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

City of Santa Fe, New Mexico



prepared by



JOHN SHOMAKER & ASSOCIATES, INC. WATER-RESOURCE AND ENVIRONMENTAL CONSULTANTS 505-345-3407 • www.shomaker.com





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

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# SECOND QUARTER 2024 MONITORING REPORT TWO-MILE POND COMPLEX RIPARIAN SURVEY, 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

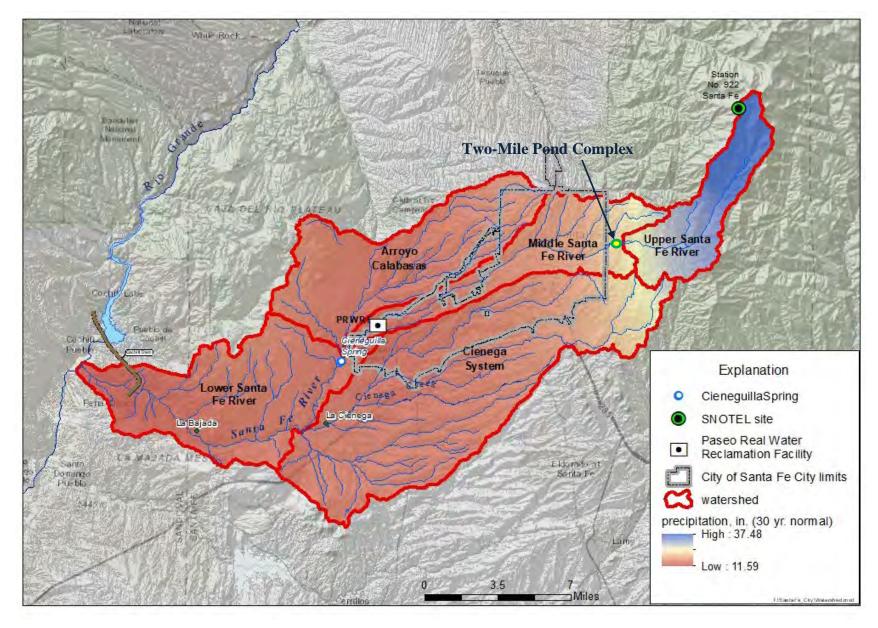


Figure 1. Map of Santa Fe watershed showing location of Two-Mile Pond Complex.

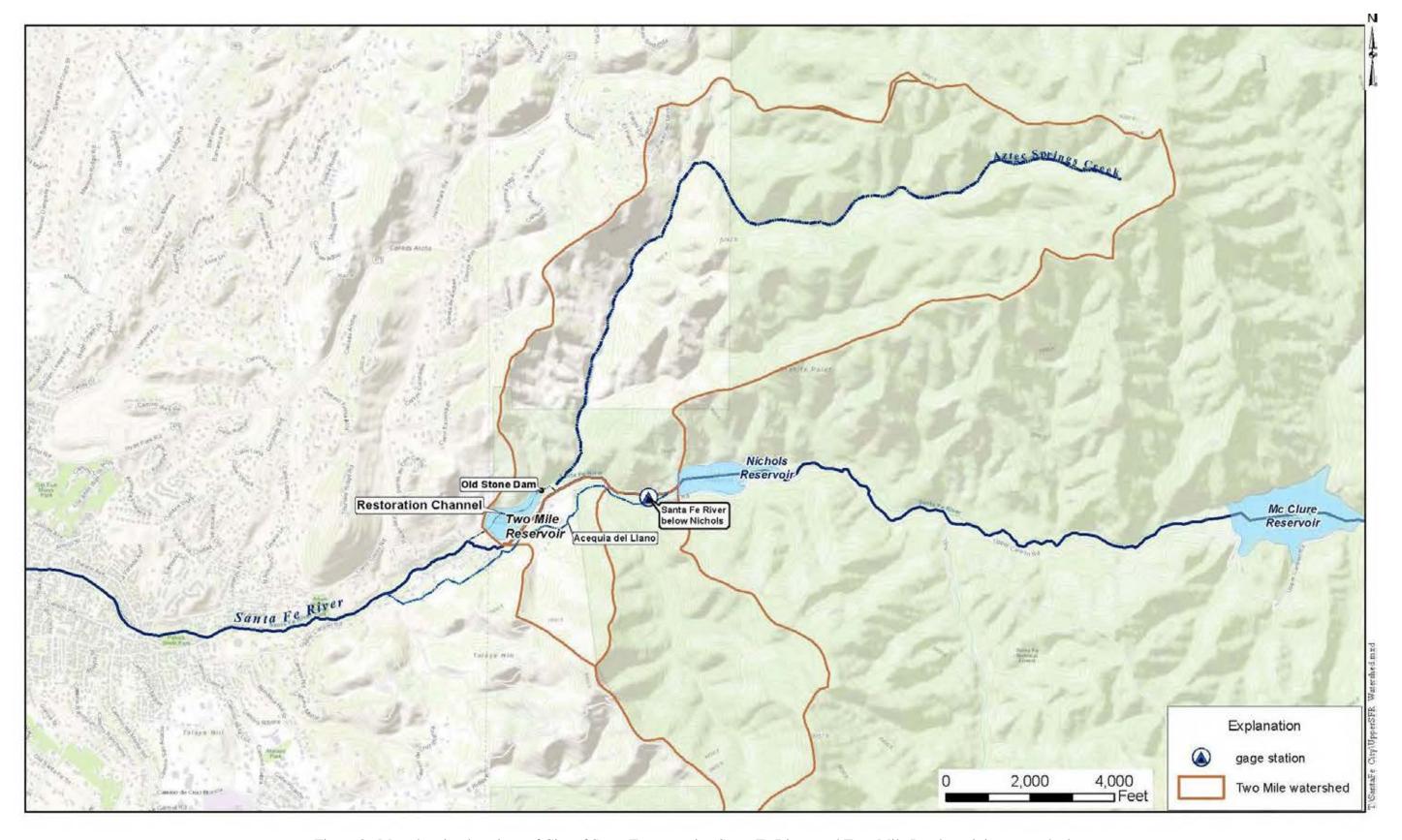


Figure 2. Map showing locations of City of Santa Fe reservoirs, Santa Fe River, and Two-Mile Pond receiving watershed.

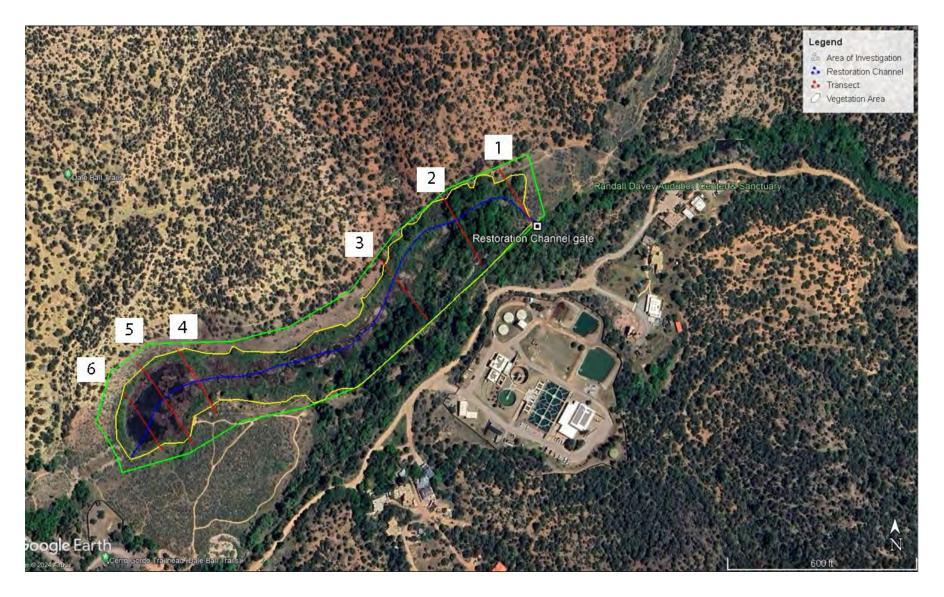


Figure 3. Landscape map showing the Two-Mile Pond Complex and area of investigation on June 7, 2023 aerial photograph.

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

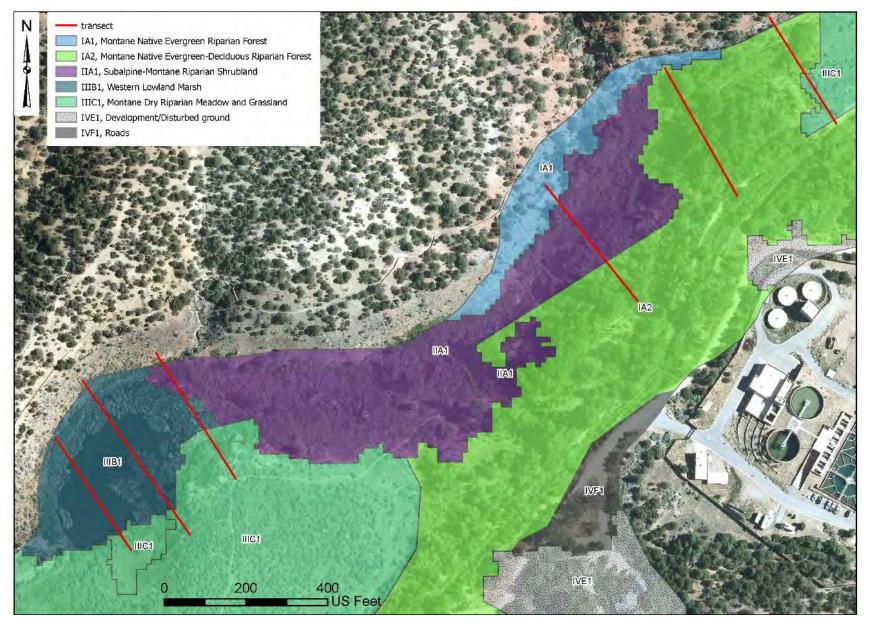


Figure 4. Map showing NMED SWQB defined riparian habitat zones for Two-Mile Pond Complex.

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).

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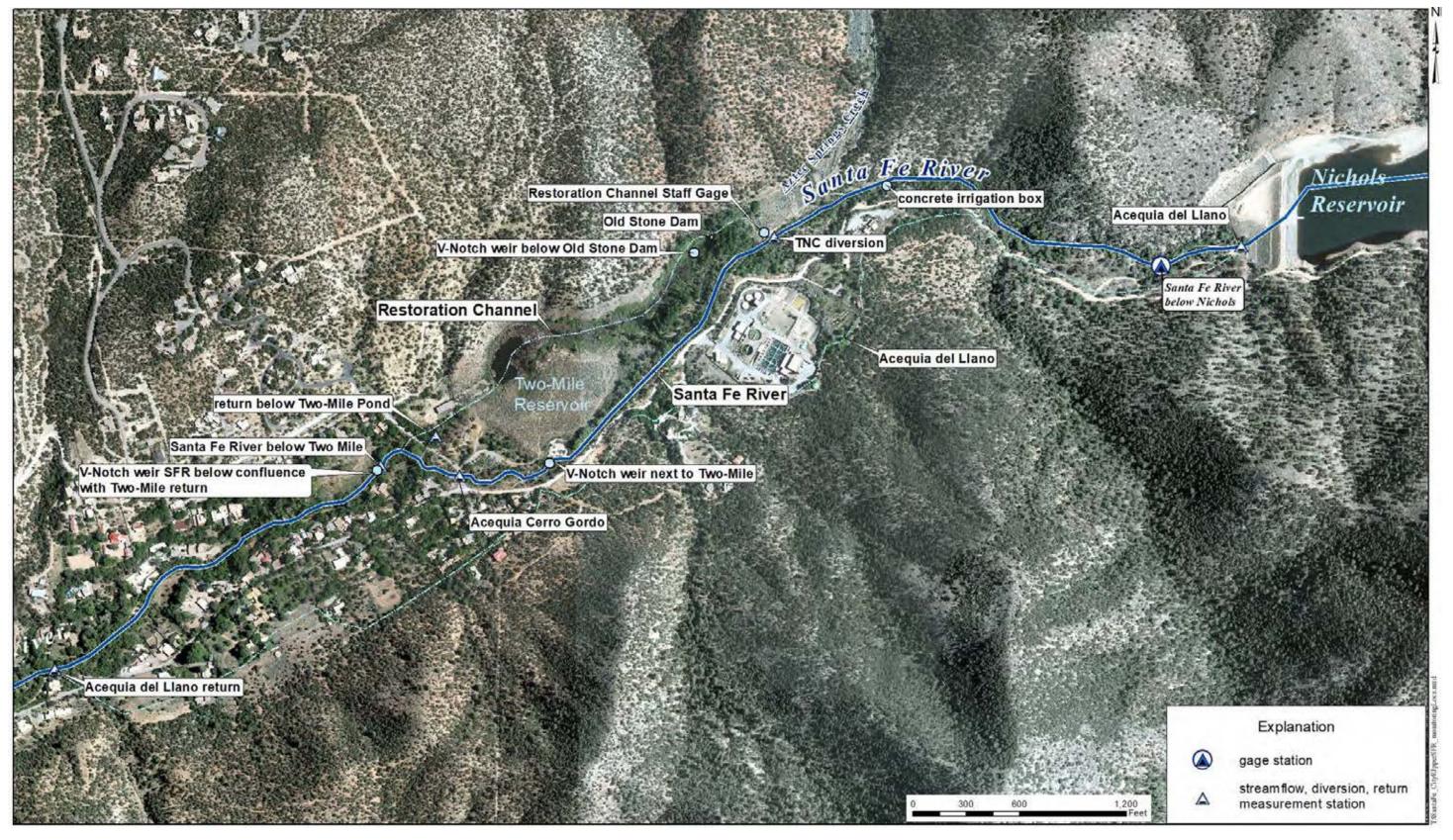
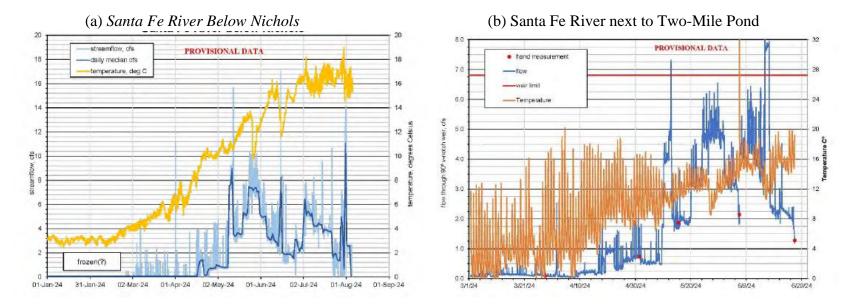


Figure 5. Map of Two-Mile Pond Complex showing streamflow monitoring stations.



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

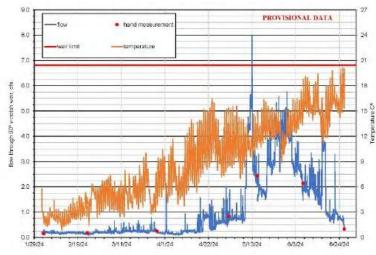
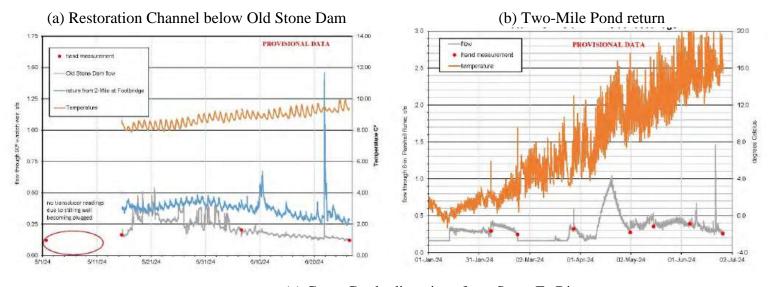
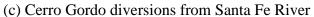


Figure 6. Hydrographs for year-to-date 2024 of (a) *Santa Fe River below Nichols* (b) Santa Fe River next to Two-Mile Pond, and (c) Santa Fe River below Two-Mile Pond return.





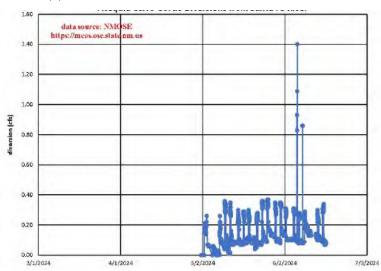


Figure 7. Hydrograph for year-to-date 2024 of (a) Restoration Channel Below Old Stone Dam, (b) Two-Mile Pond return (below Two-Mile), and (c) Cerro Gordo diversions.

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.

rankscoredescriptionA $\geq 3.25 - 4.0$ excellent conditionB $\geq 2.5 - \langle 3.25$ good conditionC $\geq 1.75 - \langle 2.5$ fair conditionD $1.0 - \langle 1.75$ poor condition

Table 4. NMRAM scoring and ranking description

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	Andrea in Angresia
5/15/2024	pinyon jay	
	garter snakes (6)	
	spotted towhee	
	black chinned hummingbird	The state of the s
	frog croaks	The state of the s
	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	Carlot Annual Control of the Control
	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.

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

Table 8. Summary of mosquito survey

#### 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 conduc	tance results alon	g Two-Mile Po	ond (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			
	temperat	ure results along	Two-Mile Pon	d (°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 oxy	ygen results along	Two-Mile Por	nd (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	monthly investigations			3	
metric description	weight	3/7/2024	4/9/2024	5/15/2024	6/11/2024
lar	ndscape co	ntext			
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
m	najor attrib	oute			
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		В	A	A	В

#### 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, <a href="https://www.sentinel-hub.com/">https://www.sentinel-hub.com/</a> 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** 

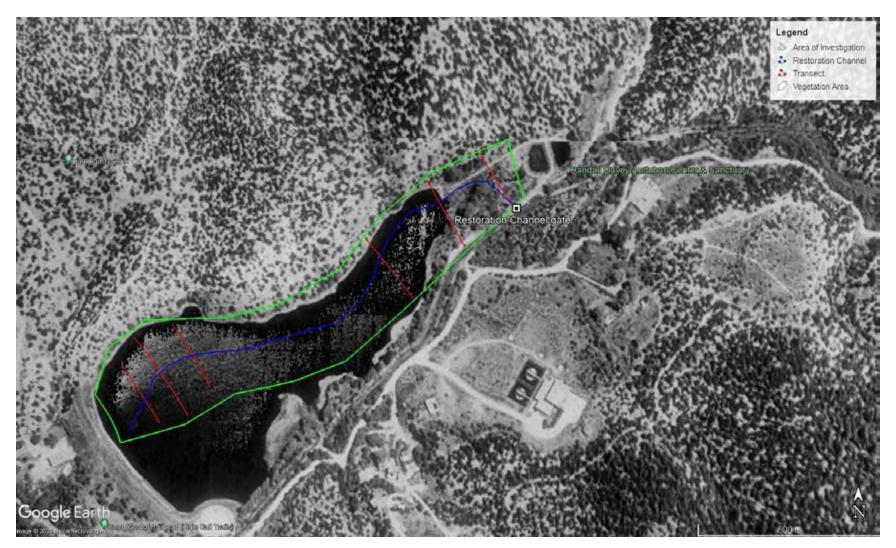


Figure A1. Historical image of Two-Mile Pond Complex dated May 25, 1991.



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

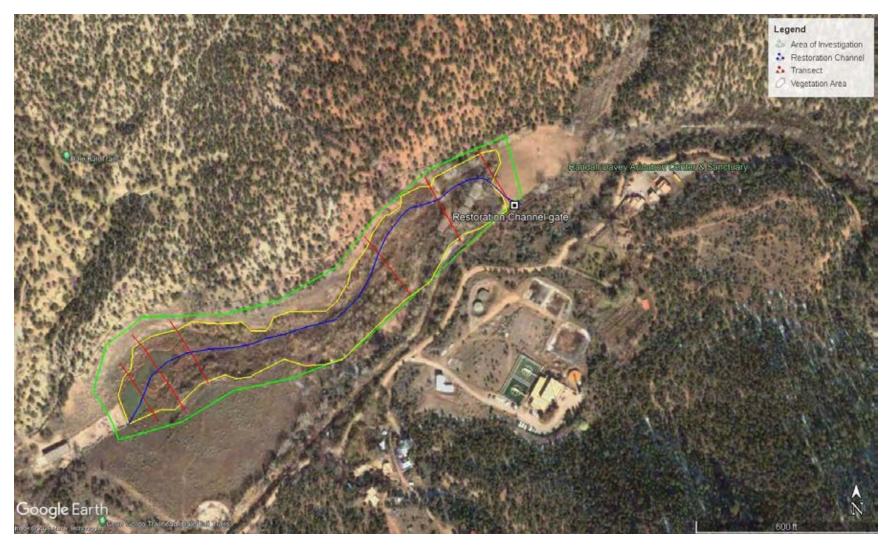


Figure A3. Historical image of Two-Mile Pond Complex dated December 6, 2002.

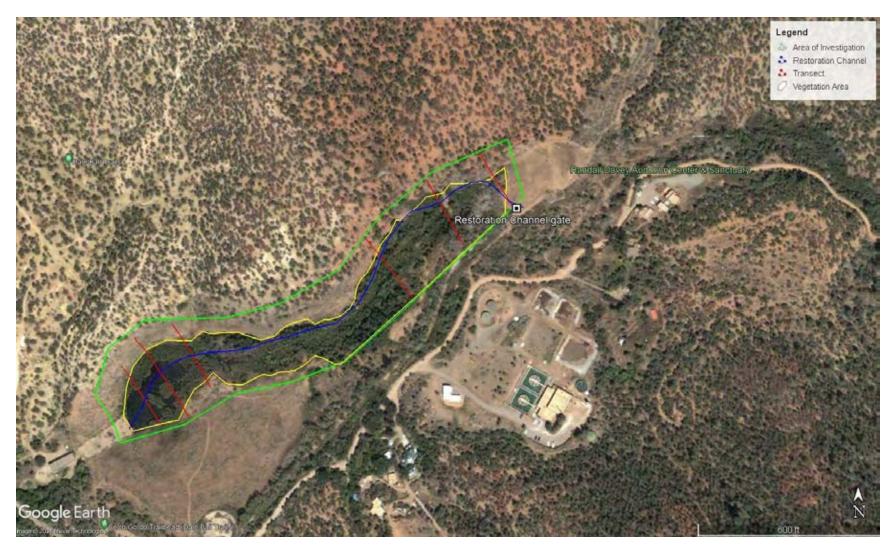


Figure A4. Historical image of Two-Mile Pond Complex dated May 10, 2004.



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.

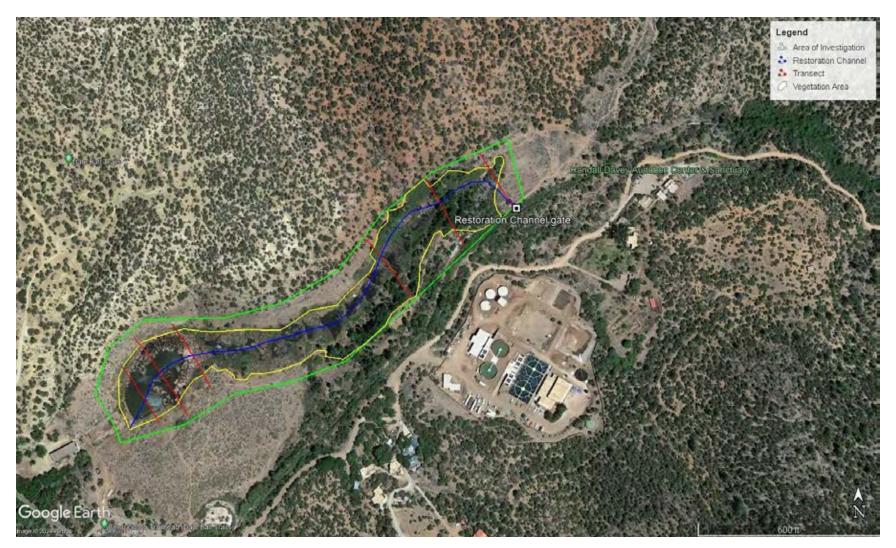


Figure A7. Historical image of Two-Mile Pond Complex dated June 16, 2011.

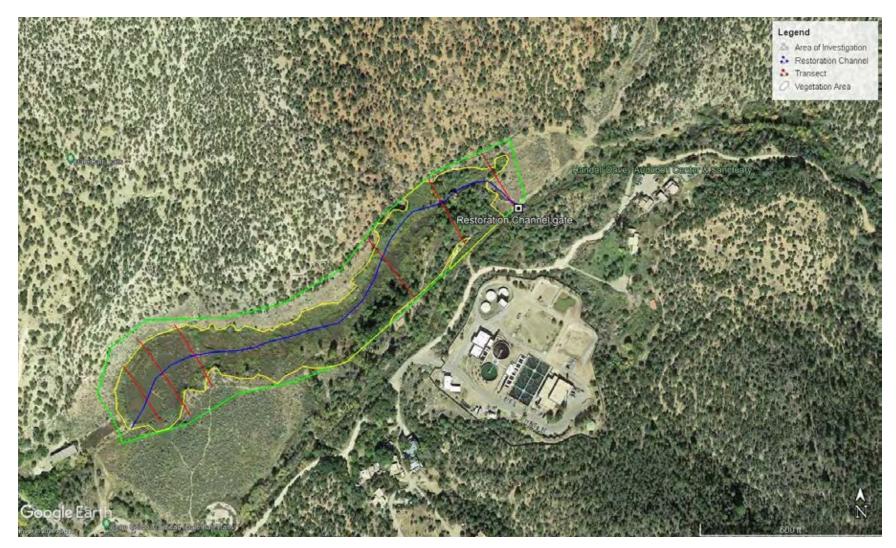


Figure A8. Historical image of Two-Mile Pond Complex dated October 2, 2013.

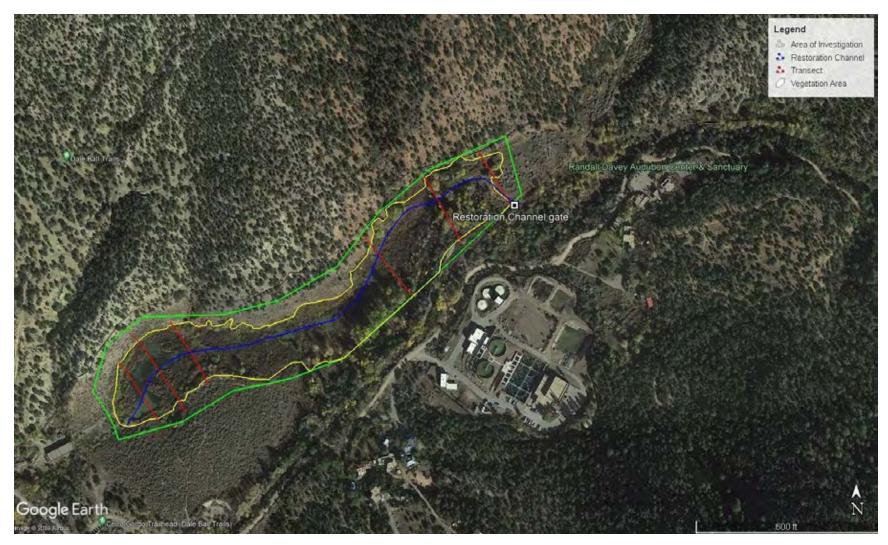


Figure A9. Historical image of Two-Mile Pond Complex dated November 1, 2015.

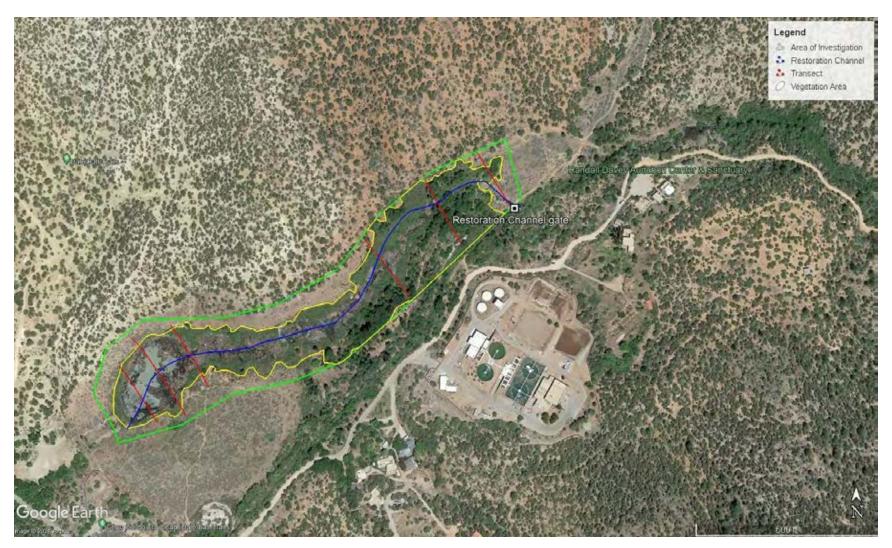


Figure A10. Historical image of Two-Mile Pond Complex dated June 10, 2017.

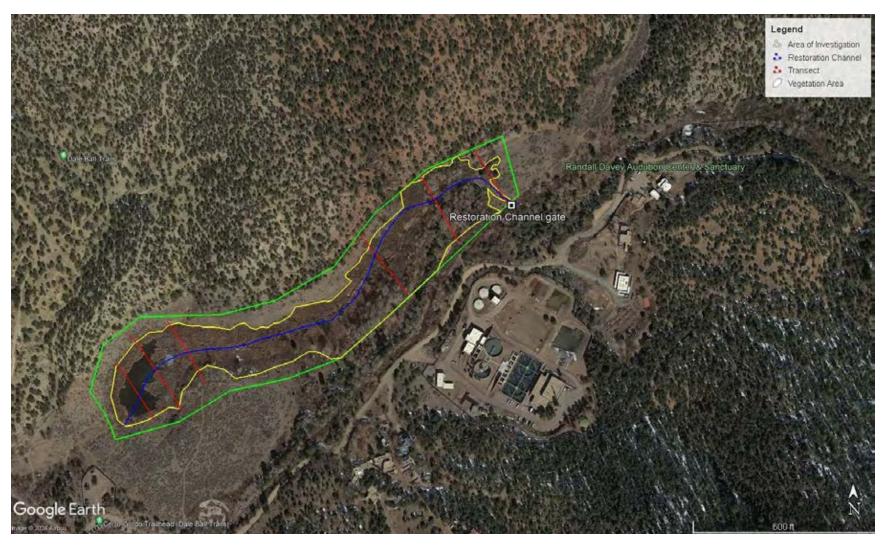


Figure A11. Historical image of Two-Mile Pond Complex dated March 2, 2021.

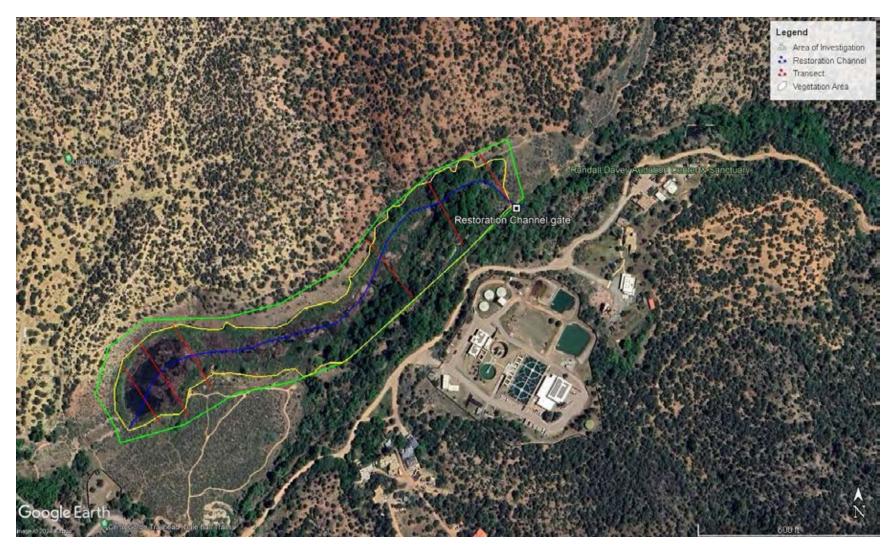


Figure A12. Historical image of Two-Mile Pond Complex dated July 6, 2023.

# Appendix B.

**NDMI Images for Two-Mile Pond Complex** 

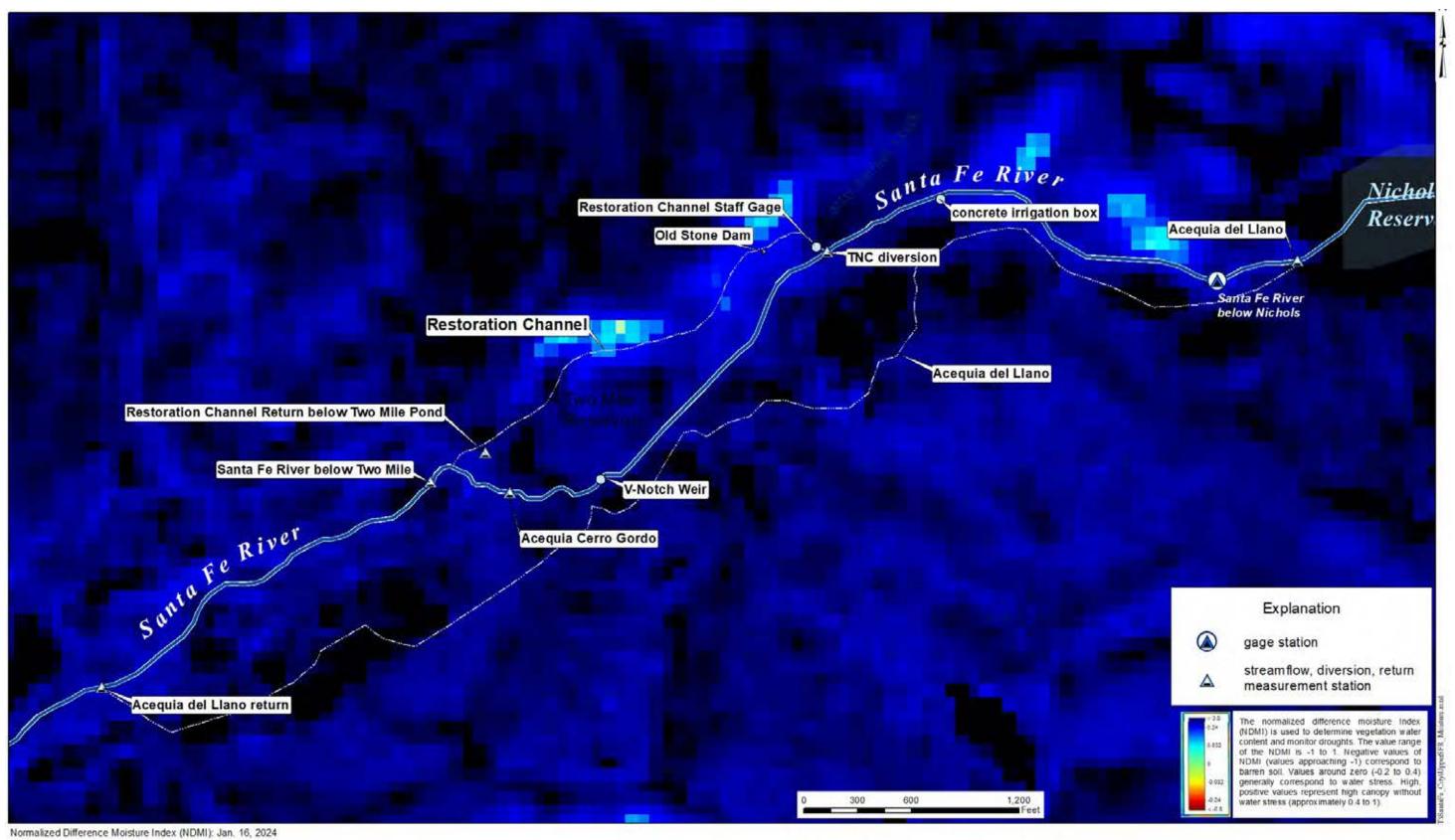


Figure B1. NDMI image of Two-Mile Pond Complex for January 16, 2024.

