, but not below it.
	☐	☒	☐	There is leaf litter, thatch, or wrack in most pools.
	☐	☒	☐	The channel contains embedded woody debris of the size and amount consistent with what is naturally available in the riparian area.
	☐	☒	☐	There is little or no active undercutting or burial of riparian vegetation.
	☐	☐	☐	There are no bars that are densely vegetated with perennial vegetation (neither mid-channel bars or point bars).
	☐	☒	☐	Channel and point-bars consist of well-sorted bed material.
	☐	☑	☐	The channel bed is not planar and without an abundance of fine materials filling the interstitial spaces between larger stream substrate.
	☐	☐	☐	There are channel pools at meander bends and some deep pools within the reach.
Indicators of Active Degradation	☐	☐	☐	The channel is characterized by deeply undercut banks with exposed living roots of trees or shrubs.
	☐	☐	☐	There are abundant bank slides or slumps, or the lower banks are uniformly scoured and not vegetated.
	☐	☐	☐	Bank vegetation is declining in stature or vigor, or many riparian trees and shrubs along the banks are leaning or falling into the channel.
	☐	☐	☐	Channel bed is scoured to large cobbles or boulders and entrained bank material is filling the cobble interstices and pools.
	☐	☐	☐	There are active headcuts within the channel.
	☐	☐	☐	An obvious historical floodplain has recently been abandoned, as indicated by the age structure of its riparian vegetation.
Indicators of Active Aggradation	☐	☐	☐	There is abundant fresh splays of coarse sediment covering the floodplain above the natural point bar elevation.
	☐	☐	☐	There are partially buried living tree trunks or shrubs along the banks.
	☐	☐	☐	The channel bed is planar overall. The stream lacks well-defined channel pools at meander bends, or pools are filled with sediment.
	☐	☐	☐	There are partially buried or sediment-choked culverts.
	☐	☐	☐	There are avulsion channels on the floodplain or adjacent valley floor.

SA CODE : SF2MI [6]

Date : 4/9/24

SA Name : Two Mile Pond Reservoir Transect [6]

Surveyor Initials : DS

Table A3. Rating for Channel Equilibrium

Rating	Description
☒ 4	Most of the channel throughout the SA is in equilibrium condition with little evidence of excessive aggradation or degradation based on the field indicators listed in Worksheet 12.
◯ 3	There is some evidence of excessive aggradation or degradation; the channel throughout the SA seems to approach an equilibrium condition. Circle primary process: aggradation or degradation.
◯ 2	There is evidence of severe aggradation or degradation throughout most of the channel through the SA. Circle primary process: aggradation or degradation.
◯ 1	The channel is artificially hardened, channelized, or is concrete throughout most of the SA.

A4- Stream Bank Stability and Cover

Worksheet 13. Bank Soil Stability and Streambank Erosion Potential Checklist. Check the indicator that best describes the condition looking a minimum of 25 m upstream and downstream at the channel edge of the upper, middle and lower segment of the SA. Average the six scores for both Bank Soil Stability and Streambank Erosion Potential. Rate using the Table A4 and enter the rating on the SA Summary Worksheet.

Condition	Upper Segment	Middle Segment	Lower Segment	Field Indicators
Indicators of Bank Soil Stability	☐4	☒4	☐4	Infrequent raw banks, less than 10% of steam bank under stress from trampling, slumping, vegetation removal or active erosion, etc.
	☐3	☐3	☐3	Raw banks and loose soil intermittently and 10%-25% of stream bank under stress from trampling, trail crossing, hoof punching, vegetation removal, erosion etc.
	☐2	☐2	☐2	Significant raw banks and loose soil, 25%-50% of stream bank under stress, trampled, slumping or eroding etc.
	☐1	☐1	☐1	Raw banks almost continuous with greater than 50% of stream bank under stress, loose soil, slumping, trampled or eroding; or channel appear to lack banks due to trampling; or channel that is artificially hardened or concrete along most of its length.
Indicators of Stream Bank Erosion Potential	☐4	☒4	☐4	≥ 80% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by boulders, large cobbles and/or large woody debris that prevent bank erosion.
	☐3	☐3	☐3	≥50% - <80% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those areas not covered by vegetation are protected to allow only minor erosion.
	☐2	☐2	☐2	≥25% - <50% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those area not covered by vegetation or stabilized by roots, are covered by materials or vegetation that give limited protection.
	☐1	☐1	☐1	Less than 25% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those areas not covered by vegetation provide little or no control over erosion and excess shear stress, and the banks are susceptible to erosion by high water flows.

Average Indicator Score 4

Table A4. Stream Bank Stability and Cover Rating

Rating	Description
☒ 4	>3.5 - 4.0
◯ 3	>2.5 - ≤3.5
◯ 2	>1.5 - ≤2.5
◯ 1	1.0 - ≤1.5

SA CODE : SF2MI [6]

Date : 4/9/24

SA Name : Two Mile Pond Reservoir Transect [6]

Surveyor Initials : DS

A5 - Soil Surface Condition

Worksheet 14. Soil Surface Condition. Check all that apply in the upper, middle and lower SA segments during the field reconnaissance. The absence of these indicators would signify that disturbances are naturally occurring (e.g., flood deposition or low-density wildlife trails). Estimate the percent soil disturbance by segment area and referring to the SA abiotic map. Rate using Table A5 and enter on the SA Rank Summary Worksheet.

Upper Segment	Middle Segment	Lower Segment	Field Indicators (Check all existing conditions)
☐	☐	☐	Active erosion features due to anthropogenic disturbance (eg. rills, gullies, plant pedestals).
☐	☒	☐	Multiple livestock and other (fishing,hiking) trails,
☐	☐	☐	Vehicle tracks including off-road and construction, etc.
☐	☐	☐	Impervious compacted surfaces or pavement
☐	☐	☐	Grading or plowing
☐	☐	☐	Fill
☐	☐	☐	Gravel pits
☐	☐	☐	Anthropogenic levees and berms
☐	☐	☐	Irrigation-driven salinity and mineral crusts
☐	☐	☐	Fire pits
☐	☐	☐	Other:
			Estimate % soil disturbance by segment area

Average % Soil Disturbance:

Table A5. Soil Surface Condition Rating	
Rating	**Description**
☒ 4	Bare soil areas due to anthropogenic disturbance absent or very limited. No human-caused impervious surfaces or gravel pits are found within the SA. Total disturbance, including erosion, impervious surfaces, fill, or other anthropogenic degradation to the soil surface is less than 1% of the SA.
○ 3	Some amount of bare soil from human causes is present but the extent is limited. Area of impervious surfaces are minimal in extent. Total disturbance, including erosion, impervious surfaces, fill, gravel pits, vehicle tracks or other anthropogenic degradation to the soil surface is between 1% and 5% of the sampling area.
○ 2	Bare soils from human causes are common. These may include dense livestock trails, vehicle tracks, trails, construction staging areas, mechanical rutting, or irrigation-driven salinity. Soil disturbance, while apparent, is limited to specific areas and not found across the majority of the SA. Total disturbance, including erosion, impervious surfaces, fill, gravel mining, or other anthropogenic degradation to the soil surface is greater than 5% or less than 10% of the SA.
○ 1	Bare soil areas degrade portions of the site because of altered hydrology or other long-lasting impacts. Deep ruts from off-road vehicles or machinery are present. Livestock disturbance or trails are widespread and several inches deep. Water is channeled into rills or ponded. Additional human-caused impervious surfaces or soil compaction are present. Total disturbance, including erosion, impervious surfaces, fill,gravel mining or other anthropogenic degradation to the soil surface is equal to or greater than 10% of the SA.

SA CODE : SF2MI [6] **Date :** 4/7/24

SA Name : Two Mile Pond Reservoir Transect [6] **Surveyor Initials :** DS

Worksheet 15. Stressor Checklist. Check off stressors by intensity category that may be affecting wetland ecological condition of the SA and WOI. Assign categories using direct evidence where available or your best professional judgement otherwise. If the presence of the stressor is uncertain, mark as "Unknow Rank Major Stressors in Dominant Stressor column(Pick up to 3)

Rank	Affect: Major	Minor	Absent	Unknown	Stressor Group/Stressor	Comments
					Adverse water management	
	☒	☐	☐	☐	Extended low flow dam releases	
	☐	☐	☒	☐	Timing of flow releases not concordant	
	☐	☐	☒	☐	Extended high flow dam releases	
	☐	☐	☒	☐	Agriculture/Urban flow diversion upstream	
					Adverse sediment management	
	☐	☐	☒	☐	Adverse sediment retention by dams	
	☐	☐	☒	☐	Sediment loss by dredging	
	☐	☐	☒	☐	Adverse sediment input (roads/development)	
					Artificial water additions	
	☐	☐	☒	☐	Sewer treatment effluent	
	☐	☐	☒	☐	Point source urban runoff	
	☐	☐	☒	☐	Factory, feedlot outfall	
	☐	☐	☒	☐	Agricultural irrigation ditch returns	
	☐	☐	☒	☐	Mining waste	
					Ground water pumping	
	☐	☐	☒	☐	Urban depletions	
	☐	☐	☒	☐	Fracking	
	☐	☐	☒	☐	Agriculture irrigation wells	
					Watershed alteration	
	☐	☐	☒	☐	Extensive recent fires in watershed	
	☐	☐	☒	☐	Extensive recent timber harvest	
	☐	☐	☒	☐	Extensive open pit mining in watershed	
	☐	☐	☒	☐	Livestock/wildlife overgrazing	
					Local biodiversity impacts	
	☐	☐	☐	☐	Evidence of excessive grazing (local)	
	☐	☐	☐	☐	Excessive noise affecting wildlife	
	0	0		0	Counts by Intensity	

itional Comments

ion Date: 04/25/2022

Schema: Montane 2.5

SA CODE : SF2MI [ ] **Date :**

SA Name : Two Mile Pond Reservoir Transect [ ] **Surveyor Initials :**

Photo Point Log

Worksheet 16. Photo point Log. Photo points are highly recommended to document 1) general condition of the SA, 2) dominant plant communities, and 3) stream condition. (See metric descriptions for when photo documentation is required.) The photograph number, direction (AZM=azimuth compass direction of photo), photo point coordinates (GPS UTM northing and easting location), and latitude and longitude should be recorded, along with a general description and segment on which the photo was taken and the initials of the photographer.

Photo PT File	AZM	Easting	Northing	Latitude	Longitude	Description	Initial

NMRAM Montane Riverine Wetlands Version 2.5

SA Cover Worksheet					
SA Code SF2MI [6]	SA Name : Two Mile Pond Reservoir		Project : Riparian Assesement		
AU Code Tsct [6]	AU Name : Transect [6]		WOI : Two Mile Pond Reservoir		
County Santa Fe	HUC 12 Headwaters Santa Fe River	Elevation (ft) 7299	(m) 2224.7	Ecoregion 6.0 NWFM	

SA General Location and Boundary (Rationale, comments)
A riparian system that leads into a pond located on the east side of Santa Fe bordering the Santa Fe National Forest. This reservoir was decommissioned due to safety concerns regarding the reservoir and a water diversion to the area was recently shut down due to lack of water rights.

Driving Directions
Driving to Santa Fe from Albuquerque you head north on Old Pecos Trail. Then head east on Camino Del Monte Sol and right on Canyon Road until you reach the reservoir located to the North.

Ownership The Nature Conservative and The Santa Fe National Forest	Data Sharing Restrictions	Results to client only.	Fish Observed in Wetland?	

Surveyor Role	Surveyor Name	Surveyor Initials
Landscape	Dustin	DS
Biotic	Annie	DS
Abiotic	Dustin	DS
Stressors	Both	DS

Easting (m)	Northing (m)	Zone	Datum	Latitude (DD ft)	Longitude (DD ft)
-105° 53' 24" W	35° 41' 23" N	13	NAD- 83 UTM	35.689722	-105.89
Survey Date	5/15/24	Start Time		End Time	

SA Description

SA Landscape Context (summarize the wetland and surrounding landscape; include condition and impacts)

Area is beginning to show signs of spring growth
Some cat tails and willows budding

SA Biotic Condition (vegetation patterns, composition and structure, exotics and invasives, disturbance evidence, fire and herbivory)

Pin weed (purple flowers), Alyssum, Frogs can be heard, 2 ducks Mallard on pond
~~[illegible]~~ Willow are green cat tails are recovering on pond edge, American bladder wort

SA Abiotic Condition (hydrological alterations {e.g., dams, walls etc.]; flooding characteristics and evidence of overbank flooding; soil disturbance and other site impacts; explain the hydrologic breaks or other factors that define the SA limits)

Land transitions very quickly with change in elevation,

Assessment Summary (Overall site condition summary and comments after the field data is collected.)

Ground cover is looking promising,
No stressors in this Area.

Provisional Field Score 3.11	Rank B	Surveyor(s) DS	Final Score 3.11	Rank B	Initials DS	Date 5/15/24

SA CODE : SF2MI [6]

Date : 5/15/24

SA Name : Two Mile Pond Reservoir Transect [6]

Surveyor Initials : DS

NMRAM - SA Rank Summary Worksheet: Montane Riverine Wetlands 2.5			
Metric Description	Rating	Wt	Final Score
Landscape Context		Σ 1.0	3.25
L1. Buffer Integrity Index	3	0.25	0.75
L2. Riparian Corridor Connectivity	4	0.25	1.0
L3. Relative Wetland Size	4	0.25	1.0
L4. Surrounding Land Use	2	0.25	0.5
Biotic		Σ	
B1. Relative Native Plant Community Composition	2	0.2	
B2. Vegetation Horizontal Patch Structure	3	0.2	
B3. Vegetation Vertical Structure	2	0.2	
B4. Native Riparian Tree Regeneration	4	0.2	
B5. Invasive Exotic Plant Species Cover	2	0.2	
Abiotic		Σ	
A1. Floodplain Hydrologic Connectivity		0.3	
A2. Physical Patch Diversity	2	0.2	
A3. Channel Equilibrium	4	0.2	
A4. Stream Bank Stability and Cover	4	0.2	
A5. Soil Surface Condition	4	0.1	

SA Condition Scoring Summary			
Major Attribute	Score	Wt.	Wt. Score
Landscape Context	3.25	0.3	0.975
Biotic	2.6	0.35	
Abiotic	3.5	0.35	
SA WETLAND CONDITION SCORE Σ			
SA WETLAND RANK =			3.11

SA Wetland Rank		
Rank	Score	Description
A	≥3.25 - 4.0	Excellent Condition
B	≥2.5 - <3.25	Good Condition
C	≥1.75 - <2.5	Fair Condition
D	1.0 - <1.75	Poor Condition

Stressor Summary	Major	Minor	Top Three	
	0	0	1	
			2	
			3	

Stressor Comments (Evaluation of risk)

SA CODE: SF2MI [6] **Date:** 5/15/24

SA Name: Two Mile Pond Reservoir Transect [6] **Surveyor Initials:** DS

Landscape Context

L. - Buffer Integrity Index

Worksheet 1a. Buffer and RCC Checklist. Check off land cover elements within the buffer area or RCC corridors that are either allowed, or are excluded and considered non-buffer elements that disrupt ecosystem connectivity. Indicate the imagery type and date (season and year of imagery).