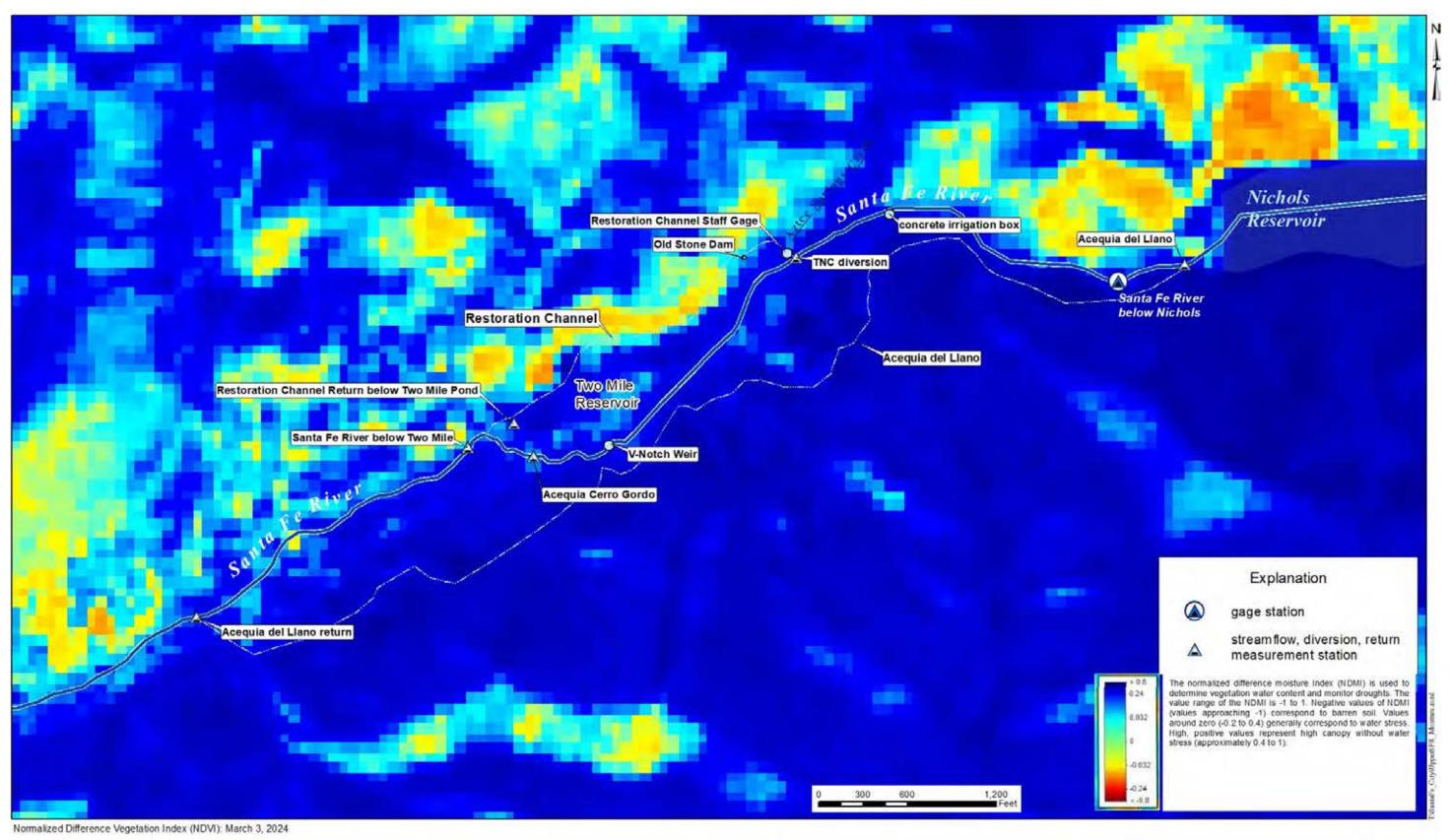


Figure B2. NDMI image of Two-Mile Pond Complex for February 5, 2024.

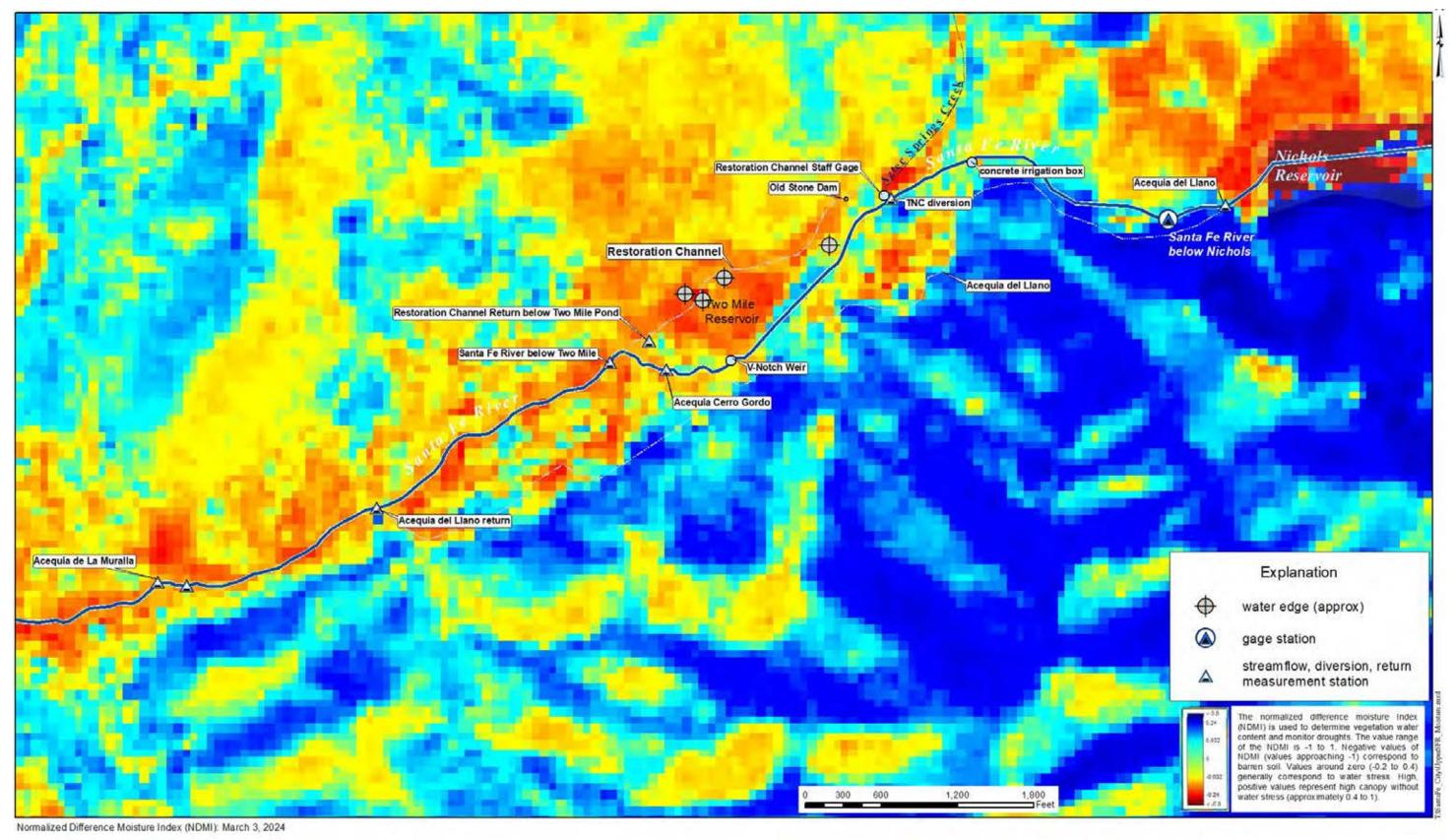


Figure B3. NDMI image of Two-Mile Pond Complex for March 3, 2024.

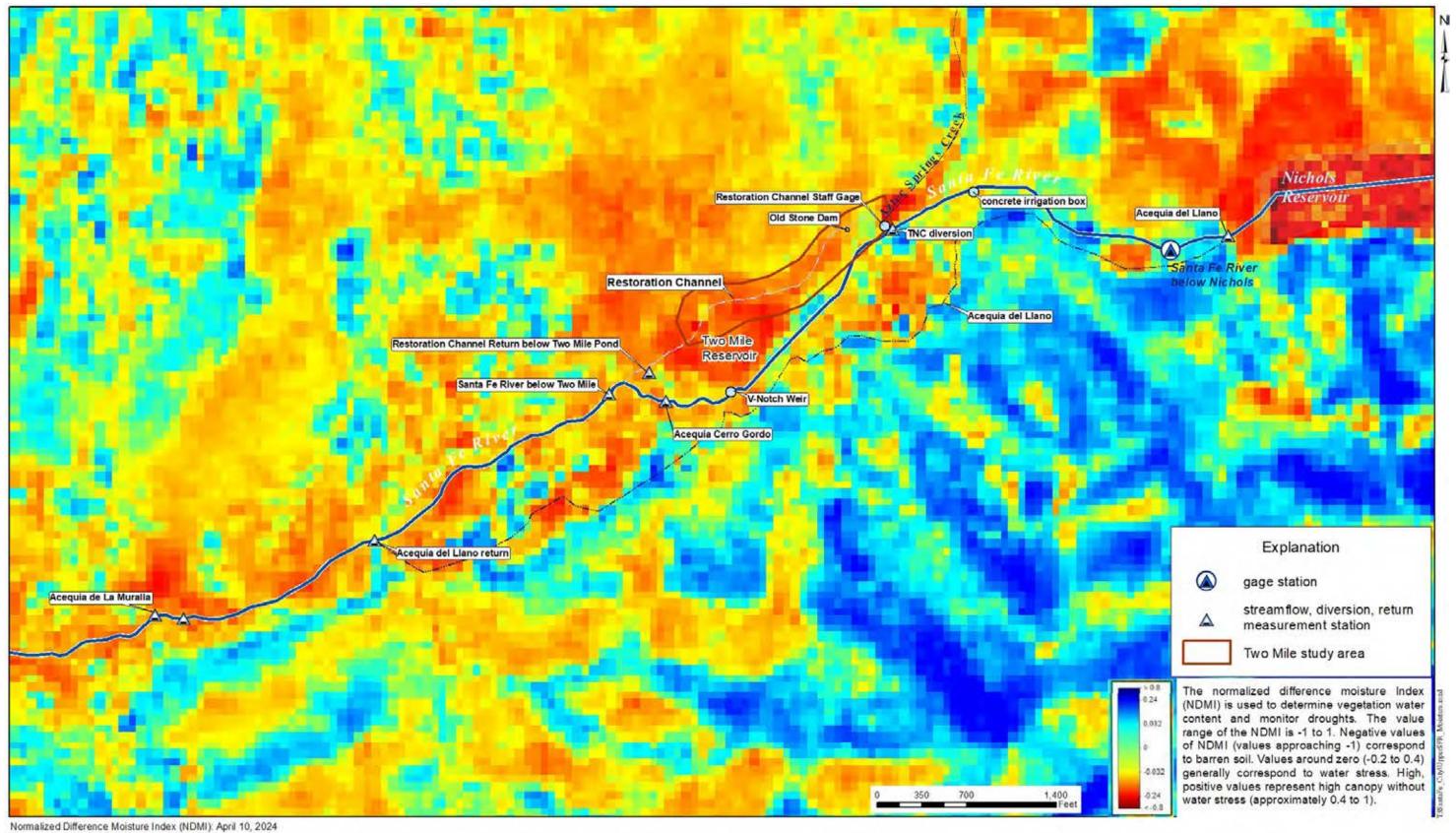


Figure B4. NDMI image of Two-Mile Pond Complex for April 10, 2024.

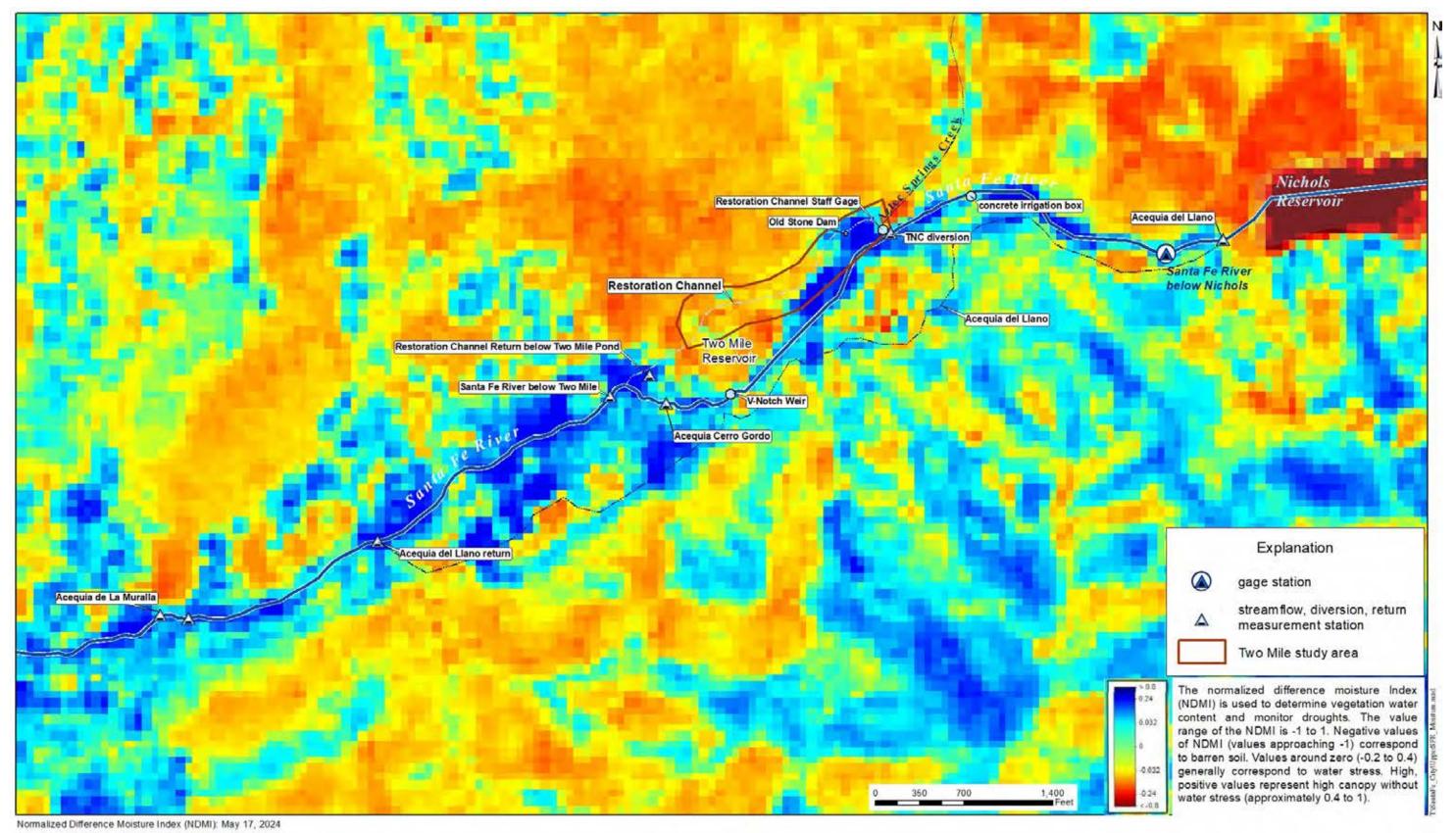


Figure B5. NDMI image of Two-Mile Pond Complex for May 17, 2024.

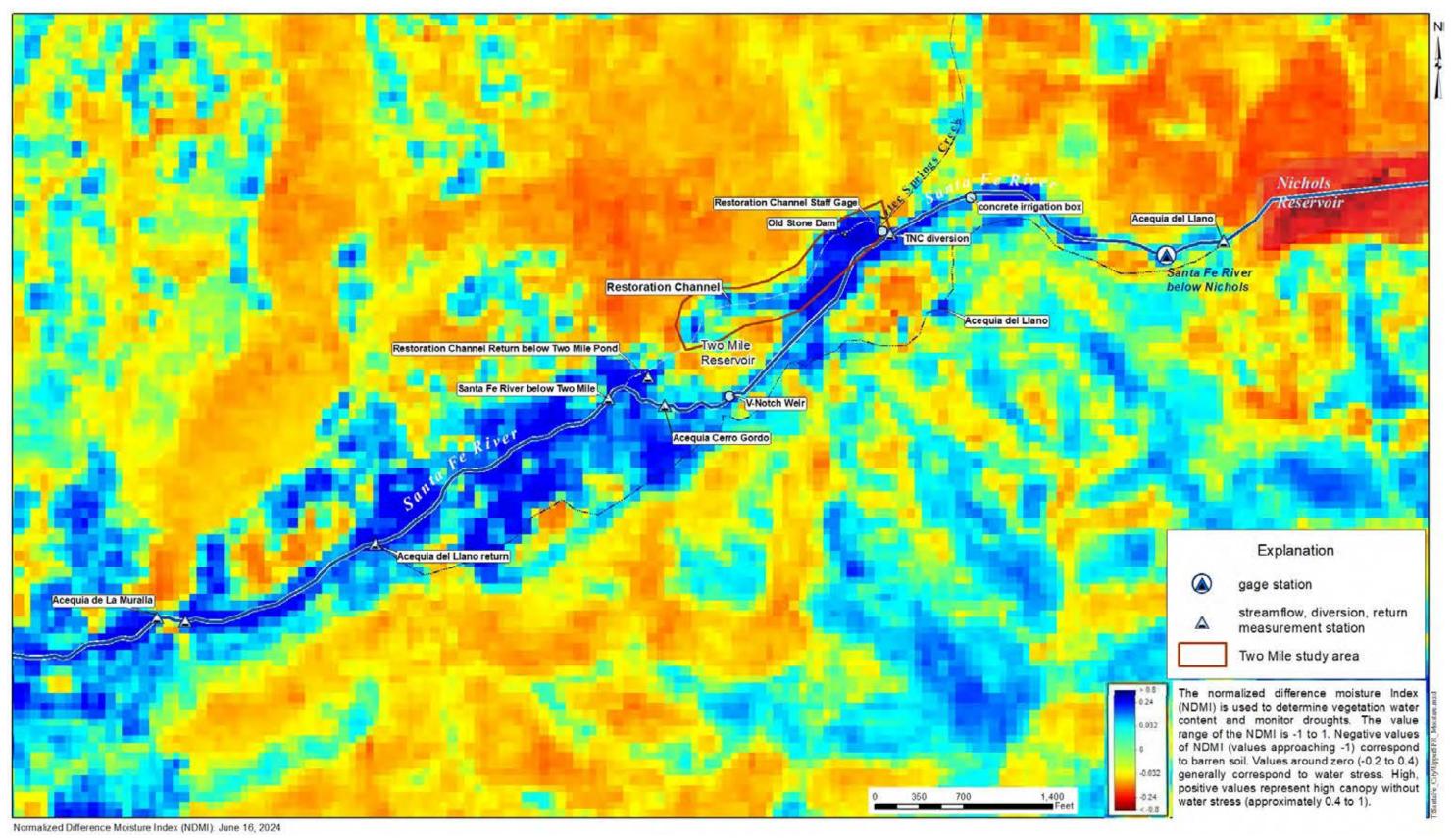


Figure B6. NDMI image of Two-Mile Pond Complex for June 16, 2024.

# Appendix C.

**NDVI Images for Two-Mile Pond Complex** 

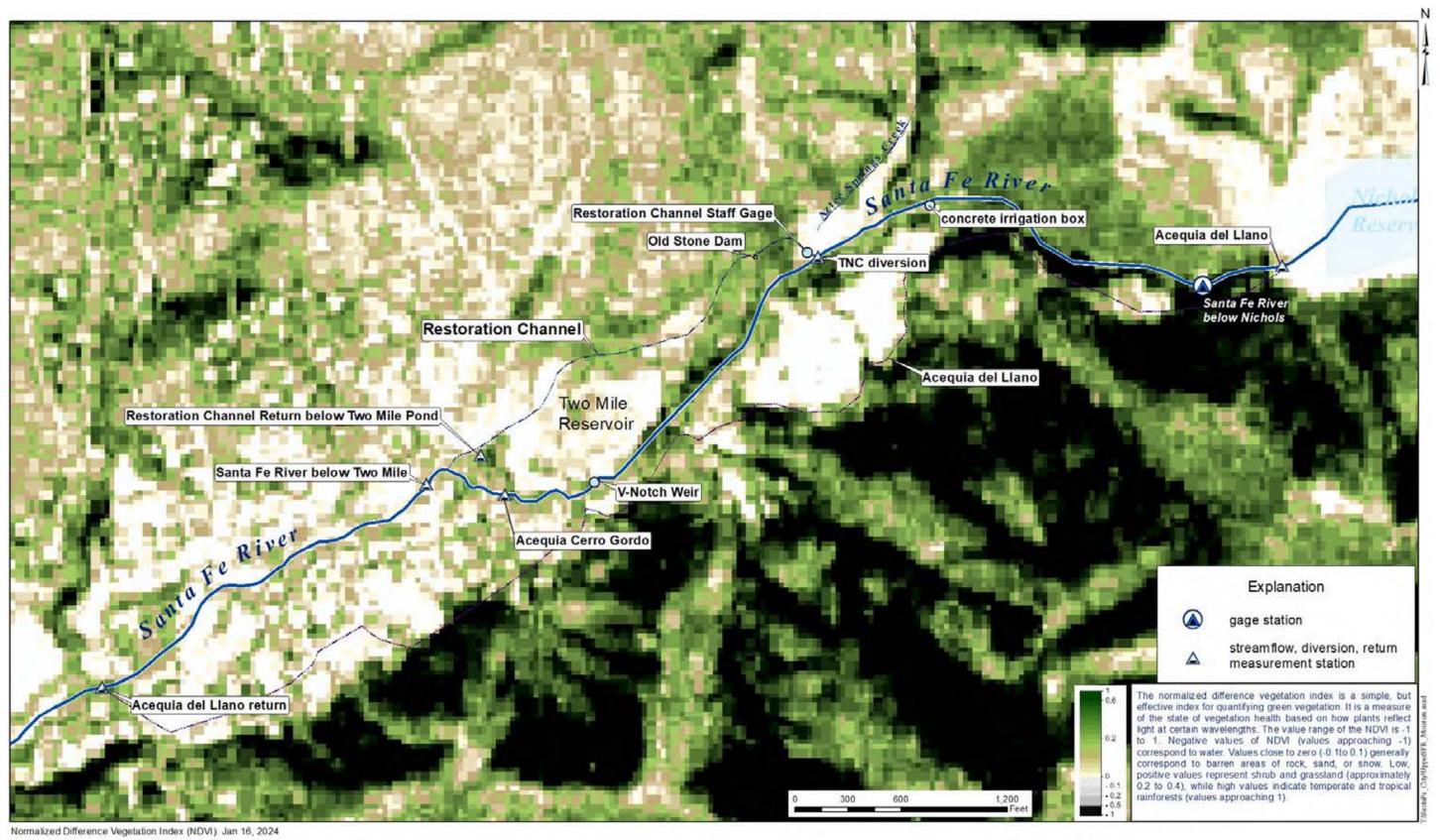


Figure C1. NDVI image of Two-Mile Pond Complex for January 16, 2024.

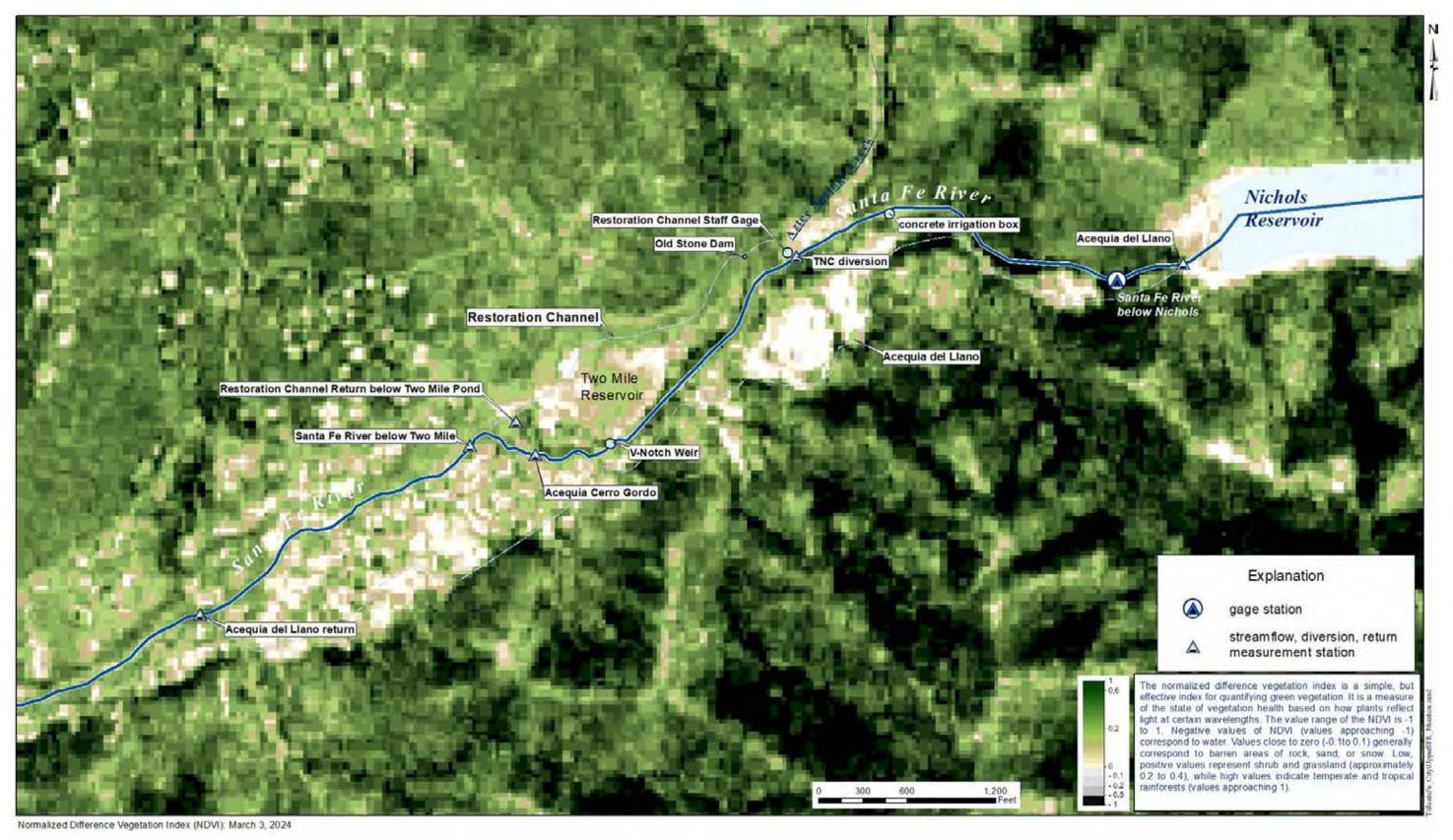


Figure C2. NDVI image of Two-Mile Pond Complex for February 5, 2024.

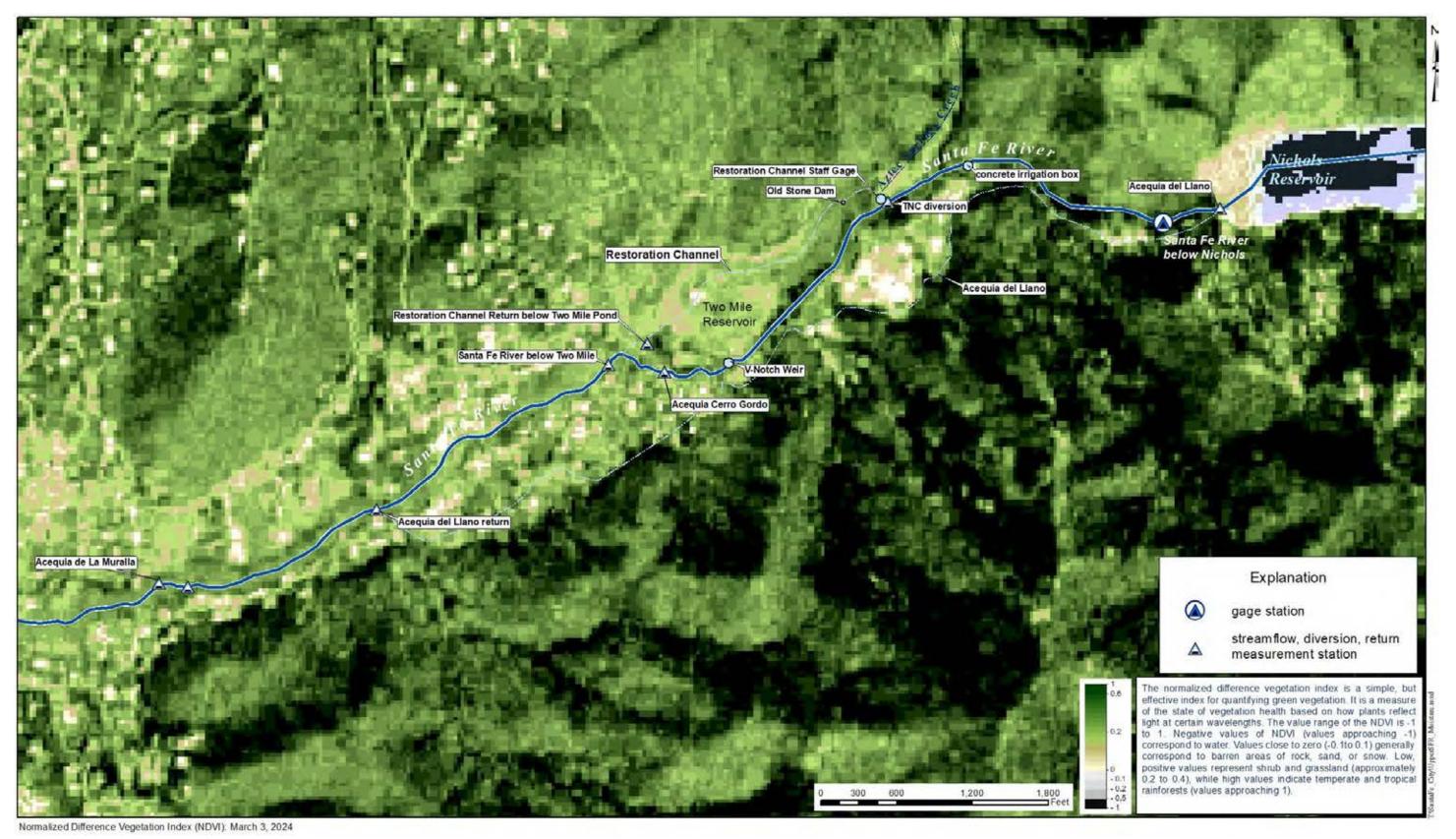


Figure C3. NDVI image of Two-Mile Pond Complex for March 3, 2024.

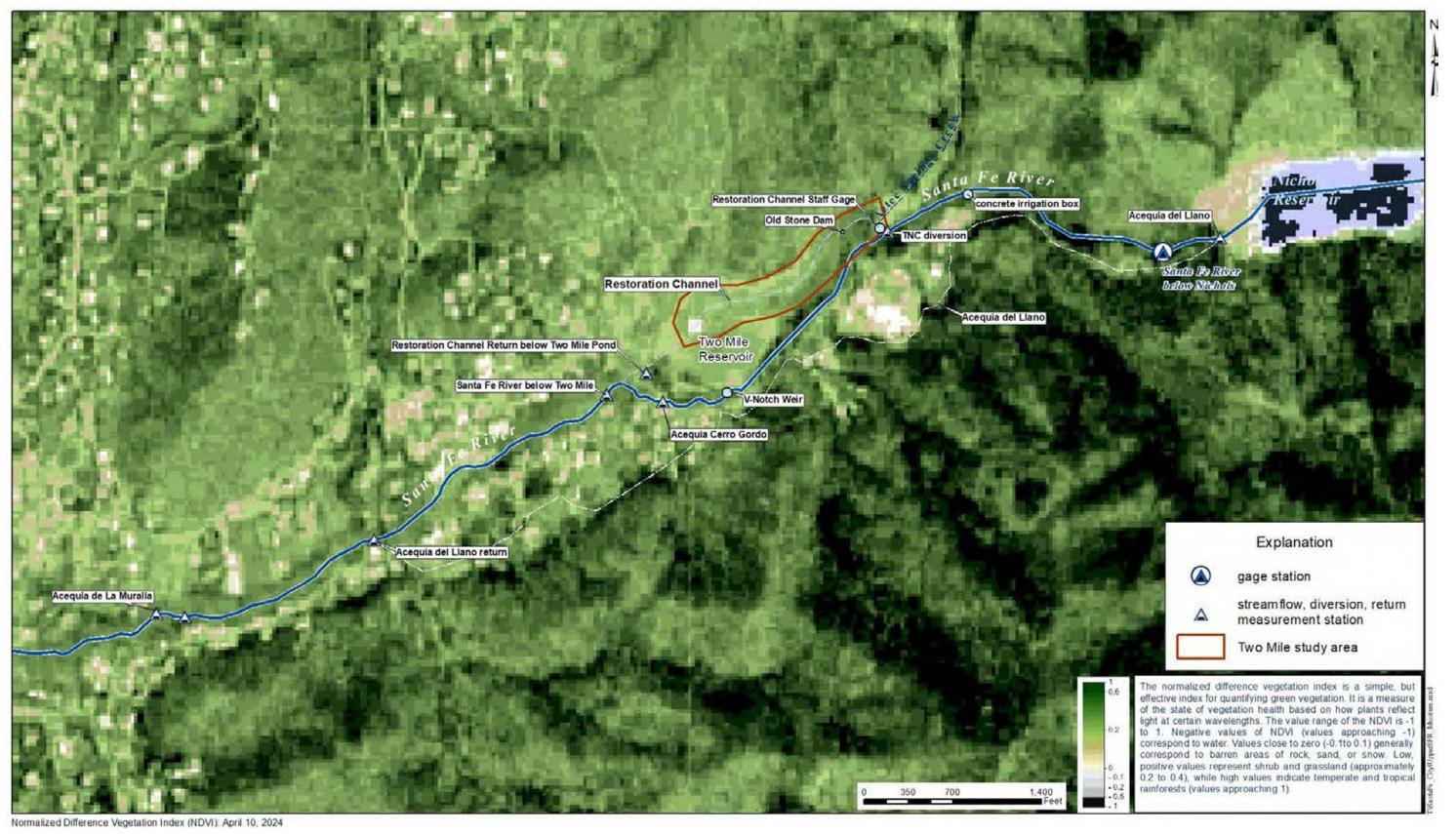


Figure C4. NDVI image of Two-Mile Pond Complex for April 10, 2024.