Imagery	Google Earth KMZ. file	Image Date	6/23

Allowed buffer/RCC land cover elements			Excluded non-buffer/RCC land cover elements		
Buffer	RCC		Buffer	RCC	
[X]	[X]	Natural or semi-natural vegetation patches	[X]	[X]	Commercial/residential developments, parking lots, dams, bridges, revetments, and other structures
[X]	[X]	Small irrigation ditches without levees	[ ]	[ ]	Lawns, parks, golf courses, sports fields
[ ]	[ ]	Old fields, unmaintained	[ ]	[ ]	Railroads
[ ]	[ ]	Open range land	[ ]	[ ]	Maintained levees, sediment piles, construction materials, staging areas
[X]	[X]	Foot trails, horse trails, unpaved bike trails (low intensity)	[ ]	[ ]	Intensive livestock areas, horse paddocks, feedlots
[X]	[X]	Non-channel open water	[ ]	[ ]	Intensive agriculture: maintained pastures, hay fields, row crops, orchards, and vineyards
[X]	[X]	Non-functioning abandoned vegetated levees, or naturally occurring levees	[X]	[X]	Paved roads or developed second-order unpaved but graded roads
[ ]	[ ]	unpaved two tracks roads	[X]	[X]	Open water bounded by a levee or other manmade structure
[ ]	[ ]	Other	[ ]	[ ]	Other

Worksheet 1b. Buffer Percent Sub-metric. Measure or estimate the percentage of the SA perimeter composed of allowed buffer elements and enter into the Buffer Percent Box below. Rate the sub-metric using Table L1a and enter the rating on the Buffer Integrity Summary Worksheet 1d.

Buffer Percent (%)=	85%

Table L1a. Buffer Percent

Rating	Buffer Percent
( ) 4	100%
(X) 3	≥80% - <100%
( ) 2	≥50% - <80%
( ) 1	<50%

Worksheet 1c. Buffer Width Sub-metric. Measure the length of each buffer line in meters in the GIS or on the map. Average the line lengths and rate using Table L1b. Enter the rating on the Buffer Integrity Summary Worksheet 1d.

Line	Buffer Width (m)	Buffer Width (ft)	Line	Buffer Width (m)	Buffer Width (ft)
A	164.26	538.91	E	161.93	531.26
B	125.25	410.92	F	231.48	759.44
C	115.39	378.57	G	121.25	397.80
D	111.07	364.40	H	155.87	511.38
Average	148.31	(m)		486.58	(ft)

Table L1b. Buffer Width

Rating	Average buffer width
( ) 4	≥190m
(X) 3	≥130 - <190m
( ) 2	≥65 - <130m
( ) 1	<65m

Worksheet 1d. Buffer Integrity Summary. Enter the sub-metric Ratings from Tables L1a and L1b above to calculate the Buffer Integrity Index Score using the formula in the box below. Using the Buffer Integrity Index Score, enter rating for Buffer Integrity in Table L1c on the SA Summary Worksheet.

Buffer % Rating	+	Buffer Width Rating	/2 =	Buffer Integrity Index Score
3	+	3	/2 =	3

Table L1c. Summary Rating for Buffer Integrity

Rating	Score
( ) 4	>3.5
(X) 3	>2.5 - ≤3.5
( ) 2	>1.5 - ≤2.5
( ) 1	≤1.5

SA CODE : SF2MI [6] **Date :** 5/15/24

SA Name : Two Mile Pond Reservoir Transect [C] **Surveyor Initials :** DS

L2 - Riparian Corridor Connectivity (RCC)

Worksheet 2. RCC excluded non-buffer elements calculation. Refer to worksheet 1a for excluded non-buffer RCC land cover elements. Following the steps in the Field Guide, enter the summed values in meters for excluded element lengths for each bank within each segment upstream and downstream of the SA. Sum the values for each segment and calculate % Segment Disruption for the upstream side and the downstream side. Add the total disruption for upstream and downstream segments and then calculate the % Total Disruptions for the riparian corridor. Rate Riparian Corridor Connectivity using Table L2 and the data from this worksheet. Enter rating on the SA Summary Worksheet.

Segments	Upstream Segment		Downstream Segment	
Banks	Left Bank	Right Bank	Left Bank	Right Bank
A) Total Bank Disruption (m)	0	0	0	0
B) Total Disruption by Segment (m)	0		0	
C) % Segment Disruption = (B/1000)*100	0		0	
D) Total Disruption both segments	0			
E) % Total Disruptions = (D/2000)*100	Zero disruption noticeable along the banks.			

Table L2. RCC Rating

Rating	Description
(X) 4	**0%** total disruption on both segments combined.
◯ 3	**<15%** total disruption on both segments combined.
◯ 2	**≥15% - <40%** total disruption on both segments combined.
◯ 1	**≥40%** total disruption on both segments combined.

L3 - Relative Wetland Size

Worksheet 3a. Calculate the Relative Size Ratio (RSR) between the current WOI size and the historic WOI size. b. Calculate the Relative Wetland Size Score (RWSI (%)) as (1-RSR)*100. Rate Relative Wetland Size Index using Table L3 and enter rating on the SA Summary Workshe

RSR					RWSI						
Current Size	/	Historic Size	=	RSR	1	-	RSR	X	100	=	RWSI (%)
9	/	10	=	0.9	1	-	0.1	X	100	=	10

Table L3. Relative Wetland Size Rating

Rating	RWSI Score	Description
(X) 4	≤10%	Wetland is at or only minimally reduced from its full natural extent
◯ 3	>10% - ≤40%	Wetland remains equal to or more than 60% of its natual size
◯ 2	>40% - ≤70%	Wetland has been reduced by more than 40% its natural size
◯ 1	>70%	Wetland has been reduced by more than 70% its natural size

SA CODE : SF2MI [6]

Date : 5/15/24

SA Name : Two Mile Pond Reservoir Transect [6]

Surveyor Initials : DS

L4 - Surrounding Land Use

rksheet 4. Surrounding Land Use. Enter the percent area occupied by a given Land Use Element in the Land Use Zone (LUZ) urrounding the SA. Calculate the Land Use Index (LUI) Score by element as the product of the element coefficient times the percent of the LUZ Area occupied. (The %LUZ Area must total 100%.) Sum the LUI scores for each element to create the final LUI Score. Rate using Table L4 and enter the rating in the SA Rank Summary Worksheet.

Land Use Element	Coef	% LUZ Area	LUI Score
Paved roads, parking lots, domestic or commercially developed buildings, mining (gravel pit, quarry, open pit, strip mining), railroads	0	0	0
Unpaved roads (e.g., driveway, tractor trail, unpaved parking lots), paddock, dirt lot	0.1	0	0
Dredging, borrow pits, abandoned mines, water-filled artificial impoundments (ponds and reservoirs)	0.1	0	0
Filling or dumping of sediment or soils	0.1	0	0
Intense recreation (all-terrain vehicle use, camping, popular fishing spot, etc.)	0.3	0	0
Rip-rapped channel (highly modified channel with severely limited vegetation zone that is altered by human activities but not a completely concrete channel [that goes under paved roads]), junkyards, trash dumps, disturbed ground (not including roads)	0.3	0	0
Ski area	0.4	0	0
Dam sites and flood-disturbed shorelines around water storage reservoirs	0.5	0	0
Abandoned artificial impoundments (ponds and reservoirs) and associated disturbed flood zones	0.5	10	5
Artificial/Constructed wetlands, irrigation ditches	0.7	20	14
Developed/Managed trail system (high use trail)	0.8	5	4
Agriculture - active tilled crop production	0.2	0	0
riculture - permanent crop (vineyards, orchards, nurseries, berry production)	0.3	0	0
Manicured lawns, sport fields, and golf courses; urban manicured parks	0.3	0	0
Old fields and other disturbed fallow lands dominated by ruderal and/or exotic species (e.g., kochia, Russian thistle, mustards, annual vegetation)	0.5	0	0
Mature old fields and other fallow lands with natural composition, introduced hay field and pastures (e.g., perennial vegetation cover)	0.7	0	0
Restoration areas in process to natural conditions (re-conversion in process)	0.8	65	52
Haying of native grassland (e.g., no tillage, haying and baling only)	0.9	0	0
Heavy logging or tree removal with >50% of large trees (e.g., >30 cm diameter at breast height) removed, woodland/shrub vegetation conversion (chaining, cabling, rotochopping)	0.3	0	0
Commercial tree plantation, Christmas tree farms	0.6	0	0
Selective logging or tree removal with <50% of large trees (e.g., >30 cm diameter at breast height) removed	0.8	0	0
Mature restoration areas returned to natural conditions (re-converted)	0.9	0	0
Natural area, land managed for native vegetation - No agriculture, logging, development	1	0	0
LUI Score= Coefficient * % LUZ Area		100	75

Table L4. Surrounding Land Use Rating	
Rating	**LUI Score**
◯ 4	≥95 - 100
◯ 3	≥80 - <95
⊗ 2	≥40 - <80
◯ 1	<40

SA CODE : SPZMP [6]   SA Name : Two Mile Pond Reservoir Transect [6]   Date : 5/15/24   Surveyor Initials : DS

Biotic Metrics

Worksheet 5. Vegetation Community Patch Polygon Data for Biotic Metrics B3, B4, and B5 for Polygons from SA Biotic Map. Enter data for each polygon under a unique number assigned from the SA Biotic Map. Each polygon is evaluated with respect to Vegetation Vertical Structure (B3), Native Tree Regeneration (B4), and Invasive Exotic Plant Species Cover (B5) metrics. Enter the Vertical Structure Type (VST) for B3, tree regeneration % cover within the polygon for B4 and the % cover of invasive exotic species for B5. Use the Tables in Appendix B and the Field Guide for metric instructions. Enter the species codes for the invasive exotic species found in the polygon (from NM Noxious Weed List - Appendix D). Use the comments box for documenting and describing vegetation community patch features.

Polygon No	B3 Vertical Structure Type Herb	B4 Tree Regeneration % Cover	B5 Invasive Exotic Species % Cover	Invasive Exotic Species (List Code(s))	Comments
4	IIIB1	10%	50%	Allysum Pinweed	Cheatgrass, Allysum, pinweed
5	IIIC1 Wetland	50%			
3	IIA1				
~~4~~	IIIB1				
~~5~~	IIIC1				
6	IVEI				
7	IVF1				
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

SA CODE: SF2MI [6] **SA Name:** Two Mile Pond Reservoir Transect [6] **Date:** 5/15/24 **Surveyor Initials:** B

B1 - Relative Native Plant Community Composition

Worksheet 6. CT Plant Species and Polygon Assignments. Starting with CT A, enter the number of the first polygon from Worksheet 5. Enter the species codes for the two top dominant species in each stratum that appears in the polygon. See footnotes for special instructions. If a species appears in more than one strata, assign the species to the stratum in which it is more abundant. Each polygon is either assigned to the same CT if it has the same composition or a new CT is created for the polygon.

		Tall Woody Stratum 1				Short Woody Stratum 2				Herbaceous/Sparse Stratum 3				CT Score 4		
CT	Polygon Nos.	Species 1	E N	Species 2	E N	Species 3	E N	Species 4	E N	Species 5	E N	Species 6	E N	Raw4	% SA5	Wt Score6
A	4			Saltbrush	N	Chamisa	N	Bluestem	N	Allysum	N	Pinweed	N	2.0	60	
B	5			willow	N	Cattail	N	Mullein	E	cheat grass bluestem	N	~~Mustard~~		4.0	40%	
C																
D																
E																
F																
G																
H																
I																
J																
K																
L																
M																
N																
O																
													Final Weighted Score7			2.8

1. Trees and shrubs > 6 m (20 feet) and > 25% total stratum cover; 2. Trees and shrubs ≤6m (20 feet) and >25% total stratum cover; 3. Herbaceous (graminoids and forbs)>10% total stratum cover. 4Raw Score is from Table B1a (Appendix B); 5%SA is the percentage of the SA area covered by the CT and expressed as a decimal number; the total area %SA must equal 1; 6Wt. Score is the product of the Raw Score * % SA; 7The Final Weighted Score is the sum of the Wt. Scores. Rate the CT Final Weighted Score on Table B1 and enter the Rating for Relative Native Plant Community Composition on the SA Rank Summary Worksheet.

SA CODE : SF2MI [6] **Date :** 5/15/14

SA Name : Two Mile Pond Reservoir Transect [6] **Surveyor Initials :** DS

Table B1. Relative Native Plant Community Composition Rating		
Rating	CT Final Weighted Score	
○ 4	≥ 3.75	<10% non-native
○ 3	≥ 3.25 and <3.75	10% ≤20% non-native
☒ 2	> 2.0 and <3.25	20% ≤50% non-native
○ 1	≤2.0	>50% non-native

2 - Vegetation Horizontal Patch Structure

Worksheet 7. Using Tables B2a and B2c (Appendix B), choose the schematic pattern that best matches the mapped vegetation patch pattern for the SA. Rate using Table B2 and enter rating on the SA Rank Summary Worksheet.

Horizontal Patch Structure pattern A,B,C, or D: ____

Table B2. Rating for Vegetation Horizontal Patch Structure	
Rating	Description
○ 4	Most closely matches Pattern A. SA has a diverse patch structure (≥4 patch types) and complexity. A dominant patch type would be difficult to determine.
X 3	Pattern B. SA has a moderate degree of patch diversity (3 patch types present) and complexity. A single, dominant patch type may be present, although the other patch types would be well represented and have more than one occurrence in the SA.
○ 2	Pattern C. SA has a low degree of patch diversity and complexity. Two or three patch types may be present; however, a single, dominant patch type exists with the others occupying a small portion of the SA.
○ 1	Pattern D. SA has essentially little to no patch diversity or complexity. The SA is dominated by a single patch type. Other patch types, if present, occur infrequently and occupy a small portion of the SA.

3 - Vegetation Vertical Structure

Worksheet 8. Percentage of SA by vertical structure type (VST). Using the Structure Type from Worksheet 5 and the %SA from Worksheet 6 calculate the total area of the SA occupied by each VST using the formula VST(type) = Sum (%SA for CTs with same VST) x 100. Enter the total %SA for each VST below.

	VST 1 High Structure Forest	VST 2 Low Structure Forest	VST 5 Tall Shrubland	VST 6S Short Shrubland	VST 6W Herbaceous Wetland	VST 6H Herbaceous Vegetation	VST 7 Sparse Vegetation
Total % of SA				50		50	

Table B3. Rating for Vegetation Vertical Structure. Using the data from Worksheet 8 rate the SA based on the criteria in Table B3. Pick the row that best fits the distribution of VSTs in the SA. Each row specifies the required dominant structure type plus co- and sub-dominants. Percentage cover required per co- or sub-dominant is a minimum. The types listed in the columns must be the most common VSTs in the SA for the rating to be applicable (Worksheet 8). VSTs 1 and 2 can be inverted in dominance and the rating is still applicable. Work from the top of the table down. As long as the requirements for one row are met, any other types may or may not co-occur without changing the rating. Enter the rating on the SA Rank Summary Worksheet.

Rating	Dominant VST	Co- or Sub-dominant VST ≥15%	Sub-dominant VST ≥5%
○ 4	1	5	6W and/or 6H
	1	6W	
	2 or 1 and 2	5	6W and/or 6H
○ 3	1		
	2 or 1 and 2	5	
	2 or 1 and 2	6W	
	5	6W	
X 2	2 or 1 and 2		
	5		
	6W		
○ 1	6S		
	6H		
	7		

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SA Name : Two Mile Pond Reservoir Transect [6]

Surveyor Initials : DS

B4 - Native Riparian Tree Regeneration

Table B4. Native Riparian Tree Regeneration rating. Using the polygon percent cover of native tree seedlings, saplings and poles from Worksheet 5, rate the SA based on polygon percent cover and patch density. Enter the rating on the SA Rank Summary Worksheet.

Rating	Description
X 4	Native poles, sapling, and seedlings trees well represented, obvious regeneration, many patches or polygons with >5% cover, typically multiple size (age) classes.
3	Native poles, saplings and/or seedlings common, scattered patches or polygons with 1% -5% cover, size classes few.
2	Native poles, saplings and/or seedlings present but uncommon, restricted to one or two patches or polygons with typically <1% cover, little size class differentiation.
1	Native poles, saplings, and/or seedlings absent (0% cover).

B5 - Invasive Exotic Plant Species Cover

Worksheet 9. Based on Worksheets 5 and 6, calculate or estimate the percentage cover of invasive exotic species for the SA and enter below. Rate using Table B5 and enter the rating on the SA Rank Summary Worksheet.

Rating Method [ ]

Invasive cover (%) [<5]

calculate

Table B5. Ratings for Invasive Exotic Plant Species Cover

Rating	Invasive Species Cover %
4	0%
3	>0% - <1%
2 X	≥1% - <10%
1	≥10

Additional CTs and Biotic Metric Comments:

SA CODE : SF2MI [6] **Date :** 5/15/24

SA Name : Two Mile Pond Reservoir Transect [6] **Surveyor Initials :** DS

Abiotic Metrics

A1 - Floodplain Hydrologic Connectivity

Method 1

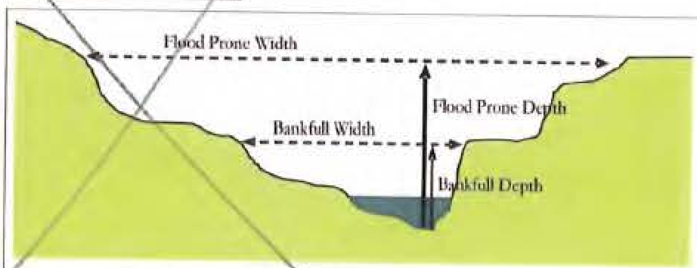
Worksheet 10a. Floodplain Hydrologic Connectivity Measurements. The following six steps are conducted at each of three cross-sections at the approximate mid-points along straight riffles and away from deep pools or meander bends. Use a measuring tape and temporary stakes for horizontal measurements, and a stadia rod or similar measuring stick for vertical measurements. If unavailable, use visual estimates. Where straight channel segments do not occur, or if there is excessive ponding or bankfull indicators are obscured, use the narrative rating approach (Method 2). Enter the rating method in the box below, either meander pool, riffle pool or narrative (Method 2) and choose the corresponding Table (A1a, A1b, or A1c) to rate Floodplain Hydrologic Connectivity. Enter the rating on the SA Rank Summary Worksheet. Photographs of each cross-section are required and recorded in Table A1d.

Steps	Description	Cross-section: 1	2	3
1: Bankfull width	This is a critical step requiring familiarity with field indicators of the bankfull contour. Measure the distance between the right and left bankfull contours with a tape.			
2: Maximum bankfull depth	Keeping the tape level between the right and left bankfull contours, measure the height of the line above the thalweg (the deepest part of the channel). A pocket line level can help here.			
3: Flood-prone depth	Double the estimate of maximum bankfull depth from Step 2.			
4: Flood-prone width	Using a tape, measure the length of a level line at a height equal to the flood prone depth from Step 3 to where it intercepts the right and left banks.			
5: Calculate Entrenchment Ratio	Divide the flood-prone width (Step 4) by the bankfull width (Step 1).			
6: Calculate average ratio	Calculate the average for Step 5 for all three replicate cross-sections. Enter the average here and rate using Table A1a. Enter the rating in the A1 box on the SA Rank Summary Worksheet.			

Rating Method:

Table A1a. Rating for Floodplain Hydrologic Connectivity in meandering single-channel riffle-pool systems

Rating	Description
◯ 4	Average entrenchment ratio is ≥ 2.2;
◯ 3	Average entrenchment ratio is ≥1.9 - <2.2
◯ 2	Average entrenchment ratio is ≥1.5 - <1.9
◯ 1	Average entrenchment ratio is < 1.5



Worksheet 10b. Floodplain Hydrologic Connectivity Indicators. Use this Worksheet in conjunction with Table A1c. Check the boxes for all that apply to each segment.

U	M	L	Indicator
☐	☐	☐	Bankful is slightly below bank height
☐	☐	☐	Bankful is well below bank height and channel is incised
☐	☐	☐	Channel widening due to bank failure
☐	☐	☐	Constructed levees preclude floodplain inundation
☐	☐	☐	Stream is straightened/channelized
☐	☐	☐	Inset floodplain formation
☐	☐	☐	Decreased peak flows due to hydrologic modification
☐	☐	☐	Bankfull indicators at point of incipient flooding of the floodplain
☐	☐	☐	Indicators of overbank flow on floodplain
☐	☐	☐	Floodplain inundation due to beaver activity

Table A1b. Rating for Floodplain Hydrologic Connectivity in single-channel step-pool systems

Rating	Description
◯ 4	Average entrenchment ratio is ≥ 1.9
◯ 3	Average entrenchment ratio is ≥1.4 - <1.9
◯ 2	Average entrenchment ratio is ≥1.2 - <1.4
◯ 1	Average entrenchment ratio is < 1.2

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SA Name : Two Mile Pond Reservoir Transect [6]

Surveyor Initials : DS

Method 2

Table A1c. Narratve Floodplain Hydrologic Connectivity Rating. Select the narrative description that best describes the floodplain hydrologic connectivity. At each cross-section, use Worksheet 10b to record channel incision, bank modification, inset floodplain or other hydrologic evidence that would preclude natural floodplain inundation. Conversely, assess indicators and evidence for overbank flow and floodplain inundation. Record whether beaver activity is obscuring bankful indicators due to inundation of the floodplain. Select a rating from the table below. Use data from Worksheets 10b to help select rating. Enter Rating on SA Summary Worksheet. Photographs are required at each cross-section and recorded in Table A1d.

Rating	Description
○ 4	Fully connected to the natural floodplain. Indicators of bankfull discharge are at the bank/floodplain transition, with over-bankfull flows likely to inundate a broad area of floodplain. Floodplain supports riparian vegetation and shows signs of overbank sediment deposition. Or beaver ponds inundate the entire, normally active floodplain and preclude the identification of bankfull indicators and the active floodplain width.
○ 3	Flow access to the floodplain moderately limited by incision, channelization. Less frequent inundation than fully connected streams described above (as noted by bankfull indicators below floodplain transition). Floodplain supports a riparian overstory, but some understory plants may be upland. An inset floodplain supporting riparian vegetation may also be present.
○ 2	Incised, channelized or modified with an inset floodplain formed, which is regularly inundated and supports riparian vegetation and sediment regimes. Or the stream has minimal access to the natural floodplain due to incision, channelization, or flow modification, and the natural floodplain does not support riparian vegetation except for relatively long-lived phreatophytes (e.g., cottonwood, salt cedar, etc.).
○ 1	Fully disconnected from floodplain, either through incision, bank modification/channelization, or hydrologic modification (i.e., abandonment of floodplain due to decreased peak flows). Indicators may include upland vegetation and lack of overbank sediment deposits on the floodplain, etc.

Table A1d. Photo Point Log for Cross-Section Photographs. For each cross-section record the digital names/numbers of photographs taken looking Upstream and Downstream from the thalweg and looking Bank Right* and Bank Left* across the stream from each side of the cross-section. Leave the cross-section tape and flags indicating bankful in the ground when taking the Bank Right and Bank Left photos. A photo board with SA name and cross-section information is helpful. (*The bank of a stream or river on the right (left) of the observer when facing in the direction of flow or downstream.) See Appendix E for additional details.

Cross Section	Easting (Latitude)	Northing (Longitude)	Upstream	Downstream	Bank Right	Bank Left
1						
2						
3						

Floodplain Hydrologic Connectivity Comments:

SA CODE : SF2MI [6]

Date : 5/15/24

SA Name : Two Mile Pond Reservoir Transect [6]

Surveyor Initials : DS

A2 - Physical Patch Complexity

Worksheet 11. Physical Patch Complexity checklist. Check off existing physical patch types for the upper, middle and lower segments of the SA; count the number of unique patch types and rate using Table A2 in combination with the narrative description. Enter the rating on the SA Rank Summary Worksheet.

Upper Segment	Middle Segment	Lower Segment	Field Indicators (check all existing conditions)
☐	☐	☐	Active side channels
☐	☐	☐	Abandoned channels
☐	☐	☐	Backwater/eddy
☐	☐	☐	Riffles or rapids
☐	☐	☐	Shoals, sparely-vegetated bars
☐	☐	☐	Channel boulders
☐	☐	☐	Oxbow lakes/ponds on floodplains
☐	☐	☐	Vegetated island and side bars
☐	☒	☐	Terraces
☐	☒	☐	Channel pools
☐	☐	☐	Beaver ponds
☐	☐	☐	Swales, depressional features on floodplains
☐	☐	☐	Debris jams in channel
☐	☐	☐	Woody wrack piles on the floodplain
☐	☐	☐	Floodplain micro-topography (mounds, pits)
☐	☐	☐	Downed logs
☐	☒	☐	Natural levees
☐	☐	☐	Standing snags
☐	☐	☐	Variegated, convoluted, or crenulated foreshore
☐	☐	☐	Undercut banks in channels
			No. of unique Patch Types

Table A2. Rating for Physical Patch Complexity

Rating	Description
○ 4	**High** degree of physical patch complexity across the floodplain. There are many floodplain micro-habitats present (mounds and pits, woody wrack piles, etc.), many fluvial geomorphic surfaces (swales, side channels, terraces, side bars, etc.), and there is high in-channel complexity (pools and riffles, large woody debris, undercut banks, etc.). As a guide, 12 or more unique indicators are present and well distributed throughout the SA (most indicators are found on multiple segments).
○ 3	**Moderate** physical patch complexity scattered across the floodplain. There are several floodplain micro-habitats present, several fluvial geomorphic surfaces, and there is moderate in-channel complexity. As a guide, 9 - 11 indicators are scattered throughout the SA (some on multiple segments).
☒ 2	**Limited** physical patch complexity scattered across the floodplain. There are some floodplain micro-habitats present, some fluvial geomorphic surfaces, and there is limited in-channel complexity. As a guide, on average there are 6 - 8 unique indicators present in the SA (only a few on multiple segments).
○ 1	**Little** or no physical patch complexity on the floodplain. There are few or no floodplain micro-habitats present, few different fluvial geomorphic surfaces, and there is little or no in-channel complexity. As a guide, ≤ 5 unique indicators are present in the SA.

SA CODE : SF2MI [6] **Date :** 5/15/24

SA Name : Two Mile Pond Reservoir Transect [6] **Surveyor Initials :** DS

A3- Channel Equilibrium

Worksheet 12. Channel Equilibrium Checklist. Check all field indicators that apply to the upper, middle and lower segment of the SA observed at the channel edge of the traverse. Rate using the Table A3 descriptions and based on a preponderance of evidence from this checklist. Enter the rating on the SA Rank Summary Worksheet.

Condition	Upper Segment	Middle Segment	Lower Segment	Field Indicators(check all existing conditions)
Indicators of Channel Equilibrium	☐	☒	☐	The channel has a well-defined bankfull contour that clearly demarcates the point of incipient flooding where moderate frequent flow events spread flow across the floodplain.
	☐	☒	☐	Perennial riparian vegetation is abundant and well established along the bankfull contour, but not below it.
	☐	☒	☐	There is leaf litter, thatch, or wrack in most pools.
	☐	☒	☐	The channel contains embedded woody debris of the size and amount consistent with what is naturally available in the riparian area.
	☐	☒	☐	There is little or no active undercutting or burial of riparian vegetation.
	☐	☐	☐	There are no bars that are densely vegetated with perennial vegetation (neither mid-channel bars or point bars).
	☐	☒	☐	Channel and point-bars consist of well-sorted bed material.
	☐	☒	☐	The channel bed is not planar and without an abundance of fine materials filling the interstitial spaces between larger stream substrate.
	☐	☐	☐	There are channel pools at meander bends and some deep pools within the reach.
Indicators of Active Degradation	☐	☐	☐	The channel is characterized by deeply undercut banks with exposed living roots of trees or shrubs.
	☐	☐	☐	There are abundant bank slides or slumps, or the lower banks are uniformly scoured and not vegetated.
	☐	☐	☐	Bank vegetation is declining in stature or vigor, or many riparian trees and shrubs along the banks are leaning or falling into the channel.
	☐	☐	☐	Channel bed is scoured to large cobbles or boulders and entrained bank material is filling the cobble interstices and pools.
	☐	☐	☐	There are active headcuts within the channel.
	☐	☐	☐	An obvious historical floodplain has recently been abandoned, as indicated by the age structure of its riparian vegetation.
Indicators of Active Aggradation	☐	☐	☐	There is abundant fresh splays of coarse sediment covering the floodplain above the natural point bar elevation.
	☐	☐	☐	There are partially buried living tree trunks or shrubs along the banks.
	☐	☐	☐	The channel bed is planar overall. The stream lacks well-defined channel pools at meander bends, or pools are filled with sediment.
	☐	☐	☐	There are partially buried or sediment-choked culverts.
	☐	☐	☐	There are avulsion channels on the floodplain or adjacent valley floor.

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Date : 5/15/24

SA Name : Two Mile Pond Reservoir Transect [6]

Surveyor Initials : DS

Table A3. Rating for Channel Equilibrium	
Rating	**Description**
☒ 4	Most of the channel throughout the SA is in equilibrium condition with little evidence of excessive aggradation or degradation based on the field indicators listed in Worksheet 12.
◯ 3	There is some evidence of excessive aggradation or degradation; the channel throughout the SA seems to approach an equilibrium condition. Circle primary process: aggradation or degradation.
◯ 2	There is evidence of severe aggradation or degradation throughout most of the channel through the SA. Circle primary process: aggradation or degradation.
◯ 1	The channel is artificially hardened, channelized, or is concrete throughout most of the SA.

A4- Stream Bank Stability and Cover

Worksheet 13. Bank Soil Stability and Streambank Erosion Potential Checklist. Check the indicator that best describes the condition looking a minimum of 25 m upstream and downstream at the channel edge of the upper, middle and lower segment of the SA. Average the six scores for both Bank Soil Stability and Streambank Erosion Potential. Rate using the Table A4 and enter the rating on the SA Summary Worksheet.

Condition	**Upper Segment**	**Middle Segment**	**Lower Segment**	**Field Indicators**
Indicators of Bank Soil Stability	☐4	☐4	☒4	Infrequent raw banks, less than 10% of steam bank under stress from trampling, slumping, vegetation removal or active erosion, etc.
	☐3	☐3	☐3	Raw banks and loose soil intermittently and 10%-25% of stream bank under stress from trampling, trail crossing, hoof punching, vegetation removal, erosion etc.
	☐2	☐2	☐2	Significant raw banks and loose soil, 25%-50% of stream bank under stress, trampled, slumping or eroding etc.
	☐1	☐1	☐1	Raw banks almost continuous with greater than 50% of stream bank under stress, loose soil, slumping, trampled or eroding; or channel appear to lack banks due to trampling; or channel that is artificially hardened or concrete along most of its length.
Indicators of Stream Bank Erosion Potential	☐4	☐4	☒4	≥ 80% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by boulders, large cobbles and/or large woody debris that prevent bank erosion.
	☐3	☐3	☐3	≥50% - <80% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those areas not covered by vegetation are protected to allow only minor erosion.
	☐2	☐2	☐2	≥25% - <50% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those area not covered by vegetation or stabilized by roots, are covered by materials or vegetation that give limited protection.
	☐1	☐1	☐1	Less than 25% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those areas not covered by vegetation provide little or no control over erosion and excess shear stress, and the banks are susceptible to erosion by high water flows.