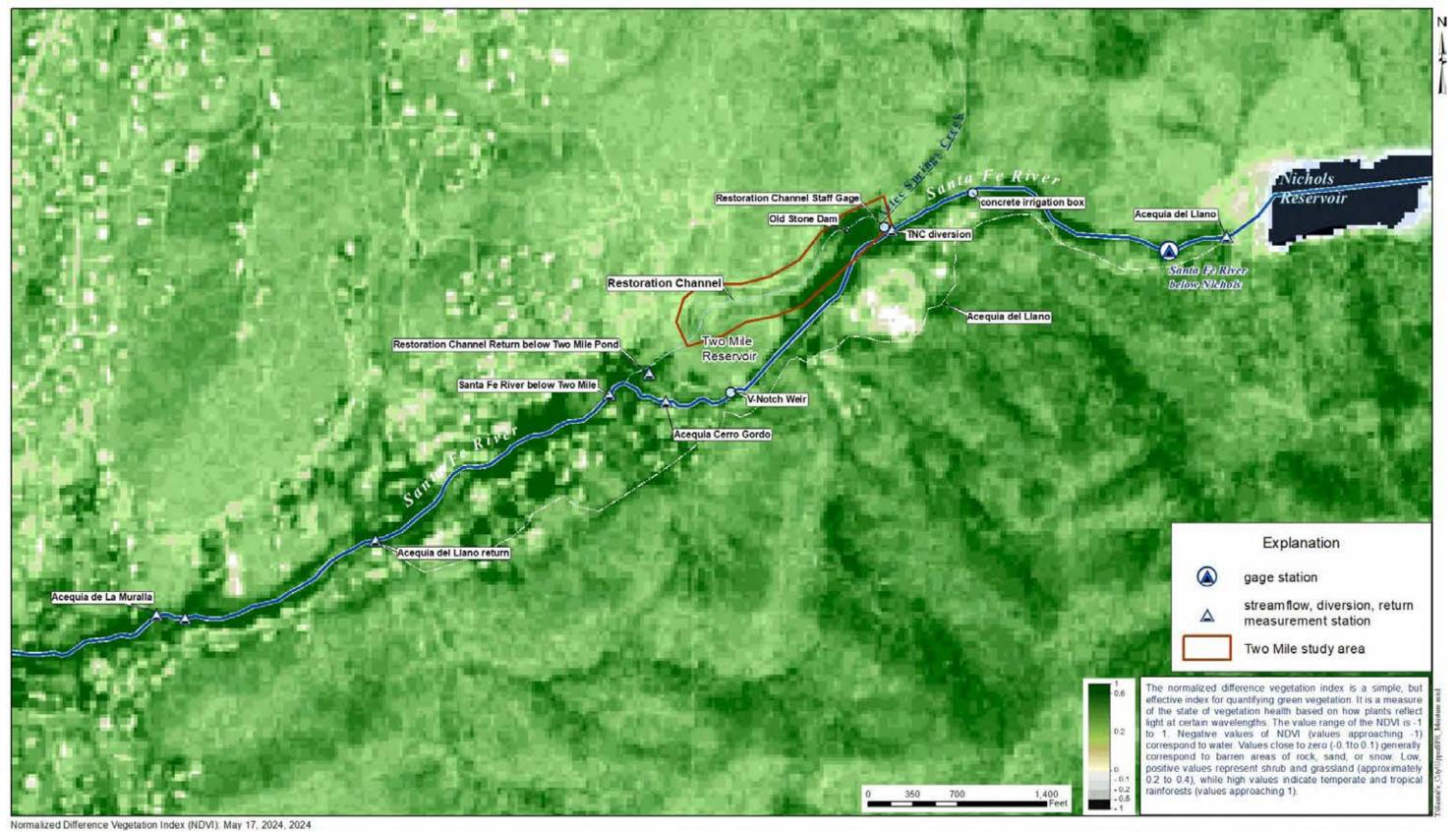


Figure C5. NDVI image of Two-Mile Pond Complex for May 17, 2024.

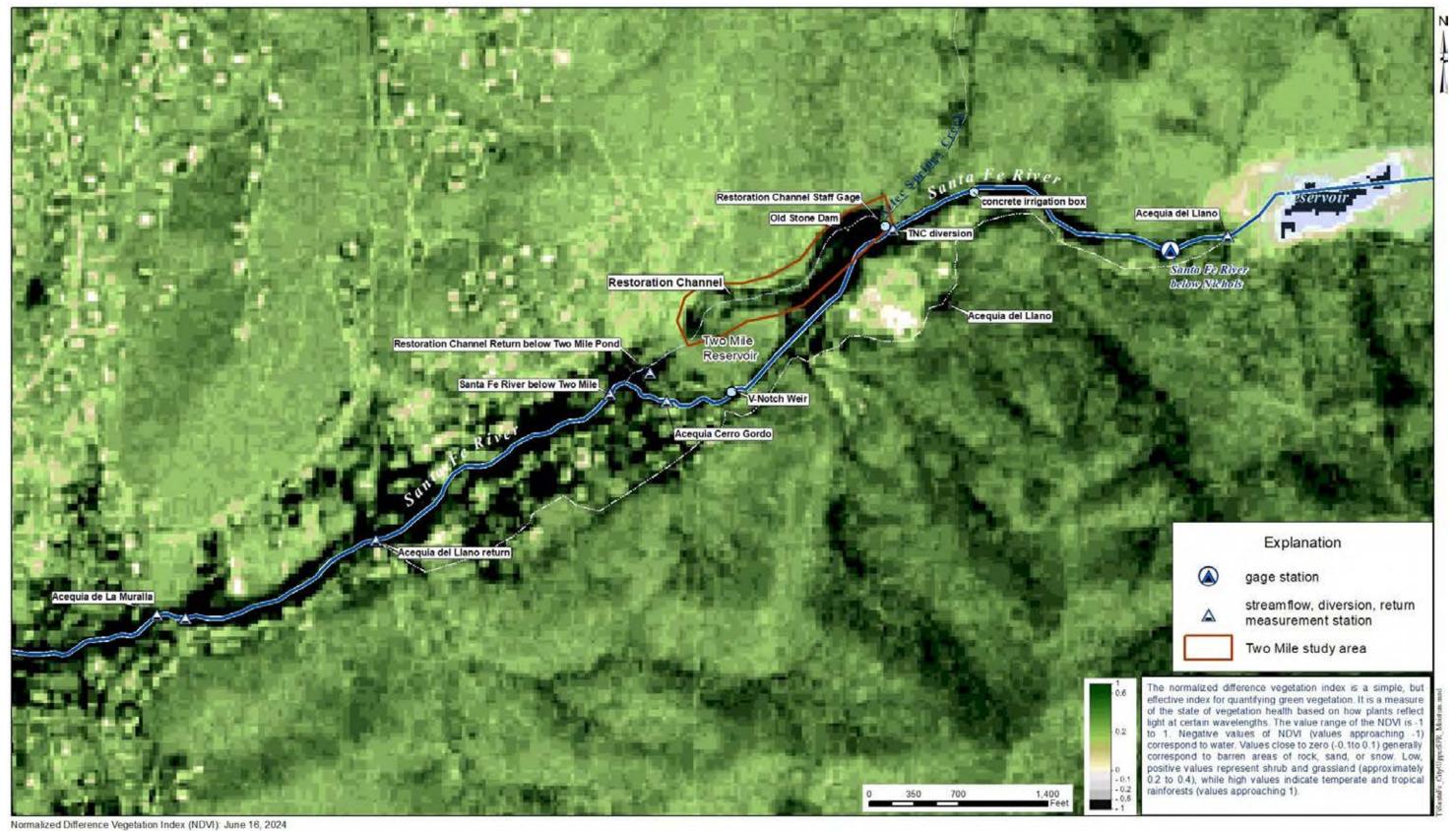


Figure C6. NDVI image of Two-Mile Pond Complex for June 16, 2024.

# Appendix D.

**Field Investigations Forms** 

# NMRAM Montane Riverine Wetlands Version 2.5

		SA Cove	er Worksheet		
SA Code SF2MI [ 1	- ] SA Name : Two !	Mile Pond Reservoir	<u> 2010, 10 255 (2)                                </u>	Project : Riparia	an Assesement
A de Tsct [ 1 ]	] AU Name : Trans	sect [ ]		WOI : Two Mile	Pond Reservoir
County Santa Fe		vaters Santa Fe River	Elevation (ft) 7299	(m) 2224.7	Ecoregion 6.0 NWFM
A riparian system decommissioned of water rights. Driving Directions Driving to Santa	and Boundary (Rationale, n that leads into a pond lo d due to safety concerns re Fe from Albuquerque you til you reach the reservoir	ecated on the east side egarding the reservoir	and a water diversion to	the area was rece	nal Forest. This reservoir was ently shut down due to lack Monte Sol and right on
Ownership The Natur	re Conservative and The S	anta Fe National Fores	st   Data Sharing   Result   Restrictions   only.	ts to client Fis	h Observed in Wetland?
Surveyor Role		ere i de la como de la companya de	eyor Name		Surveyor Initials
Landscape	Dustin a	nd Annie		Section 1	DSTAM
Biotic	4/		64		" "
Abiotic	11		(1		//
Stressors	11		11		// 10
Easting (m)	Northing (m)	Zone	Datum	Latitude (DD	Oft) 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
En	ext (summarize the wetlar viron ment is win ter, Se, Very impa	still ver me small g	y dry and growth appea	recovering but	s From Nothing
SA Biotic Condition	(vegetation patterns, com		e evotics and invasives, d	listurhance evider	as fire and harbivany
	Some baby 1				
	Not much o green,	ther life.	Currant and	m'llors	starting to
<b>SA Abiotic Condition</b> disturbance and other	n (hydrological alterations er site impacts; explain the	(e.g., dams, walls etc.)	; flooding characteristics	and evidence of o	overbank flooding; soil
St	till very dr	y landscape	e recovering 1	From Winn	ter. Some
	nstruction can				
	ry (Overall site condition s				
	Environment is just slightly	almost iden	ntical to las) les and sproi	t Months wats begin	investigation ining.
rovisional eld Score <u>3,01</u> Ran	sk Surveyor(s)	DCS/AM Final Score	30/ Rank // Ini	itials $D \leq$	Date 4/9/24

SA CODE: SF2MI[ 1 ]

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

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	0.25	0.75	
L2. Riparian Corridor Connectivity	0.25	1.0	
L3. Relative Wetland Size	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	Z	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	Ч	0.1	

SA Condition	n Scoring Su	mmary	
Major Attribute	Score	Wt.	Wt. Score
Landscape Context	3.25	0.3	0.975
Biotic		0.35	
Abiotic		0.35	
SA WETLAN	D CONDITIO	N SCORE Σ	3.01
SA WETLAN	D RANK =		B

Rank	Score	Description
Α	≥3.25 - 4.0	Excellent Condition
В	≥2.5 - <3.25	Good Condition
С	≥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 chan	mel
			3 Trails	

Stressor Comments (Evaluation of risk)

No water could affect the willows from growing back

SA CODE: SF2MI[ 1]

3

3

/2=

**SA Name :** Two Mile Pond Reservoir Transect [  $\mathcal{I}$  ]

Date: 4/9/24

Surveyor Initials:

≤1.5

# **Landscape Context**

		la. Buffer a led and cor magery).	and RCC Checklist nsidered non-buffer	Check of elemen	off land cover ts that disrup	elemen t ecosy:	nts with stem co	in the buffe onnectivity.	r area Indica	or RCC cate the im	orridors that are either allowe nagery type and date (season	
lmage	ery	Google Ea	rth KMZ. file			lmage	e Date	6/23				
		er/RCC lan	d cover elements			Exclud	ded noi	L n-buffer/RC	Cland	l cover el	ements	
Buffer	RCC					Buffer				- COVET CIT	ement?	
X	x	Natural or	semi-natural veget	ation pa	tches	X	X	Commerci	ial/residential developments, parking lots, dges, revetments, and other structures			
X			ation ditches witho	ut levee:	S	$1  \Box$					s, sports fields	
		Old fields,	unmaintained				一百	Railroads			, sports ricius	
		Open rang	e land					Maintained	nined levees, sediment piles, construction als, staging areas			
X		Foot trails, intensity)	horse trails, unpave	ed bike t	rails (low				e livestock areas, horse paddocks, feedlots			
X			el open water					Intensive agriculture: maintained pastures, hay fields row crops, orchards, and vineyards				
X	X	Non-function naturally or	oning abandoned v ccurring levees	egetate	d levees, or	X	[X]		pads or developed second-order unpaved but			
. Casasa			vo tracks roads			X	x	Open water structure	r bounded by a levee or other manmade			
		Other						Other				
<mark>/orksi</mark> A peri	heet 1b	. Buffer Pe	rcent Sub-metric.	Measure	or estimate	he perc	entage	of the		Tabl	le L1a. Buffer Percent	
OV DEI	ow. nat	e ine sub-n	of allowed buffer ele netric using Table L	ements a 1a and e	and enter into enter the ratin	the But a on the	ffer Per e Buffe	cent r	$\vdash$	Rating	Buffer Percent	
tegrit	y Sumn	nary Works	neet ra.							4	100%	
		· · · · · · · · · · · · · · · · · · ·	Buffer Percer		85%				Q	3	≥80% - <100%	
rksh	eet 1 c. l	Buffer Wid	th Sub-metric. Me	asure the	e length of ea	ch buff	er line i	in meters in	1	2	≥50% - <80%	
. 4.5 0	,, Oil (1)	- map. Ave.	rage the line length ry Worksheet 1d.	is and ra	te using Table	L1b. Er	nter the	rating on	$\cap$	1	<50%	
	Buffe	er Width	Buffer Width		Buffer W	:	D. 6	f 140 141		Tab	le L1b. Buffer Width	
ine		(m)	(ft)	Line	(m)	luth	Bur	fer Width (ft)	<del>                                    </del>	Rating		
A	164	1.26	538.91	E	161.93		53	31.26	1		Average buffer width	
В	125	5.25	410.92	F	231.48				() (X)	3	≥190m	
c		5.39	378.57					59.44		2	≥130 - <190m ≥65 - <130m	
D				G	121.25		39	7.80		1 ,	<65m	
	111		364.40	Н	155.87		51	1.38	-			
	Averag	e	148.31 ( <b>m</b> )		486.58		(ft)		Tak	Table L1c. Summary Rating for Buffer		
	_	0									Integrity	
rkshe	eet 1d. above t	o caiculate	egrity Summary. Er the Buffer Integrity	Indev S	core using th	a farm	الماء أحال	- 1	R	ating	Integrity Score	
rkshed L1b a	eet 1d. above t	e Buffer Inte	the Buffer Integrity egrity Index Score. 6	Indev S	core using th	a farm	الماء أحال	- 1	R	ating 4	Score >3.5	
orkshed L1b a ow. Us on th	eet 1d. above t	Buffer Inte	the Buffer Integrity egrity Index Score. 6	Indev S	core using th	a farm	الماء أحال	- 1			Score	

3

SA CODE: SF2MI[ / ]

SA Name: Two Mile Pond Reservoir Transect [ / ]

Date: 4/9/24
Surveyor Initials:

# 2 - Riparian Corridor Connectivity (RCC)

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

Segments	Upstream	n Segment	<b>Downstream Segment</b>		
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	I Disruption both segments				
E) % Total Disruptions = (D/2000)*100	Zero dis	ruption notic	eable along	the banks.	

Table L2. RCC Rating						
Rating	Description					
	0% total disruption on both segments combined.					
C 3	<15% total disruption on both segments combined.					
C 2	≥15% - <40% total disruption on both segments combined.					
C 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 Workshr

		RSR						R	WSI		
Current Size	1	Historic Size	=	RSR	1	2	RSR	X	100	=	RWSI (%)
0.000,000,000,000,000,000,000,000,000,0	- 11	10		0.9			0.1	V	100		10

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

SA CODE:

SF2MI[ | ]

Date: 4/9/2 4
Surveyor Initials:

SA Name:

Two Mile Pond Reservoir Transect [ | ]

# 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
Intense recreation (all-terrain vehicle use, camping, popular fishing spot, etc.)	0.1	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)  Ski area	0.3	0	0
	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, having and haling 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. Surr	ounding Land Use Rating
Rating	LUI Score
○ 4	≥95 - 100
C 3	≥80 - <95
<b>∞</b> 2	≥40 - <80
C 1	<40

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**Biotic Metrics** 

SA Name: Two Mile Pond Reservoir Transect | |

Species Cover (BS) 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 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 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.

uphen	Appellata D. Ose are collined as a second				
Polygon No	B3 Vertical Structure Type	B4 Tree Regeneration % Cover	B4 Tree B5 Invasive Regeneration Exotic % Cover Species % Cover	Invasive Exotic Species (List Code(s))	Comments
-	IA1				
2	IAZ	10%	Noexotics	None	Maple Dian, Juniper, Chimisa, Prickly Pear
3	IIA1				
4	IIIB1				
2	IIIC1	9,0	72%	Mulleia	Chimisa, Willow dry grass
9	IVEI				
7	IVF1				
∞					
6					
10					
=					
12					
13					
14					
15					
16					
11					
18					
19					
20					

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# **B1 - Relative Native Plant Community Composition**

Wt Score<sup>6</sup> 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 J. 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 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 % SA5 12% 12% CT Score 4 Raw4 2,0 Final Weighted Score<sup>7</sup> Bho Herbaceous/Sparse Stratum 3 Species 6 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. Species 5 Š  $\geq$  $\geq$ ш Z 3. E. 3. Ch. 1991 35 Species 4 Short Woody Stratum 2 2 Species 3 E Chilmi Say 3 ш 2 Species 2 Piner Tall Woody Stratum 1  $\geqslant$ Maple Species 1 Polygon Nos. S ⋖ Δ ш ט I ¥ Σ z 0

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 stratum cover. <sup>4</sup>Raw Score is from Table B1a (Appendix B); <sup>5</sup>%SA is the percentage of the SA area covered by the CT and expressed as a decimal number; the total area %SA must 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			
<u>4</u>	≥ 3.75	<10% non-native		
ີ້ 3	≥ 3.25 and <3.75	10% ≤20% non-native		
ζ 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:

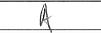


	Table B2. Rating for Vegetation Horizontal Patch Structure				
Rating	Description				
4	Most closely matches Pattern A. SA has a diverse patch structure (≥4 patch types) and complexity. A dominant patch type would be difficult to determine.				
3	Pattern B. SA has a moderate degree of patch diversity (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

**Jorksheet 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	VST 2	VST 5	VST 6S	VST 6W	VST 6H	VST 7
			'-'				V31 /
	High Structure	Low Structure	Tall Shrubland	Short	Herbaceous	Herbaceous	Sparse
	Forest	Forest		Shrubland	Wetland	Vegetation	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%
	1	5	6W and/or 6H
` 4	1	6W	
	2 or 1 and 2	5	6W and/or 6H
	1		
/ <sub>3</sub>	2 or 1 and 2	5	
3	2 or 1 and 2	6W	
	5	6W	
	2 or 1 and 2		
2	5		
	6W		
	65		- 13410414
1	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
C 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.
	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.
C 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 %			
C 4 X	0%			
3	>0% - <1%			
ι 2	≥1% - <10%			
C 1	≥10			

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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
	X		Abandoned channels
			Backwater/eddy
			Riffles or rapids
			Shoals, sparely-vegetated bars
			Channel boulders
			Oxbow lakes/ponds on floodplains
			Vegetated island and side bars
	M		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

Tabl	Table A2. Rating for Physical Patch Complexity					
Rating		Description				
C	4	<b>High</b> 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).				
C	3	<b>Moderate</b> 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).				
C	2	<b>Limited</b> 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).				
Ø	1	<b>Little</b> 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)
		図		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.
		Ø		Perennial riparian vegetation is abundant and well established along the bankfull contour, but not below it.
		D)		There is leaf litter, thatch, or wrack in most pools.
Indicators of		赵		The channel contains embedded woody debris of the size and amount consistent with what is naturally available in the riparian area.
Channel Equilibrium		M		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).
		Ą		Channel and point-bars consist of well-sorted bed material.
		Ø		The channel bed is not planar and without an abundance of fine materials filling the interstitial spaces between larger stream substrate.
		Ø		There are channel pools at meander bends and some deep pools within the reach.
				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.
Indicators of Active Degradation				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.
				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.
Indicators of Active Aggradation				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.						
C 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.						
C 2	There is evidence of severe aggradation or degradation throughout most of the channel through the SA. Circle primary process: aggradation or degradation.						
C 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.

rating on the SA Summary Worksheet.					
Condition	Condition Upper Middle Lower Segment Segment Segment		Lower Segment	Field Indicators	
	□4	⊠4	<u></u> 4	Infrequent raw banks, less than 10% of steam bank under stress from trampling, slumping, vegetation removal or active erosion, etc.	
Indicators of Bank	□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.	
Soil Stability	<b>□</b> 2	□2	□2	Significant raw banks and loose soil, 25%-50% of stream bank under stress, trampled, slumping or eroding etc.	
	<u> </u>	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.	
	<u></u> 4	<b>⊠</b> 4	<u></u> 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.	
	<u></u> 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.	
Indicators of Stream Bank Erosion Potential	<b>□</b> 2	<u></u> 2	<b>□</b> 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.	
	<u></u> 1	<u></u> 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 Sco	re
J	

Table A4. Stream Bank Stability and Cover Rating					
Rating	Description				
<b>≪</b> 4	>3.5 - 4.0				
	>2.5 - ≤3.5				
C 2	>1.5 - ≤2.5				
C 1	1.0 - ≤1.5				

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### **A5 - Soil Surface Condition**

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		Lower Segment	Field Indicators (Check all existing conditions)	
			Active erosion features due to anthropogenic disturbance (eg. rills, gullies, plant pedestals).	
	X		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							
C 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.							
<b>№</b> 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.							
<u> </u>	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.							
<b>೧</b> 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 "Unknown the Major Stressors in Dominant Stressor column (Pick up to 3)

nk	Апест				Stressor Group/Stressor	Comments
	Major	Minor	Absent	Unknown		Comments
		Flarear.	Г	Г	Adverse water management  Extended low flow dam releases	
					Timing of flow releases not concordant	
					Extended high flow dam releases	
					Agriculture/Urban flow diversion upstream	
	lane i				Adverse sediment management	
					Adverse sediment retention by dams	
					Sediment loss by dredging	
					Adverse sediment input (roads/development)	
					Artificial water additions	
			Ø		Sewer treatment effluent	
					Point source urban runoff	
			Ø		Factory, feedlot outfall	
					Agricultural irrigation ditch returns	:
					Mining waste	
					Ground water pumping	
					Urban depletions	
					Fracking	
			Ø		Agriculture irrigation wells	
			The state		Watershed alteration	
					Extensive recent fires in watershed	
					Extensive recent timber harvest	
					Extensive open pit mining in watershed	
					Livestock/wildlife overgrazing	
	Tourney and the		a distance of the same		Local biodiversity impacts	
			Ø		Evidence of excessive grazing (local)	
					Excessive noise affecting wildlife	
	0	0		0	Counts by Intensity	
litior	nal Comme	nts [	)ry L,	'5h ·	desart no water flow	ing through old channel

rsion Date: 04/25/2022

Schema: Montane 2.5

# NMRAM Montane Riverine Wetlands Version 2.5

SA Code SF2MI[		SA Cove	r Worksheet		THE RESERVE		
	SA Name: Two	Mile Pond Reservoir		Project : Riparian	n Assesement		
A de Tsct [	] AU Name : Tra	nsect [ ] ]		WOI : Two Mile F			
County Santa Fe							
decommissione of water rights. Driving Directions Driving to Santa	m that leads into a nond	regarding the reservoir a	and a water diversion to	o the area was recen	I Forest. This reservoir was tly shut down due to lack onte Sol and right on		
	ure Conservative and The		Data Sharing Resu Restrictions only.	lts to client Fish	Observed in Vetland?		
Surveyor Role		Survey	or Name		Surveyor Initials		
Landscape	Dustin	+ Annie			OS+AM		
Biotic	"	11			W N		
Abiotic	"		11		11 11		
Stressors	4		XI		44 11		
Easting (m)	Northing (m)	Zone	Datum	Latitude (DD f	t) 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		103.02		
			VI. I	End Time	121/1017		
Environ n	ext (summarize the wetla	SA Desc nd and surrounding land to be gree	ription	end Time	13:07		
A Biotic Condition  New Mexic  Write  gree  A Abiotic Condition  Sturbance and other	(vegetation patterns, con  to Whip tail, Pro  but terflies, Fleat  in more, maple  (hydrological alterations  r site impacts; explain the  motyration goin  y  Ligh	nd and surrounding land to be gree border  position and structure, e  posit	exotics and invasives, of a leave of solder as ter golden as ter gooding characteristics per factors that define to road by A	isturbance evidence  W. How, Chimit  Willows  and evidence of over the SA limits)	is still and farest  e, fire and herbivory)  sa, Saltbush beginning to  erbank flooding; soil		
A Biotic Condition  New Mexicon  White  gree  A Abiotic Condition  Sturbance and other  Condition  Sturbance and other  Sturbance Summar	(vegetation patterns, con  (vegetation patterns, con  but terfl'es, fleab  n more, maple  (hydrological alterations  r site impacts; explain the  not ration  goin  (Overall site conditions	nd and surrounding land to be gree  to be gree  border  nposition and structure, e  note Borber  ale, globe mallow,  tarthy to  le.g., dams, walls etc.]; fl hydrologic breaks or oth  gon near  lesert area	exotics and invasives, of a leave of steel as the steel a	isturbance evidence  W. How, Chimi  Willows  and evidence of ove the SA limits)	is still and farest  e, fire and herbivory)  sa, Saltbush beginning to  erbank flooding; soil		
A Biotic Condition  New Mexicon  White  gree  A Abiotic Condition  Sturbance and other  Condition  Sturbance and other  Sturbance Summar	(vegetation patterns, con  to Whip tail, Pro  but terflies, Fleat  in more, maple  (hydrological alterations  r site impacts; explain the  motyration goin  y  Ligh	nd and surrounding land to be gree  to be gree  border  nposition and structure, e  note Borber  ale, globe mallow,  tarthy to  le.g., dams, walls etc.]; fl hydrologic breaks or oth  gon near  lesert area	exotics and invasives, of a leave of steel as the steel a	isturbance evidence  W. How, Chimi  Willows  and evidence of ove the SA limits)	is still and farest  e, fire and herbivory)  sa, S. It bus h beginning to  erbank flooding; soil		

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Surveyor Initials:

MRAM - SA Rank Summary Worksheet: Montane Riverine Wetlands 2.5

MRAM - SA Rank Summary Worksheet: Montaile Niverine Victarias 2.5	Rating	Wt	Final Score
		Σ 1.0	3,25
andscape Context	3	0.25	0.75
1. Buffer Integrity Index	4	0,25	1.0
2. Riparian Corridor Connectivity	- 35		1.0
3. Relative Wetland Size	4	0.25	0.5
4. Surrounding Land Use	2	0.25	0.5
iotic		Σ	
1. Relative Native Plant Community Composition	2	0.2	
22. Vegetation Horizontal Patch Structure	3	0.2	
33. Vegetation Vertical Structure	3	0.2	1
	3	0.2	
34. Native Riparian Tree Regeneration	4	0.2	
35. Invasive Exotic Plant Species Cover		Σ	
Abiotic		0.3	
A1. Floodplain Hydrologic Connectivity		_	-
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	

Major Attribute	Score	Wt.	Wt. Score
Landscape Context	3.25	0.3	0.975
Biotic		0.35	
Abiotic		0,35	
SA WETLAN	D CONDITIO	N SCORE Σ	3,08
SA WETLAN	D RANK =	=	B

Rank	Score	Description
Α	≥3.25 - 4.0	Excellent Condition
В	≥2.5 - <3.25	Good Condition
С	≥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 C	Comments (Evaluation	n of risk)						- 4
	Willows	appear	to	Se	slightly	behind	the	willow

below the dam

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Surveyor Initials: DS

# **Landscape Context**

1	Γ	C- !-	.1 121.4—			٦		n the buffe nnectivity.				
Image	L						Image Date 6/23					
Allow	ed bufi	fer/RCC lan	d cover elements			Exclud	ded non-	-buffer/RC0	C land cover el	ements		
bullel	INCC					Buffer	RCC					
X	X	Natural or	or semi-natural vegetation patches			X	X	Commercial/residential developments, parking lo dams, bridges, revetments, and other structures				
x	X		ation ditches witho	ut levee	S	$\dagger \Box$			ks, golf courses			
		Old fields,	unmaintained			十一		Railroads	ks, gon courses	, sports neids		
		Open rang	e land					Maintained	l levees, sedime taging areas	ent piles, construction		
X	X	Foot trails, intensity)	horse trails, unpav	ed bike t	rails (low							
		techisity)								orse paddocks, feedlots		
X			el open water					ntensive ag Dw crops. c	griculture: maintained pastures, hay field orchards, and vineyards			
X	x	Non-function	oning abandoned v	ing abandoned vegetated levees, or Paved road						second-order unpaved bu		
		naturally o	curring levees			X	X g	raded road	ls	second-order unpaved bu		
7		unpaved tv	o tracks roads			X	X of	pen water	bounded by a	levee or other manmade		
ΔŢ		Other						ructure				
orkel								ther				
			rcent Sub-metric.  of allowed buffer ele					of the ent	Tabl	e L1a. Buffer Percent		
··· ~ C 1	OW. Hut	e the sub-n nary Worksl	ieuric using Table I	1a and e	nter the rating	g on the	e Buffer		Rating	Buffer Percent		
									1	-411011 6166116		
			Buffer Percer	nt (%)=	85%				O 4	100%		
	2041-	D-66 100 1	Buffer Percer		85%				Ø 3			
rkshe	eet 1c.	Buffer Wid	th Sub-metric Me	asuro the	o longth of as	ch buffe	er line in	meters in	Ø 3	100%		
rkshe GIS o		~ map. Avei	th Sub-metric. Me	asuro the	o longth of as	ch buffe L1b. Er	er line in oter the r	meters in rating on	Ø 3	100% ≥80% - <100%		
rkshe GIS o	r Integ	~ map. Avei	th Sub-metric. Me age the line length ry Worksheet 1d. Buffer Width	asuro the	e length of ea te using Table Buffer W	L1b. Er	Buffe	rating on	<ul><li>⊗ 3</li><li>○ 2</li><li>○ 1</li><li>Table</li></ul>	100% ≥80% - <100% ≥50% - <80%		
GIS o	er Integ	rity Summa er Width	<b>th Sub-metric.</b> Me rage the line length ry Worksheet 1d.	asure the	e length of ea te using Table Buffer Wi (m)	L1b. Er	Buffe	r Width (ft)	<ul> <li></li></ul>	100% ≥80% - <100% ≥50% - <80% <50%		
GIS of Buffe	Buff	rity Summa er Width (m) 4.26	th Sub-metric. Me rage the line length ry Worksheet 1d.  Buffer Width  (ft)  538.91	asure the as and radius Line	e length of ea te using Table Buffer W (m) 161.93	L1b. Er	Buffe 531	r Width (ft)	<ul> <li></li></ul>	100%  ≥80% - <100%  ≥50% - <80%  <50%  e L1b. Buffer Width  Average buffer width  ≥190m		
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/2 =

3

Buffer Integrity Index Score

>1.5 - ≤2.5 ≤1.5

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# 2 - Riparian Corridor Connectivity (RCC)

Forksheet 2. RCC excluded non-buffer elements calculation. Refer to worksheet 1a for calculated non-buffer RCC land cover elements. Following the steps in the Field Guide, entergo summed values in meters for excluded element lengths for each bank within each eigment upstream and downstream of the SA. Sum the values for each segment and alculate % Segment Disruption for the upstream side and the downstream side. Add the otal 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.

he data from this worksheet, Enter fating or	the brisa		23/3/18/1/2		
Segments	Upstream	n Segment	Downstream Segment		
Banks	Left Bank	Right Bank	Left Bank	Right Bank	
N) 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				

	Та	ble L2. RCC Rating				
R	ating	Description				
R	4	<b>0%</b> total disruption on both segments combined.				
0	3	<15% total disruption on both segments combined.				
0	2	≥15% - <40% total disruption on both segments combined.				
C	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 Worksher

RSR					RWSI						
Current Size	1	Historic Size	=	RSR	1	-	RSR	X	100	=	RWSI (%)
Cullent Size	,	Thistoric size		111111111111111111111111111111111111111			0.1		100		10
9	1	10	=	0.9	1	-	0.1	X	100		1.0

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						
C 3	>10% - ≤40%	Wetland remains equal to or more than 60% of its natual size						
		Wetland has been reduced by more than 40% its natural size						
01		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		
Dredging, borrow pits, abandoned mines, water-filled artificial impoundments (ponds and reservoirs)		0	0
Filling or dumping of sediment or soils	0.1	0	0
Intense recreation (all-terrain vehicle use, camping, popular fishing spot, etc.)	0.1	0	0
hip-tapped channel (highly modified channel with covered the transfer of the covered the transfer of the covered t	0.3	0	0
human activities but not a completely concrete channel [that goes under paved roads]), junkyards, trash dumps, disturbed ground (not including roads)  Ski area	0.3	0	0
	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	$\frac{1}{0}$
priculture - permanent crop (vineyards, orchards, nurseries, berry production)	0.3		0
viallicured lawns, sport fields, and golf courses; urban manicured parks	0.3	0	
Old fields and other disturbed fallow lands dominated by ruderal and/or exotic species (e.g., kochia, ussian 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
estoration areas in process to natural conditions (re-conversion in process)	0.0		
aying of native grassland (e.g., no tillage, having and haling only)	8.0	65	52
eavy logging or tree removal with >50% of large trees (a.g., > 20 11	0.9	0	0
The standard of the standard o	0.3	0	0
Time clar tree plantation, Christmas tree farms	0,6	0	0
elective logging or tree removal with <50% of large trees (e.g., >30 cm diameter at breast height)	0.8	0	0
ature restoration areas returned to natural conditions (re-converted)	0.9	0	0
atural area, land managed for native vegetation - No agriculture, logging, development	1	0	0
LUI Score= Coefficient * % LUZ Area		100	75

ounding Land Use Rating
LUI Score
≥95 - 100
≥80 - <95
≥40 - <80
<40

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**Biotic Metrics** 

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Species Cover (BS) 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 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 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.

Append	Appendix U). Use tille collillierits box io: document	וובוווק ממעום			
Polygon	B3 Vertical Structure Type	B4 Tree Regeneration % Cover	B4 Tree B5 Invasive Regeneration Exotic % Cover Species % Cover	Invasive Exotic Species (List Code(s))	Comments
-	IA1				
2	IA2	30%	Nosehes	Not seen	Maple, Chimisa, Prickle persyspoloen aster Heatene
3	IIA1				
4	IIIB1				
2	IIIC1	10%	> 2%	dead Millery	Chimisa, willow, provide Sorbera, globe mallow
9	IVEI				
7	IVF1				
∞					
0					
10					
=					
12					
13					
14					
15					
16					
17					
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# **B1 - Relative Native Plant Community Composition**

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Raw<sup>4</sup> |% SA<sup>5</sup> |Wt Score<sup>6</sup> 1.75 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 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 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 46 30% 12.5 70% CT Score 4 Herbaceous/Sparse Stratum 3 Species 6 8/2c ster 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. 2 Species 5 E 2 7055 Whent Species 4 E Chinist 1 Short Woody Stratum 2 Species 3 E S. J. S. J. Species 2 Tall Woody Stratum 1 Species 1 Maple Polygon Nos. كا V ⋖ മ Ü Δ ш ш G ェ  $\checkmark$ Σ 0 z

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 stratum cover. <sup>4</sup>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 for Relative Native Plant Community Composition on the SA Rank Summary Worksheet.

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Table B1	. Relative Native Plant C	ommunity Composition Rating
Rating	CT Fina	l 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.

zontal	Patch	Structure	pattern	A,B,C,	or (	D:
LUIILUI	1 46611	21.00.0.0				

	Table B2. Rating for Vegetation Horizontal Patch Structure
Rating	Description  Complexity A dominant patch type would
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, nowever, a single,
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.

#### - 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.

me VST) x 100	. Enter the total '	%SA for each VS	i below.		VET CM	VST 6H	VST 7
	VST 1 High Structure Forest	VST 2 Low Structure Forest	VST 5 Tall Shrubland	VST 6S Short Shrubland	VST 6W Herbaceous Wetland	Herbaceous Vegetation	Sparse Vegetation
Total % of SA	. 5. 55	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.

	Dominant VST	Co- or Sub-dominant VST ≥15%	Sub-dominant VST ≥5%
Rating	John Mark Vol.	5	6W and/or 6H
	1		
4	1	6W	614 - 4/- 611
	2 or 1 and 2	5	6W and/or 6H
	1		
	2 or 1 and 2	5	
3	2 or 1 and 2	6W	
	5	6W	
	2 or 1 and 2		•
2	5		
	6W		
	65		
1	6H		
	7		

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г	w	13	X	183	gra	<b>(29)</b>	10	130		82	199						33	7					100								1	10			
31		3	ŧ٧	r.	Ъź	8 8	77	В	96.	4	1 4	4	-1	1	м		30	86	x	7	ο.	ж.	20	Ψ.			n	Δ	377		æ	ì.		27	꿦
á	82	8.5	200	223	A.	والعو	oths				8 5	de.	va.	40	4	8	200	æ.	J.,			L.A.	٠.	×	١.	3	А.	150	L	a			σ.		B

1	
1	4. Native Riparian Tree Regeneration rating. Using the polygon percent cover of native tree seedlings, saplings and poles from
W	orksheet 5, rate the SA based on polygon percent cover and patch density. Enter the rating on the SA Rank Summary Worksheet.