Average Indicator Score	

Table A4. Stream Bank Stability and Cover Rating	
Rating	**Description**
☒ 4	>3.5 - 4.0
◯ 3	>2.5 - ≤3.5
◯ 2	>1.5 - ≤2.5
◯ 1	1.0 - ≤1.5

SA CODE : SF2MI [6]

Date : 5/15/24

SA Name : Two Mile Pond Reservoir Transect [6]

Surveyor Initials : OS

A5 - Soil Surface Condition

orksheet 14. Soil Surface Condition. Check all that apply in the upper , middle and lower SA segments during the field reconnaissance. The absence of these indicators would signify that disturbances are naturally occurring (e.g., flood deposition or low-density wildlife trails). Estimate the percent soil disturbance by segment area and referring to the SA abiotic map. Rate using Table A5 and enter on the SA Rank Summary Worksheet.

Upper Segment	Middle Segment	Lower Segment	Field Indicators (Check all existing conditions)
☐	☐	☐	Active erosion features due to anthropogenic disturbance (eg. rills, gullies, plant pedestals).
☐	☒	☐	Multiple livestock and other (fishing,hiking) trails,
☐	☐	☐	Vehicle tracks including off-road and construction, etc.
☐	☐	☐	Impervious compacted surfaces or pavement
☐	☐	☐	Grading or plowing
☐	☐	☐	Fill
☐	☐	☐	Gravel pits
☐	☐	☐	Anthropogenic levees and berms
☐	☐	☐	Irrigation-driven salinity and mineral crusts
☐	☐	☐	Fire pits
☐	☐	☐	Other:
			Estimate % soil disturbance by segment area

Average % Soil Disturbance:

Table A5. Soil Surface Condition Rating	
Rating	**Description**
☒ 4	Bare soil areas due to anthropogenic disturbance absent or very limited. No human-caused impervious surfaces or gravel pits are found within the SA. Total disturbance, including erosion, impervious surfaces, fill, or other anthropogenic degradation to the soil surface is less than 1% of the SA.
○ 3	Some amount of bare soil from human causes is present but the extent is limited. Area of impervious surfaces are minimal in extent. Total disturbance, including erosion, impervious surfaces, fill, gravel pits, vehicle tracks or other anthropogenic degradation to the soil surface is between 1% and 5% of the sampling area.
○ 2	Bare soils from human causes are common. These may include dense livestock trails, vehicle tracks, trails, construction staging areas, mechanical rutting, or irrigation-driven salinity. Soil disturbance, while apparent, is limited to specific areas and not found across the majority of the SA. Total disturbance, including erosion, impervious surfaces, fill, gravel mining, or other anthropogenic degradation to the soil surface is greater than 5% or less than 10% of the SA.
○ 1	Bare soil areas degrade portions of the site because of altered hydrology or other long-lasting impacts. Deep ruts from off-road vehicles or machinery are present. Livestock disturbance or trails are widespread and several inches deep. Water is channeled into rills or ponded. Additional human-caused impervious surfaces or soil compaction are present. Total disturbance, including erosion, impervious surfaces, fill,gravel mining or other anthropogenic degradation to the soil surface is equal to or greater than 10% of the SA.

SA CODE : SF2MI [6] **Date :** 5/15/24

SA Name : Two Mile Pond Reservoir Transect [6] **Surveyor Initials :** DS

Worksheet 15. Stressor Checklist. Check off stressors by intensity category that may be affecting wetland ecological condition of the SA and WOI. Assign categories using direct evidence where available or your best professional judgement otherwise. If the presence of the stressor is uncertain, mark as "Unknow Rank Major Stressors in Dominant Stressor column(Pick up to 3)

Rank	Affect: Major	Affect: Minor	Affect: Absent	Affect: Unknown	Stressor Group/Stressor	Comments
					Adverse water management	
	☐	☒	☐	☐	Extended low flow dam releases	
	☐	☐	☒	☐	Timing of flow releases not concordant	
	☐	☐	☒	☐	Extended high flow dam releases	
	☐	☐	☒	☐	Agriculture/Urban flow diversion upstream	
					Adverse sediment management	
	☐	☐	☒	☐	Adverse sediment retention by dams	
	☐	☐	☒	☐	Sediment loss by dredging	
	☐	☐	☒	☐	Adverse sediment input (roads/development)	
					Artificial water additions	
	☐	☐	☒	☐	Sewer treatment effluent	
	☐	☐	☒	☐	Point source urban runoff	
	☐	☐	☒	☐	Factory, feedlot outfall	
	☐	☐	☒	☐	Agricultural irrigation ditch returns	
	☐	☐	☒	☐	Mining waste	
					Ground water pumping	
	☐	☐	☒	☐	Urban depletions	
	☐	☐	☒	☐	Fracking	
	☐	☐	☒	☐	Agriculture irrigation wells	
					Watershed alteration	
	☐	☐	☒	☐	Extensive recent fires in watershed	
	☐	☐	☒	☐	Extensive recent timber harvest	
	☐	☐	☒	☐	Extensive open pit mining in watershed	
	☐	☐	☒	☐	Livestock/wildlife overgrazing	
					Local biodiversity impacts	
	☐	☐	☐	☐	Evidence of excessive grazing (local)	
	☐	☐	☐	☐	Excessive noise affecting wildlife	
	0	0		0	Counts by Intensity	

ditional Comments

NMRAM Montane Riverine Wetlands Version 2.5

SA Cover Worksheet					
SA Code SF2MI [6]	SA Name : Two Mile Pond Reservoir		Project : Riparian Assesement		
Code Tsct [6]	AU Name : Transect [6]		WOI : Two Mile Pond Reservoir		
County Santa Fe	HUC 12 Headwaters Santa Fe River	Elevation (ft) 7299	(m) 2224.7	Ecoregion 6.0 NWFM	

SA General Location and Boundary (Rationale, comments)

A riparian system that leads into a pond located on the east side of Santa Fe bordering the Santa Fe National Forest. This reservoir was decommissioned due to safety concerns regarding the reservoir and a water diversion to the area was recently shut down due to lack of water rights.

Driving Directions

Driving to Santa Fe from Albuquerque you head north on Old Pecos Trail. Then head east on Camino Del Monte Sol and right on Canyon Road until you reach the reservoir located to the North.

Ownership	The Nature Conservative and The Santa Fe National Forest	Data Sharing Restrictions	Results to client only.	Fish Observed in Wetland?	

Surveyor Role	Surveyor Name	Surveyor Initials
Landscape	Dustin Schwartz	DS
Biotic	Annie McCoy	AM
Abiotic	Dustin Schwartz	DS
Stressors	Dustin Schwartz	DS

Easting (m)	Northing (m)	Zone	Datum	Latitude (DD ft)	Longitude (DD ft)
-105° 53' 24" W	35° 41' 23" N	13	NAD- 83 UTM	35.689722	-105.89
Survey Date	6/11/24	**Start Time**	9:00	**End Time**	15:00

SA Description

SA Landscape Context (summarize the wetland and surrounding landscape; include condition and impacts)

It has been raining the past two days and the area is very wet and growing.

SA Biotic Condition (vegetation patterns, composition and structure, exotics and invasives, disturbance evidence, fire and herbivory)

Red wing black bird, mustard has grown in fast 2 feet high and flowering lots of brown growth on pond, Brown elfin, clover, allysum cat tails around edge of pond gum weed. | 90% ground coverage

SA Abiotic Condition (hydrological alterations {e.g., dams, walls etc.]; flooding characteristics and evidence of overbank flooding; soil disturbance and other site impacts; explain the hydrologic breaks or other factors that define the SA limits)

Moist earth from rain past two days ground is very covered

T 14.2°C Cond 358 uS pH 6.71 turb 16.2

Assessment Summary (Overall site condition summary and comments after the field data is collected.)

Site seems to be coming in dense with 90% ground cover. Mustard coming fast

Provisional Field Score	3.04	Rank	B	Surveyor(s)	DS/AM	Final Score	3.04	Rank	B	Initials	DS/AM	Date	6/11/24

SA CODE : SF2MI [6] **Date :** 6/11/24

SA Name : Two Mile Pond Reservoir Transect [6] **Surveyor Initials :** DS/AM

NMRAM - SA Rank Summary Worksheet: Montane Riverine Wetlands 2.5			
Metric Description	Rating	Wt	Final Score
Landscape Context		Σ 1.0	3.25
L1. Buffer Integrity Index	3	0.25	0.75
L2. Riparian Corridor Connectivity	4	0.25	1.0
L3. Relative Wetland Size	4	0.25	1.0
L4. Surrounding Land Use	2	0.25	0.5
Biotic		Σ	
B1. Relative Native Plant Community Composition	2	0.2	
B2. Vegetation Horizontal Patch Structure	3	0.2	
B3. Vegetation Vertical Structure	2	0.2	
B4. Native Riparian Tree Regeneration	4	0.2	
B5. Invasive Exotic Plant Species Cover	1	0.2	
Abiotic		Σ	
A1. Floodplain Hydrologic Connectivity		0.3	
A2. Physical Patch Diversity	2	0.2	
A3. Channel Equilibrium	4	0.2	
A4. Stream Bank Stability and Cover	4	0.2	
A5. Soil Surface Condition	4	0.1	

SA Condition Scoring Summary			
Major Attribute	Score	Wt.	Wt. Score
Landscape Context	3.25	0.3	0.975
Biotic	2.4	0.35	
Abiotic	3.5	0.35	
SA WETLAND CONDITION SCORE Σ			
SA WETLAND RANK =			3.04

SA Wetland Rank		
Rank	Score	Description
A	≥3.25 - 4.0	Excellent Condition
B	≥2.5 - <3.25	Good Condition
C	≥1.75 - <2.5	Fair Condition
D	1.0 - <1.75	Poor Condition

Stressor Summary	Major	Minor	Top Three	
	0	0	1	Less Water to this area
			2	
			3	

Stressor Comments (Evaluation of risk)

Not a lot of stressors here.

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Landscape Context

- Buffer Integrity Index

Worksheet 1a. Buffer and RCC Checklist. Check off land cover elements within the buffer area or RCC corridors that are either allowed, or are excluded and considered non-buffer elements that disrupt ecosystem connectivity. Indicate the imagery type and date (season and year of imagery).

Imagery	Google Earth KMZ. file	Image Date	6/23

Allowed buffer/RCC land cover elements			Excluded non-buffer/RCC land cover elements		
Buffer	RCC		Buffer	RCC	
[X]	[X]	Natural or semi-natural vegetation patches	[X]	[X]	Commercial/residential developments, parking lots, dams, bridges, revetments, and other structures
[X]	[X]	Small irrigation ditches without levees	[ ]	[ ]	Lawns, parks, golf courses, sports fields
[ ]	[ ]	Old fields, unmaintained	[ ]	[ ]	Railroads
[ ]	[ ]	Open range land	[ ]	[ ]	Maintained levees, sediment piles, construction materials, staging areas
[X]	[X]	Foot trails, horse trails, unpaved bike trails (low intensity)	[ ]	[ ]	Intensive livestock areas, horse paddocks, feedlots
[X]	[X]	Non-channel open water	[ ]	[ ]	Intensive agriculture: maintained pastures, hay fields, row crops, orchards, and vineyards
[X]	[X]	Non-functioning abandoned vegetated levees, or naturally occurring levees	[X]	[X]	Paved roads or developed second-order unpaved but graded roads
[ ]	[ ]	unpaved two tracks roads	[X]	[X]	Open water bounded by a levee or other manmade structure
[ ]	[ ]	Other	[ ]	[ ]	Other

Worksheet 1b. Buffer Percent Sub-metric. Measure or estimate the percentage of the SA perimeter composed of allowed buffer elements and enter into the Buffer Percent Box below. Rate the sub-metric using Table L1a and enter the rating on the Buffer Integrity Summary Worksheet 1d.

Buffer Percent (%)=	85%

Table L1a. Buffer Percent

	Rating	Buffer Percent
◯	4	100%
(X)	3	≥80% - <100%
◯	2	≥50% - <80%
◯	1	<50%

Worksheet 1c. Buffer Width Sub-metric. Measure the length of each buffer line in meters in the GIS or on the map. Average the line lengths and rate using Table L1b. Enter the rating on the Buffer Integrity Summary Worksheet 1d.

Line	Buffer Width (m)	Buffer Width (ft)	Line	Buffer Width (m)	Buffer Width (ft)
A	164.26	538.91	E	161.93	531.26
B	125.25	410.92	F	231.48	759.44
C	115.39	378.57	G	121.25	397.80
D	111.07	364.40	H	155.87	511.38
Average		148.31 (m)		486.58	(ft)

Table L1b. Buffer Width

	Rating	Average buffer width
◯	4	≥190m
(X)	3	≥130 - <190m
◯	2	≥65 - <130m
◯	1	<65m

Table L1c. Summary Rating for Buffer Integrity

	Rating	Score
◯	4	>3.5
(X)	3	>2.5 - ≤3.5
◯	2	>1.5 - ≤2.5
◯	1	≤1.5

Worksheet 1d. Buffer Integrity Summary. Enter the sub-metric Ratings from Tables L1a and L1b above to calculate the Buffer Integrity Index Score using the formula in the box below. Using the Buffer Integrity Index Score, enter rating for Buffer Integrity in Table L1c and on the SA Summary Worksheet.

Buffer % Rating	+	Buffer Width Rating	/2 =	Buffer Integrity Index Score
3	+	3	/2 =	3

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L2 - Riparian Corridor Connectivity (RCC)

Worksheet 2. RCC excluded non-buffer elements calculation. Refer to worksheet 1a for excluded non-buffer RCC land cover elements. Following the steps in the Field Guide, enter the summed values in meters for excluded element lengths for each bank within each segment upstream and downstream of the SA. Sum the values for each segment and calculate % Segment Disruption for the upstream side and the downstream side. Add the total disruption for upstream and downstream segments and then calculate the % Total Disruptions for the riparian corridor. Rate Riparian Corridor Connectivity using Table L2 and the data from this worksheet. Enter rating on the SA Summary Worksheet.

Segments	Upstream Segment		Downstream Segment	
Banks	Left Bank	Right Bank	Left Bank	Right Bank
A) Total Bank Disruption (m)	0	0	0	0
B) Total Disruption by Segment (m)	0		0	
C) % Segment Disruption = (B/1000)*100	0		0	
D) Total Disruption both segments	0			
E) % Total Disruptions = (D/2000)*100	Zero disruption noticeable along the banks.			

Table L2. RCC Rating

Rating	Description
(X) 4	**0%** total disruption on both segments combined.
( ) 3	**<15%** total disruption on both segments combined.
( ) 2	**≥15% - <40%** total disruption on both segments combined.
( ) 1	**≥40%** total disruption on both segments combined.

L3 - Relative Wetland Size

Worksheet 3a. Calculate the Relative Size Ratio (RSR) between the current WOI size and the historic WOI size. b. Calculate the Relative Wetland Size Score (RWSI (%)) as (1-RSR)*100. Rate Relative Wetland Size Index using Table L3 and enter rating on the SA Summary Worksheet.

RSR					RWSI						
Current Size	/	Historic Size	=	RSR	1	-	RSR	X	100	=	RWSI (%)
9	/	10	=	0.9	1	-	0.1	X	100	=	10

Table L3. Relative Wetland Size Rating

Rating	RWSI Score	Description
(X) 4	≤10%	Wetland is at or only minimally reduced from its full natural extent
( ) 3	>10% - ≤40%	Wetland remains equal to or more than 60% of its natual size
( ) 2	>40% - ≤70%	Wetland has been reduced by more than 40% its natural size
( ) 1	>70%	Wetland has been reduced by more than 70% its natural size

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L4 - Surrounding Land Use

Worksheet 4. Surrounding Land Use. Enter the percent area occupied by a given Land Use Element in the Land Use Zone (LUZ) surrounding the SA. Calculate the Land Use Index (LUI) Score by element as the product of the element coefficient times the percent of the LUZ Area occupied. (The %LUZ Area must total 100%.) Sum the LUI scores for each element to create the final LUI Score. Rate using Table L4 and enter the rating in the SA Rank Summary Worksheet.

Land Use Element	Coef	% LUZ Area	LUI Score
Paved roads, parking lots, domestic or commercially developed buildings, mining (gravel pit, quarry, open pit, strip mining), railroads	0	0	0
Unpaved roads (e.g., driveway, tractor trail, unpaved parking lots), paddock, dirt lot	0.1	0	0
Dredging, borrow pits, abandoned mines, water-filled artificial impoundments (ponds and reservoirs)	0.1	0	0
Filling or dumping of sediment or soils	0.1	0	0
Intense recreation (all-terrain vehicle use, camping, popular fishing spot, etc.)	0.3	0	0
Rip-rapped channel (highly modified channel with severely limited vegetation zone that is altered by human activities but not a completely concrete channel [that goes under paved roads]), junkyards, trash dumps, disturbed ground (not including roads)	0.3	0	0
Ski area	0.4	0	0
Dam sites and flood-disturbed shorelines around water storage reservoirs	0.5	0	0
Abandoned artificial impoundments (ponds and reservoirs) and associated disturbed flood zones	0.5	10	5
Artificial/Constructed wetlands, irrigation ditches	0.7	20	14
Developed/Managed trail system (high use trail)	0.8	5	4
Agriculture - active tilled crop production	0.2	0	0
Agriculture - permanent crop (vineyards, orchards, nurseries, berry production)	0.3	0	0
Manicured lawns, sport fields, and golf courses; urban manicured parks	0.3	0	0
Old fields and other disturbed fallow lands dominated by ruderal and/or exotic species (e.g., kochia, Russian thistle, mustards, annual vegetation)	0.5	0	0
Mature old fields and other fallow lands with natural composition, introduced hay field and pastures (e.g., perennial vegetation cover)	0.7	0	0
Restoration areas in process to natural conditions (re-conversion in process)	0.8	65	52
Haying of native grassland (e.g., no tillage, haying and baling only)	0.9	0	0
Heavy logging or tree removal with >50% of large trees (e.g., >30 cm diameter at breast height) removed, woodland/shrub vegetation conversion (chaining, cabling, rotochopping)	0.3	0	0
Commercial tree plantation, Christmas tree farms	0.6	0	0
Selective logging or tree removal with <50% of large trees (e.g., >30 cm diameter at breast height) removed	0.8	0	0
Mature restoration areas returned to natural conditions (re-converted)	0.9	0	0
Natural area, land managed for native vegetation - No agriculture, logging, development	1	0	0
LUI Score= Coefficient * % LUZ Area		100	75

Table L4. Surrounding Land Use Rating	
Rating	**LUI Score**
◯ 4	≥95 - 100
◯ 3	≥80 - <95
⊗ 2	≥40 - <80
◯ 1	<40

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Biotic Metrics

Worksheet 5. Vegetation Community Patch Polygon Data for Biotic Metrics B3, B4, and B5 for Polygons from SA Biotic Map. Enter data for each polygon under a unique number assigned from the SA Biotic Map. Each polygon is evaluated with respect to Vegetation Vertical Structure (B3), Native Tree Regeneration (B4), and Invasive Exotic Plant Species Cover (B5) metrics. Enter the Vertical Structure Type (VST) for B3, tree regeneration % cover within the polygon for B4 and the % cover of invasive exotic species for B5. Use the Tables in Appendix B and the Field Guide for metric instructions. Enter the species codes for the invasive exotic species found in the polygon (from NM Noxious Weed List - Appendix D). Use the comments box for documenting and describing vegetation community patch features.

Polygon No	B3 Vertical Structure Type	B4 Tree Regeneration % Cover	B5 Invasive Exotic Species % Cover	Invasive Exotic Species (List Code(s))	Comments
4	IIIB1	80%	20%	Mustard	
5	IIIC1	70%	0%	Algae	
3	IIA1				
	IIIB1				
	IIIC1				
6	IVEI				
7	IVF1				
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

SA CO SF2MI [6] SA Name : Two Mile Pond Reservoir T ect [6] Date : 6/11/24 Surveyor Initials : M

B1 - Relative Native Plant Community Composition

Worksheet 6. CT Plant Species and Polygon Assignments. Starting with CT A, enter the number of the first polygon from Worksheet 5. Enter the species codes for the two top dominant species in each stratum that appears in the polygon. See footnotes for special instructions. If a species appears in more than one strata, assign the species to the stratum in which it is more abundant. Each polygon is either assigned to the same CT if it has the same composition or a new CT is created for the polygon.

		Tall Woody Stratum 1				Short Woody Stratum 2				Herbaceous/Sparse Stratum 3				CT Score 4		
CT	Polygon Nos.	Species 1	E N	Species 2	E N	Species 3	E N	Species 4	E N	Species 5	E N	Species 6	E N	Raw4	% SA5	Wt Score6
A		Willow	N			Cattail	N			Mustard	E	daisy	E	1.5	60	0.9
B						Chinaisa	N			globemallow	N	Bluestem	N	4	40	1.6
C																
D																
E																
F																
G																
H																
I																
J																
K																
L																
M																
N																
O																
													Final Weighted Score7			2.5

1. Trees and shrubs > 6 m (20 feet) and > 25% total stratum cover; 2. Trees and shrubs ≤6m (20 feet) and >25% total stratum cover; 3. Herbaceous (graminoids and forbs)>10% total stratum cover. 4Raw Score is from Table B1a (Appendix B); 5%SA is the percentage of the SA area covered by the CT and expressed as a decimal number; the total area %SA must equal 1; 6Wt. Score is the product of the Raw Score * % SA; 7The Final Weighted Score is the sum of the Wt. Scores. Rate the CT Final Weighted Score on Table B1 and enter the Rating for Relative Native Plant Community Composition on the SA Rank Summary Worksheet.

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Table B1. Relative Native Plant Community Composition Rating		
Rating	**CT Final Weighted Score**	
◯ 4	≥ 3.75	<10% non-native
◯ 3	≥ 3.25 and <3.75	10% ≤20% non-native
X 2	> 2.0 and <3.25	20% ≤50% non-native
◯ 1	≤2.0	>50% non-native

2 - Vegetation Horizontal Patch Structure

Worksheet 7. Using Tables B2a and B2c (Appendix B), choose the schematic pattern that best matches the mapped vegetation patch pattern for the SA. Rate using Table B2 and enter rating on the SA Rank Summary Worksheet.

Horizontal Patch Structure pattern A,B,C, or D:

Table B2. Rating for Vegetation Horizontal Patch Structure	
Rating	**Description**
◯ 4	Most closely matches Pattern A. SA has a diverse patch structure (≥4 patch types) and complexity. A dominant patch type would be difficult to determine.
X 3	Pattern B. SA has a moderate degree of patch diversity (3 patch types present) and complexity. A single, dominant patch type may be present, although the other patch types would be well represented and have more than one occurrence in the SA.
◯ 2	Pattern C. SA has a low degree of patch diversity and complexity. Two or three patch types may be present; however, a single, dominant patch type exists with the others occupying a small portion of the SA.
◯ 1	Pattern D. SA has essentially little to no patch diversity or complexity. The SA is dominated by a single patch type. Other patch types, if present, occur infrequently and occupy a small portion of the SA.

B3 - Vegetation Vertical Structure

Worksheet 8. Percentage of SA by vertical structure type (VST). Using the Structure Type from Worksheet 5 and the %SA from Worksheet 6 calculate the total area of the SA occupied by each VST using the formula VST(type) = Sum (%SA for CTs with same VST) x 100. Enter the total %SA for each VST below.

	VST 1 High Structure Forest	VST 2 Low Structure Forest	VST 5 Tall Shrubland	VST 6S Short Shrubland	VST 6W Herbaceous Wetland	VST 6H Herbaceous Vegetation	VST 7 Sparse Vegetation
Total % of SA				50		50	

Table B3. Rating for Vegetation Vertical Structure. Using the data from Worksheet 8 rate the SA based on the criteria in Table B3. Pick the row that best fits the distribution of VSTs in the SA. Each row specifies the required dominant structure type plus co- and sub-dominants. Percentage cover required per co- or sub-dominant is a minimum. The types listed in the columns must be the most common VSTs in the SA for the rating to be applicable (Worksheet 8). VSTs 1 and 2 can be inverted in dominance and the rating is still applicable. Work from the top of the table down. As long as the requirements for one row are met, any other types may or may not co-occur without changing the rating. Enter the rating on the SA Rank Summary Worksheet.

Rating	**Dominant VST**	**Co- or Sub-dominant VST ≥15%**	**Sub-dominant VST ≥5%**
◯ 4	1	5	6W and/or 6H
	1	6W	
	2 or 1 and 2	5	6W and/or 6H
◯ 3	1		
	2 or 1 and 2	5	
	2 or 1 and 2	6W	
	5	6W	
X 2	2 or 1 and 2		
	5		
	6W		
◯ 1	6S		
	6H		
	7		

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B4 - Native Riparian Tree Regeneration

B4. Native Riparian Tree Regeneration rating. Using the polygon percent cover of native tree seedlings, saplings and poles from Worksheet 5, rate the SA based on polygon percent cover and patch density. Enter the rating on the SA Rank Summary Worksheet.

Rating	Description
X 4	Native poles, sapling, and seedlings trees well represented, obvious regeneration, many patches or polygons with >5% cover, typically multiple size (age) classes.
3	Native poles, saplings and/or seedlings common, scattered patches or polygons with 1% -5% cover, size classes few.
2	Native poles, saplings and/or seedlings present but uncommon, restricted to one or two patches or polygons with typically <1% cover, little size class differentiation.
1	Native poles, saplings, and/or seedlings absent (0% cover).

B5 - Invasive Exotic Plant Species Cover

Worksheet 9. Based on Worksheets 5 and 6, calculate or estimate the percentage cover of invasive exotic species for the SA and enter below. Rate using Table B5 and enter the rating on the SA Rank Summary Worksheet.

Rating Method [ ] Invasive cover (%) [ ] calculate

Table B5. Ratings for Invasive Exotic Plant Species Cover	
Rating	**Invasive Species Cover %**
4	0%
3	>0% - <1%
2	≥1% - <10%
X 1	≥10

Additional CTs and Biotic Metric Comments:

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Abiotic Metrics

A1 - Floodplain Hydrologic Connectivity

Method 1

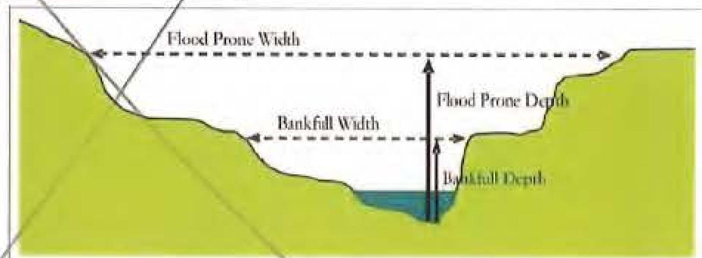
Worksheet 10a. Floodplain Hydrologic Connectivity Measurements. The following six steps are conducted at each of three cross-sections at the approximate mid-points along straight riffles and away from deep pools or meander bends. Use a measuring tape and temporary stakes for horizontal measurements, and a stadia rod or similar measuring stick for vertical measurements. If unavailable, use visual estimates. Where straight channel segments do not occur, or if there is excessive ponding or bankfull indicators are obscured, use the narrative rating approach (Method 2). Enter the rating method in the box below, either meander pool, riffle pool or narrative (Method 2) and choose the corresponding Table (A1a, A1b, or A1c) to rate Floodplain Hydrologic Connectivity. Enter the rating on the SA Rank Summary Worksheet. Photographs of each cross-section are required and recorded in Table A1d.

Steps	Description	Cross-section: 1	2	3
1: Bankfull width	This is a critical step requiring familiarity with field indicators of the bankfull contour. Measure the distance between the right and left bankfull contours with a tape.			
2: Maximum bankfull depth	Keeping the tape level between the right and left bankfull contours, measure the height of the line above the thalweg (the deepest part of the channel). A pocket line level can help here.			
3: Flood-prone depth	Double the estimate of maximum bankfull depth from Step 2.			
4: Flood-prone width	Using a tape, measure the length of a level line at a height equal to the flood prone depth from Step 3 to where it intercepts the right and left banks.			
5: Calculate Entrenchment Ratio	Divide the flood-prone width (Step 4) by the bankfull width (Step 1).			
6: Calculate average ratio	Calculate the average for Step 5 for all three replicate cross-sections. Enter the average here and rate using Table A1a. Enter the rating in the A1 box on the SA Rank Summary Worksheet.			

Rating Method:

Table A1a. Rating for Floodplain Hydrologic Connectivity in meandering single-channel riffle-pool systems

Rating	Description
○ 4	Average entrenchment ratio is ≥ 2.2;
○ 3	Average entrenchment ratio is ≥1.9 - <2.2
○ 2	Average entrenchment ratio is ≥1.5 - <1.9
○ 1	Average entrenchment ratio is < 1.5



Worksheet 10b. Floodplain Hydrologic Connectivity Indicators. Use this Worksheet in conjunction with Table A1c. Check the boxes for all that apply to each segment.

U	M	L	Indicator
☐	☐	☐	Bankful is slightly below bank height
☐	☐	☐	Bankful is well below bank height and channel is incised
☐	☐	☐	Channel widening due to bank failure
☐	☐	☐	Constructed levees preclude floodplain inundation
☐	☐	☐	Stream is straightened/channelized
☐	☐	☐	Inset floodplain formation
☐	☐	☐	Decreased peak flows due to hydrologic modification
☐	☐	☐	Bankfull indicators at point of incipient flooding of the floodplain
☐	☐	☐	Indicators of overbank flow on floodplain
☐	☐	☐	Floodplain inundation due to beaver activity

Table A1b. Rating for Floodplain Hydrologic Connectivity in single-channel step-pool systems

Rating	Description
○ 4	Average entrenchment ratio is ≥ 1.9
○ 3	Average entrenchment ratio is ≥1.4 - <1.9
○ 2	Average entrenchment ratio is ≥1.2 - <1.4
○ 1	Average entrenchment ratio is < 1.2

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Method 2

ble A1c. Narratve Floodplain Hydrologic Connectivity Rating. Select the narrative description that best describes the floodplain hydrologic connectivity. At each cross-section, use Worksheet 10b to record channel incision, bank modification, inset floodplain or other hydrologic evidence that would preclude natural floodplain inundation. Conversely, assess indicators and evidence for overbank flow and floodplain inundation. Record whether beaver activity is obscuring bankful indicators due to inundation of the floodplain. Select a rating from the table below. Use data from Worksheets 10b to help select rating. Enter Rating on SA Summary Worksheet. Photographs are required at each cross-section and recorded in Table A1d.

Rating	Description
○ 4	Fully connected to the natural floodplain. Indicators of bankfull discharge are at the bank/floodplain transition, with over-bankfull flows likely to inundate a broad area of floodplain. Floodplain supports riparian vegetation and shows signs of overbank sediment deposition. Or beaver ponds inundate the entire, normally active floodplain and preclude the identification of bankfull indicators and the active floodplain width.
○ 3	Flow access to the floodplain moderately limited by incision, channelization. Less frequent inundation than fully connected streams described above (as noted by bankfull indicators below floodplain transition). Floodplain supports a riparian overstory, but some understory plants may be upland. An inset floodplain supporting riparian vegetation may also be present.
○ 2	Incised, channelized or modified with an inset floodplain formed, which is regularly inundated and supports riparian vegetation and sediment regimes. Or the stream has minimal access to the natural floodplain due to incision, channelization, or flow modification, and the natural floodplain does not support riparian vegetation except for relatively long-lived phreatophytes (e.g., cottonwood, salt cedar, etc.).
○ 1	Fully disconnected from floodplain, either through incision, bank modification/channelization, or hydrologic modification (i.e., abandonment of floodplain due to decreased peak flows). Indicators may include upland vegetation and lack of overbank sediment deposits on the floodplain, etc.