		, rate the SA based on polygon percent cover and patch density. Enter the rating on the SA Rank Summary Worksheet.
R	Rating	Description
ဂ	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.
$\circ$	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.
$\circ$	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 %				
O 4 X	0%			
C 3	>0% - <1%			
2	≥1% - <10%			
O 1	≥10			

Ad	lditi	onal	CTs	and	Biotic	Metric	Comments:
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#### **Abiotic Metrics**

#### A1 - Floodplain Hydrologic Connectivity

#### Method 1

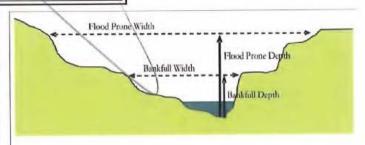
Worksheet 10a. Floodplain Hydrologic Connectivity Measurements. The following six steps are conducted at each of three crosssections at the approximate mid-points along straight riffles and away from deep pools or meander bends. Use a measuring tape and
temporary stakes for horizontal measurements, and 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	reping the tape level between the right and left bankfull contours, measure the height the line above the thalweg (the deepest part of the channel). A pocket line level can be phere.						
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 rom Step 8 to where it intercepts the right and left banks.						
5: Calculate Entrenchment Ratio	Pivide 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 crousing Table A1a. Enter the rating in the A1 box on the SA	ss-sections. Enter the average her A Rank Summary Worksheet.	re and	rate			

Rating Method

	ting for Floodplain Hydrologic Con ingle-channel riffle-pool systems	nectivity in
Rating	Description	\
O 4	Average entrenchment ratio is	≥ 2.2;

	1
O 4	Average entrenchment ratio is ≥ 2.2;
C 3	Average entrenchment ratio is ≥1.9 - <2.2
C 2	Average entrenchment ratio is ≥1.5 - < 1,9
0 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

segme	ent.		
U	M	L	Indicator
		D	Bankful is slightly below bank height
	P		Bankful is well below bank height and channel is incised
			Channel widening due to bank failure
			Constructed levees preclude floodplain inundation
		A	Stream is straightened/channelized
			Inset floodplain formation
			Decreased peak flows due to hydrologic modification

Indicators of overbank flow on floodplain

Floodplain inundation due to beaver activity

Bankfull indicators at point of incipient flooding of the floodplain

Rating		Description	
0	4	Average entrenchment ratio is ≥ 1.9	
(	3	Average entrenchment ratio is ≥1.4 - <1.9	
0	2	Average entrenchment ratio is ≥1.2 - <1.4	
0	1	Average entrenchment ratio is < 1.2	

Table A1b. Rating for Floodplain Hydrologic

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#### Method 2

1. .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
C 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.
C 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.
O 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.).
<u> </u>	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.

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	04	JSAI	Assessment	
:					

SA CODE: SF2MI [ / ]	e: 3	5/15/24
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SA Name: Two Mile Pond Reservoir Transect [ / ] 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		Abandoned channels
	Backwater/eddy		Backwater/eddy
			Riffles or rapids
			Shoals, sparely-vegetated bars
			Channel boulders
			Oxbow lakes/ponds on floodplains
			Vegetated island and side bars
	X		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

Tabl	e A2. Ra	nting for Physical Patch Complexity
Ratir	ng	Description
C	4	<b>High</b> 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).
$\cap$	3	<b>Moderate</b> 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).
C	2	<b>Limited</b> 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	<b>Little</b> 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	1
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Date: 5/15/24

SA Name: Two Mile Pond Reservoir Transect [ | ]

Surveyor Initials:

### 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)	
		X		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.	
		M		Perennial riparian vegetation is abundant and well established along the bankfull contour, but not below it.	
		X		There is leaf litter, thatch, or wrack in most pools.	
Indicators of		X		The channel contains embedded woody debris of the size and amount consistent with what is naturally available in the riparian area.	
Channel Equilibrium		Ø		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).	
		X		Channel and point-bars consist of well-sorted bed material.	
		Ø		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.	
				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.	
Indicators of Active Degradation			. 🔲 📗	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.	
				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.	
ndicators of Active Aggradation				The channel bed is planar overall. The stream lacks well-defined channel pools at meander bends, or pools are filled with sediment.	
				here are partially buried or sediment-choked culverts.	
				here are avulsion channels on the floodplain or adjacent valley floor.	

SA CODE:

SF2MI[ / ]

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SA Name:

Two Mile Pond Reservoir Transect [ / ]

Surveyor Initials: D65

	Table A3. Rating for Channel Equilibrium
Rating	Description
<b>%</b> 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.
C 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		
	<u></u> 4	<b>X</b> 4	<u></u> 4	Infrequent raw banks, less than 10% of steam bank under stress from trampling, slumping, vegetation removal or active erosion, etc.		
Indicators of Bank	□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.		
Soil Stability	<b>□</b> 2	□2	<u>2</u>	Significant raw banks and loose soil, 25%-50% of stream bank under stress, trampled, slumping or eroding etc.		
	1	<u></u> 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	<u></u> 4	<b>X</b> )4	<u></u> 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.		
	<u></u> 2	<u></u> 2	<u></u> 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.		
	<u></u> 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			
<u></u>	>2.5 - ≤3.5			
C 2	>1.5 - ≤2.5			
C 1	1.0 - ≤1.5			

					1
SA	CODE	:	SF2MI	[ ,	/ ]

Date: 5/15/24

**SA Name:** Two Mile Pond Reservoir Transect [ | ]

Surveyor Initials :

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#### **A5 - Soil Surface Condition**

rksheet 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					
<b>C</b> 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.					
<b>%</b> 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.					
O 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.					
O 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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SA CODE:	SF2MI[ /	' ]

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**SA Name:** Two Mile Pond Reservoir Transect [ / ]

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 egories using direct evidence where available or your best professional judgement otherwise. If the presence of the stressor is uncertain, mark as "Unknow had been stressor in Dominant Stressor column(Pick up to 3)

ınk	-	Aff	ect		Stressor Group/Stressor	Comments
IIIK T	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	
		Γ		l	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	
			Ø		Factory, feedlot outfall	
					Agricultural irrigation ditch returns	
					Mining waste	
				100	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	
			Ø		Evidence of excessive grazing (local)	
	Z				Excessive noise affecting wildlife	
	0	0		0	Counts by Intensity	

dditional Comments

ersion Date: 04/25/2022

Schema: Montane 2.5

		SA Cove	r Worksheet			
SA Code SF2MI[	SA Name : Two	o Mile Pond Reservoir		Project : F	Riparian Asses	omant
Fode Tsct [ /	] AU Name : Tra	ansect [ / ]			o Mile Pond R	
County Santa Fe	HUC 12 Head	dwaters Santa Fe River	Elevation (ft) 729			
decommissione of water rights. riving Directions Driving to Santa	Fe from Albuquerque w	e, comments) located on the east side or regarding the reservoir a	of Santa Fe borde and a water divers	ring the Santa Fe N sion to the area was	lational Forest s recently shu	t down due to lac
		Santa Fe National Forest		Results to client only.	Fish Observ Wetland	ed in
Surveyor Role		Surveye	or Name		wetrand	
Landscape	Dustin Schwar					Surveyor Initia
Biotic	Annie McCoy					DS
Abiotic	Dustin Schwar	rtz				AM
Stressors	Dustin Schwar	rtz				DS
Easting (m)	Northing (m)	Zone			44	DS
05° 53' 24" W	35° 41' 23" N	13	Datum	Latitude		Longitude (DD
		1 13 1	NAD- 83 UT	M 35.68972	.a. I	-105.89
Survey Date  Landscape Conte	6/11/24	Start Time SA Desc	9:00	End 1	ime	15:00
Landscape Conte	xt (summarize the wetla	Start Time SA Descrind and surrounding land	9:00	End 7	ime	15:00
Landscape Conte	ext (summarize the wetla offs of water over flow	Start Time  SA Description of the sanda of t	9:00  ription  scape; include co	end Today b	ts)	15:00 5:9n
Landscape Conte	ext (summarize the wetla offs of water over flow	Start Time  SA Description of the sanda of t	9:00  ription  scape; include co	end Today b	ts)	15:00
Biotic Condition (  9 lob malle w  Salt bush	ext (summarize the wetland)  oto of water  over flow  vegetation patterns, com  vegetation patterns, com  golden es  green and dense	Start Time  SA Description and surrounding lands  From santa  in to channe  apposition and structure, exister  willow  whip tails	9:00  ription  scape; include co  fe river  /  exotics and invasiv  bush seems  seen seems	ndition and impact today b  ves, disturbance every full y where	idence, fire ar	15:00
Biotic Condition (  glob mallow Salt bask  Abiotic Condition urbance and other  T 16,89	ext (summarize the wetland)  oto of water  over flow  vegetation patterns, com  yegetation patterns, com  golden es  green and dense  (hydrological alterations site impacts; explain the	Start Time  SA Description and surrounding lands  From santa in the channe in the chan	9:00  ription  scape; include co  fe firer  xotics and invasiv  bush seems  seen every  cooding characterier factors that de	ndition and impact today b  ves, disturbance ev  very full where  stics and evidence fine the SA limits)	idence, fire ar	15:00
Biotic Condition (  Galt bush  Abiotic Condition  urbance and other  T 16,8°	ext (summarize the wetland of of water over flow over flow egetation patterns, come of green and dense of the extensite impacts; explain the extensite impacts; explain the water has	Start Time  SA Description and surrounding lands  From Santa  Into Channe  Apposition and structure, exter willow  Whip fails  Ge.g., dams, walls etc.]; flee hydrologic breaks or other  7.60 p. H.  Over Flowed in the second structure.	9:00  ription  scape; include co  fe river  /  exotics and invasiv  bush seems  seen ever  cooling characteri er factors that decent  6.10 nta	res, disturbance every full store the SA limits)	idence, fire ar	15:00
Biotic Condition (  glob maller  Salt bask  Abiotic Condition  T 16,8°  No	ext (summarize the wetland of soft water over flow over	Start Time  SA Description and surrounding lands in to channe in the willow whip tails  [e.g., dams, walls etc.]; fle hydrologic breaks or other to channe in the comments a summary and comments a surrounding in the comments as surrounding in the comments	9:00  ription  scape; include co  fe river  /  exotics and invasiv  bush seems  seen ever,  pooding characteri er factors that de  6.10 ntm	res, disturbance every full where stics and evidence fine the SA limits)	idence, fire ar	15:00  Sign  Ind herbivory)  and  Ilooding; soil
Biotic Condition (  glob mallow Salt bash  Abiotic Condition urbance and other T 16,8° No  essment Summary	ext (summarize the wetland of soft of water over flow over flow vegetation patterns, come golden es green and dense (hydrological alterations site impacts; explain the condition suffer has	Start Time  SA Description and surrounding lands from santa in to channe in to channe in to channe without whip tails  Ge.g., dams, walls etc.]; fle hydrologic breaks or other santa in the santa in th	9:00  ription  scape; include co  fe river  /  exotics and invasive  bush seems  seen ever  cooding characteri er factors that de  6.10 ntm  de channel	ndition and impact today b  ves, disturbance ev  very full where  stics and evidence fine the SA limits)	idence, fire ar	15:00  5:54  Ind herbivory)  and  Blooding; soil

SA CODE: SF2MI[ ]

SA Name: Two Mile Pond Reservoir Transect [ ]

Date: 6/11/24

Surveyor Initials: DS/AM

NMRAM - SA Rank Summary Worksheet: Montane Riverine Wetlands 2.5	Rating	Wt	Final Score
Metric Description		Σ 1.0	3.25
andscape Context	. 3	0.25	0.75
_1. Buffer Integrity Index	4	0.25	1.0
L2. Riparian Corridor Connectivity	4	0.25	1.0
L3. Relative Wetland Size	2	0.25	0.5
L4. Surrounding Land Use	2	0,25	2022
Biotic		2	
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	
	4	0.2	
B5. Invasive Exotic Plant Species Cover		Σ	
Abiotic		0.3	

Major Attribute	scape 3.25 0.3		Wt. Score
Landscape Context			0.975
Biotic		0.35	
Abiotic		0.35	
SA WETLAN	D CONDITIC	N SCORE Σ	3,08
SA WETLAN	D RANK =	=	B

A1. Floodplain Hydrologic Connectivity

A4. Stream Bank Stability and Cover

A2. Physical Patch Diversity

A3. Channel Equilibrium

A5. Soil Surface Condition

Rank	Score	Description
Α	≥3.25 - 4.0	Excellent Condition
В	≥2.5 - <3.25	Good Condition
C	≥1.75 - <2.5	Fair Condition
D	1.0 - <1.75	Poor Condition

0.2

0.2

0.2

0.1

4

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

11/0	wader	going the	ugh chann	el and	many	
trails 1	su t	Willows	appear	to be	Flowering	

SA CODE: SF2MI[ / ]

**SA Name :** Two Mile Pond Reservoir Transect [ / ]

Date:

6/11/24

Surveyor Initials: DS/AM

# **Landscape Context**

		er Integrity Index					
or are	sheet exclu ear of	<b>1a. Buffer and RCC Checklist.</b> Check off land cover ded and considered non-buffer elements that disrugingery).	elemen ot ecosy	nts wir	hin the buffer connectivity. I	area or RCC condicate the im	orridors that are either allowed agery type and date (season
lmage	ry	Google Earth KMZ. file	lmag	e Date	6/23		
		fer/RCC land cover elements			L		
Buffer	RCC		Buffe	r RCC	on-buπer/RCC	land cover ele	ements
X	×	Natural or semi-natural vegetation patches	X	X	Commercial	l/residential de	evelopments, parking lots, s, and other structures
X	X	Small irrigation ditches without levees	$+\Box$			s, golf courses,	
		Old fields, unmaintained	一百		Railroads	o, gon courses,	, sports neids
		Open range land			Maintained materials, sta	levees, sedime	ent piles, construction
X	X	Foot trails, horse trails, unpaved bike trails (low intensity)					orse paddocks, feedlots
X	X	Non-channel open water			Intensive agr	riculture: main chards, and vi	tained pastures, hay fields,
X	x	Non-functioning abandoned vegetated levees, or naturally occurring levees	X	X		or developed :	second-order unpaved but
		unpaved two tracks roads	X	x			evee or other manmade
		Other		П	Other		
Vorksh	eet 1	D. Buffer Percent Sub-metric. Measure or estimate to	he ner	entac			
						Table	L1a. Buffer Percent
· ~ ~ C   C	www.itu	te the sub-metric using Table L1a and enter the rationary Worksheet 1d.	g on the	e Buffe	er	Rating	Buffer Percent

Buffer Percent (%)= 85%

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.

	Buffer Width	Buffer Width	Т		
Line	(m)	(ft)	Line	Buffer Width (m)	Buffer Width (ft)
Α	164.26	538.91	E	161.93	531.26
В	125.25	410.92	F	231.48	759.44
С	115.39	378.57	G	121.25	397.80
D	111.07	364.40	Н	155.87	511.38
	Average	148.31 ( <b>m</b> )		486.58	(ft)

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 don't be SA Summary Worksheet.

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

Table I	Table L1a. Buffer Percent				
Rating	Buffer Percent				
O 4	100%				
<b>⊗</b> 3	≥80% - <100%				
C 2	≥50% - <80%				
O 1	<50%				

Table L1b. Buffer Width						
Rating Average buffer width						
O 4	≥190m					
<b>⊗</b> 3	≥130 - <190m					
O 2	≥65 - <130m					
O 1	<65m					

Table L1c. Su	mmary Rating for Buffer Integrity
Rating	Score
O 4	>3.5
<b>⊗</b> 3	>2.5 - ≤3.5
C 2	>1.5 - ≤2.5
O 1	≤1.5

SA CODE: SF2MI[ ]

Date: 6/11/24

SA Name: Two Mile Pond Reservoir Transect [ | ]

Surveyor Initials: DS/AM

# 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	n Segment	Downstrea	m 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			)
D) Total Disruption both segments	0		0	
E) % Total Disruptions = (D/2000)*100	Zero dis	ruption notic	eable along	the banks.

Table L2. RCC Rating						
Rating	Description					
	<b>0%</b> total disruption on both segments combined.					
C 3	<15% total disruption on both segments combined.					
C 2	≥15% - <40% total disruption on both segments combined.					
O 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						R/	NSI		
		Historic Size	=	RSR	1		RSR	X	100	=	RWSI (%)
Current Size	nt Size / Historic Si	HIStoric Size					0.1	0.1	100	=	10
9	1	10	=	0.9	1	150	0.1	X	100		10000

		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
		Wetland remains equal to or more than 60% of its natual size
O2		Wetland has been reduced by more than 40% its natural size
01	>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.

Γ	Thin in the state of the state	<del></del>		
	Land Use Element	Coef	% LUZ Area	LUI Score
	aved roads, parking lots, domestic or commercially developed buildings, mining (gravel pit, quarry, pen pit, strip mining), railroads	0	0	0
L	inpaved roads (e.g., driveway, tractor trail, unpaved parking lots), paddock, dirt lot	0.1	0	0
	redging, borrow pits, abandoned mines, water-filled artificial impoundments (ponds and reservoirs)	0.1		0
F	illing or dumping of sediment or soils	0.1	0	0
lr	tense recreation (all-terrain vehicle use, camping, popular fishing spot, etc.)	0.1	0	
R h tr	p-rapped channel (highly modified channel with severely limited vegetation zone that is altered by uman activities but not a completely concrete channel [that goes under paved roads]), junkyards, ash dumps, disturbed ground (not including roads)	0.3	0	0
-		0.4	0	0
	am sites and flood-disturbed shorelines around water storage reservoirs	0.5	0	0
A	pandoned artificial impoundments (ponds and reservoirs) and associated disturbed flood zones	0.5	10	5
A	tificial/Constructed wetlands, irrigation ditches	0.7	20	14
	eveloped/Managed trail system (high use trail)	0.8	5	4
Á	riculture - active tilled crop production	0.2	0	0
AC	riculture - permanent crop (vineyards, orchards, nurseries, berry production)	0.3	0	0
IVI	inicured lawns, sport fields, and golf courses; urban manicured parks	0.3	0	0
OI Ru	d fields and other disturbed fallow lands dominated by ruderal and/or exotic species (e.g., kochia, ssian thistle, mustards, annual vegetation)	0.5	0	0
1	ture old fields and other fallow lands with natural composition, introduced hay field and pastures g., perennial vegetation cover)	0.7	0	0
Re:	storation areas in process to natural conditions (re-conversion in process)	0.8	65	52
Ha	ying of native grassland (e.g., no tillage, having and haling only)	0.9	0	0
	noved, woodland/shrub vegetation conversion (chaining, cabling, rotochopping)	0.3	0	0
J	innercial tree plantation, Christmas tree farms	0.6	0	0
	ective logging or tree removal with <50% of large trees (e.g., >30 cm diameter at breast height)	0.8	0	0
Mat	cure restoration areas returned to natural conditions (re-converted)	0.9	0	0
ıval	ural area, land managed for native vegetation - No agriculture, logging, development	1	0	0
	LUI Score= Coefficient * % LUZ Area		100	75

Table L4. Surr	ounding Land Use Rating
Rating	LUI Score
O 4	≥95 - 100
O 3	≥80 - <95
<b>⊗</b> 2	≥40 - <80
O 1	<40

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**Biotic Metrics** 

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:		-			
Polygon No	B3 Vertical Structure Type	B4 Tree Regeneration % Cover	BS Invasive Exotic Species % Cover	Invasive Exotic Species (List Code(s))	Comments
-	IA1				
2	IA2	20%	hew explics	golder Astor	globe mallow
m	IIA1				
4	IIIB1	20%	Noneseen		Salt bush, chimisa.
2	IIIC1				
9	IVEI				
7	IVF1				
00					
6					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

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Surveyor Initials: '

**B1 - Relative Native Plant Community Composition** 

The physical content of the					1	21.71.7	The same composition of a serial assignment of the same composition of a new CT is created for the polygon	Ido CIIC Sall		2 2 2 2 2			11111					
Polygon No.   Species 1   No.   Species 3   Species 5   Species 6   Species				<u> </u>	all Woody	y Stratur	n 1	Short Woo	dy Stratu	ım 2		Herbaceou	Js/Sparse	Stratum	_	CT Score	4	
2		olygon Nos.	-	<u>S</u>		ш Z						Species 5	ш Z	Species 6			% SA5	Wt Score <sup>6</sup>
S   William   Wi				_	laple	>	Pine		5			Solden	11)			5.7	35%	1.31
	8	5						W, //n		G.W.Z	1	8/4e					1029	V 5
Linal Meight of Cond.	U									``	)	Stern	2				<i>(</i> 0)	)
Einal Mikriphot George	۵																	
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Constitution Const	z																	
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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 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. <sup>4</sup>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 for Relative Native Plant Community Composition on the SA Rank Summary Worksheet. SA CODE: SF2MI[ | ]

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Table B1	Relative Native Plant	Community Composition Rating						
Rating	ing CT Final Weighted Score							
√ 4	≥ 3.75	<10% non-native						
<u> </u>	≥ 3.25 and <3.75	10% ≤20% non-native						
C 2	> 2.0 and <3.25	20% ≤50% non-native						
C 1	≤2.0	>50% non-native						

#### 32 - Vegetation Horizontal Patch Structure

**Vorksheet 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.

orizontal Datch (	Structure patteri	nΔR	or D:

A
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	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.					
Ϋ́	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.					
C	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.					
C	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.					

#### 33 - 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	VST 2	VST 5	VST 6S	VST 6W	VST 6H	VST 7
	High Structure	Low Structure	Tall Shrubland	Short	Herbaceous	Herbaceous	Sparse
	Forest	Forest	,	Shrubland	Wetland	Vegetation	Vegetation
Total % of SA		30%	700/0				

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%
	1	5	6W and/or 6H
C 4	1	6W	
	2 or 1 and 2	5	6W and/or 6H
	1		
	2 or 1 and 2	5	
3	2 or 1 and 2	6W	
	5	6W	
/	2 or 1 and 2		
2	5		
	6W		
	6S		
C 1	6H		
	7		

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B4 -	Native Ri	parian Tree Regeneration								
T Worl	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 satisfactor and the SA based on polygon percent cover and patch density. Enter the satisfactor and the SA based on polygon percent cover and patch density.									
Worksheet 5, rate the SA based on polygon percent cover and patch density. Enter the rating on the SA Rank Summary Worksheet.  Rating  Description										
0	4 Na	tive poles, sapling, and seedlings tree	well represented, obvio		tches or polygons with >5%					
	3 Na	ver, typically multiple size (age) classe tive poles, saplings and/or seedlings c	ommon, scattered patch	nes or polygons with 1% -5	5% cover, size classes few.					
Ø	<sub>2</sub> Nat	tive poles, saplings and/or seedlings p % cover, little size class differentiatior	resent but uncommon,	restricted to one or two pa	atches or polygons with typically					
0		tive poles, saplings, and/or seedlings a								
B5 - I	nvasive E	xotic Plant Species Cover								
<b>Work</b> belov	r <b>sheet 9.</b> Ba v. Rate using	sed on Worksheets 5 and 6, calculate g Table B5 and enter the rating on the	or estimate the percenta SA Rank Summary Work	ge cover of invasive exotics	c species for the SA and enter					
	Rating Me	ethod	Invasive cov	ver (%)	calculate					
Γ										
		ngs for Invasive Exotic Plant Specie	Cover							
	Rating 4 $^{\prime\prime}$	Invasive Species Cover %								
	3	>0% - <1%								
	1	≥1% - <10% ≥10								
		210								
Addi	itional CTs a	nd Biotic Metric Comments:								
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## **Abiotic Metrics**

#### A1 - Floodplain Hydrologic Connectivity

#### Method 1

SA Name :

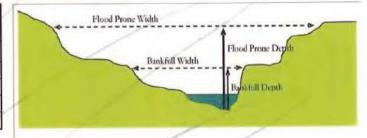
Worksheet 10a. Floodplain Hydrologic Connectivity Measurements. The following six steps are conducted at each of three crosssections at the approximate mid-points along straight riffles and away from deep pools or meander bends. Use a measuring tape and
temporary stakes for horizontal measurements, and 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	: 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.				
Maximum bankfull  Epth  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	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 her using Table A1a. Enter the rating in the A1 box on the SA Rank Summary Worksheet.	e and I	rate		

Rating Method

NAMES OF STREET STREET, STREET	ingle-channel riffle-pool systems
Rating	Description
C 4	Average entrenchment ratio is $\geq 2.2$ ;

Kating	Description
O 4	Average entrenchment ratio is ≥ 2.2;
O 3	Average entrenchment ratio is ≥1.9 - <2.2
0 2	Average entrenchment ratio is ≥1.5 - <1.9
0 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
П	П	П	Floodplain inundation due to beaver activity

	Table A1b. Rating for Floodplain Hydrologic Connectivity in single-channel step-pool systems					
Ra	ting	Description				
0	4	Average entrenchment ratio is ≥ 1.9				
0	3	Average entrenchment ratio is ≥1.4 - <1.9				
0	2	Average entrenchment ratio is ≥1.2 - <1.4				

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.

The section and recorded in Table Ard.							
Rating	Description						
O 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.						
<b>С</b> 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.						
O 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.).						
O 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.						

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		And the state of t				
2		San Marian Comment				
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
	X		Abandoned channels
			Backwater/eddy
			Riffles or rapids
			Shoals, sparely-vegetated bars
			Channel boulders
			Oxbow lakes/ponds on floodplains
			Vegetated island and side bars
	N		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
	<u> </u>		No. of unique Patch Types

Ratir	ng	Description					
$\subset$	4	<b>High</b> 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).					
$\cap$	3	<b>Moderate</b> 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).					
$\subset$	2	<b>Limited</b> 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).					
X	1	<b>Little</b> 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, $\leq 5$ 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.

	Linner	AA: Jalla		
Condition	Upper Segment	Middle Segment	Lower Segment	Field Indicators(check all existing conditions)
				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.
		Ø		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.
Indicators of		囟		The channel contains embedded woody debris of the size and amount consistent with what is naturally available in the riparian area.
Channel Equilibrium		Ø		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).
		X		Channel and point-bars consist of well-sorted bed material.
		Ż		The channel bed is not planar and without an abundance of fine materials filling the interstitial spaces between larger stream substrate.
		Ø		There are channel pools at meander bends and some deep pools within the reach.
				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.
Indicators of Active Degradation				Channel bed is scoured to large cobbles or boulders and entrained bank material is filling the cobble interstices and pools.
			T	here are active headcuts within the channel.
				An obvious historical floodplain has recently been abandoned, as indicated by the age structure of its riparian vegetation.
				here is abundant fresh splays of coarse sediment covering the floodplain bove the natural point bar elevation.
ndicators of Active Aggradation			Т	here are partially buried living tree trunks or shrubs along the banks.
			□ T p	he channel bed is planar overall. The stream lacks well-defined channel ools at meander bends, or pools are filled with sediment.
			П	here are partially buried or sediment-choked culverts.
				here 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.						
<u> </u>	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.						
<u> </u>	There is evidence of severe aggradation or degradation throughout most of the channel through the SA. Circle primary process: aggradation or degradation.						
C 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.

rating on the SA Summary Worksheet.  Upper Middle Lower Field Indicators				
Condition	Upper Segment	Segment	Segment	Field Indicators
	□4	<u>[X]</u> 4	□4	Infrequent raw banks, less than 10% of steam bank under stress from trampling, slumping, vegetation removal or active erosion, etc.
Indicators of Bank	□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.
Soil Stability	<u></u> 2	<u>2</u>	<u></u> 2	Significant raw banks and loose soil, 25%-50% of stream bank under stress, trampled, slumping or eroding etc.
	1	1	<u></u> 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.
	<u></u> 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.
Indicators of Stream Bank Erosion Potential	<u></u> 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.
	<u></u> 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	
/// Clage	l li

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

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#### **A5 - Soil Surface Condition**

Vorksheet 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).			
	X		Multiple livestock and other (fishing, hiking) trails,			
	$\boxtimes$		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:	
Average % Soil Disturbance:	
	ł

	Table A5. Soil Surface Condition Rating					
Rating	Description					
O 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.					
<b>%</b> 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.					
C 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.					
O 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[ | ]

**Date:** 6/11/24

DS/AM

**SA Name:** Two Mile Pond Reservoir Transect [ / ]

Surveyor Initials:

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 "Unknow ank Major Stressors in Dominant Stressor column(Pick up to 3)

ank	Affect			Stressor Group/Stressor	Comments		
ank	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		
ille.	10.30			T.	Watershed alteration		
					Extensive recent fires in watershed		
					Extensive recent timber harvest		
					Extensive open pit mining in watershed		
					Livestock/wildlife overgrazing		
				es us condition	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

		SA Cove	er Worksheet				
SA Code SF2MI[	2.] SA Name : 7	wo Mile Pond Reservoir		Project : R	iparian Ass	esement	
de Tsct [ 2	] AU Name :	Transect [ 2 ]			Mile Pond		
County Santa Fe	HUC 12 H	eadwaters Santa Fe River	Elevation (ft) 7299	(m) 2224.			
SA General Location A riparian syster	and Roundary (Pation	sala a		1	- 1	oregion <i>6</i>	.0 NWFM
Or water rights.  Priving Directions  Driving to Santa	Fe from Albuquerque	nd located on the east side of the reservoir a regarding the reservoir located to the North.		rife area was	recently sr	iut down o	due to laci
		voir located to the North.  he Santa Fe National Forest		ts to client	Fish Obse	erved in	nt on
Surveyor Role		Survey	or Name		vvetta		yor Initia
Landscape	"Dust in	t Annie					Roundani Sandani
Biotic	11	1, 44,041.5				1	+AM
Abiotic	11	\}				11	
Stressors	11	1/			· · · · · · · · · · · · · · · · · · ·	11	
Easting (m)	Northing (m)	Zone	Datum		VD D 2		
105° 53' 24" W	35° 41' 23" N			Latitude	(DD (ft)	Longitude (DE	
NAD- 83 UTM 35.689722					4.0		
Survey Date	4/9/24				- San - 21 - 22 - 22 - 22 - 22 - 22 - 22 - 2	-10	
Landscape Conte	ext (summarize the were the dam,	Start Time SA Desc	69:18 ription Iscape; include condition	End T	ime	13:0	5
A Landscape Conte  Above  I early  Biotic Condition (  This  bush  Fores:  Abiotic Condition turbance and other  The	ext (summarize the we re the dam, re the dam, re the dam, cotton wood vegetation patterns, co Area has a for section are the area (hydrological alterationsite impacts; explaint)	Start Time  SA Description  tland and surrounding land  common L. Kr  thing to be  something to be  somethin	exotics and invasives, die first half	en and impact  the be  willow  sturbance evi  then soc  and in	ime  s)  nches, trees  dence, fire  a not	The and herbita will her his	ory) Now
A Landscape Conte	ext (summarize the we re the dam, re the dam, re the dam, re startion wood vegetation patterns, or Area has a for section are the area (hydrological alterationsite impacts; explain the standon solutions of the section of	Start Time  SA Description  tland and surrounding land  common Like  thing to be  sylve  composition and structure, express area the  connod the chair  ons {e.g., dams, walls etc.]; fle the hydrologic breaks or oth  the ear shill sylve  musummary and comments and	iription  Iscape; include condition  Iscape; inc	en and impact  the be  willow  sturbance evi  then goe  and in  and evidence  ne SA limits)	ime  s)  nches, trees  dence, fire a not  of overband	The and herbita will her hill	Jory) Now Soil
A Landscape Conte Above I eared Biotic Condition ( This bush Fores: Abiotic Condition turbance and other The and essment Summary	ext (summarize the week to the dam)  so are stone cotton wood vegetation patterns, or the day a form of the day a form of the day and the day and a section of the day and	Start Time  SA Description and surrounding land  common L. K.  whing to be  surest area the  cound the chair  the hydrologic breaks or oth  the hydrologic breaks or oth  the summary and comments and  similar to	description  Iscape; include condition  Iscape;	en and impact  the be  willow  sturbance evi  then soc  and in  and evidence are SA limits)  ign of	ime  s)  nches, trees  dence, fire s to a anot  of overband	The and herbina with	ory) Now
Biotic Condition ( This bush fores: Abiotic Condition turbance and other The and	ext (summarize the week to the dam)  so are stone cotton wood vegetation patterns, or the day a form of the day a form of the day and the day and a section of the day and	Start Time  SA Description  tland and surrounding land  common Like  c	description  Iscape; include condition  Iscape;	en and impact  the be  willow  sturbance evi  then soc  and in  and evidence are SA limits)  ign of	ime  s)  nches, trees  dence, fire s to a anot  of overband	The and herbina with	ory) Now

SA CODE: SF2MI[ 7 ]

SA Name: Two Mile Pond Reservoir Transect [ 7 ]

Date: 4/9/24

Surveyor Initials: 05

MRAM - SA Rank Summary Worksheet: Montane Riverine Wetlands 2.5

Metric Description	Rating	Wt	Final Score	
		Σ 1.0	3.25	
andscape Context	3	0.25	0.75	
1. Buffer Integrity Index	4	0.25	1.0	
2. Riparian Corridor Connectivity	12.00		1.0	
3. Relative Wetland Size	4	0.25	0.5	
4. Surrounding Land Use	2	0.25	0.5	
Biotic		Σ		
31. Relative Native Plant Community Composition	4	0.2		
32. Vegetation Horizontal Patch Structure	Z	0.2		
33. Vegetation Vertical Structure	3	0.2		
B4. Native Riparian Tree Regeneration	ч	0.2		
	3	0.2		
B5. Invasive Exotic Plant Species Cover	Σ			
Abiotic	X	0.3		
A1. Floodplain Hydrologic Connectivity	2	0.2		
A2. Physical Patch Diversity	- 1	_	_	
A3. Channel Equilibrium	7	0.2	_	
A4. Stream Bank Stability and Cover	4	0,2		
A5. Soil Surface Condition	2	0.1	1	

Major Attribute	Score	Score Wt.	
Landscape Context	3.25	0.3	0.975
Biotic	3.2	0.35	
Abiotic	2.75	0.35	
SA WETLAN	3,058		
SA WETLAN	D RANK =		B

Rank	Score	Description
A	≥3.25 - 4.0	Excellent Condition
В	≥2.5 - <3.25	Good Condition
С	≥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 tlis area the most,

SA CODE: SF2MI[ 2 ]

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

Surveyor initials:

# **Landscape Context**

6	F-5500						
20.0							
-		ипе	TO	TPIT.	77 6		2.50
ALC: N	- <b>B</b> i					ue	Κï
	· · · · · · · · · · · · · · · · · · ·					finisis no de	350

mage		Google Earth KMZ. file			thin the buffer area or RCC corridors that are either allo connectivity. Indicate the imagery type and date (seaso
Allowed buffer/RCC land cover elements			lmag	ge Dat	e 6/23
uffer	RCC	nei/Nee land cover elements	Exclu	ıded n	on-buffer/RCC land cover elements
	1		Buffe	er RCC	salely need and cover elements
X	X	Natural or semi-natural vegetation patches	X	×	Commercial/residential developments, parking lots,
X	X	Small irrigation ditches without levees	$+_{\vdash}$	+	dams, bridges, revetments, and other structures
		Old fields, unmaintained	+-	1 =	Lawns, parks, golf courses, sports fields
		Open range land	<u>                                   </u>	<u> </u>	Railroads  Maintained levees, sediment piles, construction
X	X	Foot trails, horse trails, unpaved bike trails (low intensity)			materials, staging areas Intensive livestock areas, horse paddocks, feedlots
X]		Non-channel open water			Intensive agriculture: maintained pastures, hay fields
K	X	Non-functioning abandoned vegetated levees, or naturally occurring levees	X	X	row crops, orchards, and vineyards  Paved roads or developed second-order unpaved but graded roads
The second of th		unpaved two tracks roads	X	x	Open water bounded by a levee or other manmade structure
<u> </u>		Other			Other

Box below. Rate the sub-metric using Table L1a and enter the rating on the Buffer Integrity Summary Worksheet 1d. Buffer Percent (%)= 85%

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	Buffer Width
A	164.26			(m)	(ft)
	10-1.20	538.91	E	161.93	531.26
В	125.25	410.92	F	231,48	
C	115.39	378.57			759.44
D	444		G	121.25	397.80
<u> </u>	111.07	364.40	Н	155.87	511.38
1	Average	148.31 (m)		486.58	(ft)

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.

		TOTASTICEL,						
Buffer % Rating	+ Buff	fer Width Rating	/2 =	Buffer Integrity Index Score				
	+	3	/2 =	3				

Table L	Table L1a. Buffer Percent				
Rating	Buffer Percent				
C 4	100%				
( <b>x</b> 3	≥80% - <100%				
C 2	≥50% - <80%				
$\bigcirc$ 1	<50%				

Table L1b. Buffer Width					
Average buffer width					
≥190m					
≥130 - <190m					
≥65 - <130m					
<65m					

Table L1c. Summary Rating for Buffer Integrity Rating Score 4 >3.5 R 3 >2.5 - ≤3.5 2 >1.5 - ≤2.5 ≤1.5

SA CODE: SF2MI[ 2 ]

SA Name: Two Mile Pond Reservoir Transect [ 2]

Date: 4/9/29

Surveyor Initials: 05

# - 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 slculate % Segment Disruption for the upstream side and the downstream side. Add the otal disruption for upstream and downstream segments and then calculate the % Total isruptions for the riparian corridor. Rate Riparian Corridor Connectivity using Table L2 and ne data from this worksheet. Enter rating on the SA Summary Worksheet.

Segments		n Segment	<b>Downstream Segment</b>		
	Left Bank	Right Bank	Left Bank	Right Bank	
Danie	0	0	0	0	
) Total Bank Disruption (m)  ) Total Disruption by Segment (m)			0		
c) % Segment Disruption = (B/1000)*100	0		0		
D) Total Disruption both segments	0				
E) % Total Disruptions = (D/2000)*100	Zero disruption notic		ceable along	the banks.	

Table L2. RCC Rating						
Rating	Description					
(x̄ 4	<b>0%</b> total disruption on both segments combined.					
C 3	<15% total disruption on both segments combined.					
C 2	≥15% - <40% total disruption on both segments combined.					
C 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 Workshr

								RI	NSI		
		RSR					DCD.	v	100	=	RWSI (%)
Current Size	1	Historic Size	=	RSR	1	-	RSR	^	100		
							0.1	X	100	=	10
9	1	10	=	0.9	1		0.1	- 1			

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			
C3	>10% - <40%	Wetland remains equal to or more than 60% of its natual size			
C2	>40% - <70%	Wetland has been reduced by more than 40% its natural size			
C1	>70%	Wetland has been reduced by more than 70% its natural size			

SF2MI[ 2]

Date: 4/9/24

SA Name:

Two Mile Pond Reservoir Transect [ 2]

Surveyor Initials :

05

### 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			
Unpaved roads (e.g., driveway, tractor trail, unpaved parking lots), paddock, dirt lot	0	0	0
Dredging, borrow pits, abandoned mines, water filed a visit with the control of t	0.1	0	0
Dredging, borrow pits, abandoned mines, water-filled artificial impoundments (ponds and reservoirs) Filling or dumping of sediment or soils	0.1	0	0
Intense recreation (all-terrain vehicle use camping popular C. L.)	0.1	0	0
	0.3	0	0
human activities but not a completely concrete channel [that goes under paved roads]), junkyards, trash dumps, disturbed ground (not including roads) Ski area	0.3	0	0
Dam sites and flood-disturbed shorelines around water storage reservoirs	0.4	0	0
Abandoned artificial impoundments (ponds and recent it)	0.5	0	0
Abandoned artificial impoundments (ponds and reservoirs) and associated disturbed flood zones  Artificial/Constructed wetlands, irrigation ditches	0.5	10	5
Developed/Managed trail system (high use trail)	0.7	20	14
griculture - active tilled crop production	0.8	5	4
griculture - permanent crop (vineyards, orchards, purcories, beauty)	0.2	0	0
and golf courses: urban manicured parks	0.3	0	0
Id fields and other disturbed fallow lands dominated to	0.3	0	0
<b>3</b> • • • • • • • • • • • • • • • • • • •	0.5	0	0
ature old fields and other fallow lands with natural composition, introduced hay field and pastures	0.7	0	0
estoration areas in process to natural conditions (re-conversion in process)	0.8	65	52
aying of native grassland (e.g., no tillage, haying and baling only)	0.9	0	0
moved, woodland/shrub vegetation conversion (chaining, cabling, rotochopping)  moved, tree plantation, Christmas tree farms	0.3	0	0
lective logging or tree removal with <50% of large trees (e.g., >30 cm diameter at breast height)	0.6	0	0
ture restoration areas returned to natural conditions (re-converted)	0.8	0	0
tural area, land managed for native vegetation - No agriculture, logging, development	0.9	0	0
	1	0	0
LUI Score= Coefficient * % LUZ Area		100	75

Table L4. Surr	ounding Land Use Rating
Rating	LUI Score
← 4	≥95 - 100
C 3	≥80 - <95
<b>(₹</b> ) 2	≥40 - <80
$\bigcirc$ 1	<40

SA CODE: SF2M! [ 2]

**Biotic Metrics** 

SA Name: Two Mile Pond Reservoir Transect | 📞

Date: 7/6/27

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 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 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 Listendix D). Use the comments box for documenting and describing vegetation community patch features.

Polygon B3 Vertical Structure No Type		B4 Tree B5 Invasive Regeneration Exotic % Cover Species % Cover	드리	Comments
1 IA1	ķ.	K.	10521	1 4 4
2 IA2	gumpor Worker	5>.	Elm: untroun	
3 IIA1	gooth			
4 IIIB1	Cetton w	9		
5 IIIC1		7011		
6 IVEI				
7 IVF1				
-				
6				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

B1 - Relative Native Plant Community Composition

SA CODE - SF2MI[ 7]

**SA Name:** Two Mile Pond Reservoir Transect [  $\mathcal{Z}_{}$  ]

Date: 4/9/24

Surveyor Initials:

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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

Raw4 |% SA5 |Wt Score6 23 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 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. <sup>4</sup>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 3,75 105% CT Score 4 4 Species 6 E Herbaceous/Sparse Stratum 3 V.42 14 tree 5 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. 3 Species 5 E N 1/2 20 kg Sica Per Species 4 Short Woody Stratum 2 Species 3 E by the Species 2 Elen Elen Species 1 E Cothernal . Polygon Nos. N ⋖ Ω U ۵ ш ட Ō I ¥ Σ z 0

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 Page 7 of 17

				_
c۸	CO	NE	•	2

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Two Mile Pond Reservoir Transect [ 🔞 ] SA Name:

Date: 4/9/24

Surveyor Initials:

able B1.	Relative Native Plant Co	ommunity Composition Rating
ating	CT Fina	l Weighted Score
4	≥ 3.75	<10% non-native
4	≥ 3.25 and <3.75	10% ≤20% non-native
3		20% ≤50% non-native
2	> 2.0 and <3.25	>50% non-native
1	≤2.0	>30% (1011-11ative

## - Vegetation Horizontal Patch Structure

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

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

	Table B2. Rating for Vegetation Horizontal Patch Structure
	± 1 ·
Rating	<b>Description</b> Most closely matches Pattern A. SA has a diverse patch structure (≥4 patch types) and complexity. A dominant patch type would
	Most closely matches Pattern A. SA has a diverse patental and the same of the
4	be difficult to determine.  Pattern B. SA has a moderate degree of patch diversity (3 patch types present) and complexity. A single, dominant patch type may Pattern B. SA has a moderate degree of patch diversity (3 patch types presented and have more than one occurrence in the SA.
	Pattern B. SA has a moderate degree of patch diversity (3 patch types present) and complexity. This is a property of the same of the same party of the same
3	Pattern B. SA has a moderate degree of patch diversity (3 patch types present) and complexity.  Pattern B. SA has a moderate degree of patch diversity and represented and have more than one occurrence in the SA.  be present, although the other patch diversity and complexity. Two or three patch types may be present; however, a single,  Pattern C. SA has a low degree of patch diversity and complexity. Two or three patch types may be present; however, a single,  Pattern C. SA has a low degree of patch diversity and complexity. Two or three patch types may be present; however, a single,
	The state of the s
2	Pattern C. SA has a low degree of patch diversity and small portion of the SA.  dominant patch type exists with the others occupying a small portion of the SA is dominated by a single patch type. Other patch
	B. CA become in the little to no patch diversity of complexity. The system of the syst
1	types, if present, occur infrequently and occupy a small portion of the SA.
	types, if present, occur infrequently and occupy comments

### 3 - Vegetation Vertical Structure

**Forksheet 8. Percentage of SA by vertical structure type (VST).** Using the Structure Type from Worksheet 5 and the %SAom 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.

ame VST) x 100.	VST 1	%SA for each VS VST 2	VS1 5	VST 6S Short Shrubland	VST 6W Herbaceous Wetland	VST 6H Herbaceous Vegetation	VST 7 Sparse Vegetation
Total % of SA	50			90		A breed on the	riteria in Table B

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 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.

ting on the SA Ra	ank Summary Worksheet.	Co- or Sub-dominant VST ≥15%	Sub-dominant VST ≥5%			
Rating	Dominant VST		6W and/or 6H			
	1	5				
	1	6W	6W and/or 6H			
4	2 or 1 and 2	d 2 5	GVV aria, or orr			
	1					
,	2 or 1 and 2	5				
3	2 or 1 and 2	6W				
	5	6W				
	2 or 1 and 2					
. 2	5					
-	6W					
	6S					
\ 1 \ \	6H					
·	7					

SF2MI[ 2 ]

Date:

4/9/24

SA Name:

Two Mile Pond Reservoir Transect [ 🔞 ]

Surveyor initials:

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4 - 1										

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.

	The rating on the SA Rank Summary Worksheet.
Rating	Description
	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.
17: 2	Native poles, saplings and/or seedlings present but uncommon, restricted to one or two patches or polygons with typically cover, little size class differentiation.
	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	
Mating Michiod	

Invasive cover (%)

< 1%

calculate

Table B5. Ratings for Invasive Exotic Plant Species Cover					
Rating	Invasive Species Cover %				
C 4	0%				
7 3 X	>0% - <1%				
( 2	≥1% - <10%				
$\bigcirc$ 1	≥10				

Additional C	.Ts and	Biotic	Metric	Comments:
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SA CODE:	SF2MI[ ?]	Date:	4/9/2
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SA Name: Two Mile Pond Reservoir Transect [ 2] Surveyor Initials:

## 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.

Enter the rating on the Upper Segment	Middle Segment	Lower Segment	Field Indicators (check all existing conditions)
			Active side channels
			Abandoned channels
	$-\overline{\Box}$		Backwater/eddy
			Riffles or rapids
			Shoals, sparely-vegetated bars
			Channel boulders
			Oxbow lakes/ponds on floodplains
			Vegetated island and side bars
	70		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
	<u> </u>		No. of unique Patch Types

Ratir	ng	Description
(mounds and pits, woody wrack piles, etc.), many fluvial geomorphic surfaces (swales, side channels, terraces, s etc.), and there is high in-channel complexity (pools and riffles, large woody debris, undercut banks, etc.). As a g or more unique indicators are present and well distributed throughout the SA (most indicators are found on m segments).		<b>High</b> 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).
C	3	<b>Moderate</b> 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).
C	2	<b>Limited</b> 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).
X	1	<b>Little</b> 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)
		<b>₩</b>		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.
		$\square$		Perennial riparian vegetation is abundant and well established along the bankfull contour, but not below it.
		Ø		There is leaf litter, thatch, or wrack in most pools.
Indicators of		沟		The channel contains embedded woody debris of the size and amount consistent with what is naturally available in the riparian area.
Channel Equilibrium		×		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).
		囟		Channel and point-bars consist of well-sorted bed material.
		囟		The channel bed is not planar and without an abundance of fine materials filling the interstitial spaces between larger stream substrate.
		囟	[7]	There are channel pools at meander bends and some deep pools within the reach.
				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.
ndicators of Active Degradation				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.
Í				here is abundant fresh splays of coarse sediment covering the floodplain bove the natural point bar elevation.
			П П	here are partially buried living tree trunks or shrubs along the banks.
ndicators of Active ggradation			☐  T	he channel bed is planar overall. The stream lacks well-defined channel ools at meander bends, or pools are filled with sediment.
			_	here are partially buried or sediment-choked culverts.
			Т	here are avulsion channels on the floodplain or adjacent valley floor.

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Table A3. Rating for Channel Equilibrium					
Rating	Description				
. /	Most of the channel throughout the SA is in equilibrium condition with little evidence of excessive aggradation or				
₹ 4	degradation based on the field indicators listed in Worksheet 12.				
	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.				
	There is evidence of severe aggradation or degradation throughout most of the channel through the SA. Circle primary				
C 2	process: aggradation or degradation.				
C 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
	<b>□</b> 4	<b>∑</b> 4	□4	Infrequent raw banks, less than 10% of steam bank under stress from trampling, slumping, vegetation removal or active erosion, etc.
Indicators of Bank	□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.
Soil Stability	<u>2</u>	□2	<b>□</b> 2	Significant raw banks and loose soil, 25%-50% of stream bank under stress, trampled, slumping or eroding etc.
	<u></u> 1	<u></u> 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	<b>□</b> 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	<b>□</b> 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.
	<u></u> 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	

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

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05

#### **A5 - Soil Surface Condition**

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 Indicate (C)
	<b>3</b>		Field Indicators (Check all existing conditions)
			Active erosion features due to anthropogenic disturbance (eg. rills, gullies, plant pedestals).
	X		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					
<u> </u>	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.					
<b>С</b> 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	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.					
C 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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**SA Name:** Two Mile Pond Reservoir Transect [ 2]

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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 "Unknov as Major Stressors in Dominant Stressor column(Pick up to 3)

			ect		Stressor Group/Stressor	Comments			
nk ⊩	Major	Minor	Absent	Unknown					
		300	Appellantes		Adverse water management				
	M		Z		Extended low flow dam releases				
					Timing of flow releases not concordant				
					Extended high flow dam releases				
			Q		Agriculture/Urban flow diversion upstream				
					Adverse sediment management				
					Adverse sediment retention by dams				
					Sediment loss by dredging				
					Adverse sediment input (roads/development)				
			- 15 mm		Artificial water additions				
			Q		Sewer treatment effluent				
					Point source urban runoff				
			\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		Factory, feedlot outfall				
					Agricultural irrigation ditch returns				
					Mining waste				
					Ground water pumping	All properties and the second			
					Urban depletions				
					Fracking				
					Agriculture irrigation wells				
	100				Watershed alteration				
			Q		Extensive recent fires in watershed				
					Extensive recent timber harvest				
					Extensive open pit mining in watershed				
					Livestock/wildlife overgrazing				
	111		1000000		Local biodiversity impacts				
					Evidence of excessive grazing (local)				
					Excessive noise affecting wildlife				
	0	0		0	Counts by Intensity				
lditio	onal Comi	ments	No	Wo	ter is going to the	in area			

Version Date: 04/25/2022

Schema: Montane 2.5

SA Code SF2MI[		SA Cove	r Worksheet	and the second second				
	2 ] SA Name: Tw	o Mile Pond Reservoir		Dunt 4 - 1	Olmandan A			
4 de Tsct [ 2					Riparian Ass	E-550 (000063-00-10)		
County Santa Fe					o Mile Pond	Reservoir		
SA General Location	and Roundany (Patient	The same of the sa	Elevation (ft) 72			oregion 6.	0 NWFM	
decommissione of water rights. Driving Directions Driving to Santa	ed due to safety concerns	located on the east side of regarding the reservoir a		ision to the area wa	s recently sr	nut down d	ue to lac	
		Santa Fe National Forest		Results to client only.	Fish Obse	erved in		
Surveyor Role		Surveyo	or Name		Wetla			
Landscape	Dustin a	1 1				Survey	or Initia	
Biotic	4	and Annie				P5+	An	
Abiotic	11	11				11	١	
Stressors	11	- 1	1			1		
Easting (m)	Northing (m)					11		
105° 53' 24" W	Northing (m) 35° 41' 23" N	Zone	Datum	Latitude	(DD ft)	Longitu	de (DD f	
29 A 10 W 10 O	33 41 23 N	13	NAD- 83 UT	TM 35.68972	2	-105	89	
Survey Date	5/15/24	Start Time		End T	ime			
		SA Descr	ription		A Marie State			
Landscape Conte	ext (summarize the wetla	nd and surrounding lands	scape; include co					
Sivean	landollons Seen	nd and surrounding lands  Vy and doesn  in aroa	scape; include co	mossture	70% g.	or!		
Biotic Condition (	andollons Seen	ry and doesn	scape; include co	motsture;	00% g.	w <i>i</i> /		
Blue bind willow tra	yegetation patterns, com  Narrow last  es, garter small	in area  sposition and structure, exposition wood  Approximately, Spotted Tool	exotics and invasion from	ives, disturbance ev	off training of the second of	and herbivo	ory)	
Blue bind willow tra	yegetation patterns, com  Narrow last  es, garter small  (hydrological alterations site impacts: explain the	nd and surrounding lands  Yy and doesn  in area  position and structure, ex  cotton wood App  (a, Spotted Tool  le.g., dams, walls etc.); flo	exotics and invasible free	ives, disturbance evi willow, Bo,	of overbank	and herbive	ory) 2 to 1	
Blue bind willow tra  Abiotic Condition furbance and other:	yegetation patterns, com  Narrow last  es, garter small  (hydrological alterations site impacts; explain the  Area still  channel an	in area  aposition and structure, expection wood App  (a, Spotted To-lead, dams, walls etc.]; flo hydrologic breaks or other  has no	exotics and invasion for factors that de most per most pe	ives, disturbance ever willow, Bo, disturbance existics and evidence estine the SA limits)	of overbank	and herbive	ory) 2 to 1	
Biotic Condition ( Blue bind Willow tra  Abiotic Condition turbance and other the  essment Summary	yegetation patterns, com  Narrow last  ves, garter small  (hydrological alterations site impacts; explain the  Area still  channel an	in area  position and structure, exposition wood App  (a, Spotted To:  le.g., dams, walls etc.]; flo hydrologic breaks or other  has no  the	exotics and invasible free hee.	ives, disturbance evi Willow, Bo, ristics and evidence efine the SA limits) water a destrian G,	idence, fire a Elder	and herbiver, Horse	oil	
Biotic Condition ( Blue bind Willow tra  Abiotic Condition Furbance and other  This the  essment Summary  Tre  area. Fecen	yegetation patterns, com  Narrow last  ves, garter small  (hydrological alterations site impacts; explain the  Area still  channel an	in aroa  position and structure, exposition wood Apple (a, Spotted Today  le.g., dams, walls etc.]; flo hydrologic breaks or other  has no in the  immary and comments a  eving and lot be turning,  changes	exotics and invasible free hee.	ives, disturbance evi Willow, Bo, ristics and evidence efine the SA limits) water a destrian G,	idence, fire a Elder	and herbiver, Horse	oil	

SA CODE: SF2MI[ Z]

SA Name: Two Mile Pond Reservoir Transect [ 2]

Date: 5/15/24

Surveyor Initials: D5

Final Score

3.25

Wt

MRAM - SA Rank Summary Worksheet: Montane Riverine Wetlands 2.5	
MRAM - SA Rank Summary Worksheet. Montaine Investment  Metric Description	Rating
ndscape Context	3
(2) 1. (2) 1. (2) 1. (3)	

		7.75	100000000000000000000000000000000000000
ndscape Context	3	0.25	0.75
Buffer Integrity Index	4	0.25	1.0
. Riparian Corridor Connectivity	4	0.25	1.0
. Relative Wetland Size	2	0.25	0.5

4. Surrounding Land Use iotic

0.2 1. Relative Native Plant Community Composition 0.2 2. Vegetation Horizontal Patch Structure 0.2 3. Vegetation Vertical Structure 0.2 4

34. Native Riparian Tree Regeneration 0.2 35. Invasive Exotic Plant Species Cover

Abiotic 0.3 A1. Floodplain Hydrologic Connectivity 0.2 A2. Physical Patch Diversity 0.2 4 0.2

A3. Channel Equilibrium A4. Stream Bank Stability and Cover 0.1 A5. Soil Surface Condition

Major Attribute	Score	Wt.	Wt. Score
Landscape Context	3.25	0.3	0.975
Biotic		0.35	
Abiotic		0.35	
SA WETLAN	D CONDITIO	ON SCORE Σ	3.12
SA WETLAN		=	B

Rank	Score	Description
Α	≥3.25 - 4.0	Excellent Condition
В	≥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	
And the amount of the second	0	0	1 Construction	
			2 No Water	
			3 Pedestrians	

tressor Comments	(Evaluation of risk)
	12

No water coming through old channel doesn't appear to affect the wall of willows

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

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## **Landscape Context**

Wor	ksheet	er Integri 1a. Buffer ded and co imagery).	and RCC Checklis	t. Check er eleme	off land cove nts that disru	r eleme ot ecosy	nts with estem co	in the buff onnectivity	er area or RCC o . Indicate the in	corridors that are either allo nagery type and date (seaso		
lmag	ery	Google Ea	rth KMZ. file			lmag	e Date	6/23				
Allow	ved buf	fer/RCC lan	nd cover elements					h	-21 .			
Buffer RCC B						Buffe	Excluded non-buffer/RCC land cover elements Buffer   RCC					
X	x	Natural or	semi-natural vege	tation pa	atches	×	[X]	Commerc	Commercial/residential developments, parking			
х	X	Small irrig	ation ditches witho	ut levee	!S	10			ams, bridges, revetments, and other structures			
		Old fields,	unmaintained			十片		Railroads	s, parks, golf courses, sports fields			
		Open rang						Maintaine	d levees, sedime staging areas	ent piles, construction		
X	X	Foot trails, intensity)	trails (low				nsive livestock areas, horse paddocks, feedlots					
X			el open water					Intensive agriculture: maintained pastures, ha row crops, orchards, and vineyards				
X Non-functioning abandoned veget naturally occurring levees					d levees, or	x			roads or developed second-order unpayed bu			
								Open wate tructure	r bounded by a	levee or other manmade		
		Other						Other				
orksl	heet 1k	. Buffer Pe	rcent Sub-metric.	Measure	or estimate	the perc	entage	of the				
x bel	ow. Rat	e the sub-n	n anowed buner en Netric using Table I							e L1a. Buffer Percent		
egrit	y Sumn	nary Worksh	neet 1d.	Tu and e	inter the ratiff	g on th	e Buffer		Rating	Buffer Percent		
			Buffer Percer	nt (%)=	85%				O 4	100%		
rkshe	eet 1c.	Buffer Wid	th Sub-metric. Me	asuro th	o longth of a	-1. 1. 66			<b>⊗</b> 3	≥80% - <100%		
		ap.,,,vc,	ade the line length	is and ra	e ierigin of ea te using Table	ich buff al 15 Er	er line ir	n meters in		≥50% - <80%		
Buffe		Try Summa	ry Worksheet 1d.		ig idbic	- L I D, LI	itei the	rating on	<u>0 1 </u>	<50%		
ne		er Width (m)	Buffer Width (ft)	Line	Buffer W (m)	idth	dth Buffer Width (ft)			e L1b. Buffer Width		
١	164	1.26	538.91	E	161.93		531.26		Rating	Average buffer width		
	125	5.25	410.92	F	231.48				<u>○ 4</u>	≥190m		
	115	5.39	378.57	G	121.25			).44	C 2	≥130 - <190m ≥65 - <130m		
,	111	.07					397	.80	O 1	<65m		
			364.40	Н	155.87		511.	.38		100111		
kshe	Averag et 1d.	Buffer Inte	grity Summary. Er	oter the	486.58		(ft)	00   10	Table L1c. S	ummary Rating for Buffer Integrity		
									Rating	Score		
VV. US	5	Buffer Inte Immary Wo	unty maex score, e	nter rati	ng for Buffer	Integrit	/ in Tabl	e L1c	O 4	>3.5		
n th			TRANCEL.					1		~· <b>~</b>		
<u> </u>									<b>⊗</b> 3	>2.5 - ≤3.5		
<u> </u>	Rating		ffer Width Rating	/2 =	Buffer I	ntegrity	/ Index	Score	<ul><li>Ø: 3</li><li>C 2</li><li>C 1</li></ul>	>2.5 - ≤3.5 >1.5 - ≤2.5		

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Date: 5/15/24

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## : - 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 egment upstream and downstream of the SA. Sum the values for each segment and alculate % Segment Disruption for the upstream side and the downstream side. Add the otal disruption for upstream and downstream segments and then calculate the % Total isruptions 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		n Segment	Downstream Segment			
Banks		Right Bank	Left Bank	Right Bank		
.) Total Bank Disruption (m)	0	0	0	0		
s) 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						
	<b>0%</b> total disruption on both segments combined.						
O 3	<15% total disruption on both segments combined.						
C 2	≥15% - <40% total disruption on both segments combined.						
O 1	≥40% total disruption on both segments combined.						

### 3 - Relative Wetland Size

**Norksheet 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						
	7		-	RSR	1		RSR	X	100	=	RWSI (%)
Current Size	1	Historic Size		TI.SIT			0.1		100		10
9	1	10	=	0.9	1	1	0.1	X	100	=	1.7

		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
		Wetland remains equal to or more than 60% of its natual size
C2	>40% - ≤70%	Wetland has been reduced by more than 40% its natural size
01	>70%	Wetland has been reduced by more than 70% its natural size

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### L4 - Surrounding Land Use

prksheet 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	+	+	
Unpaved roads (e.g., driveway, tractor trail, unpaved parking lots), paddock, dirt lot	0	0	0
Dredging, borrow pits, abandoned minos water fills be used to be a selected for the selected file be used to be a selected file be used to be use	0.1	0	0
Dredging, borrow pits, abandoned mines, water-filled artificial impoundments (ponds and reservoirs) Filling or dumping of sediment or soils	0.1	0	0
Intense recreation (all-terrain vehicle use, camping, popular fishing spot, etc.)	0.1	0	0
TOP TOPPEU CHAINE INIANIV MODIFICA -L- I III	0.3	0	0
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
Dam sites and flood-disturbed shorelines around water storage reservoirs	0.4	0	0
Abandoned artificial impoundments (ponds and reservoirs) and associated disturbed flood zones	0.5	0	0
Artificial/Constructed wetlands, irrigation ditches	0.5	10	5
Developed/Managed trail system (high use trail)	0.7	20	14
griculture - active tilled crop production	0.8	5	4
riculture - permanent crop (vineyards, propards, pursories, by	0.2	0	0
remedied lawns, sport fields, and golf courses: urban manicured parks	0.3	0	0
Id fields and other disturbed fallow lands dominated.	0.3	0	0
J	0.5	0	0
ature old fields and other fallow lands with natural composition, introduced hay field and pastures .g., perennial vegetation cover)	0.7	0	0
estoration areas in process to natural conditions (re-conversion in process)	0.8		
tying of fidure drassland (e.g. no tillage having the	0.8	65	52
moved, woodland/shrub vegetation conversion (chaining, cabling, rotochopping)  moved, tree plantation, Christmas tree farms	0.3	0	0
ective logging or tree removal with <50% of large trees (e.g., >30 cm diameter at breast height)	0.6	0	0
ture restoration areas returned to natural conditions (re-converted)	0.8	0	0
tural area, land managed for native vegetation - No agriculture, logging, development	0.9	0	0
s development	1	0	0
LUI Score= Coefficient * % LUZ Area		100	75

Table L4. Surr	ounding Land Use Rating
Rating	LUI Score
O 4	≥95 - 100
○ 3	≥80 - <95
<b>⊗</b> 2	≥40 - <80
$\bigcirc$ 1	<40

SA CODE: SF2MI [ 2 ]

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**Biotic Metrics** 

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 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 60 yourds 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 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-N 3 had e 100 producing one green China + Appendix D). Use the comments box for documenting and describing vegetation community patch features. 1.30 horse Comments Area Invasive Exotic Species (List Code(s)) None B4 Tree B5 Invasive Regeneration Exotic % Cover Species % Cover Noted None 166% B3 Vertical Structure Type 10 IVE INF1 IIIB1 IA1 IIA1 IA2 19 18 16 17 15 13 14 Polygon 1 12 10 6  $\infty$ 9 4 2 m

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**SA Name:** Two Mile Pond Reservoir Transect [  $\gtrsim$  ]

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B1 - Relative Native Plant Community Composition

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the same composition or a new (Tis created for the stratum in	Species appears in more than one strata, assigned to the same CT if it has the same composition or a new (T is created for the composition or a new (T is	ed to the same (T if	it has the same	compositio	n or a new	/ CT is create	ore than c	ne strata, a:	ssign the	species t	o the stratum
Polygon Nos	Tall Woody Stratum 1	tum 1	Short Woody Stratum 2	Stratum 2		Herbace	Jain ioi p	Herbaceous/Sparce Stratum 3			
	Species 1 <sup>E</sup>	Species 2 E	Species 3	Species 4	ies 4 E	Chocies	E E	- Siratum -	<u> </u>	CT Score 4	4
A 2	Norweaf //			1 / Profe		c sanado	Z	Species 6	J Z	Raw4	% SA <sup>5</sup> Wt Score6
Δ	C. Tennad 19	162	41000	>     t	Trees 5	Horse tal	5	Stort Lillar	5	4.00 100 g	100% 4.00
1. I rees and shrubs > 6 m (20 feet) and > 25% total stratum cover; 2. Trees and shrubs > 6 m (20 feet) and > 25% total stratum cover; 2. Trees and shrubs > 6 m (20 feet) and > 25% total stratum cover; 3. Trees and shrubs > 6 m (20 feet) and > 25% total stratum cover; 3. Trees and shrubs > 6 m (20 feet) and > 25% total stratum cover; 3. Trees and shrubs > 6 m (20 feet) and > 25% total stratum cover; 3. Trees and shrubs > 6 m (20 feet) and > 25% total stratum cover; 3. Trees and shrubs > 6 m (20 feet) and > 25% total stratum cover; 3. Trees and shrubs > 6 m (20 feet) and > 25% total stratum cover; 3. Trees and shrubs > 6 m (20 feet) and > 25% total stratum cover; 3. Trees and shrubs > 6 m (20 feet) and > 25% total stratum cover; 3. Trees and shrubs > 6 m (20 feet) and > 25% total stratum cover; 3. Trees and shrubs > 6 m (20 feet) and >	> 25% total stratum	Cover: 2 Trees and					Final W	'eighted Sc	ore7		

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 Page 7 of 17

SA Name:

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able B1.	<ol> <li>Relative Native Plant Community Composition Ratin</li> </ol>			
tating	CT Fina	l Weighted Score		
<u>. 4</u>	≥ 3.75	<10% non-native		
7	≥ 3.25 and <3.75	10% ≤20% non-native		
	> 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.

zontal Patch	Structure patte	n A,B,C, or D:

	Table B2. Rating for Vegetation Horizontal Patch Structure
Rating	<b>Description</b> 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.  be present, although the other patch types would be well represented and have more than one occurrence in the SA.  Pattern C. SA has a low degree of patch diversity and complexity. Two or three patch types may be present; however, a single,  Pattern C. SA has a low degree of patch diversity and complexity. Two or three patch types may be present; however, a single,
2	Pattern C. SA has a low degree of patch diversity and complexity. Two of three patents, patch you dominant patch type exists with the others occupying a small portion of the SA.  Pattern D. SA has essentially little to no patch diversity or complexity. The SA is dominated by a single patch type. Other patch
1	Pattern D. SA has essentially little to no patch diversity of complexity. The syrib demands of the syrib demands o

### 3 - Vegetation Vertical Structure

Torksheet 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.

	. Enter the total ' VST 1	VST 2	VST 5	Shrubland	VST 6W Herbaceous Wetland	VST 6H Herbaceous Vegetation	VST 7 Sparse Vegetation
Total % of SA	20			50	l 10 mate the C	A based on the	criteria in Table B

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 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.

ting on the 3A Ka	ank Summary Worksheet.	Co- or Sub-dominant VST ≥15%	Sub-dominant VST ≥5%
Rating	Dominant VST		6W and/or 6H
	1	5	
`	1	6W	CW and/or 6H
^ 4	2 or 1 and 2	5	6W and/or 6H
	1		
	2 or 1 and 2	5	
3	2 or 1 and 2	6W	
	5	6W	
	2 or 1 and 2		
2	5		
	6W		
	6S		
7 1 T	6H		
	7		

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B4 - Native Riparian Tree Regeneration	84 - N	Vative F	linaria	n Tuc	D		
		rative f	upana	n ire	ie Keč	jenera	ation

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

R	ating	Description
92	4	Native poles, sapling, and seedlings trees well represented, obvious regeneration, many patches or polygons with >5% cover, typically multiple size (age) classes.
$\circ$		Native poles, saplings and/or seedlings common, scattered patches or polygons with 1% -5% cover, size classes few.
$\cap$		Native poles, saplings and/or seedlings present but uncommon, restricted to one or two patches or polygons with typically cover, little size class differentiation.
0		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			
<b>5</b>	Invasive cover (%)	6	<b>cal</b> culate

Table B5. Ratings for Invasive Exotic Plant Species Cover		
Rating	Invasive Species Cover %	
O 4 ×	0%	
$\bigcap_{a} 3$	>0% - <1%	
( 2	≥1% - <10%	
0 1	≥10	

Additional CTs and Biotic Metric Commer	ts:
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#### **Abiotic Metrics**

#### 11 - Floodplain Hydrologic Connectivity

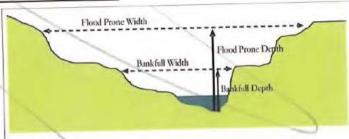
#### **Method 1**

Worksheet 10a. Floodplain Hydrologic Connectivity Measurements. The following six steps are conducted at each of three crosssections 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.

et. Photographs of each cross section are req	Curre costions	1	2	3
	COMPANY OF THE PROPERTY OF THE PARTY OF THE		-	
Measure the distance between the right and left bankfull contours will	ii a tape.			
Washing the tangleyel between the right and left bankfull contours, n	neasure the neight			
Double the estimate of maximum bankfull depth from Step 2.				_
Using a tape, measure the length of a level line at a height equal to the from Step 3 to where it intercepts the right and left banks.	e flood prone depth			
Divide the flood-prone width (Step 4) by the bankfull width (Step 1).	/		rata	
Calculate the average for Step 5 for all three replicate cross-sections. Using Table A1a. Enter the rating in the A1 box on the SA Rank Summ	Enter the average he nary Worksheet.	reand	rate	
	This is a critical step requiring familiarity with field indicators of the ba Measure the distance between the right and left bankfull contours with Keeping the tape level between the right and left bankfull contours, no of the line above the thalweg (the deepest part of the channel). A pool help here.  Double the estimate of maximum bankfull depth from Step 2.  Using a tape, measure the length of a level line at a height equal to the from Step 3 to where it intercepts the right and left banks.  Divide the flood-prone width (Step 4) by the bankfull width (Step 1).	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.  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.  Double the estimate of maximum bankfull depth from Step 2.  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.  Divide the flood-prone width (Step 4) by the bankfull width (Step 1).	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.  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.  Double the estimate of maximum bankfull depth from Step 2.  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.  Divide the flood-prone width (Step 4) by the bankfull width (Step 1).	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.  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.  Double the estimate of maximum bankfull depth from Step 2.  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.  Divide the flood-prone width (Step 4) by the bankfull width (Step 1).

Rating Method

Table A1a. Ra meandering	ating for Floodplain Hydrologic Connectivity in single-channel riffle-pool systems
Rating	Description
0 4	Average entrenchment ratio is ≥ 2.2;
C 3	Average entrenchment ratio is ≥1.9 - <2.2
0 2	Average entrenchment ratio is ≥1.5 - <1.9
0 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
П			Constructed levees preclude floodplain inundation
			Stream is straightened/channelized
			Inset floodplain formation
			Decreased peak flows due to hydrologic modification
П	In		Bankfull indicators at point of incipient flooding of the floodpla
			Indicators of overbank flow on floodplain

Floodplain inundation due to beaver activity

Table A1b. Connectivi	able A1b. Rating for Floodplain Hydrologic Connectivity in single-channel step-pool systems		
Rating	Description		
0 4	Average entrenchment ratio is ≥ 1.9		
O 3	Average entrenchment ratio is ≥1.4 - <1.9		
C 2	Average entrenchment ratio is ≥1.2 - <1.4		

Average entrenchment ratio is < 1.2

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#### Method 2

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.