T A1d. Photo Point Log for Cross-Section Photographs. For each cross-section record the digital names/numbers of photographs taken looking Upstream and Downstream from the thalweg and looking Bank Right* and Bank Left* across the stream from each side of the cross-section. Leave the cross-section tape and flags indicating bankful in the ground when taking the Bank Right and Bank Left photos. A photo board with SA name and cross-section information is helpful. (*The bank of a stream or river on the right (left) of the observer when facing in the direction of flow or downstream.) See Appendix E for additional details.

Cross Section	Easting (Latitude)	Northing (Longitude)	Upstream	Downstream	Bank Right	Bank Left
1						
2						
3						

Floodplain Hydrologic Connectivity Comments:

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A2 - Physical Patch Complexity

Worksheet 11. Physical Patch Complexity checklist. Check off existing physical patch types for the upper, middle and lower segments of the SA; count the number of unique patch types and rate using Table A2 in combination with the narrative description. Enter the rating on the SA Rank Summary Worksheet.

Upper Segment	Middle Segment	Lower Segment	Field Indicators (check all existing conditions)
☐	☐	☐	Active side channels
☐	☐	☐	Abandoned channels
☐	☐	☐	Backwater/eddy
☐	☐	☐	Riffles or rapids
☐	☐	☐	Shoals, sparely-vegetated bars
☐	☐	☐	Channel boulders
☐	☐	☐	Oxbow lakes/ponds on floodplains
☐	☐	☐	Vegetated island and side bars
☐	☒	☐	Terraces
☐	☒	☐	Channel pools
☐	☐	☐	Beaver ponds
☐	☐	☐	Swales, depressional features on floodplains
☐	☐	☐	Debris jams in channel
☐	☐	☐	Woody wrack piles on the floodplain
☐	☐	☐	Floodplain micro-topography (mounds, pits)
☐	☐	☐	Downed logs
☐	☒	☐	Natural levees
☐	☐	☐	Standing snags
☐	☐	☐	Variegated, convoluted, or crenulated foreshore
☐	☐	☐	Undercut banks in channels
			No. of unique Patch Types

Table A2. Rating for Physical Patch Complexity

Rating	Description
◯ 4	**High** degree of physical patch complexity across the floodplain. There are many floodplain micro-habitats present (mounds and pits, woody wrack piles, etc.), many fluvial geomorphic surfaces (swales, side channels, terraces, side bars, etc.), and there is high in-channel complexity (pools and riffles, large woody debris, undercut banks, etc.). As a guide, 12 or more unique indicators are present and well distributed throughout the SA (most indicators are found on multiple segments).
◯ 3	**Moderate** physical patch complexity scattered across the floodplain. There are several floodplain micro-habitats present, several fluvial geomorphic surfaces, and there is moderate in-channel complexity. As a guide, 9 - 11 indicators are scattered throughout the SA (some on multiple segments).
☒ 2	**Limited** physical patch complexity scattered across the floodplain. There are some floodplain micro-habitats present, some fluvial geomorphic surfaces, and there is limited in-channel complexity. As a guide, on average there are 6 - 8 unique indicators present in the SA (only a few on multiple segments).
◯ 1	**Little** or no physical patch complexity on the floodplain. There are few or no floodplain micro-habitats present, few different fluvial geomorphic surfaces, and there is little or no in-channel complexity. As a guide, ≤ 5 unique indicators are present in the SA.

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A3- Channel Equilibrium

Worksheet 12. Channel Equilibrium Checklist. Check all field indicators that apply to the upper, middle and lower segment of the SA observed at the channel edge of the traverse. Rate using the Table A3 descriptions and based on a preponderance of evidence from this checklist. Enter the rating on the SA Rank Summary Worksheet.

Condition	Upper Segment	Middle Segment	Lower Segment	Field Indicators(check all existing conditions)
Indicators of Channel Equilibrium	☐	☒	☐	The channel has a well-defined bankfull contour that clearly demarcates the point of incipient flooding where moderate frequent flow events spread flow across the floodplain.
	☐	☒	☐	Perennial riparian vegetation is abundant and well established along the bankfull contour, but not below it.
	☐	☒	☐	There is leaf litter, thatch, or wrack in most pools.
	☐	☒	☐	The channel contains embedded woody debris of the size and amount consistent with what is naturally available in the riparian area.
	☐	☒	☐	There is little or no active undercutting or burial of riparian vegetation.
	☐	☐	☐	There are no bars that are densely vegetated with perennial vegetation (neither mid-channel bars or point bars).
	☐	☒	☐	Channel and point-bars consist of well-sorted bed material.
	☐	☒	☐	The channel bed is not planar and without an abundance of fine materials filling the interstitial spaces between larger stream substrate.
	☐	☐	☐	There are channel pools at meander bends and some deep pools within the reach.
Indicators of Active Degradation	☐	☐	☐	The channel is characterized by deeply undercut banks with exposed living roots of trees or shrubs.
	☐	☐	☐	There are abundant bank slides or slumps, or the lower banks are uniformly scoured and not vegetated.
	☐	☐	☐	Bank vegetation is declining in stature or vigor, or many riparian trees and shrubs along the banks are leaning or falling into the channel.
	☐	☐	☐	Channel bed is scoured to large cobbles or boulders and entrained bank material is filling the cobble interstices and pools.
	☐	☐	☐	There are active headcuts within the channel.
	☐	☐	☐	An obvious historical floodplain has recently been abandoned, as indicated by the age structure of its riparian vegetation.
Indicators of Active Aggradation	☐	☐	☐	There is abundant fresh splays of coarse sediment covering the floodplain above the natural point bar elevation.
	☐	☐	☐	There are partially buried living tree trunks or shrubs along the banks.
	☐	☐	☐	The channel bed is planar overall. The stream lacks well-defined channel pools at meander bends, or pools are filled with sediment.
	☐	☐	☐	There are partially buried or sediment-choked culverts.
	☐	☐	☐	There are avulsion channels on the floodplain or adjacent valley floor.

SA CODE : SF2MI [6] **Date :** 6/11/24

SA Name : Two Mile Pond Reservoir Transect [6] **Surveyor Initials :** DS/AM

Table A3. Rating for Channel Equilibrium

Rating	Description
☒ 4	Most of the channel throughout the SA is in equilibrium condition with little evidence of excessive aggradation or degradation based on the field indicators listed in Worksheet 12.
◯ 3	There is some evidence of excessive aggradation or degradation; the channel throughout the SA seems to approach an equilibrium condition. Circle primary process: aggradation or degradation.
◯ 2	There is evidence of severe aggradation or degradation throughout most of the channel through the SA. Circle primary process: aggradation or degradation.
◯ 1	The channel is artificially hardened, channelized, or is concrete throughout most of the SA.

A4- Stream Bank Stability and Cover

Worksheet 13. Bank Soil Stability and Streambank Erosion Potential Checklist. Check the indicator that best describes the condition looking a minimum of 25 m upstream and downstream at the channel edge of the upper, middle and lower segment of the SA. Average the six scores for both Bank Soil Stability and Streambank Erosion Potential. Rate using the Table A4 and enter the rating on the SA Summary Worksheet.

Condition	Upper Segment	Middle Segment	Lower Segment	Field Indicators
Indicators of Bank Soil Stability	☐4	☒4	☒4	Infrequent raw banks, less than 10% of steam bank under stress from trampling, slumping, vegetation removal or active erosion, etc.
	☐3	☐3	☐3	Raw banks and loose soil intermittently and 10%-25% of stream bank under stress from trampling, trail crossing, hoof punching, vegetation removal, erosion etc.
	☐2	☐2	☐2	Significant raw banks and loose soil, 25%-50% of stream bank under stress, trampled, slumping or eroding etc.
	☐1	☐1	☐1	Raw banks almost continuous with greater than 50% of stream bank under stress, loose soil, slumping, trampled or eroding; or channel appear to lack banks due to trampling; or channel that is artificially hardened or concrete along most of its length.
Indicators of Stream Bank Erosion Potential	☐4	☒4	☐4	≥ 80% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by boulders, large cobbles and/or large woody debris that prevent bank erosion.
	☐3	☐3	☐3	≥50% - <80% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those areas not covered by vegetation are protected to allow only minor erosion.
	☐2	☐2	☐2	≥25% - <50% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those area not covered by vegetation or stabilized by roots, are covered by materials or vegetation that give limited protection.
	☐1	☐1	☐1	Less than 25% of the stream bank surfaces are covered by vegetation in vigorous condition with dense root mass or by cobble or larger material. Those areas not covered by vegetation provide little or no control over erosion and excess shear stress, and the banks are susceptible to erosion by high water flows.

Average Indicator Score [ ]

Table A4. Stream Bank Stability and Cover Rating

Rating	Description
☒ 4	>3.5 - 4.0
◯ 3	>2.5 - ≤3.5
◯ 2	>1.5 - ≤2.5
◯ 1	1.0 - ≤1.5

SA CODE : SF2MI [6]

Date : 6/11/24

SA Name : Two Mile Pond Reservoir Transect [6]

Surveyor Initials : DS/AM

A5 - Soil Surface Condition

Worksheet 14. Soil Surface Condition. Check all that apply in the upper, middle and lower SA segments during the field reconnaissance. The absence of these indicators would signify that disturbances are naturally occurring (e.g., flood deposition or low-density wildlife trails). Estimate the percent soil disturbance by segment area and referring to the SA abiotic map. Rate using Table A5 and enter on the SA Rank Summary Worksheet.

Upper Segment	Middle Segment	Lower Segment	Field Indicators (Check all existing conditions)
☐	☐	☐	Active erosion features due to anthropogenic disturbance (eg. rills, gullies, plant pedestals).
☐	☒	☐	Multiple livestock and other (fishing,hiking) trails,
☐	☐	☐	Vehicle tracks including off-road and construction, etc.
☐	☐	☐	Impervious compacted surfaces or pavement
☐	☐	☐	Grading or plowing
☐	☐	☐	Fill
☐	☐	☐	Gravel pits
☐	☐	☐	Anthropogenic levees and berms
☐	☐	☐	Irrigation-driven salinity and mineral crusts
☐	☐	☐	Fire pits
☐	☐	☐	Other:
			Estimate % soil disturbance by segment area

Average % Soil Disturbance:

Table A5. Soil Surface Condition Rating

Rating	Description
☒ 4	Bare soil areas due to anthropogenic disturbance absent or very limited. No human-caused impervious surfaces or gravel pits are found within the SA. Total disturbance, including erosion, impervious surfaces, fill, or other anthropogenic degradation to the soil surface is less than 1% of the SA.
○ 3	Some amount of bare soil from human causes is present but the extent is limited. Area of impervious surfaces are minimal in extent. Total disturbance, including erosion, impervious surfaces, fill, gravel pits, vehicle tracks or other anthropogenic degradation to the soil surface is between 1% and 5% of the sampling area.
○ 2	Bare soils from human causes are common. These may include dense livestock trails, vehicle tracks, trails, construction staging areas, mechanical rutting, or irrigation-driven salinity. Soil disturbance, while apparent, is limited to specific areas and not found across the majority of the SA. Total disturbance, including erosion, impervious surfaces, fill, gravel mining, or other anthropogenic degradation to the soil surface is greater than 5% or less than 10% of the SA.
○ 1	Bare soil areas degrade portions of the site because of altered hydrology or other long-lasting impacts. Deep ruts from off-road vehicles or machinery are present. Livestock disturbance or trails are widespread and several inches deep. Water is channeled into rills or ponded. Additional human-caused impervious surfaces or soil compaction are present. Total disturbance, including erosion, impervious surfaces, fill,gravel mining or other anthropogenic degradation to the soil surface is equal to or greater than 10% of the SA.

SA CODE : SF2MI [6]

Date : 6/11/24

SA Name : Two Mile Pond Reservoir Transect [6]

Surveyor Initials : DS/AM

Worksheet 15. Stressor Checklist. Check off stressors by intensity category that may be affecting wetland ecological condition of the SA and WOI. Assign categories using direct evidence where available or your best professional judgement otherwise. If the presence of the stressor is uncertain, mark as "Unknown". Rank Major Stressors in Dominant Stressor column(Pick up to 3)

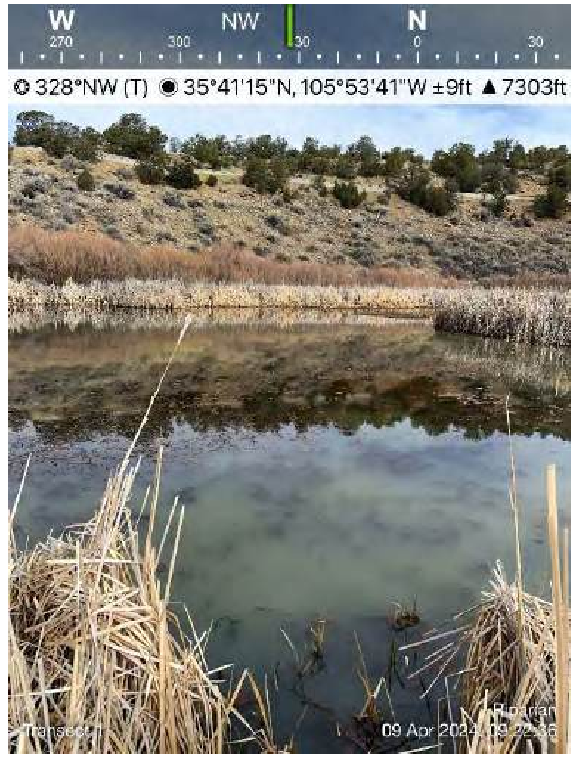
Rank	Affect				Stressor Group/Stressor	Comments
	Major	Minor	Absent	Unknown		
					Adverse water management	
	☐	☐	☐	☐	Extended low flow dam releases	
	☐	☐	☐	☐	Timing of flow releases not concordant	
	☐	☐	☐	☐	Extended high flow dam releases	
	☐	☐	☐	☐	Agriculture/Urban flow diversion upstream	
					Adverse sediment management	
	☐	☐	☐	☐	Adverse sediment retention by dams	
	☐	☐	☐	☐	Sediment loss by dredging	
	☐	☐	☐	☐	Adverse sediment input (roads/development)	
					Artificial water additions	
	☐	☐	☐	☐	Sewer treatment effluent	
	☐	☐	☐	☐	Point source urban runoff	
	☐	☐	☐	☐	Factory, feedlot outfall	
	☐	☐	☐	☐	Agricultural irrigation ditch returns	
	☐	☐	☐	☐	Mining waste	
					Ground water pumping	
	☐	☐	☐	☐	Urban depletions	
	☐	☐	☐	☐	Fracking	
	☐	☐	☐	☐	Agriculture irrigation wells	
					Watershed alteration	
	☐	☐	☐	☐	Extensive recent fires in watershed	
	☐	☐	☐	☐	Extensive recent timber harvest	
	☐	☐	☐	☐	Extensive open pit mining in watershed	
	☐	☐	☐	☐	Livestock/wildlife overgrazing	
					Local biodiversity impacts	
	☐	☐	☐	☐	Evidence of excessive grazing (local)	
	☐	☐	☐	☐	Excessive noise affecting wildlife	
	0	0		0	Counts by Intensity	

dditional Comments

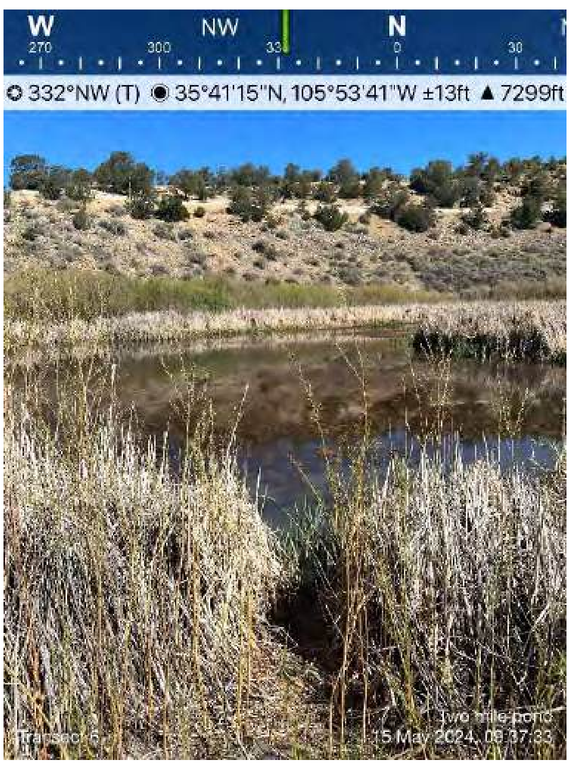
Appendix E.