Surveyor Initials:

1	Rating	
H		Description
С		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.
0	7	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.
0	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.).
C	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.

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				A Company of the Comp	and the second s	
2						
3			And the state of t	, part of the same		

Floodplain Hydrologic Connectivity Comments:

Not in	JSAI	Assesment	

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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
	X		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

Ratin		ating for Physical Patch Complexity  Description
C	4	<b>High</b> 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).
C	3	<b>Moderate</b> 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).
$\cap$	2	<b>Limited</b> 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).
X	1	<b>Little</b> 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)
		Ŕ		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.
		Ø		Perennial riparian vegetation is abundant and well established along the bankfull contour, but not below it.
		Ø		There is leaf litter, thatch, or wrack in most pools.
Indicators of		X		The channel contains embedded woody debris of the size and amount consistent with what is naturally available in the riparian area.
Channel Equilibrium		Ą		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).
		网		Channel and point-bars consist of well-sorted bed material.
		內		The channel bed is not planar and without an abundance of fine materials filling the interstitial spaces between larger stream substrate.
		Ņ		There are channel pools at meander bends and some deep pools within the reach.
				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.
Indicators of Active Degradation				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.
				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.
ndicators of Active Aggradation				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.
			Т	here 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.
	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.
	There is evidence of severe aggradation or degradation throughout most of the channel through the SA. Circle primary process: aggradation or degradation.
$\cap$ 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	ndition Upper Middle Segment Segment		Lower Segment	Field Indicators		
	<u></u> 4	<b></b>	<u></u> 4	Infrequent raw banks, less than 10% of steam bank under stress from trampling, slumping, vegetation removal or active erosion, etc.		
Indicators of Bank	□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.		
Soil Stability	<b>□</b> 2	<u></u> 2	<u></u> 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.		
	<u></u> 4	[∑]4	<u></u> 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.		
Indicators of Stream Bank Erosion Potential	<u></u> 2	<u></u> 2	<u></u> 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 ba	ank Stability and Cover Rating	
Rating	Description	
<b>6</b> 4	>3.5 - 4.0	
C 3	>2.5 - ≤3.5	
<u> </u>	>1.5 - ≤2.5	
C 1	1.0 - ≤1.5	

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#### **A5 - Soil Surface Condition**

brksheet 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).
	X		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					
O 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.					
C 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[ Z ]

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

Date: 5/15/24

Surveyor Initials :  $D \leq$ 

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 ak Major Stressors in Dominant Stressor column(Pick up to 3)

		Aff	fect		Stressor Group/Stressor	Comments
ık∦	Major	Minor	Absent	Unknown		
	-41		— — T		Adverse water management  Extended low flow dam releases	
			Ø		Timing of flow releases not concordant	
			Ó		Extended high flow dam releases	
					Agriculture/Urban flow diversion upstream	
		er sedil			Adverse sediment management	
					Adverse sediment retention by dams	
					Sediment loss by dredging	
			Ø		Adverse sediment input (roads/development)	
					Artificial water additions	
					Sewer treatment effluent	
					Point source urban runoff	
					Factory, feedlot outfall	
					Agricultural irrigation ditch returns	
					Mining waste	
	100				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	
	- 44				Local biodiversity impacts	
					Evidence of excessive grazing (local)	
					Excessive noise affecting wildlife	
	0	0		0	Counts by Intensity	
ditio	onal Comm	ents	Na	W	ater is going d	s this from

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

# **NMRAM Montane Riverine Wetlands Version 2.5**

CA Cada (Farma **)		SA Cove	er Worksheet			
SA Code SF2MI [ 2	orthanic: Two	o Mile Pond Reservoir		Project : R	iparian Ass	esement
ode Tsct [2]	AU Name : Tra	insect [2]			Mile Pond	
County Santa Fe	HUC 12 Head	dwaters Santa Fe River	Elevation (ft) 729			
A General Location A	and Roundany (Daties at			, ,		oregion 6.0 NWFN
Oriving Directions  Driving to Santa	Fe from Albuquerque vo	e, comments)  Illipia on the east side regarding the reservoir ou head north on Old Peir located to the North.		ion to the area was	recently sr	nut down due to lac
		ir located to the North.  Santa Fe National Fores	Data Sharing	Results to client	Fish Obse	erved in
Surveyor Role		Survey	or Name	only.	Wetla	
Landscape	Dustin Schwar		, or name			Surveyor Initi
Biotic	Annie McCoy					DS
Abiotic	Dustin Schwar	tz				AM
Stressors	Dustin Schwar	tz				DS
Easting (m)	Northing (m)	Zone	_			DS
105° 53' 24" W	35° 41' 23" N	13	Datum	Latitude	(DD ft)	Longitude (DD
Survey Date	6/11/24	Start Time	NAD- 83 UTN	35.689722	2	-105.89
	0/11/24	I STATT I IMA			SEA OF CONTROL OF CONT	
			9:00	End Ti	me	15:00
Landscane Contox	+/cummati-	SA Desc	cription			15:00
Landscape Contex	et (summarize the wetlar	SA Desc	cription			
Landscape Contex	it (summarize the wetlar	SA Desc	cription			
before	Channel Soli	SA Desc and and surrounding land is a sitti	dscape; include cor	ndition and impacts	s) dryish	just
Landscape Contex The before hum	Channel Soli	SA Desc and and surrounding land is a sitti	dscape; include cor	ndition and impacts	s) dryish	just
before ham	Channel and in wood	SA Descend and surrounding land is a sitting very wet Water com-	dscape; include cor	ndition and impacts	s) dryish	just and
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before ham  Biotic Condition (v.	channel has in med	SA Descend and surrounding land is a sitting very wet Water composition and structure of	discape; include cor ing mud for area, Tra	ndition and impacts and goes a acks of a Pipe belo	s) dryish annals an che	inst and nhol
before hum  Biotic Condition (v. Saw a De Willows	egetation patterns, com	SA Descended and surrounding land is a sitt wery wet wet water composition and structure, end and surrounding land.	dscape; include cor ing mud po area, Tra ing out of exotics and invasive	ndition and impacts and goes a  refs of a  Pipe below  es, disturbance evidence bumps	s) dryish annals an che	inst and nhol
before hum  Biotic Condition (v. Saw a De Willows	egetation patterns, com	SA Descended and surrounding land is a sitt wery wet wet water composition and structure, end and surrounding land.	dscape; include cor ing mud po area, Tra ing out of exotics and invasive	ndition and impacts and goes a  refs of a  Pipe below  es, disturbance evidence bumps	s) dryish annals an che	inst and nhol
before hum  Biotic Condition (v. Saw a De Willows out s	egetation patterns, com  er and swallow  are tarning  Bame amount o	SA Descend and surrounding land  is a sittle very wet wet water composition and structure, expension spotted for the structure of the structur	discape; include cor ing mud po area, Tra ing out of exotics and invasive extensions and invasive to where work	ndition and impacts and goes a places of a Pipe belo es, disturbance evic have bumps bling Vireo. 9	dryish ninals on che dence, fire a on lear rasson	and herbivory)
Biotic Condition (v. Saw a De Willows out s	egetation patterns, com  eer and swallow  are turning  Same amount of  nydrological alterations  ite impacts; explain the l	SA Descended and surrounding land of the solution and structure, experienced for the scene spotted for the scene sce	discape; include cor discape; include cor discape; include cor discape; include cor discape; include cor discape of the discape of the corrections	Pipe belowers of a Pipe belowers of a bumps wireo.	dry ish	and herbivory)  Solutions  Glooding; soil
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SA CODE: SF2MI[ 2 ]

SA Name: Two Mile Pond Reservoir Transect [ 2 ]

Date: 6/11/24

Surveyor Initials: DS/AM

NMRAM - SA Rank Summary Worksheet: Montane Riverine Wetlands 2.5

MRAM - SA Rank Summary Worksheet: Montane Riverine Wetlands 2.5	Rating	Wt	Final Score
Metric Description		Σ 1.0	3.25
andscape Context	3	0.25	0.75
_1. Buffer Integrity Index	4	0.25	1.0
2. Riparian Corridor Connectivity	4	0.25	1.0
L3. Relative Wetland Size	2	0.25	0.5
L4. Surrounding Land Use		Σ	
Biotic	*	0.2	
B1. Relative Native Plant Community Composition	2	0.2	
B2. Vegetation Horizontal Patch Structure	3	0.2	
B3. Vegetation Vertical Structure	- J	0.2	
B4. Native Riparian Tree Regeneration	Ц	0.2	
B5. Invasive Exotic Plant Species Cover		5	
Abiotic		0.3	
A1. Floodplain Hydrologic Connectivity		0.2	
A2. Physical Patch Diversity	- 4	0.2	
A3. Channel Equilibrium	7	0.2	
A4. Stream Bank Stability and Cover		0.1	
A5. Soil Surface Condition		0,1	

0.3	0.975
	_
0.35	
0.35	
SCORE Σ	3.04
	0.35

Rank	Score	Description
Α	≥3.25 - 4.0	Excellent Condition
В	≥2.5 - <3.25	Good Condition
С	≥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	Pedrstulans

Stressor Comments (Evaluation of risk)

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

SA CODE: SF2M[2]

SA Name: Two Mile Pond Reservoir Transect [ 2 ]

Date:

6/11/24

Surveyor Initials: DS/AM

Landscape Context
- Buffer Integrity Index

or are	<b>Yorksheet 1a. Buffer and RCC Checklist.</b> Check off land cover elements within the bear excluded and considered non-buffer elements that disrupt ecosystem connectived year of imagery).							y.	aicate tile l	mayery type and date (seaso	
and y	ear of i										
Image	·		rth KMZ. file			lmag	e Date		6/23		
Allow	ed buff	er/RCC land	d cover elements			Exclu	ded no	on-buff	er/RC0	Cland cover	elements
Buffer	rIRCC					Buffe	r RCC			- Idiid COVC/ (	riements
X	X		semi-natural vege			X	X	Com	mercia	al/residential	developments, parking lots, nts, and other structures
х	X	Small irriga	ntion ditches witho	ut levees		$\perp_{\Box}$	$\vdash_{\sqcap}$				es, sports fields
		Old fields,	unmaintained			十片	$+ \exists$	Railro		vs, gon cours	es, sports fields
		Open range	e land					Maint	tained	levees, sedir taging areas	nent piles, construction
×	X	Foot trails, intensity)	horse trails, unpav	ed bike tr	ails (low						horse paddocks, feedlots
×	X	Non-chann	el open water					Intens	ive ag	riculture: ma	intained pastures, hay fields.
X	X	Non-function naturally oc	oning abandoned v curring levees	vegetated	l levees, or	X	×		roads	orchards, and or develope	vineyards d second-order unpaved but
		inpaved tw	o tracks roads					.1			a levee or other manmade
<u> </u>		•				X	X	Structi	ırα		
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prkshee GIS oo e Buffe ine A B C D orkshee L1b a ow. Us	heet 1b meter cow. Rate y Summ eet 1c. I or on the er Integr Buffe 164 125 111 Averag	Buffer Widte map. Averity Summar Width (m)  2.25  3.39  .07  e  Buffer Interior Summar Width (m)	rcent Sub-metric. f allowed buffer electric using Table Leet 1d.  Buffer Percer Sh Sub-metric. Meage the line length ry Worksheet 1d.  Buffer Width (ft)  538.91  410.92  378.57  364.40  148.31 (m)  grity Summary. Ethe Buffer Integrity grity Index Score.	ements and 1a and er ont (%)=  assure the ons and rate  Line  F  G  H  Inter the so one of the original properties of the origina	85%  length of ea e using Table  Buffer W (m)  161.93  231.48  121.25  155.87  486.58	ch buff L1b. Er idth	centag ffer Pe e Buffe  er line nter th  5  7  39  51  (ft)  om Tal ala in the	in metier rating  ffer Wing (ft)  i31.26  59.44  97.80  1.38  bles L12  ne box ble L12	ers in g on dth	Rating  A  Rating  A  B  C  C  C  C  C  C  C  C  C  C  C  C	Buffer Percent  100%  ≥80% - <100%  ≥50% - <80%  <50%  ble L1b. Buffer Width  Average buffer width  ≥190m  ≥130 - <190m  ≥65 - <130m  <65m  Summary Rating for Buffer Integrity  Score

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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	n Segment	Downstrea	m 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	al Disruption both segments		0	
E) % Total Disruptions = (D/2000)*100	Zero dis	ruption notic	eable along	the banks.

Та	ble L2. RCC Rating
Rating	Description
	<b>0%</b> total disruption on both segments combined.
C 3	<15% total disruption on both segments combined.
O 2	≥15% - <40% total disruption on both segments combined.
O 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						R	NSI		
Current Size	1	Historic Size	=	RSR	1	-	RSR	Х	100	=	RWSI (%)
Current Size		1.110.500,70.00		Salar III			0.1	V	100	_	10
9	1	10	=	0.9	1	-	0.1	X	100	- T	

		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
	>10% - ≤40%	Wetland remains equal to or more than 60% of its natual size
C2	>40% - ≤70%	Wetland has been reduced by more than 40% its natural size
01	>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

T	able L4. Suri	rounding Land Use Rating
R	ating	LUI Score
$\circ$	4	≥95 - 100
$\circ$	3	≥80 - <95
<b>®</b>	2	≥40 - <80
0	1	<40

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**Biotic Metrics** 

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Species Cover (BS) 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 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 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 Listnumber 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 Appendix D). Use the comments box for documenting and describing vegetation community patch features.

Append	Appendix D). Use the confinence box for docamening and describing	וופווראסמ כזוופוו	accalliciting t	6	
Polygon No	B3 Vertical Structure Type	84 Tree Regeneration % Cover	B4 Tree B5 Invasive Regeneration Exotic % Cover Species % Cover	Invasive Exotic Species (List Code(s))	Comments
1	IA1				4 1 27
2	IA2	909	Nonesaen	Nonc	Avea is sprouting many tray new growths o're to recom rain
м	IIA1				
4	IIIB1				
2	IIIC1				
9	IVEI				
7	IVF1				
∞					
6					
10					
=					
12					
13					
14				Q e	
15					
16					
17					
18					
19					
20					

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Surveyor Initials: 7 1M

**B1 - Relative Native Plant Community Composition** 

$\vdash$				Tall Wood: 64-64-67-67-67-67-67-67-67-67-67-67-67-67-67-	0.0	1				מוניסוו כו מ	וע אי לי	Is created i	or trie pr	Jiygon.				
$\top$				I all woody Stratum	y stratui	- - -		Short Woody Stratum <sup>2</sup>	dy Stratı	7 mr		Herbaceou	ıs/Sparse	Herbaceous/Sparse Stratum <sup>3</sup>		CT Score 4	e 4	
2	Polygon Nos.	-  -  -	-	Species 1	υZ	Species 2	uZ	Species 3	ш Z	Species 4	ш Z	Species 5	ш 2	Species 6	ш 2	Raw4	% SA5	Wt Score6
4				Nevicul leaf	>	Dor	$\geq$	Willow Twee?	$\sim$	Apple trees	2	Horse,	$\geq$	Medon	>	arh	(0)	4.0%
<u>—</u>														Ten se		- 1	) )	3
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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 stratum cover. <sup>4</sup>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 for Relative Native Plant Community Composition on the SA Rank Summary Worksheet. SA CODE: SF2MI[ ≥ ]

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Table B1	. Relative Native Plant C	ommunity Composition Rating
Rating	CT Fina	al Weighted Score
Ø 4	≥ 3.75	<10% non-native
C 3	≥ 3.25 and <3.75	10% ≤20% non-native
C 2	> 2.0 and <3.25	20% ≤50% non-native
O 1	≤2.0	>50% non-native

#### 2 - Vegetation Horizontal Patch Structure

**Vorksheet 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.

lorizontal Patch Structure pattern A,B,C, or D	Iorizontal	Patch	Structure	pattern	A,B,C,	or D:
--	------------	-------	-----------	---------	--------	-------

	Table B2. Rating for Vegetation Horizontal Patch Structure				
ating	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.				

#### 33 - 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	V 2			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%
	1	5	6W and/or 6H
C 4	1	6W	
	2 or 1 and 2	5	6W and/or 6H
	1		
	2 or 1 and 2	5	
<b>☆</b> 3	2 or 1 and 2	6W	
	5	6W	
	2 or 1 and 2		
C 2	5		
	6W		
	6S		
	6H		
	7		

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В4	- Native	Riparian Tree Regeneration			
1	B4. Na	tive Riparian Tree Regeneration rating. Using	the polygon perce	nt cover of native tree	seedlings, saplings and poles from
1		rate the SA based on polygon percent cover and	patch density. Ente	er the rating on the SA	Rank Summary Worksheet.
F	Rating		Description		
X		Native poles, sapling, and seedlings trees well re cover, typically multiple size (age) classes.			1
$\circ$	3	Native poles, saplings and/or seedlings common	, scattered patches	or polygons with 1% -	5% cover, size classes few.
$\circ$	2	Native poles, saplings and/or seedlings present be < 1% cover, little size class differentiation.	out uncommon, res	tricted to one or two p	atches or polygons with typically
$\overline{C}$		Native poles, saplings, and/or seedlings absent (0	0% cover).		
Wor	ksheet 9.	Exotic Plant Species Cover  Based on Worksheets 5 and 6, calculate or estimesing Table B5 and enter the rating on the SA Rank	ate the percentage k Summary Worksh	cover of invasive exot	ic species for the SA and enter
	Rating	Method	Invasive cover	(%)	calculate .
Ta	able B5. R Rating	atings for Invasive Exotic Plant Species Cover Invasive Species Cover %			
	4 📉	0%			
	3	>0% - <1%			
	<u> </u>	≥1% - <10%			
$\Box$	) 1	≥10			
Ado	ditional CT	's and Biotic Metric Comments:			

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#### **Abiotic Metrics**

#### A1 - Floodplain Hydrologic Connectivity

#### Method 1

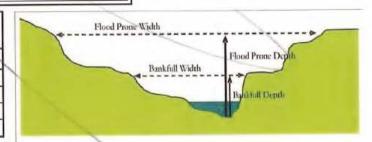
Worksheet 10a. Floodplain Hydrologic Connectivity Measurements. The following six steps are conducted at each of three cross-sections at the approximate mid-points along straight riffles and away from deep pools or meander bends. Use a measuring tape and temporary stakes for horizontal measurements, 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 Cros	s-section:	1	2	3
1: Bankfull width	This is a critical step requiring familiarity with field indicators of the bankfull of Measure the distance between the right and left bankfull contours with a tap	ontour. e.			
2: Maximum bankfull depth	Keeping the tape level between the right and left bankfull contours, measure of the line above the thalweg (the deepest part of the channel). A pocket line help here.	the height level can			
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).	1			
6: Calculate average ratio	Calculate the average for Step 5 for all three replicate cross-sections. Enter the using Table A1a. Enter the rating in the A1 box on the SA Rank Summary Wo	e average he ksheet.	re and I	rate	

Rating Method

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

meandering single chamber time poor systems				
Rating	Description			
0 4	Average entrenchment ratio is ≥ 2.2;			
O 3	Average entrenchment ratio is ≥1.9 - <2.2			
O 2	Average entrenchment ratio is ≥1.5 - <1.9			
0 1	Average entrenchment ratio is < 1.5			



Worksheet 10b. Floodp	lain Hydrologic Connectiv	rity Indicators. Use this
Worksheet in conjunctio	n with Table A1c. Check the	boxes for all that apply to each
segment.	/	

segme	ent.	1	
U	M	L	Indicator
			Bankful is slightly below bank height
			Bankful is well below bank height and channel is incised
	D		Channel widening due to bank failure
		Q	Constructed levees preclude floodplain inundation
			Stream is straightened/channelized
		D	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			
0 4	Average entrenchment ratio is ≥ 1.9			
C 3	Average entrenchment ratio is ≥1.4 - <1.9			
O 2	Average entrenchment ratio is ≥1.2 - <1.4			
0 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
0	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.
0	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.
0	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.).
0	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.

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	Anna de la companya del companya de la companya del companya de la		A Company of the Comp	Market St. Co.	and the second s	
2			L			
3						

Floodplain Hydrologic Connectivity Comments:

·	Not in	JSAI	Assosment

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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
	<b>3</b> .		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	ole A2. Rating for Physical Patch Complexity						
Ratin	g	Description					
C	4	<b>High</b> 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).					
C	3	<b>Moderate</b> 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).					
C	2	<b>Limited</b> 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	<b>Little</b> 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, $\leq 5$ 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.

	1 11	2 44 1 11	T	
Condition	Upper Segment	Middle Segment	Lower Segment	Field Indicators(check all existing conditions)
		囟		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.
		ĽŻ		Perennial riparian vegetation is abundant and well established along the bankfull contour, but not below it.
		南		There is leaf litter, thatch, or wrack in most pools.
Indicators of		Ŋ		The channel contains embedded woody debris of the size and amount consistent with what is naturally available in the riparian area.
Channel Equilibrium		Þ		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).
		A		Channel and point-bars consist of well-sorted bed material.
		囟		The channel bed is not planar and without an abundance of fine materials filling the interstitial spaces between larger stream substrate.
Ç.		Į.		There are channel pools at meander bends and some deep pools within the reach.
				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.
Indicators of Active Degradation				Channel bed is scoured to large cobbles or boulders and entrained bank material is filling the cobble interstices and pools.
			ר 🗆	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.
			☐ T a	here is abundant fresh splays of coarse sediment covering the floodplain bove the natural point bar elevation.
			Т	here are partially buried living tree trunks or shrubs along the banks.
ndicators of Active Aggradation			□  T	he channel bed is planar overall. The stream lacks well-defined channel ools at meander bends, or pools are filled with sediment.
			П	here are partially buried or sediment-choked culverts.
			<u> </u>	here are avulsion channels on the floodplain or adjacent valley floor.

SA Name:

SF2MI[ 2 ]

Two Mile Pond Reservoir Transect [ 2 ]

Date: 6/11/24

Surveyor Initials: DS/AM

	Table A3. Rating for Channel Equilibrium							
Rating	Description							
<b>4</b>	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.							
C 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.							
$\cap$ 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
	<u></u> 4	<u></u> 4	<u></u> 4	Infrequent raw banks, less than 10% of steam bank under stress from trampling, slumping, vegetation removal or active erosion, etc.
Indicators of Bank	□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.
Soil Stability	<u></u> 2	<u></u> 2	<u></u> 2	Significant raw banks and loose soil, 25%-50% of stream bank under stress, trampled, slumping or eroding etc.
	<u></u> 1	<u></u> 1	<u></u> 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.
	□4	<b>A</b>	□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.
Indicators of Stream Bank Erosion Potential	<u></u> 2	□2	<u></u> 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	İ
,	

Rating	Description
<b>6</b> 4	>3.5 - 4.0
C 3	>2.5 - ≤3.5
C 2	>1.5 - ≤2.5
C 1	1.0 - ≤1.5

SA CODE: SF2MI[ 2]

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

Date: 6/11/24

Surveyor Initials: DS/AM

# **A5 - Soil Surface Condition**

**Vorksheet 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).
	ĮŽĪ		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					
O 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.					
O 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.					
<b>∩</b> 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.					
<b>Ø</b> 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 [ )

Date: 6/11/24

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

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 "Unknow" and Major Stressors in Dominant Stressor column(Pick up to 3)

		Aff	ect		Stressor Group/Stressor	Comments
ank	Major	Minor	Absent	Unknown	•	
			e de la composição de l		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	
			口口		Sediment loss by dredging	
	П	ПП			Adverse sediment input (roads/development)	
					Artificial water additions	
	Τσ				Sewer treatment effluent	
					Point source urban runoff	
					Factory, feedlot outfall	
					Agricultural irrigation ditch returns	
	<del>  -</del>				Mining waste	
		1	7		Ground water pumping	
					Urban depletions	
					Fracking	
					Agriculture irrigation wells	
					Watershed alteration	
	$\Box$				Extensive recent fires in watershed	
			T p		Extensive recent timber harvest	
					Extensive open pit mining in watershed	
					Livestock/wildlife overgrazing	
		10 - 10 - 10 - 10 - 10 - 10 - 10 - 10 -	U properties	and the second	Local biodiversity impacts	DATERIAL SALESCEN EN ESCALUTAR DE TRANSPORTA DE PROPERTA DE LA CARRELLA DE LA CARRELLA DE LA CARRELLA DE LA CA La companya de la co
.050.000000					Evidence of excessive grazing (local)	
<b>U</b>					Excessive noise affecting wildlife	
	0	0		0	Counts by Intensity	
Additi	onal Comn	nents	Me	No to	is going to	his area

Version Date: 04/25/2022

Schema: Montane 2.5

# NMRAM Montane Riverine Wetlands Version 2.5

		SA Cove	er Worksheet	Park Indian	STATE OF STREET
SA Code SF2MI[	3 ] SA Name: Two	Mile Pond Reservoir		Project : Ripariar	1 Assesement
A de Tsct [ 3	] AU Name : Tran	nsect [ ] ]	49,00	WOI : Two Mile F	TOTAL CONTRACTOR CONTRACTOR
County Santa Fe	HUC 12 Heads	waters Santa Fe River	Elevation (ft) 7299	(m) 2224.7	Ecoregion 6.0 NWFM
A riparian syster decommissione of water rights. Driving Directions Driving to Santa	and Boundary (Rationale, m that leads into a pond lo d due to safety concerns r a Fe from Albuquerque yo ntil you reach the reservoir	ocated on the east side regarding the reservoir	and a water diversion t	o the area was recen	I Forest. This reservoir was only shut down due to lack
Ownership The Natu	re Conservative and The S	Santa Fe National Fores	Data Sharing Resu Restrictions only	A. I I I I I I I I I I I I I I I I I I I	Observed in Wetland?
Surveyor Role		Surve	yor Name	111111111111111111111111111111111111111	Surveyor Initials
Landscape	Dustin Sch	marte A	inie McCoy		DS+MC
Biotic	4	7/1	THE TICCOY		4 "
Abiotic	4		•	1	# 15
Stressors	11			V	11
Easting (m)	Northing (m)	Zone	Datum	Latitude (DD f	
-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	
grow	Ang near "is	waking up	lots of a	lead leave.	s cover the
SA Biotic Condition	(vegetation patterns, com	position and structure	, exotics and invasives.	disturbance evidenc	e fire and harbivons
Boe Fly Aside	From currount :	small buds for	eming on willow	and buzzing	with bees woods
SA Abiotic Condition disturbance and othe	n (hydrological alterations er site impacts; explain the	(e.g., dams, walls etc.)	flooding characteristics	cand audden as of au	erbank flooding; soil
The gro	ound is co	overed in o	land leaves .	and bran	
beaver	dam' still	holds the n	mater a 7"	above outs	ide ground level
Assessment Summar	ry (Overall site condition s	ummary and commen	s after the field data is	collected.)	
Lano alread	ly starting	Recovering to become	From winter me prominer	d in area.	is arc
ovisional Ran eld Score Ran	k Surveyor(s)	Final Score	Rank A In	nitials DCS	Date 4/9/24

SA CODE: SF2MI[ 3 ]

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

Date: 4/9/24
Surveyor Initials: DC5

NMRAM - SA Rank Summary Worksheet: Montane Riverine Wetlands 2.5

Rating	Wt	Final Score	
	Σ 1.0	3.25	
3	0.25	0.75	
4	0.25	1.0	
4	0.25	1.0	
2	0.25	0.5	
	Σ		
3	0.2		
4	0.2		
3	0.2		
3	0.2		
3	0.2		
	Σ		
· ·	0.3		
A1. Floodplain Hydrologic Connectivity A2. Physical Patch Diversity			
Ч	0.2		
Y	0.2		
4	0.1		
	3 4 4 2 3 4 3 3 3	Σ 1.0  3 0.25  4 0.25  4 0.25  2 0.25  Σ  3 0.2  4 0.2  5 0.2  7 0.2  7 0.2  8 0.2  9 0.2  10 0.2  11 0.2  12 0.2  13 0.2  14 0.2  15 0.2  16 0.2  17 0.2  18 0.2  19 0.2  19 0.2  19 0.2  19 0.2  19 0.2  19 0.2	

SA Condition	n Scoring Su	mmary	
Major Attribute	Score	Wt.	Wt. Score
Landscape Context	3.25	0.3	0.975
Biotic		0.35	
Abiotic		0.35	
SA WETLAN	D CONDITIO	N SCORE Σ	
SA WETLAN	D RANK =		

Rank	Score	Description
Α	≥3.25 - 4.0	Excellent Condition
В	≥2.5 - <3.25	Good Condition
С	≥1.75 - <2.5	Fair Condition
D	1.0 - <1.75	Poor Condition

Stressor Summary	Major	Minor	Top Three	
	0	0	1	
			2	
			3	

ressor Comments (Evaluation of risk)		

**SA CODE:** SF2MI[3]

**SA Name:** Two Mile Pond Reservoir Transect [ | 3 ]

Date: 4/9/24

Surveyor Initials: DC

# **Landscape Context**

# Lı - Buffer Integrity Index

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 $\Box$ 

Other

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). Google Earth KMZ, file **Imagery** Image Date 6/23 Allowed buffer/RCC land cover elements Excluded non-buffer/RCC land cover elements Buffer RCC Buffer RCC Commercial/residential developments, parking lots, X Natural or semi-natural vegetation patches X Х dams, bridges, revetments, and other structures X Small irrigation ditches without levees Lawns, parks, golf courses, sports fields Old fields, unmaintained Railroads Maintained levees, sediment piles, construction  $\Box$ Open range land materials, staging areas Foot trails, horse trails, unpaved bike trails (low X X П Intensive livestock areas, horse paddocks, feedlots intensity) Intensive agriculture: maintained pastures, hay fields, X X Non-channel open water row crops, orchards, and vineyards Non-functioning abandoned vegetated levees, or Paved roads or developed second-order unpaved but X  $\mathbf{x}$ X X naturally occurring levees graded roads Open water bounded by a levee or other manmade unpaved two tracks roads Х X 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%

**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
В	125.25	410.92	F	231.48	759.44
c	115.39	378.57	G	121.25	397.80
D	111.07	364.40	Н	155.87	511.38
	Average	148.31 (m)		486.58	(ft)

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	+ Buff	er Width Rating	/2 =	Buffer Integrity Index Score
3	+	3	/2 =	3

	Table L1a. Buffer Percent						
R	lating	Buffer Percent					
$\cap$	4	100%					
Œ	3	≥80% - <100%					
$\cap$	2	≥50% - <80%					
$\bigcirc$	1	<50%					

	Table L1b. Buffer Width						
Rating Average buffer width							
C	4	≥190m					
(X)	3	≥130 - <190m					
$\overline{C}$	2 ·	≥65 - <130m					
$\cap$	1	<65m					

 Table L1c. Summary Rating for Buffer Integrity

 Rating
 Score

 C
 4
 >3.5

 (X
 3
 >2.5 - ≤3.5

 C
 2
 >1.5 - ≤2.5

 C
 1
 ≤1.5

SA CODE: SF2MI[3]

SA Name: Two Mile Pond Reservoir Transect [ 3]

Surveyor Initials: DC5

# 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	n Segment	Downstrea	m 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	(	)	
D) Total Disruption both segments		(	0		
E) % Total Disruptions = (D/2000)*100	Zero dis	ruption notic	eable along	the banks.	

Та	ble L2. RCC Rating
Rating	Description
	<b>0%</b> total disruption on both segments combined.
C 3	<15% total disruption on both segments combined.
C 2	≥15% - <40% total disruption on both segments combined.
C 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						R	WSI		
Current Size	1	Historic Size	=	RSR	1	2	RSR	х	100	=	RWSI (%)
9	1	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						
C3	>10% -≤40%	Wetland remains equal to or more than 60% of its natual size						
C 2	>40% - ≤70%	Wetland has been reduced by more than 40% its natural size						
C1	>70%	Wetland has been reduced by more than 70% its natural size						

SF2MI[ 3]

Date: 4/9/24

SA Name:

Two Mile Pond Reservoir Transect [  $\supset$  ]

**Surveyor Initials:** 

DCS

# 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

T	Table L4. Surrounding Land Use Rating						
R	ating	LUI Score					
C	4	≥95 - 100					
$\bigcap$	3	≥80 - <95					
(X)	2	≥40 - <80					
$\subset$	1	<40					

SA CODE: SPZMI [ 5]

**Biotic Metrics** 

SA Name: Two Mile Pond Reservoir Transect [ > ]

Surveyor initials:

Date: 4/7/24

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 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 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. 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

1	Charles Charles	B4 Tree	35 Invasive	Invasive Exotic Species	
No	Type	Regeneration B	exotic Species % Cover	(List Code(s))	Comments
1	IA1	42			
2	IA2	9,55	7 2%	Mullein	Ground Pull of dead leavest branches, Current growing
3	IIA1	4004	NIA	None	Grosses, Currant, elderbugs, one like bird
4	1111811				
2	IIIC1				
9	IVEI				
7	IVF1				
∞					
6					
10					
11					
12					
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17					
18					
19					
20					

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**SA Name:** Two Mile Pond Reservoir Transect [  $\preceq$  ]

SA CODE - SF2MI[ 🔼]

Date: 4/9/24 Surveyor Initials:

**B1 - Relative Native Plant Community Composition** 

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 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 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	v Stratum 1			Short Woods Stration 7	T Company	Short Woods State 2		רו במובה זר	י ווע א	iygori.				
t	Dollars Nice		1			DOM TIGHT	uy surau			lerbaceous	/>parse	Herbaceous/Sparse Stratum 3		CT Score 4	4	
5	rolygon lvos.	Species 1	ız		. Z	Species 3 C		Species 4 E	<u>N</u>	Species 5 E		Species 6	шZ	Raw4	% SA5	% SA <sup>5</sup> Wt Score <sup>6</sup>
∢	2	Elm	2	Birch	2	Willers N	2			Mallen		Mesobor	1	N 2.4	So	42
8	3	Cottonnog	3	8,1	>	7	2			12 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		B. L. M.	. 2		2	175
U					1	C 200 11	}					Vezi yrain				
ے ا																
2																
ш																
<b>Ц</b>																
ט																
н																
_						*										
ſ																
У																
٦																
Σ																
z																
0																
											Final	Final Weighted Score <sup>7</sup>	Score7			5.5
<u>-</u> t	1. Irees 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	1 > 25% tota	l stratum cov	າ cover; 2. Tr∈	ees and	shrubs ≤6n	, (20 fee	t) and >25% to	otal stra	atum cove	7.3. Her	paceous (g	raminoic	ds and fc	rbs)>109	% total

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 stratum cover. <sup>4</sup>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 for Relative Native Plant Community Composition on the SA Rank Summary Worksheet.

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SA Name:

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Table B1	. Relative Native Plan	t Community Composition Rating
Rating	CTF	inal Weighted Score
4	≥ 3.75	<10% non-native
<b>5</b> 3	≥ 3.25 and <3.75	10% ≤20% non-native
<b>^</b> 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.
` 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	VST 2	VST 5	VST 6S	VST 6W	VST 6H	VST 7
	High Structure	Low Structure	Tall Shrubland	Short	Herbaceous	Herbaceous	Sparse
	Forest	Forest		Shrubland	Wetland	Vegetation	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 low 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 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 lable 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 lating on the SA Rank Summary Worksheet.

Rating	Dominant VST	Co- or Sub-dominant VST ≥15%	Sub-dominant VST ≥5%
	1	5	6W and/or 6H
^ 4	1	6W	
	2 or 1 and 2	5	6W and/or 6H
	1		
₹ 3	2 or 1 and 2	5	
<b>7</b> 3	2 or 1 and 2	6W	
	5	6W	
	2 or 1 and 2		
2	5		
ľ	6W		
	6S		
1	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
C 4	Native poles, sapling, and seedlings trees well represented, obvious regeneration, many patches or polygons with >5% cover, typically multiple size (age) classes.
<i>(</i> 7∕′ 3	Native poles, saplings and/or seedlings common, scattered patches or polygons with 1% -5% cover, size classes few.
C 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.
C 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.

Doting Mathead	
Rating Method	

Invasive cover (%)

calculate

Table B5. Ratings for Invasive Exotic Plant Species Cover			
Rating		Invasive Species Cover %	
C 4		0%	
7 3	X	>0% - <1%	
ι 2	1	≥1% - <10%	
C 1		≥10	

#### Additional CTs and Biotic Metric Comments:

Bee flys over flowing causing green grasses current has bees.

SA CODE:	SF2MI[ <sup>3</sup> ]	Date :	4/9/24
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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.

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

Tabl	e A2. R	ating for Physical Patch Complexity
Rati	ng	Description
K	4	<b>High</b> 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).
C	3	<b>Moderate</b> 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).
C	2	<b>Limited</b> 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).
C	1	<b>Little</b> 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, $\leq 5$ 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)
		À		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.
		Ď		Perennial riparian vegetation is abundant and well established along the bankfull contour, but not below it.
		Ø		There is leaf litter, thatch, or wrack in most pools.
Indicators of		Ø		The channel contains embedded woody debris of the size and amount consistent with what is naturally available in the riparian area.
Channel Equilibrium		Ø		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.
		[X]		The channel bed is not planar and without an abundance of fine materials filling the interstitial spaces between larger stream substrate.
		M	П	There are channel pools at meander bends and some deep pools within the reach.
				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.
Indicators of Active Degradation				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.
				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.
ndicators of Active Aggradation				The channel bed is planar overall. The stream lacks well-defined channel pools at meander bends, or pools are filled with sediment.
				here are partially buried or sediment-choked culverts.
			Т	here are avulsion channels on the floodplain or adjacent valley floor.

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**SA Name:** Two Mile Pond Reservoir Transect [ ]

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	Table A3. Rating for Channel Equilibrium			
Rating	Description			
<b>4</b> 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.			
C 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.			
C 2	There is evidence of severe aggradation or degradation throughout most of the channel through the SA. Circle primary process: aggradation or degradation.			
C 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
	<u></u> 4	<b>[</b> ]4	□4	Infrequent raw banks, less than 10% of steam bank under stress from trampling, slumping, vegetation removal or active erosion, etc.
Indicators of Bank	□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.
Soil Stability	□2	<u></u> 2	□2	Significant raw banks and loose soil, 25%-50% of stream bank under stress, trampled, slumping or eroding etc.
	1	1	1 <sub>.</sub>	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.
	<u></u> 4	<b>⊅</b> 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.
Indicators of Stream Bank Erosion Potential	<u></u> 2	<u></u> 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

Rating	Description	
× 4	>3.5 - 4.0	
3	>2.5 - ≤3.5	
C 2	>1.5 - ≤2.5	
C 1	1.0 - ≤1.5	

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

Date: 4/9/24

Surveyor Initials: DCS

# **A5 - Soil Surface Condition**

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).		
	$\boxtimes$		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						
<b>⊘</b> 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.						
<u> </u>	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.						
<u> </u>	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.						
C 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	COD	E :	SF2MI [	[ ろ]

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**SA Name:** Two Mile Pond Reservoir Transect [  $\supset$  ]

Surveyor Initials: DC5

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 "Unknowink Major Stressors in Dominant Stressor column(Pick up to 3)

ank	Affect			Stressor Group/Stressor	Comments	
alik	Major	Minor	Absent	Unknown	•	Comments
	1 a major i		plis.		Adverse water management	
					Extended low flow dam releases	
			Ď		Timing of flow releases not concordant	
					Extended high flow dam releases	
					Agriculture/Urban flow diversion upstream	
					Adverse sediment management	
			Q		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	1
			Q		Mining waste	
	7 CH 18 CH	and the co	100 PM	ander all and	Ground water pumping	
					Urban depletions	
			Ž		Fracking	
					Agriculture irrigation wells	
					Watershed alteration	
			Q		Extensive recent fires in watershed	
					Extensive recent timber harvest	
					Extensive open pit mining in watershed	
			Q		Livestock/wildlife overgrazing	
	per File	Parish and			Local biodiversity impacts	
					Evidence of excessive grazing (local)	
					Excessive noise affecting wildlife	
	0	0		0	Counts by Intensity	

ditional Comments

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

# NMRAM Montane Riverine Wetlands Version 2.5

		SA Cove	r Worksheet				
SA Code SF2MI[	SA Name: Two	Mile Pond Reservoir		Project : F	Riparian Ass	sesement	
A de Tsct [ 3	] AU Name : Tra	nsect [3]			o Mile Pond		
County Santa Fe	HUC 12 Head	waters Santa Fe River	Elevation (ft) 729			coregion 6.0 NWFM	
decommissione of water rights. Driving Directions Driving to Santa	and Boundary (Rationale m that leads into a pond leads due to safety concerns a Fe from Albuquerque yo ntil you reach the reservoi	regarding the reservoir a	and a water divers	on to the area wa	lational For s recently s	est. This reservoir was hut down due to lack	
Ownership The Natu	re Conservative and The	Santa Fe National Forest	Data Sharing Restrictions	Results to client only.	Fish Obs Wetla		
Surveyor Role		Survey	or Name		Well	Surveyor Initials	
Landscape	Pusto +	Annie				A CONTRACTOR OF THE PARTY OF TH	
Biotic	7	n				DS+ AM	
Abiotic	11		1,			11	
Stressors	*		11			// N	
Easting (m)	Northing (m)	Zone	Datum	Latitud	e (DD ft)		
-105° 53' 24" W	35° 41' 23" N	13	NAD- 83 UTI		- St A.	Longitude (DD f	
	C 1 2000 - 101			33.00372	-2	103.03	
Survey Date  A Landscape Conte	5/15/24  ext (summarize the wetland trees	SA Description of and surrounding land	Iscane: Include co	End 1			
A Landscape Conte		SA Desc	Iscane: Include co	ndition and in		prouting	
A Biotic Condition	trees water cur	SA Descended and surrounding land  Narrow lead  reart, mullein  position and structure, a	dscape; include co	ndition and impact  house to  rass,  res, disturbance ex	ridence, fire	and herbivory)	
A Abiotic Condition	ext (summarize the wetland trees ) will an water cur (vegetation patterns, come in bird, snakes	SA Descended and surrounding land of Narrow leaf grant, mullein sposition and structure, a sposition and structure, a sposition and structure, and structure	exotics and invasion	rass,  res, disturbance ex  sprouting	ridence, fire	seen beaver pend.	
A Abiotic Condition  A Abiotic Condition Sturbance and other	(vegetation patterns, com  (hydrological alterations is te impacts; explain the  Beaver Jam	sa Descend and surrounding land of Narrow leak grant, mullein sposition and structure, engages and land structure, and land st	exotics and invasion of factors that described in the second of the seco	rass,  res, disturbance ex  sprouting  stics and evidence fine the SA limits)  till cover	vidence, fire	beaver pend.	
A Biotic Condition  A Abiotic Condition  Sturbance and other  Sessment Summary	(vegetation patterns, com  (vegetation patterns,	sa Descend and surrounding land Narrow leaf grant, mullein sposition and structure, each and last and last and last ance, ance, and last ance, and last ance, and last ance, and last ance	exotics and invasion of factors that defined attention of the second of	rass,  res, disturbance ex  sprouting  stics and evidence fine the SA limits)  till cover  clowing,	vidence, fire	beaver pend.  hk flooding; soil  dead leaves	
A Abiotic Condition  A Abiotic Condition  Sturbance and other  Sessment Summary	(vegetation patterns, com  (hydrological alterations is te impacts; explain the  Beaver Jam	sa Descend and surrounding land of Narrow lead from the mullein sposition and structure, and str	exotics and invasion for se tails  looding characteriner factors that decorate the field data	rass,  res, disturbance ex  sprouting  stics and evidence fine the SA limits)  Hill cover  Clowing, a is collected.)	vidence, fire	beaver pend.  hk flooding; soil  dead leaves	

SA CODE: SF2MI[ 3 ]

SA Name: Two Mile Pond Reservoir Transect [ 3 ]

Date: 5/15/24

Surveyor Initials: DCS

NMRAM - SA Rank Summary Worksheet: Montane Riverine Wetlands 2.5

Metric Description	Rating	Wt	Final Score
		Σ 1.0	3.25
andscape Context	3	0.25	0.75
1. Buffer Integrity Index	4	0.25	1.0
2. Riparian Corridor Connectivity	4	0.25	1.0
3. Relative Wetland Size			0.5
4. Surrounding Land Use	2	0.25	0.5
Biotic		Σ	
31. Relative Native Plant Community Composition	4	0.2	
32. Vegetation Horizontal Patch Structure	4	0.2	
33. Vegetation Vertical Structure	3	0.2	
34. 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	Ý	0.2	
A4. Stream Bank Stability and Cover	ų.	0.2	
A5. Soil Surface Condition	Ų	0.1	

Major Attribute	Score	Wt.	Wt. Score
Landscape Context	3.25	0.3	0.975
Biotic	3.4	0.35	
Abiotic	4	0.35	
SA WETLAN	D CONDITIO	N SCORE Σ	
SA WETLAN	D RANK =	3.569	7

Rank	Score	Description
Α	≥3.25 - 4.0	Excellent Condition
В	≥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	

SF2MI[ 3] SA CODE:

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

Date: 5/15/24

Surveyor Initials: DCS

# **Landscape Context**

L. Æ	3uffe	r Integrity Index		•					
or are	exclud	<b>1a. Buffer and RCC Checklist.</b> Check off land cover edded and considered non-buffer elements that disrupt magery).	element t ecosys	ts withi	in the buffer a	rea or RCC cor dicate the imag	ridors that are either allowed, gery type and date (season		
	magery Google Earth KMZ. file			e Date	6/23				
		fer/RCC land cover elements	Exclud	ded nor	n-buffer/RCC I	land cover elen	nents		
Buffer	RCC		Buffer						
X	х	Natural or semi-natural vegetation patches	X	X		l/residential developments, parking lot ges, revetments, and other structures			
x	X					, golf courses, s	sports fields		
		Old fields, unmaintained			Railroads				
		Open range land			1	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		Non-channel open water				iculture: maint chards, and vir	ained pastures, hay fields, neyards		
X		Non-functioning abandoned vegetated levees, or naturally occurring levees	x	X	Paved roads of graded roads	•	econd-order unpaved but		
		unpaved two tracks roads	x		Open water bounded by a levee or other manmade structure				
		Other			Other				
Vorksł	neet 1	b. Buffer Percent Sub-metric. Measure or estimate t	the ner	centag	e of the				
SA perii	meter (	composed of allowed buffer elements and enter into	o the Bu	uffer Pei	rcent	Table	L1a. Buffer Percent		
Box bel	ow. Ra	ate the sub-metric using Table L1a and enter the ratin	ıg on th	ıe Buffe	er	Rating	Buffer Percent		
ntegni	y Surm	mary Worksheet 1d.		)		O 4	100%		
Buffer Percent (%)= 85%						<b>ⓒ</b> 3	≥80% - <100%		

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.

	The state of the s							
Line	Buffer Width (m)	Buffer Width (ft)	Line	Buffer Width (m)	Buffer Width (ft)			
A	164.26	538.91	E	161.93	531.26			
В	125.25	410.92	F	231.48	759.44			
C	115.39	378.57	G	121.25	397.80			
D	111.07	364.40	Н	155.87	511.38			
	Average	148.31 (m)		486.58	(ft)			

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	+ Buff	er Width Rating	/2 =	Buffer Integrity Index Score
3	+	3	/2 =	3

Table L1a. Buffer Percent						
R	ating	Buffer Percent				
	4	100%				
Ø	3	≥80% - <100%				
$\circ$	2	≥50% - <80%				
$\bigcirc$	1	<50%				

Tab	Table L1b. Buffer Width						
Rating	Average buffer width						
O 4	≥190m						
<b>(</b> ₹) 3	≥130 - <190m						
○ 2	≥65 - <130m						
O 1	<65m						

Table L1c.	Summary Rating for Buffer Integrity
Rating	Score
C 4	>3.5
<b>(</b> ₹ 3	>2.5 - ≤3.5
C 2	>1.5 - ≤2.5
O 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	n Segment	<b>Downstream Segment</b>			
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	(	)		
D) Total Disruption both segments		(	)			
E) % Total Disruptions = (D/2000)*100	Zero disi	Zero disruption noticeable along the banks.				

Table L2. RCC Rating						
Rating	Description					
(X 4	<b>0%</b> total disruption on both segments combined.					
C 3	<15% total disruption on both segments combined.					
C 2	≥15% - <40% total disruption on both segments combined.					
0 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	1	Historic Size	=	RSR	1		RSR	X	100	-	RWSI (%)
9	1	10	=	0.9	1	-	0.1	Х	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			
<b>∩</b> 2	>40% - ≤70%	Wetland has been reduced by more than 40% its natural size			
$\bigcap$ 1	>70%	Wetland has been reduced by more than 70% its natural size			

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# L4 - Surrounding Land Use

prksheet 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)	8.0	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

T	Table L4. Surrounding Land Use Rating						
Rating		LUI Score					
$\circ$	4	≥95 - 100					
$\bigcirc$	3	≥80 - <95					
Ø	2	≥40 - <80					
$\overline{\bigcirc}$	1	<40					

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**Biotic Metrics** 

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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 -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 Appendix D). Use the comments box for documenting and describing vegetation community patch features.

	1				
Polygon No	B3 Vertical Structure Type	Begeneration % Cover	B4 Iree B5 Invasive Regeneration Exotic % Cover Species % Cover	Invasive Exotic Species (List Code(s))	Comments
1	IA1				Last his
7	IA2	%09	>2%	Mullein	Currant this leaked cotton tails, rye grass
м	IIA1	80%	None	None	Cat tails Harse tails some willow trees
4	IIIB1				
5	IIICI				
9	IVEI				
7	IVF1				
ω					
6					
10					
11					
12					
13					
14					
15					
16					
17					
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# **B1 - Relative Native Plant Community Composition**

% SA<sup>5</sup> Wt Score<sup>6</sup> 2,00 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 I. 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 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 CT Score 4 Raw4 3,5 2.0 Final Weighted Score<sup>7</sup> Herbaceous/Sparse Stratum 3 Species 6 Horse, 2000 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. [I] Species 5 E てたが Species 4 E V Carriery Short Woody Stratum 2 Species 3 E W.1/0mg | 2, 1/00 Species 2 Willow trees Villar. Tall Woody Stratum 1 GHanca/ Species 1 Norrowlast 6ther sear Polygon Nos. Δ ш G ェ Σ z 0

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 stratum cover. <sup>4</sup>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 for Relative Native Plant Community Composition on the SA Rank Summary Worksheet.

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Surveyor Initials:

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Ta	Table B1. Relative Native Plant Community Composition Rating								
Rating		CT F	inal Weighted Score						
	4	≥ 3.75	<10% non-native						
<i>'</i> ''	3	≥ 3.25 and <3.75	10% ≤20% non-native						
ſ	2	> 2.0 and < 3.25	20% ≤50% non-native						
$\supset$	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.				
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

**Forksheet 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	VST 2	VST 5	VST 6S	VST 6W	VST 6H	VST 7
	High Structure	Low Structure	Tall Shrubland	Short	Herbaceous	Herbaceous	Sparse
	Forest	Forest		Shrubland	Wetland	Vegetation	Vegetation
otal % 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 low 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 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 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 lating on the SA Rank Summary Worksheet.

Rating	Dominant VST	Co- or Sub-dominant VST ≥15%	Sub-dominant VST ≥5%
	1	5	6W and/or 6H
4	1	6W	
	2 or 1 and 2	5	6W and/or 6H
	1		NO. 10. 10. 10. 10. 10. 10. 10. 10. 10. 10
<b></b> → ¬	2 or 1 and 2	5	
( 3	2 or 1 and 2	6W	
	5	6W	
	2 or 1 and 2		
2	5		
	6W		
	6S		
1	6H		
	7		

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#### **B4 - Native Riparian Tree Regeneration**

4. 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.

R	Rating	Description
0		Native poles, sapling, and seedlings trees well represented, obvious regeneration, many patches or polygons with >5% cover, typically multiple size (age) classes.
Ø	3	Native poles, saplings and/or seedlings common, scattered patches or polygons with 1%-5% cover, size classes few.
0	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.
$\circ$	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 %					
O 4	0%				
$C \setminus 3 \mid \chi$	>0% - <1%				
( <b>∮</b> 2	≥1% - <10%				
O 1	≥10				

#### Additional CTs and Biotic Metric Comments:

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

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#### **Abiotic Metrics**

# A1 - Floodplain Hydrologic Connectivity

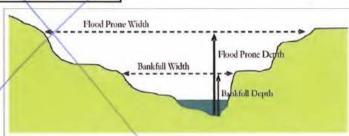
#### Method 1

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 ba Measure the distance between the right and left bankfull contours wit		/		
2: Maximum bankfull depth	Keeping the tape level between the right and left bankfull contours, mof the line above the thalweg (the deepest part of the channel). A pochelp 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 from Step 3 to where it intercepts the right and left banks.	e flood prone depth			
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. Eusing Table A1a. Enter the rating in the A1 box on the SA Rank Summ		re and r	ate	

Rating Method

Table A1a. Rating for Floodplain Hydrologic Connectivity in meandering single-channel riffle-pool systems				
Rating Description				
C 4	Average entrenchment ratio is $\geq$ 2.2;			
C 3	Average entrenchment ratio is ≥1.9 - <2.2			
C 2	Average entrenchment ratio is ≥1.5 - <1.9			
0 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.

egine	eginent.					
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			
			pecreased peak flows due to hydrologic modification			
		9	Bankfull indicators at point of incipient flooding of the floodplain			
		6	Indicators of overbank flow on floodplain			

Floodplain inundation due to beaver activity

Rating Description					
0 4	Average entrenchment ratio is ≥ 1.9				
O 3	Average entrenchment ratio is ≥1.4 - <1.9				
C 2	Average entrenchment ratio is ≥1.2 - <1.4				
C 1	Average entrenchment ratio is < 1.2				

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#### Method 2

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.

Rati	Description /
O 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.
O 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 riparian overstory, but some understory plants may be upland. An inset floodplain supporting riparian vegetation may also be present.
C 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.).
O 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.

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:

0		

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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)
	风		Active side channels
			Abandoned channels
	$\Box$		Backwater/eddy
			Riffles or rapids
	$\square$		Shoals, sparely-vegetated bars
			Channel boulders
			Oxbow lakes/ponds on floodplains
			Vegetated island and side bars
	$\boxtimes$		Terraces
	Ø		Channel pools
	攵		Beaver ponds
	X		Swales, depressional features on floodplains
	X		Debris jams in channel
	X		Woody wrack piles on the floodplain
			Floodplain micro-topography (mounds, pits)
	Y		Downed logs
	Ø		Natural levees
	Ø		Standing snags
			Variegated, convoluted, or crenulated foreshore
			Undercut banks in channels
			No. of unique Patch Types

Table	ble A2. Rating for Physical Patch Complexity							
Rating		Description						
X	4	<b>High</b> 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).						
C	3	<b>Moderate</b> 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).						
C <sub>i</sub>	2	<b>Limited</b> 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).						
C	1	<b>Little</b> 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)
		凶		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.
		$\square$		Perennial riparian vegetation is abundant and well established along the bankfull contour, but not below it.
		ĹΣI		There is leaf litter, thatch, or wrack in most pools.
Indicators of		Ø		The channel contains embedded woody debris of the size and amount consistent with what is naturally available in the riparian area.
Channel Equilibrium		×		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).
		风		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.
				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.
Indicators of Active Degradation				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.
				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.
ndicators of Active Aggradation				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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**SA Name:** Two Mile Pond Reservoir Transect [3] **Surveyor Initials:**  $D \subseteq S$ 

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.					
O 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 Middle Lower Field Indicators			
Condition	Segment	Segment	Segment	Field indicators
	<u>-</u> ]4	<b>∆</b> 4	<u></u> 4	Infrequent raw banks, less than 10% of steam bank under stress from trampling, slumping, vegetation removal or active erosion, etc.
Indicators of Bank	□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.
Soil Stability	<u></u> 2	<u>2</u>	□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.
	<u></u> 4	₫4	<u></u> 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.
Indicators of Stream Bank Erosion Potential	<u></u> 2	<u></u> 2	<u></u> 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				
尺 4	>3.5 - 4.0				
<b>○</b> 3	>2.5 - ≤3.5				
C 2	>1.5 - ≤2.5				
C 1	1.0 - ≤1.5				

SA CODE: SF2MI[ 3 ]

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

Date: 5/15/24

Surveyor Initials: DC5

# **A5 - Soil Surface Condition**

brksheet 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)
	Ø		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						
<b>X</b> 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.						
<u> </u>	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.						
C 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.						
O 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: 5/15/24

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

Surveyor Initials:

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 "Unknow nk Major Stressors in Dominant Stressor column(Pick up to 3)

ank	Affect		Stressor Group/Stressor		Stressor Group/Stressor	Comments
ulify [	Major	Minor	Absent	Unknown	·	
					Adverse water management  Extended low flow dam releases	
	Ш				Timing of flow releases not concordant	
					Extended high flow dam releases	
			Ø		Agriculture/Urban flow diversion upstream	
	1.54			1 1	Adverse sediment management	
			Ø		Adverse sediment retention by dams	
			Q		Sediment loss by dredging	
			Ø		Adverse sediment input (roads/development)	
					Artificial water additions	
					Sewer treatment effluent	
			Q		Point source urban runoff	
			Ø		Factory, feedlot outfall	
			Ø		Agricultural irrigation ditch returns	
					Mining waste	
					Ground water pumping	
					Urban depletions	
					Fracking	
					Agriculture irrigation wells	
	Г	i i i i i i i i i i i i i i i i i i i		Ī	Watershed alteration	
					Extensive recent fires in watershed	
					Extensive recent timber harvest	
			Ø		Extensive open pit mining in watershed	
					Livestock/wildlife overgrazing	
		1		T	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

V -		SA Cove	er Worksheet					
SA Code SF2MI[	SA Name : Two	o Mile Pond Reservoir		Project : R	iparian Asse	Sement		
Code Tsct [3]	AU Name : Tra	AU Name : Transect [ 3 ] WOI : Two Mile Pond F						
County Santa Fe	HUC 12 Head	dwaters Santa Fe River	Elevation (ft) 7299					
A rinarian system	and Roundany (Bational			, , , ,	1	region 6	0 NWFM	
Oriving Directions  Driving to Santa	n that leads into a pond leads	Nu head north an Old D	- a water diversion	on to the area was	recently sh	ut down c	ue to lac	
	e Conservative and The		t Data Sharing R	esults to client nly.	Fish Obse	rved in		
Surveyor Role		Survey	or Name	••••	Wetlar			
Landscape	Dustin Schwar					Surve	or Initia	
Biotic	Annie McCoy					DS		
Abiotic	Dustin Schwar	tz				AM		
Stressors	Dustin Schwar	tz				DS		
Easting (m)	Northing (m)	Zone				DS		
105° 53' 24" W	35° 41' 23" N	13	Datum	Latitude		Longitu		
		'3	NAD- 83 UTM	35.689722	)	-105	.89	
Survey Date	6/11/24	Chaut Ti				100		
Landscape Contex	(summarize the wetlar	Start Time  SA Description of and surrounding land	9:00	End Ti	ime	15:00	AN STATE	
Deaver been . A	et (summarize the wetlar Jam is over flo Jew Changels form	sa Descend and surrounding land swing, vater ing, Lots of	9:00  cription  dscape; include cond  level 15 hig  downed trees	dition and impacts her than a	ime s) it ha dense	15:00 3 ever	the for	
Deaver been, A  Biotic Condition (v	egetation patterns, com	sa Description and structure, e	9:00  discape; include condition his downed trees	dition and impacts  her then he has and very  s, disturbance evidence	s)  it ha  dense  dence, fire a	15:00  S ever  Vegelo	tien	
Deaver been, A  Biotic Condition (v	egetation patterns, com	sa Description and structure, e	9:00  discape; include condition his downed trees	dition and impacts  her then he has and very  s, disturbance evidence	s)  it ha  dense  dence, fire a	15:00  S ever  Vegelo	the form	
Biotic Condition (v  Horse  Filling  Lots	et (summarize the wetlar  fam is over flow  Jew Changelo Form  regetation patterns, com  tails taking or  up willows  of birds Co	position and structure, and cotton wo	9:00  cription  discape; include cond  level 15 hig  downed trees  exotics and invasive  area, Villows  ods dropp.	End Ti	dence, fire a	15:00  Sever  Vegeliand herbiv	ory)	
Biotic Condition (v  Horse  Lots  Abiotic Condition (v  urbance and others  T 10.7°C	egetation patterns, com  Le Willows  Le Wi	position and structure, e and cetter wo see app Mag {e.g., dams, walls etc.]; fl hydrologic breaks or oth	9:00  cription  dscape; include cond  level 15 hig  downed trees  exotics and invasive  arca, Villows  ods dropp.  llein 13  looding characterist mer factors that defin	s, disturbance evil	dence, fire a woods wateria	15:00  3 ever  Vegeliand herbiv	ory)	
Biotic Condition (v  Horse filling Lots  Abiotic Condition (lurbance and others  T 10.7°C Lots	egetation patterns, com  The willows  A birds Ca  hydrological alterations  ite impacts; explain the la  193 US  A downer	position and structure, ever reparted of modern and structure, and cotton wo see app) Manager (e.g., dams, walls etc.]; fle hydrologic breaks or other and details	9:00  cription  dscape; include cond  level 15 hig  downed trees  exotics and invasive  arca, Villows  ods dropp.  llein 13  looding characterist mer factors that defin	s, disturbance evil	dence, fire a woods wateria	15:00  3 ever  vegelind herbiv	ory)	
Biotic Condition (v  Horse filling Lots  Abiotic Condition (to the	regetation patterns, com  le is taking or  regetation patterns, com  le is taking or  up willows  of birds Com  193 US  of downer  over flowing	position and structure, and cotton wo see app) Manager	9:00  cription  descape; include conditions of the second the seco	s, disturbance evidence one the SA limits)	dence, fire a woods wateria	15:00  3 ever  vegelind herbiv	ory)	
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Biotic Condition (v  Horse  Filling  Lots  Abiotic Condition (lurbance and others  T 10.7°C  Lots  Area  and	regetation patterns, com  le is taking or  regetation patterns, com  le is taking or  up willows  of birds Com  193 US  of downer  over flowing	position and structure, and cotton wo see app) Manager of the provided of the	9:00  cription  descape; include conditions of the end	s, disturbance evidence one the SA limits)  End Ti  Band very  s, disturbance evidence one the SA limits)  S collected.)  Live	dence, fire a woods of overbank	15:00  Sever  Vegeliand herbive  are  flooding;	ory)	

SA CODE: SF2MI[ 3]

SA Name: Two Mile Pond Reservoir Transect [ 3 ]

Date: 6/11/24

Surveyor Initials: DS/AM

MRAM - SA Rank Summary Worksheet: Montane Riverine Wetlands 2.5	Rating	Wt	Final Score
Metric Description		Σ 1.0	3.25
andscape Context	3	0.25	0.75
_1. Buffer Integrity Index	4	0.25	1.0
2. Riparlan Corridor Connectivity	4	0.25	1.0
L3. Relative Wetland Size	2	0.25	0.5
L4. Surrounding Land Use	-	Σ	
Biotic	l u	0.2	
B1. Relative Native Plant Community Composition		0.2	-
B2. Vegetation Horizontal Patch Structure	2	0.2	-
B3. Vegetation Vertical Structure	3		
B4. Native Riparian Tree Regeneration	2	0.2	
B5. Invasive Exotic Plant Species Cover	)	0.2	
Abiotic		2	III) E
A1. Floodplain Hydrologic Connectivity		0.3	
A2. Physical Patch Diversity	4	0.2	
A3. Channel Equilibrium	1/	0.2	
	4	0.2	
A4. Stream Bank Stability and Cover  A5. Soil Surface Condition	H	0.1	

3.25	0.3	0.975
		0.575
3.4	0.35	
4	0.35	
NDITION	N SCORE Σ	
		UNDITION SCORE Σ

Rank	Score	Description
Α	≥3.25 - 4.0	Excellent Condition
В	≥2.5 - <3.25	Good Condition
С	≥1.75 - <2.5	Fair Condition
D	1.0 - <1.75	Poor Condition

Stressor Summary	Major	Minor	Top Three	
	0	0	1 Hi	king trails
			2 0	ver Flowing Dan
			3	/-

ssor Comments (Eva	luation of risk)			

SA CODE: SF2MI[3]

**SA Name:** Two Mile Pond Reservoir Transect [  $\beta$  ]

Date:

6/11/24

Surveyor Initials: DS/AM

# **Landscape Context**

Works			**********************									
	excluded and core are of imagery).	and RCC Checklist sidered non-buffer	. Check of r element	ff land cover s that disrup	eleme et ecosy	nts witl vstem c	hin the bonnectiv	ouffer vity. I	r area Indica	or RCC cate the im	orridors that are either allowe nagery type and date (season	
lmage		rth KMZ. file			lmag	e Date	6/	/23				
	d buffer/RCC lan	d cover elements			Exclu	ded no	n-buffer	r/RCC	land	l cover ele	emonts	
Buffer	RCC				Buffe	r RCC	T		- rana	COVELER	ements	
X		semi-natural veget		ches	X	×	Comm dams,	ercia bridg	ıl/resi ges, re	dential d evetment	evelopments, parking lots, s, and other structures	
×		ation ditches witho	ut levees								s, sports fields	
	Old fields,	unmaintained					Railroa			<del></del>		
	Open rang						Mainta materia	ined als, st	levee	es, sedime	ent piles, construction	
X	Foot trails, intensity)	horse trails, unpave	ed bike tra	ails (low							norse paddocks, feedlots	
X		el open water					Intensiv	ve ag	ricult rchar	ure: mair ds, and v	ntained pastures, hay fields, ineyards	
X	Non-function naturally of	oning abandoned v curring levees	/egetated	levees, or	X	X		oads	ds or developed second-order unpaved			
		o tracks roads			X	×	Open w structur	ater e	r bounded by a levee or other manmac			
	U Other						Other					
Vorksh	eet 1h Ruffer Do											
	ect ib. Dallel Fe	rcent Sub-metric.	Measure	or estimate	the per	centag	e of the	1				
л ренн	rerei composed o	rcent Sub-metric. If allowed buffer ele	ements ar	nd antar into	tha Du	effar Da	أ منتثث			Tabl	e L1a. Buffer Percent	
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ox belo	rerei composed o	n allowed buffer ele netric using Table L neet 1d.	ements ar .1a and er	nd enter into	tha Du	effar Da	أ منتثث		0	Rating 4		
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orkshe	et 1c. Buffer Wid	n allowed buffer ele netric using Table L neet 1d. Buffer Percer th Sub-metric. Me	ements ar 1a and er nt (%)=	85%	o the Bu	offer Pe	rcent		<u>○</u>	Rating 4 3	Buffer Percent 100% ≥80% - <100%	
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orkshe e GIS or e Buffer A	et 1c. Buffer Wider on the map. Average Integrity Summa  Buffer Width (m)  164.26	allowed buffer elemetric using Table Lineet 1d.  Buffer Percer  th Sub-metric. Me rage the line length ry Worksheet 1d.  Buffer Width (ft)  538.91  410.92	ements ar 1a and er nt (%)= rasure the ns and rate	85%  length of eae using Table  Buffer W (m)	o the Bu ng on th ach buff e L1b. E	offer Pene Buffer  fer line nter th	in meter e rating ffer Wid (ft)	rs in on		Rating  4 3 2 1 Table Rating 4 3	Buffer Percent  100%  ≥80% - <100%  ≥50% - <80%  <50%  L1b. Buffer Width  Average buffer width  ≥190m  ≥130 - <190m	
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orkshe e GIS or e Buffer A B C	et 1c. Buffer Wider on the map. Average Integrity Summa  Buffer Width (m)  164.26	allowed buffer elemetric using Table Lineet 1d.  Buffer Percer  th Sub-metric. Me rage the line length ry Worksheet 1d.  Buffer Width (ft)  538.91  410.92	ements ar 1a and er  nt (%)=  rasure the ns and rate  Line  E	85%  length of eae using Table  Buffer W (m)  161.93	o the Bung on the Bung of the	fer line nter th	in meter e rating ffer Wid (ft) 531.26	rs in on		Rating  4 3 2 1 Table Rating 4 3	Buffer Percent  100%  ≥80% - <100%  ≥50% - <80%  <50%  L1b. Buffer Width  Average buffer width  ≥190m  ≥130 - <190m	
orkshe e GIS or e Buffer A B C D	et 1c. Buffer Wider on the map. Average  Buffer Width (m)  164.26  125.25  111.07	allowed buffer elemetric using Table Lineet 1d.  Buffer Percer  th Sub-metric. Me rage the line length ry Worksheet 1d.  Buffer Width (ft)  538.91  410.92  378.57  364.40  148.31 (m)	ements ar 1a and er  nt (%)=  rasure the ns and rate  Line  E  F  G  H	85%  length of eae using Table  Buffer W (m)  161.93  231.48  121.25  155.87	o the Bu	fer line nter th	in meter e rating ffer Wid (ft) 31.26 59.44 97.80	rs in on		### Rating ### Table ### ### ### ### ### ### ### ### ### #	Buffer Percent  100%  ≥80% - <100%  ≥50% - <80%  <50%  L1b. Buffer Width  Average buffer width  ≥190m  ≥130 - <190m  ≥65 - <130m	
orkshe e GIS or e Buffer A B C D A	et 1c. Buffer Widton the map. Average  125.25  111.07  111.07  124.26  125.25  115.39	the allowed buffer element is allowed buffer element in the sub-metric. Me rage the line length ry Worksheet 1d.  Buffer Width (ft)  538.91  410.92  378.57  364.40  148.31 (m)  egrity Summary. Enthe Buffer Integrity in the suffer Integrity in the	ements ar 1a and er  nt (%)=  rasure the ns and rate  Line  F  G  H	Buffer W (m) 161.93 231.48 121.25 155.87 486.58	ach buffe L1b. E	fer line nter th  But  5  7,  39  51  (ft)	in meter e rating ffer Wid (ft) 31.26 59.44 97.80 1.38	rs in on		### Rating ### Table ### ### ### ### ### ### ### ### ### #	Buffer Percent  100%  ≥80% - <100%  ≥50% - <80%  <50%  le L1b. Buffer Width  Average buffer width  ≥190m  ≥130 - <190m  ≥65 - <130m  <65m  cummary Rating for Buffer	
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SA CODE: SF2MI[ 3]

SA Name: Two Mile Pond Reservoir Transect [ 3 ]

Date: 6/11/24

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	n 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.					

Та	ble L2. RCC Rating
Rating	Description
	<b>0%</b> total disruption on both segments combined.
O 3	<15% total disruption on both segments combined.
C 2	≥15% - <40% total disruption on both segments combined.
O 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	1	Historic Size	=	RSR	1	p <del>e</del> i	RSR	X	100	=	RWSI (%)
BENEVEY & BATTLE		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						
O3	>10% - ≤40%	Wetland remains equal to or more than 60% of its natual size						
C2	>40% - ≤70%	Wetland has been reduced by more than 40% its natural size						
C1	>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. Surr	ounding Land Use Rating
Rating	LUI Score
O 4	≥95 - 100
O 3	≥80 - <95
<b>⊘</b> 2	≥40 - <80
O 1	<40

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**Biotic Metrics** 

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Species Cover (BS) 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 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 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	B3 Vertical Structure	B4 Tree Regeneration	B5 Invasive Exotic	Invasive Exotic Species	Comments
oN N	lype	% Cover	Species % Cover	(rist code(s))	
-	IA1	*			
7	IA2	20%	12%	Mullein	current Norrow leaked cotton wood yyeguss
8	llA1	85%	None	Nono	Cot to 16 Horse tals, Raisys, willow trees
4	IIIB1				
2	IIIC1				
9	IVEI				
7	IVF1				
∞					
6					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
	1				

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**B1 - Relative Native Plant Community Composition** 

Work domir which	sheet 6. CT Pl nant species in it is more abu	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 which it is more abundant. Each polygon is either actioned to the contraction of the species of the stratum which it is more abundant.	Polygon Ass It appears in t	ignmen ihe polyg	ts. Starting v	with CT /	A, enter the	number	of the first	polygon es appe	T. A, enter the number of the first polygon from Worksheet 5. Enter the species codes for the two top s for special instructions. If a species appears in more than one strata, assign the species to the stratum in	sheet 5. E	inter the sp strata, ass	pecies α ign the s	odes for species t	the two	top atum in
			Tall Woody Stratum 1	y Stratun	n 1	=	Short Woody Stratum 2	to compo	osition or a	new C.I.	Short Woody Stratum 2	r the pol	ygon.				
ե	Polygon Nos.		Species 1	ша	ecies 2	ш:	Species 3	E Strand	ies 4	ш	Speries 5   E   Charies 6	E   C			<b>∟</b> 1	L.	7
⋖			Novowlear					1	1	~		1		*****	Raw o	% SA	Wt Score
8			Cottonian		Trines		2.1011.12		I GREAT	2	\$ 5 T		90055	2			();
			85m in/ / Co	≥	Same	≥	C2:	Z			Ca/ My 1/5	2	/ないのま/	$\geq$	2. Ö	S	2.00
U																	
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z																	
0						·											
												Final W	Final Weighted Score7	Core7			X
1. Tree	s and shrubs	1. Trees and shrubs > 6 m (20 feet) and > 25% total stratum cover; 2. Trees and shrubs <6m (20 feet) and < 35% total ctrate	d > 25% total	stratum	cover; 2. Tre	bue see	shriihs <6m	(20 feet	1) and <25%	10+0+	40	7 1 C		-   -  -  -	<u> </u>		

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 > 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. <sup>4</sup>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 for Relative Native Plant Community Composition on the SA Rank Summary Worksheet.