Field Photos

March 7th 2024
Transect 6

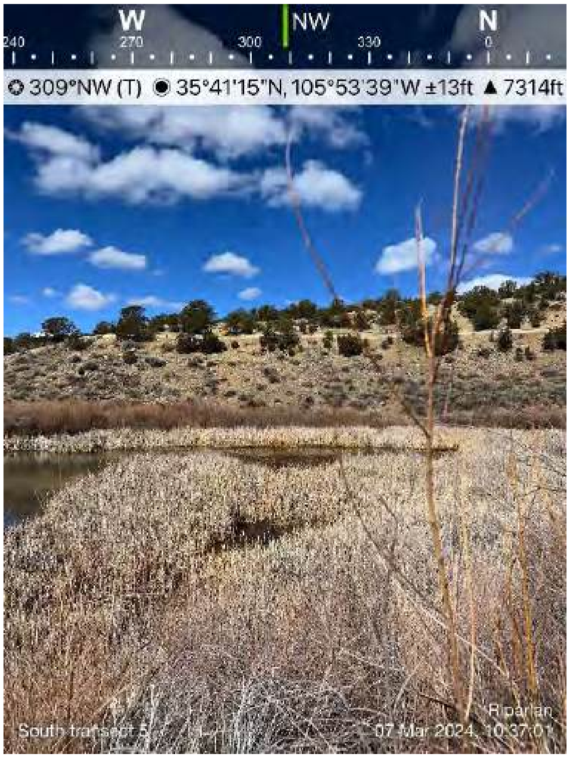


April 9th 2024
Transect 6



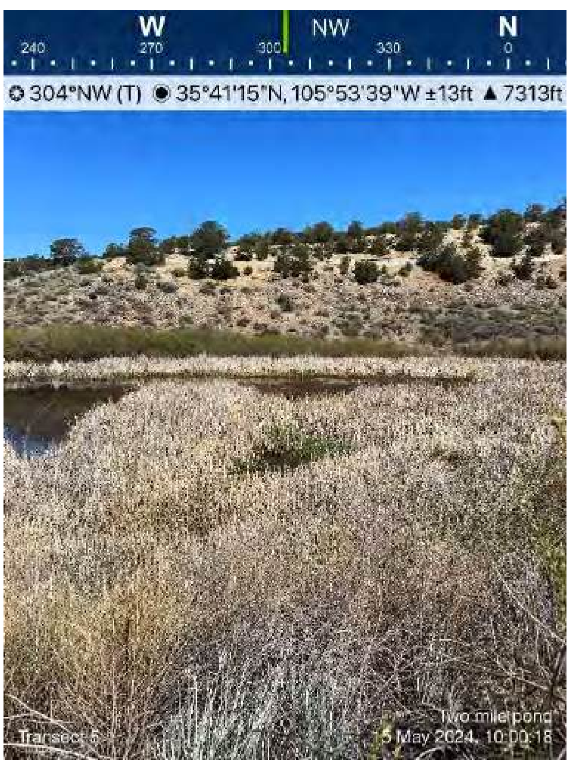
May 15th 2024
Transect 6

June 11th 2024
Transect 6



March 7th 2024
Transect 5

April 9th 2024
Transect 5

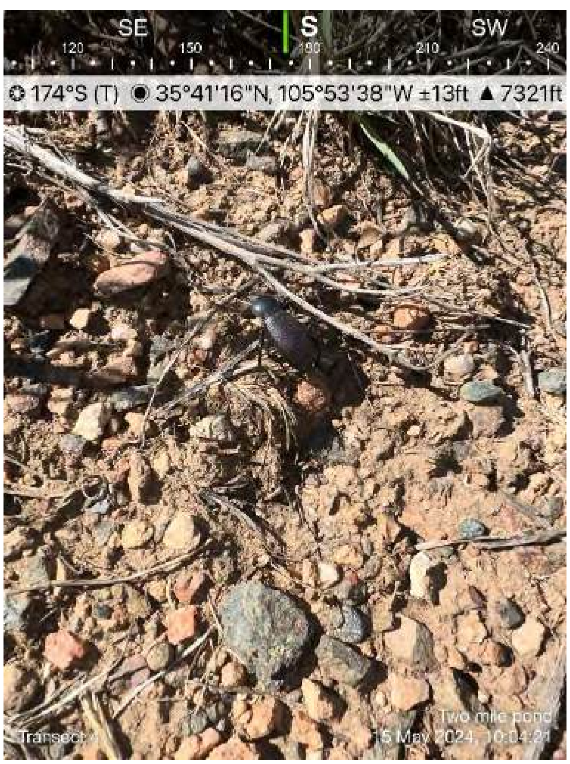


May 15th 2024
Transect 5

June 11th 2024
Transect 5

March 7th 2024
Transect 4

April 9th 2024
Transect 4



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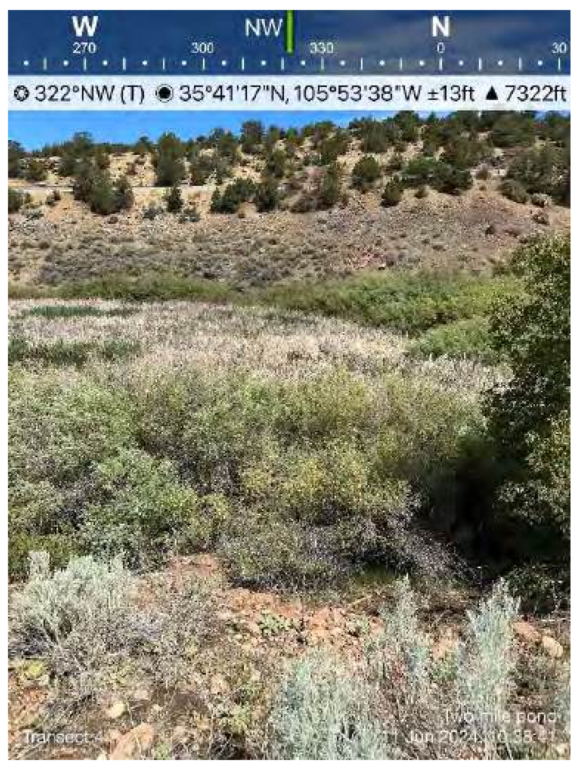
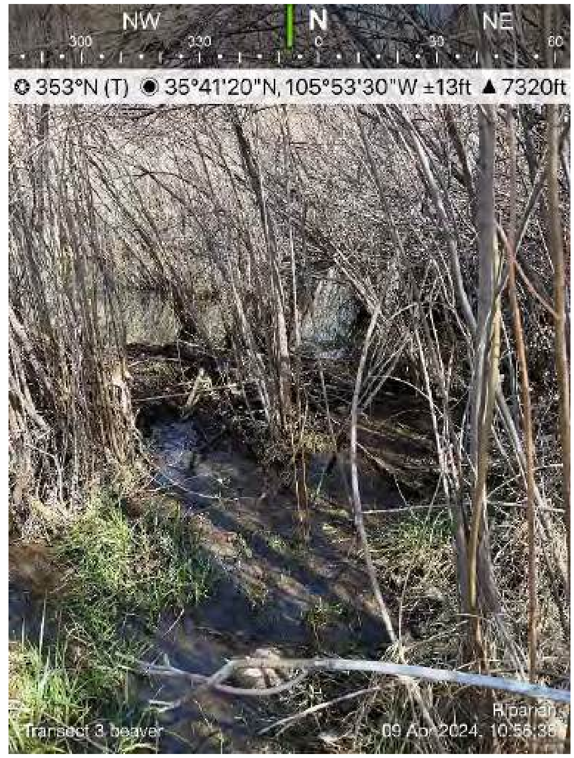
Transect 4



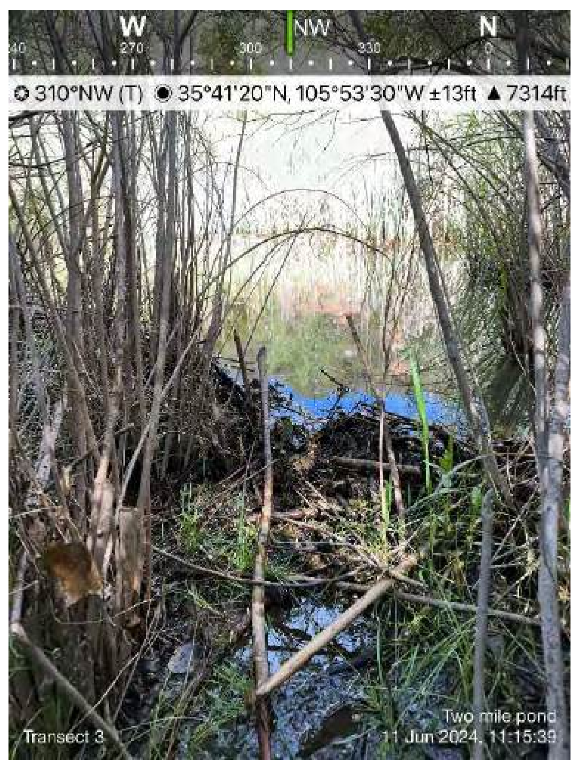
June 11th 2024
Transect 4

March 7th 2024
Transect 3



April 9th 2024
Transect 3

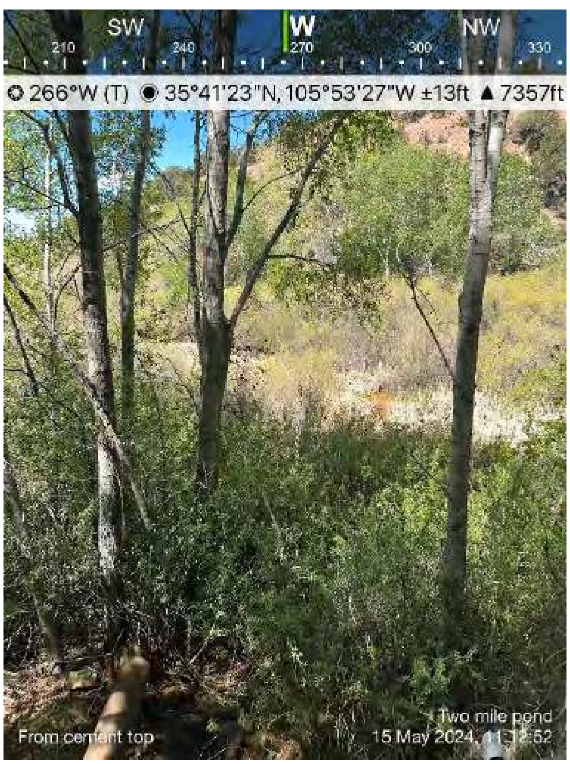
May 15th 2024
Transect 3



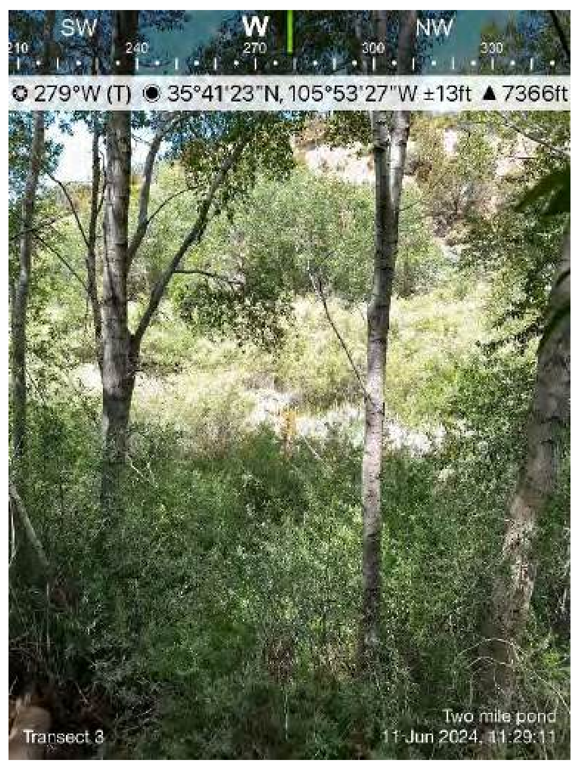
June 11th 2024
Transect 3

March 7th 2024
View from top of dam.

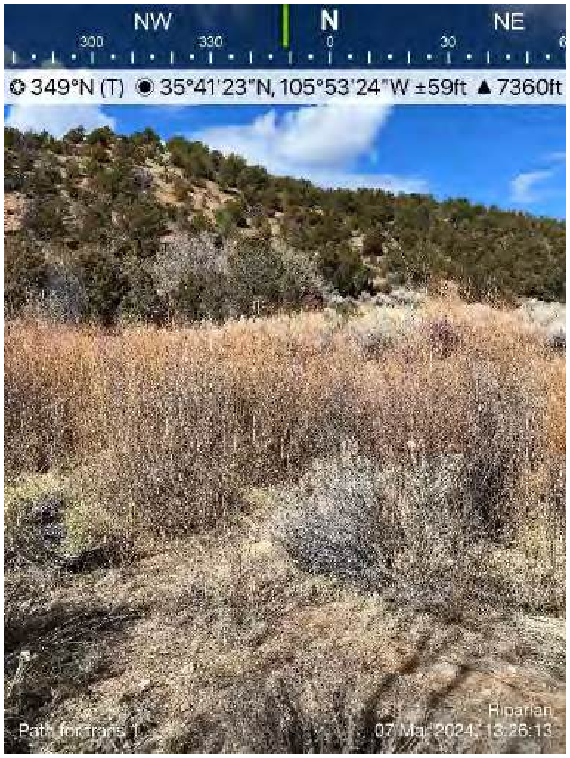
April 9th 2024
View from top of dam.



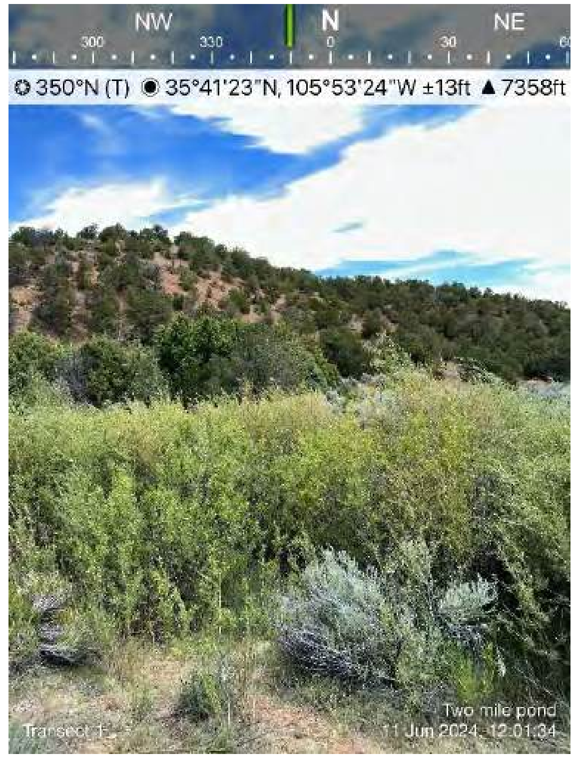
May 15th 2024
View from top of dam.



June 11th 2024
View from top of dam.



March 7th 2024
Transect 1



June 11th 2024
Transect 1

Red Stem Storks
An exotic plant here in Santa fe

Spreading Fleabane
A native wildflower in the Southwest.

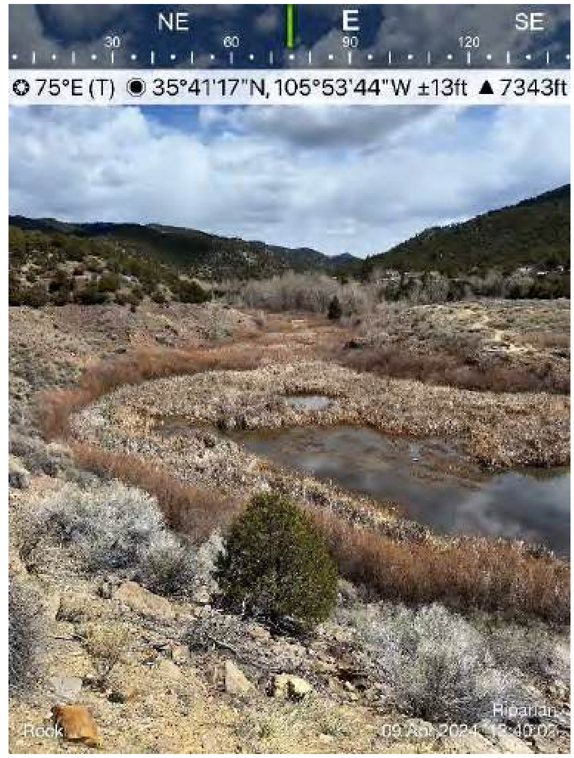
Large Box Elder bug.

Goldfish in pond.

Spotted Towhee

Mule Deer

March 7th 2024
Two Mile Pond



April 9th 2024
Two Mile Pond

May 15th 2024
Two Mile Pond

June 11th 2024
Two Mile Pond

Appendix F.

Santa Fe, New Mexico, Mosquito Study Two-Mile Pond

City of Santa Fe, New Mexico
Integrated Pest Management

Two Mile Pond Mosquito Survey

City of Santa Fe employees with assistance from New Mexico Department of Health (DOH) conducted presence sampling for adult mosquitos at Two Mile Pond (TMP). Trapping was conducted according to DOH protocols, including a standard sampling array using gravid traps and light traps specifically designed for capturing mosquitos. Weather conditions were ideal, and trapping proved successful.

In total, sixty-six mosquitos were captured with seven species representing the four genera identified (Table 1). All species identified are common throughout NM and would be expected in an environment such as Two Mile Pond. All species captured are considered nuisance species except C. tarsalis, a common vector for West Nile Virus (WNV) in New Mexico.

Santa Fe has a low number of WNV cases and very little mosquito sampling has been conducted previously. As such, historical data may be hard to come by. With the data from this recent sampling, we are unable to draw any conclusions as to how changes in TMP flows have impacted the mosquito populations in the area. However, this testing does confirm the presence of mosquitos at the time of sampling. To further examine the status of the mosquito population at TMP a long-term study would need to be developed and implemented.

Table 1: Sample results from June 18th, 2024 field collection

Species	Count	Percent of total sample	WNV vector
Aedes increpitus	1	1.52%	
Aedes trivittatus	11	16.67%	
Anopheles freeborni	6	9.09%	
Culex tarsalis	18	27.27%	yes
Culiseta incidens	4	6.06%	
Culiseta increpitus	1	1.52%	
Culiseta inornata	25	37.88%	

Appendix G.

Soil moisture maps

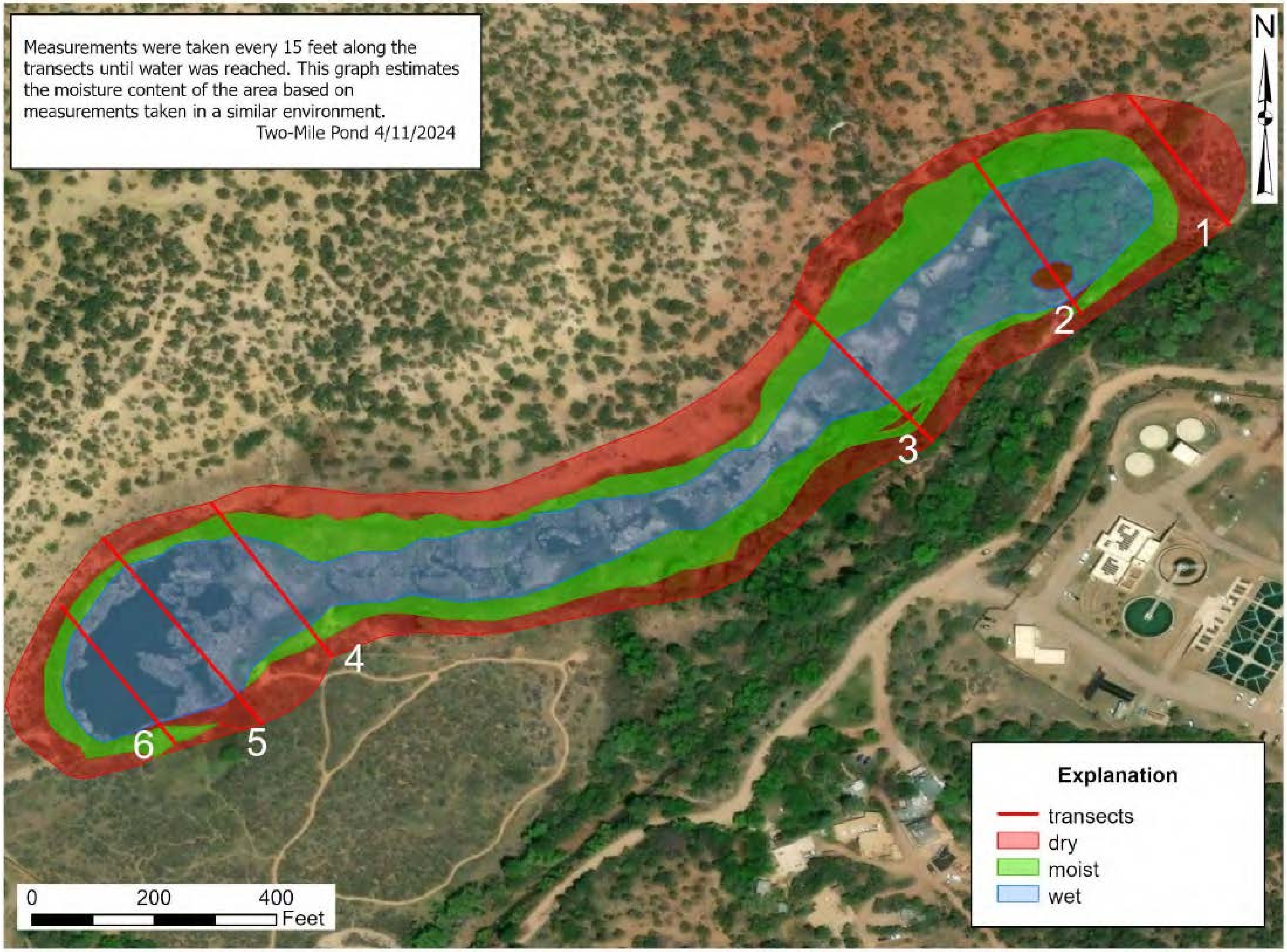


Figure G1. Moisture map April 11, 2024.

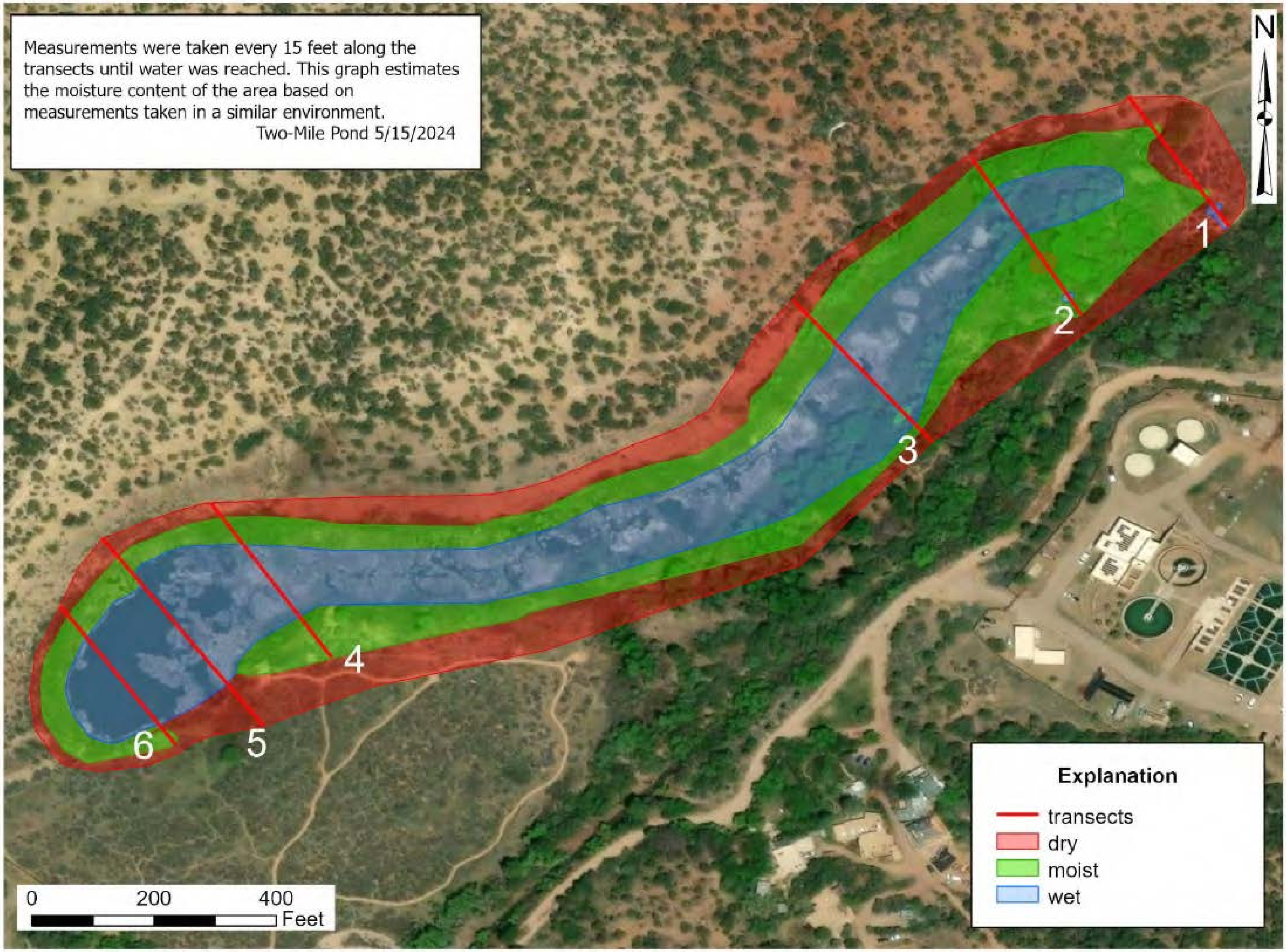


Figure G2. Moisture map May 15, 2024.

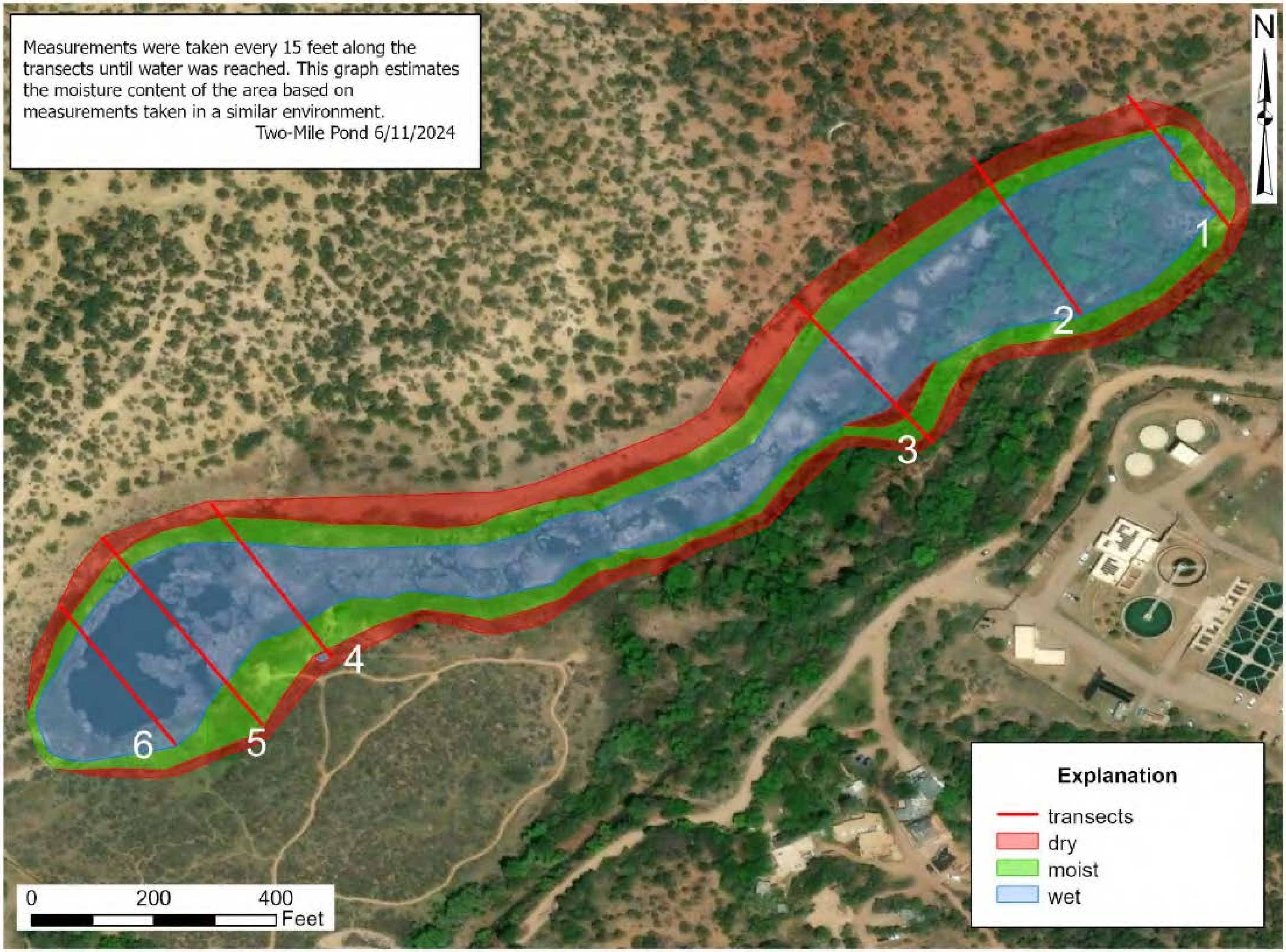


Figure G3. Moisture map June 11, 2024.