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Ta	able B1	. Relative Native Plant C	Community Composition Rating
Ra	ating	CT Fina	al Weighted Score
K.	4	≥ 3.75	<10% non-native
Ĉ	3	≥ 3.25 and <3.75	10% ≤20% non-native
$\overline{C}$	2	> 2.0 and <3.25	20% ≤50% non-native
C	1	≤2.0	>50% non-native

#### 2 - Vegetation Horizontal Patch Structure

**Vorksheet 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.

orizontal	Patch	Structure	nattern	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.			
С 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.			
<u> </u>	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.			

#### 33 - 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		TOICSC		50		-9	

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%
-	1	5	6W and/or 6H
C 4	1	6W	
	2 or 1 and 2	5	6W and/or 6H
	1		
0 3	2 or 1 and 2	5	
% 3 ├	2 or 1 and 2	6W	
-	5	6W	
	2 or 1 and 2		
C 2	5		
	6W		
	6S		
C 1	6H		
	7		

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**B4 - Native Riparian Tree Regeneration** 

Rating	Native Riparian Tree Regeneration rating. Using the polygon percent cover of native tree seedlings, saplings and poles for safe the SA based on polygon percent cover and patch density. Enter the rating on the SA Rank Summary Worksheet.
	Nativo notes 1: Description
7 4	Native poles, sapling, and seedlings trees well represented, obvious regeneration, many patches or polygons with >5%  Native poles, saplings and/or seedlings.
7 3	cover, typically multiple size (age) classes.
<u> </u>	
) 2	Native poles, saplings and/or seedlings common, scattered patches or polygons with 1% -5% cover, size classes few.  Native poles, saplings and/or seedlings present but uncommon, restricted to one or two patches or polygons with typical Native poles, saplings and/or seedlings.
	<1% cover, little size class differential present but uncommon, restricted to one or two patches or and
) 1	Native poles, saplings, and/or seedlings absent (0% cover).

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

Rating Method	

nvasive cover (%)	>1%
	_

calculate

	gs for Invasive Exotic Plant Species Cove
Rating	Invasive Species Cover %
0 4	0%
3 X	>0% - <1%
2	≥1% - <10%
9 1	≥10

# Additional CTs and Biotic Metric Comments:

Black - headed Grosbeak, spotted Towhee, American Robin House Finch, Pine Siskin, Yellow-breasted Chat Warbling Viveo, Lesser Gold, Western Wood Perse Cedar Waxwing

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# **Abiotic Metrics**

# 11 - Floodplain Hydrologic Connectivity

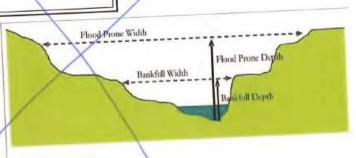
Worksheet 10a. Floodplain Hydrologic Connectivity Measurements. The following six steps are conducted at each of three crosssections at the approximate mid-points along straight riffles and away from deep pools or meander bends. Use a measuring tape and temporary stakes for horizontal measurements, and 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.

	t. Photographs of each cross-section are required and recorded  Description				
Steps	field indicators of	the bankfull contour.			
1: Bankfull width	Measure the distance between the right and terms the bankfull cont	tours, measure the height			1
2: Maximum bankfull depth	of the line above the thalweg (the deepest part of the	****	1	/	
3: Flood-prone depth	Double the estimate of maximum bankfull depth from Step 2.	al to the flood prone depti	1		+
4: Flood-prone width	Using a tape, measure the length of a level line at a height equ 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 (S Calculate the average for Step 5 for all three replicate cross-se	ctions. Enter the average n	ere and	rate	+
6: Calculate average ratio	Calculate the average for Step 5 for all three replicate cross-se using Table A1a. Enter the rating in the A1 box on the SA Ran	sk Summary Worksheet.			

Rating Method

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

Rating	Description
Rating	Average entrenchment ratio is ≥ 2.2;
0 4	Average entrenchment ratio is ≥1.9 - <2.2
3	Average entrenchment ratio is ≥1.5 - <1.9
2	Average entrenchment ratio is < 1.5
0 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

seg	ment.

egme	M	L	Indicator
			Bankful is slightly below bank height
片		금	Bankful is well below bank height and channel is incised
님		-	Channel widening due to bank failure
ᆜ			Constructed levees preclude floodplain inundation
블		님	Stream is straightened/channelized
ᆜ	ᆜ	님	Inset floodplain formation
ᆜ	무	님	Decreased peak flows due to hydrologic modification
Ц		1/2	Bankfull indicators at point of incipient flooding of the floodplain
	14	1	Indicators of overbank flow on floodplain
	K	14	Floodplain inundation due to beaver activity

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

The state of the s	Description
Rating	Average entrenchment ratio is ≥ 1.9
C 4	Average entrenement is >1.4 - <1.9
C 3	Average entrenchment ratio is ≥1.4 - <1.9
0 2	Average entrenchment ratio is ≥1.2 - <1.4
0 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	and recorded in Table A1d.
0	4	Fully connected to the natural floodplain. Indicators of bankfull discharge are at the bank/floodplain transition, with signs of overbank sediment deposition. Or beaver ponds inundate the entire, normally active floodplain and preclude Flow access to the floodplain moderate.
0	3	Flow access to the floodplain moderately limited by incision, channelization. Less frequent inundation than fully riparian overstory, but some understory plants may be upland. An inset floodplain supports also be present.
)	2	Incised, channelized or modified with an inset floodplain formed, which is regularly inundated and supports riparian channelization, or flow modification, and the natural floodplain does not support riparian relatively long-lived phreatophytes (see
)	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.

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.

	Easting (Latitude)		Upstream	or additional details.	3.11 (1010)	or the observer w
1		(Longitude)		Downstream	Bank Right	Bank Left
2						
3						

Floodplain Hydrologic Connectivity Comments:

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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.

nter the rating on t	he SA Rank Summary	Lower Segment	Field Indicators (check all existing conditions)
Jpper Segment	Middle Segment		Active side channels
	$\square$		Abandoned channels
			Backwater/eddy
		<del> </del>	Riffles or rapids
		<del>                                     </del>	Shoals, sparely-vegetated bars
	図	<u> </u>	Channel boulders
		<del>                                     </del>	Oxbow lakes/ponds on floodplains
		<del>                                     </del>	Vegetated island and side bars
		1	Terraces
	X		Channel pools
	区	<del>                                     </del>	Roaver nonds
	$\square$	<u> </u>	Swales, depressional features on floodplains
$\overline{\Box}$			Debris jams in channel
	□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □		Woody wrack piles on the floodplain
	X		Floodplain micro-topography (mounds, pits)
			Downed logs
	X		Natural levees
	X		
├ <del>─</del>			Standing snags Variegated, convoluted, or crenulated foreshore
<del>   </del>	1 0		Undercut banks in channels
			No. of unique Patch Types

able A2. Rating for Physical Patch Complexity  Description				
Rating		n 11 migro habitats present		
<b>1</b>	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, (mounds and pits, woody wrack piles, etc.), many fluvial geomorphic surfaces (swales, side channels, terraces, side bars, (mounds and pits, woody wrack piles, etc.), many fluvial geomorphic surfaces (swales, side channels, terraces, side bars, (mounds and pits, woody wrack piles, etc.), and riffles, large woody debris, undercut banks, etc.). As a guide, 12 etc.), and there is high in-channel complexity (pools and riffles, large woody debris, undercut banks, etc.). As a guide, 12 etc.), and there is high in-channel complexity (pools and riffles, large woody debris, undercut banks, etc.) are present and well distributed throughout the SA (most indicators are found on multiple or more unique indicators are present and well distributed throughout the SA (most indicators are found on multiple or more unique indicators are present and well distributed throughout the SA (most indicators are found on multiple or more unique indicators are present and well distributed throughout the SA (most indicators are found on multiple or more unique indicators are present and well distributed throughout the SA (most indicators are found on multiple or more unique indicators are present and well distributed throughout the SA (most indicators are found on multiple or more unique indicators are present and well distributed throughout the SA (most indicators are found on multiple or more unique indicators are present and well distributed throughout the SA (most indicators are found on multiple or more unique indicators are present and well distributed throughout the SA (most indicators are found on multiple or more unique indicators are present and well distributed throughout the same are present and the s		
		segments).		
$\sim$	3	present, several fluvial geomorphic sattle presents).		
C	2	<b>Limited</b> physical patch complexity scattered across the floodplain. There are 5 - 8 some fluvial geomorphic surfaces, and there is limited in-channel complexity. As a guide, on average there are 6 - 8 some fluvial geomorphic surfaces, and there is limited in-channel complexity. As a guide, on average there are 6 - 8 some fluvial geomorphic surfaces, and there is limited in-channel complexity. As a guide, on average there are 6 - 8 some fluvial geomorphic surfaces, and there is limited in-channel complexity. As a guide, on average there are 6 - 8 some fluvial geomorphic surfaces, and there is limited in-channel complexity. As a guide, on average there are 6 - 8 some fluvial geomorphic surfaces, and there is limited in-channel complexity. As a guide, on average there are 6 - 8 some fluvial geomorphic surfaces, and there is limited in-channel complexity.		
0	1	unique indicators present in the SA (only a few on multiple segments).  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 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	Middle	E Lov	wer	
	36	gment	Segme	nt Segr	nent	g conditions)
			X		]	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.
			Ø			Perennial riparian vegetation is abundant and well established along the bankfull contour, but not below it.
			À			There is leaf litter, thatch, or wrack in most pools.
Indicators of Channel			$\boxtimes$		]	The channel contains embedded woody debris of the size and amount consistent with what is naturally available in the riparian area.
Equilibrium			×			There is little or no active undercutting or burial of riparian vegetation.
					, l'	There are no bars that are densely vegetated with perennial vegetation (neither mid-channel bars or point bars).
			区		-+	Channel and point-bars consist of well-sorted bed material.
	]				7	The channel bed is not planar and without an abundance of fine materials illing the interstitial spaces between larger stream substrate.
					re	There are channel pools at meander bends and some deep pools within the each.
					T.	he channel is characterized by deeply undercut banks with exposed living pots of trees or shrubs.
					TI	here are abundant bank slides or slumps, or the lower banks are uniformly coured and not vegetated.
la li a					Ba	ank vegetation is declining in stature or vigor, or many riparian trees and urubs along the banks are leaning or falling into the channel.
Indicators of Active Degradation					Cr	nannel bed is scoured to large cobbles or boulders and entrained bank aterial is filling the cobble interstices and pools.
					1	ere are active headcuts within the channel.
					An	obvious historical floodplain has recently been abandoned, as indicated the age structure of its riparian vegetation.
					The	ere is abundant fresh splays of coarse sediment covering the floodplain ove the natural point bar elevation.
					_	ere are partially buried living tree trunks or shrubs along the banks.
ndicators of Active Aggradation					The	channel bed is planar overall. The stream leaders it is a
					<del> </del>	ols at meander bends, or pools are filled with sediment.  re are partially buried or sediment-choked culverts.
					1	re are avulsion channels on the floodplain or adjacent valley floor.

SF2M1[ 3]

Two Mile Pond Reservoir Transect [ 3 ]

**Date:** 6/11/24

Surveyor Initials:

DS/AM

SA Na	ame:	Two Mile Pond Reservoir Transect [ 5]							
	Table A3. Rating for Channel Equilibrium								
<u></u>	Doccription								
r	ating	Most of the channel throughout the SA is in equilibrium condition with little evidence of excessive aggradation or							
X	4	degradation based on the field indicators listed in Worksheet 12.  There is some evidence of excessive aggradation or degradation; the channel throughout the SA seems to approach an or degradation.							
C	3	There is some evidence of excessive aggradation of degradation, and equilibrium condition. Circle primary process: aggradation or degradation.  There is evidence of severe aggradation or degradation throughout most of the channel through the SA. Circle primary							
C	2	There is evidence of severe aggradation of degradation throughout most of the SA.  The channel is artificially hardened, channelized, or is concrete throughout most of the SA.							
10	1	The channel is artificially hardened, channelized, or is concrete through							

# 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

Condition	mary Worksho Upper Segment	Middle Segment	Lower Segment	Field Indicators
	<u></u> 4	<del> </del>  4	<u></u> 4	Infrequent raw banks, less than 10% of steam bank under stress from trampling, slumping, vegetation removal or active erosion, etc.
	<u></u> 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.
dicators of Bank Soil Stability	<u></u> 2	<u></u> 2	<u>2</u>	Significant raw banks and loose soil, 25%-50% of stream banks
		1	1	Raw banks almost continuous with greater than 30% of stream bank under stress, loose soil, slumping, trampled or eroding; or channel appear to lack banks due to trampling; or channel that is a stifficially bardened or concrete along most of its length.
	<u>4</u>	4	<u></u>	≥ 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.
Indicators of Stream Bank Erosion Potentia	<b>□</b> 2	<u>□</u> 2	<u></u> □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 of stabilized by roots, are covered by materials or vegetation that girllimited 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	
Average manuare	

able A4. Stream Bank Stability and Cover Rating					
Rating	Description				
4	>3.5 - 4.0				
C 3	>2.5 - ≤3.5				
C 2	>1.5 - ≤2.5				
C 1	1.0 - ≤1.5				

SA CODE: SF2MI[ 3]

Date: 6/11/24

**SA Name:** Two Mile Pond Reservoir Transect [  $\supset$  ]

Surveyor Initials: DS/AM

# **A5 - Soil Surface Condition**

Vorksheet 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.

Jpper Segment	Middle Segment	Lower Segment	Field Indicators (Check all existing conditions)
	凶		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						
R	ating	Description					
<i>X</i> 1	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 anthropogen					
<u> </u>	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 15% of the soil surface is between 1% and 15% of the soil surface is between 1% and 15% of the soil surface is between 1% and 15% of the soil surface is between 15% of the s					
)	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 area or other anthropogenic degradation to the soil guide and including erosion, impervious surfaces, fill, grayel mining					
)	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. Wate 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]		

DS/AM

Name: Town Alls Daniel Bearing Transact [ 3 ]

Name: Town Alls Daniel Bearing Transact [ 3 ]

SA Name: Two Mile Pond Reservoir Transect [ ] |

In the processor 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 "Unknown to be Major Stressors in Dominant Stressor column(Pick up to 3).

**Date:** 6/11/24

ories Majo	s using d or Stress	lirect evid ors in Dor	ninant St	ressor colui	e or your best professional judgement otherwise mn(Pick up to 3)	
k		Aff	ect		Stressor Group/Stressor	Comments
<u> </u>	Major	Minor	Absent	Unknown	Adverse water management	
T					Extended low flow dam releases	
					Timing of flow releases not concordant	
$\top$			Ø		Extended high flow dam releases	
+					Agriculture/Urban flow diversion upstream	
					Adverse sediment management	
					Adverse sediment retention by dams	
					Sediment loss by dredging	
寸					Adverse sediment input (roads/development)	
					Artificial water additions	
					Sewer treatment effluent	
1					Point source urban runoff	
					Factory, feedlot outfall	
					Agricultural irrigation ditch returns	
					Mining waste	
					Ground water pumping	
					Urban depletions	
					Fracking	
					Agriculture irrigation wells	
			177		Watershed alteration	
					Extensive recent fires in watershed	
				í   [		d
					Local biodiversity impacts	
		] [			Evidence of excessive grazing (local)  Excessive noise affecting wildlife	
		]   [				
	0	C	)	0	Counts by Intensity	

Additional Comments

Version Date: 04/25/2022

# NMRAM Montane Riverine Wetlands Version 2.5

16 V C ~ ~ ~ C C J V VI L ~	/ 1			The second secon	
SA Code SF2MI[ 4		o Mile Pond Reservoir	Project: Riparian Assesement		
A de Tsct [4]		•		WOI: Two Mile Pond Reservoir	
County Santa Fe	HUC 12 Head and Boundary (Rational	dwaters Santa Fe River	Elevation (ft) 7299	(m) 2224.7	Ecoregion 6.0 NWFM
decommissioned of water rights. Driving Directions Driving to Santa	n that leads into a pond I due to safety concerns	located on the east side of regarding the reservoir a	and a water diversion to	the area was recer	al Forest. This reservoir was ntly shut down due to lack onte Sol and right on
		Santa Fe National Forest	Data Sharing Resul Restrictions only.		Observed in Wetland?
Surveyor Role		Survey	or Name		Surveyor Initials
Landscape	Dustin				$ \uparrow$ $\land$ $<$ $-$
Biotic	Annie				A M
Abiotic	Dustin				1/5
Stressors	Both				105
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
	l .	, ,,	1 1470-02 0 1141		1 100,09
Survey Date	4/9/24	Start Time	14AD- 63 01W	End Time	-103.69
		Start Time SA Desi	cription	End Time	-103.69
SA Landscape Conte	Xt (summarize the wat):	Start Time SA Desc	cription	End Time	
SA Landscape Conte	Xt (summarize the wat):	Start Time SA Desc	cription	End Time	
SA Landscape Conte	Xt (summarize the wat):	Start Time SA Desi	cription	End Time	
SA Landscape Conte A rca F r	ext (summarize the wetle Appear	Start Time  SA Description of the start of t	cription  dscape; include condition  be recovery  appears	end Time on and impacts) coving to be a	dry
SA Landscape Conte	ext (summarize the wet).  Appear  for the  (vegetation patterns, con	Start Time  SA Design and and surrounding lands  to still  winter Sea	cription  dscape; include condition  be recovery  appears  exotics and invasives, description	end Time  on and impacts)  to be a	ee, fire and herbiyory)
SA Landscape Conte	ext (summarize the wetle Appear  on the  (vegetation patterns, con	Start Time  SA Design and and surrounding lands  to Still  winter Sea  mposition and structure,  a cent Flowe	exotics and invasives, d	End Time  on and impacts)  ieving  to be of	e, fire and herbivory)
SA Landscape Conte	ext (summarize the wetle Appear  on the  (vegetation patterns, con	Start Time  SA Design and and surrounding lands  to Still  winter Sea  mposition and structure,  a cent Flowe	exotics and invasives, d	End Time  on and impacts)  ieving  to be of	e, fire and herbivory)
SA Landscape Conte	vegetation patterns, con the start.  (hydrological alteration	Start Time  SA Design of the start of the st	exotics and invasives, de sirds in green.	end Time  on and impacts)  icving  to be of  listurbance evidence  yet in  this pari	ee, fire and herbivory)  recovery  licular area
SA Landscape Conte  Arca  Fy  SA Biotic Condition (  From u  Chr  SA Abiotic Condition  listurbance and other	vegetation patterns, con  lows  Still  index  (hydrological alteration site impacts; explain the	Start Time  SA Design of SA Des	exotics and invasives, de sinds in green.  Flooding characteristics her factors that define the service of the	end Time  on and impacts)  for be of  listurbance evidence  yet in  this para	e, fire and herbivory)  recovery  licular area  rerbank flooding; soil
SA Landscape Conte  Arca  Fy  SA Biotic Condition (  From u  Chr  SA Abiotic Condition  listurbance and other	vegetation patterns, con  lows  Still  index  (hydrological alteration site impacts; explain the	Start Time  SA Design of SA Des	exotics and invasives, de sinds in green.  Flooding characteristics her factors that define the service of the	end Time  on and impacts)  for be of  listurbance evidence  yet in  this para	ee, fire and herbivory)  recovery  dicular area
SA Landscape Conte	vegetation patterns, con  lows Still  inder No  rant Stard,  (hydrological alteration site impacts; explain the	Start Time  SA Designation and surrounding lands  to still  winter Sea  mposition and structure,  Arem Plower  Noticeable  15 to turn  15 (e.g., dams, walls etc.); to the hydrologic breaks or other  cracked	exotics and invasives, de sirds in green.  flooding characteristics her factors that define to a record and a	end Time  on and impacts)  yet in  this pari  and evidence of overhe SA limits)	e, fire and herbivory)  recovery  licular area  rerbank flooding; soil
SA Landscape Conte  Arca  Fr  SA Biotic Condition (  From a  Chr  SA Abiotic Condition  disturbance and other  Seep	vegetation patterns, con the vegetation of the vegetation	Start Time  SA Design of the standard surrounding lands of the standard structure, areast flower standard flow	exotics and invasives, de sinds in green.  Flooding characteristics her factors that define to after the field data is considered.	end Time  on and impacts)  for be of a listurbance evidence  yet in this part  and evidence of overhe SA limits)  ollected.)	e, fire and herbivory)  recovery  dicular area  rerbank flooding; soil  still recovery
SA Landscape Conte  Arca  Fr  SA Biotic Condition (  From a  Chr  SA Abiotic Condition  disturbance and other  Seep	vegetation patterns, con the vegetation of the vegetation	Start Time  SA Designation and surrounding lands  to still  winter Sea  mposition and structure,  Arem Plower  Noticeable  15 to turn  15 (e.g., dams, walls etc.); to the hydrologic breaks or other  cracked	exotics and invasives, de sinds in green.  Flooding characteristics her factors that define to after the field data is considered.	end Time  on and impacts)  for be of a listurbance evidence  yet in this part  and evidence of overhe SA limits)  ollected.)	e, fire and herbivory)  recovery  dicular area  rerbank flooding; soil  still recovery

SA CODE: SF2MI[4]

SA Name: Two Mile Pond Reservoir Transect [ 4 ]

Date: 4/9/24

Surveyor Initials: D5

NMRAM - SA Rank Summar	Worksheet: Montane Riverine Wetlands 2.5
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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
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	Ч	0.2	
A4. Stream Bank Stability and Cover	Ч	0.2	
A5. Soil Surface Condition	i)	0.1	

Major Attribute	Score	Wt.	Wt. Score
Landscape Context	3.25	0.3	0.975
Biotic	3.4	0.35	1 27 -
Abiotic	3.75	0.35	
SA WETLAN	D CONDITION	SCORE Σ	3,472
SA WETLAN	D RANK =		A

Rank	Score	Description
Α	≥3.25 - 4.0	Excellent Condition
В	≥2.5 - <3.25	Good Condition
С	≥1.75 - <2.5	Fair Condition
D	1.0 - <1.75	Poor Condition

Stressor Summary	Major	Minor	Top Three
	0	0	1 Recovery From wister
			2 less nator
			3 steep edage

Stressor Comments (Evaluation of risk)

No Water coming from seep

SA CODE: SF2MI[4]

**SA Name :** Two Mile Pond Reservoir Transect [  $\frac{\checkmark}{}$  ]

Date: 4/9/24

Surveyor Initials :

# **Landscape Context**

La -	Buffer	Integrity	<sup>r</sup> Index			V 10 1 1 1				
or are	sheet 1 exclude ear of im	ed and cons	nd RCC Checklist. ( idered non-buffer (	Check off I elements t	and cover o hat disrupt	elemen t ecosys	ts with tem co	in the buffer innectivity. I	area or RCC co ndicate the ima	rridors that are either allowed gery type and date (season
lmage	ery	Google Eart	h KMZ. file			lmage	Date	6/23		
Allow	ed buffe	r/RCC land	cover elements			Exclud	led nor	<u> </u> n-buffer/RCC	land cover ele	ments
Buffer	RCC					Buffer				
X	x	Natural or s	emi-natural vegeta	tion patch	nes	X	X			velopments, parking lots, , and other structures
X	X	Small irriga	tion ditches withou	t levees				Lawns, park	s, golf courses,	sports fields
		Old fields, u	nmaintained					Railroads		W
		Open range	land						levees, sedime aging areas	nt piles, construction
X	IXII	Foot trails, h intensity)	norse trails, unpave	d bike trail	ls (low			Intensive liv	estock areas, h	orse paddocks, feedlots
X	I X	Non-channe	el open water						riculture: main orchards, and vi	tained pastures, hay fields, neyards
X			ning abandoned v curring levees	egetated l	evees, or	x		Paved roads graded road		second-order unpaved but
Segment of the segmen		unpaved tw	o tracks roads			X	1711	Open water structure	bounded by a	levee or other manmade
		Other						Other		
Works	heet 1b	. Buffer Pei	cent Sub-metric.	Measure o	r estimate	the per	centag	e of the	Tabl	e L1a. Buffer Percent
oa peri Box be	meter c	omposed o e the sub-m	f allowed buffer ele etric using Table L	ments and I a and ent	d enter into er the ratin	the Bu a on th	iffer Pei ie Buffe	rcent	Rating	Buffer Percent
ntegri	ty Sumn	nary Worksh	eet 1d.						C 4	100%
w			Buffer Percen	t (%)=	85%				( <del>X</del> 3	≥80% - <100%
/orksh	eet 1c.	Buffer Widt	t <b>h Sub-metric.</b> Me	asure the l	enath of ea	ach buf	fer line	in meters in	C 2	≥50% - <80%
ie GIS	or on the	e map. Aver	age the line length	s and rate	using Tabl	e L1b. E	nter th	e rating on	C 1	<50%
ie Bum			ry Worksheet 1d. <b>Buffer Width</b>		D 66 11		T =		Tabl	e L1b. Buffer Width
Line		(m)	(ft)	Line	Buffer W (m)		But	ffer Width (ft)	Rating	Average buffer width
Α	164	4.26	538.91	E	161.93		5	31.26	1 4	≥190m
В	125	5.25	410.92	F	231.48	3	7	59.44	<b>(</b> ₹ 3	≥130 - <190m
C	115	5.39	378.57	G	121.25	5	3	97.80	C 2	≥65 - <130m
D	11	1.07	364.40	н	155.87	7	51	1.38	<u>C 1</u>	<65m
									F	
	Averag	je	148.31 (m)		486.58		(ft)		Table Lic. S	ummary Rating for Buffer
Vorksk			(,				(ft)		lable L1c. S	ummary Rating for Buffer Integrity
<b>Vorksh</b> nd L1b	eet 1d.	Buffer Inte	grity Summary. E	nter the su	ıb-metric R	atings i	rom Ta	bles L1a	Rating	
nd L1b elow. l	eet 1d. above to	<b>Buffer Inte</b> to calculate e Buffer Inte	egrity Summary. E the Buffer Integrity egrity Index Score,	Index Sco	ıb-metric R ore using th	ne form	rom Ta ula in t	he box		Integrity
nd L1b elow. l	eet 1d. above to	<b>Buffer Inte</b> to calculate	egrity Summary. E the Buffer Integrity egrity Index Score,	Index Sco	ıb-metric R ore using th	ne form	rom Ta ula in t	he box	Rating  ( 4  ( 3	integrity Score
nd L1b elow. t	eet 1d. above to	Buffer Inte to calculate e Buffer Inte ummary Wo	egrity Summary. E the Buffer Integrity egrity Index Score,	/ Index Sco	ib-metric R ore using th g for Buffe	ne form r Integr	rom Ta ula in t ity in Ta	he box	Rating 4	Integrity Score >3.5

SA CODE: SF2MI[ 1

**SA Name:** Two Mile Pond Reservoir Transect [ | ]

Date: 4/9/24

Surveyor Initials: 05

#### 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	n Segment	Downstrea	m 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	C	)
D) Total Disruption both segments		(	)	
E) % Total Disruptions = (D/2000)*100	Zero disi	ruption notic	eable along t	the banks.

Та	ble L2. RCC Rating
Rating	Description
(x 4	0% total disruption on both segments combined.
C 3	<15% total disruption on both segments combined.
C 2	≥15% - <40% total disruption on both segments combined.
C 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						RI	WSI		
Current Size	1	Historic Size	=	RSR	1	-	RSR	х	100	=	RWSI (%)
9	1	10	= 3	0.9	1	(5)	0.1	Х	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
C3	>10% -≤40%	Wetland remains equal to or more than 60% of its natual size
C 2	>40% - ≤70%	Wetland has been reduced by more than 40% its natural size
C1	>70%	Wetland has been reduced by more than 70% its natural size

SA Name:

SF2MI[ // ]

Two Mile Pond Reservoir Transect [  $\mbox{\em 9}$  ]

Date:

4/9/24

Surveyor Initials:

0)

# 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
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
C 4	≥95 - 100
C 3	≥80 - <95
<b>(</b> ₹ 2	≥40 - <80
<u> </u>	<40

SA Name: Iwo Mile Pond Reservoir Iransect [ ~ ]

SA CODE: STZIMI L CLI

**Biotic Metrics** 

Surveyor Initials:

Date: 4/09/24

Species Cover (BS) 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 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 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 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 Appendix D). Use the comments box for documenting and describing vegetation community patch features.

olygon	Polygon B3 Vertical Structure No Type	B4 Tree Regeneration B % Cover	35 Invasive Exotic Species % Cover	Invasive Exotic Species (List Code(s))	Comments
-	IA1				
2	IA2				
m	IIA1				
4	IIIB1	%09	None	None	Current soon growing not as many birds
2	IIC1	100%	%01 ≈	Mustor & Muller	Some Qunipers 1 Salt bush / Chimisa
9	IVEI				, ,
7	IVF1				
∞					
6					
10					
=					
12					
13					
14					
15					
16					
17					
18					
19					
20					

SA CODF SF2MI[ 🗸 ]

**SA Name:** Two Mile Pond Reservoir Transet [ imes ]

| Reservoir Trarract [ ゲ ] Date: があり シップ Surveyor Initials:

# **B1 - Relative Native Plant Community Composition**

Raw4 |% SA5 |Wt Score6 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 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 4.0 10% 20 CT Score 4 Final Weighted Score<sup>7</sup>  $\mathcal{N} \mid b$  lue ston  $\mid \mathcal{N} \mid$ Species 6 E Herbaceous/Sparse Stratum 3 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. Species 5 E Meadow 5 > Species 4 E Chimise 145 Short Woody Stratum 2 5 5 Species 3 E Salthus Willow! Species 2 Tall Woody Stratum 1 ш Z Species 1 Polygon Nos. T ⋖ മ U ۵ ш щ G ェ ¥ Σ 0 Z

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 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 for Relative Native Plant Community Composition on the SA Rank Summary Worksheet.

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SA Name:

Two Mile Pond Reservoir Transect [ 1 ]

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Tabl	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		
<u> </u>		≤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.

izontal	Patch	Structure	nattern	A.R.C.	or D:
IZVIILGI	ratti	Jucture	pattern	$A_1 \cup A_2 \cup A_3$	VI D.

D	
1.7	
$\checkmark$	

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		

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 low 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 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 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	<b>Dominant VST</b>	Co- or Sub-dominant VST ≥15%	Sub-dominant VST ≥5%
	1	5	6W and/or 6H
` 4	1	6W	
	2 or 1 and 2	5	6W and/or 6H
	1		
3	2 or 1 and 2	5	
3	2 or 1 and 2	6W	
	5	6W	
	2 or 1 and 2		
2	5		
	6W		
	65		
1	6H		
	7		

SA Name:

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Two Mile Pond Reservoir Transect [  $\frac{4}{3}$  ]

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**B4 - Native Riparian Tree Regeneration** 

4. 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
<b>A</b> 4	Native poles, sapling, and seedlings trees well represented, obvious regeneration, many patches or polygons with >5% cover, typically multiple size (age) classes.
C 3	Native poles, saplings and/or seedlings common, scattered patches or polygons with 1% -5% cover, size classes few.
C 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.
<u> </u>	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 %				
C 4	0%				
7 3 X	>0% - <1%				
2	≥1% - <10%				
C 1	≥10				

#### Additional CTs and Biotic Metric Comments:

Current growing down by Water. magnorts seen in transect. Shady sid of hill very moist.

SA CODE: SF2MI[ / ]

**SA Name:** Two Mile Pond Reservoir Transect [  $\frac{4}{3}$  ]

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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)
	Ø		Active side channels
			Abandoned channels
			Backwater/eddy
			Riffles or rapids
	$\wp$		Shoals, sparely-vegetated bars
	1		Channel boulders
			Oxbow lakes/ponds on floodplains
			Vegetated island and side bars
	$\boxtimes$		Terraces
			Channel pools
	[XI		Beaver ponds
			Swales, depressional features on floodplains
	X		Debris jams in channel
			Woody wrack piles on the floodplain
			Floodplain micro-topography (mounds, pits)
			Downed logs
	X		Natural levees
			Standing snags
			Variegated, convoluted, or crenulated foreshore
			Undercut banks in channels
			No. of unique Patch Types

Tab	Table A2. Rating for Physical Patch Complexity					
Rati	ng	Description				
	4	<b>High</b> 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).				
st)	3	<b>Moderate</b> 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).				
C	2	<b>Limited</b> 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).				
C	1	<b>Little</b> 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, $\leq 5$ 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)
		M		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.
		內		Perennial riparian vegetation is abundant and well established along the bankfull contour, but not below it.
		Þ		There is leaf litter, thatch, or wrack in most pools.
Indicators of	` <b>□</b>	Ø		The channel contains embedded woody debris of the size and amount consistent with what is naturally available in the riparian area.
Channel Equilibrium		Ø		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.
		図		The channel bed is not planar and without an abundance of fine materials filling the interstitial spaces between larger stream substrate.
		$\square$		There are channel pools at meander bends and some deep pools within the reach.
				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.
Indicators of Active Degradation				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.
				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.
Indicators of Active Aggradation				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
7 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.
C 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.
C 2	There is evidence of severe aggradation or degradation throughout most of the channel through the SA. Circle primary process: aggradation or degradation.
C 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.

rating on the SA Sun			_	
Condition	Upper Segment	Middle Segment	Lower Segment	Field Indicators
	□4	<u> </u>        4	<b>□</b> 4	Infrequent raw banks, less than 10% of steam bank under stress from trampling, slumping, vegetation removal or active erosion, etc.
Indicators of Bank	□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.
Soil Stability	□2	□2	□2	Significant raw banks and loose soil, 25%-50% of stream bank under stress, trampled, slumping or eroding etc.
	1	<u></u> 1	<u></u> 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.
	<u></u> 4	<u>\</u> 34	□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.
Indicators of Stream Bank Erosion Potential	<b>□</b> 2	<b>□</b> 2	<b>□</b> 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.
	<u></u> 1	<u></u> 1	<u></u> 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	
<b>%</b> 4	>3.5 - 4.0	
C 3	>2.5 - ≤3.5	
C 2	>1.5 - ≤2.5	
C 1	1.0 - ≤1.5	

Date: 4/9/24

**SA Name:** Two Mile Pond Reservoir Transect [ // ]

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## **A5 - Soil Surface Condition**

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).
	X		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
<b>%</b> 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.
C 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.
C 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 area 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.
<b>C</b> 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. Wate 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[ // ]

**SA Name:** Two Mile Pond Reservoir Transect [ 4 ]

Date: 4/92

**Surveyor Initials:** 

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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 at the stressor is uncertain, which is a stressor is uncertain, which is a stressor is uncertain, which is a stressor in Dominant Stressor column(Pick up to 3).

lank		Afi	fect		Strassor Group/Strassor	6
MILIK	Major	Minor	Absent	Unknown	Stressor Group/Stressor	Comments
			T T		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	
			[Z]		Adverse sediment input (roads/development)	
					Artificial water additions	
					Sewer treatment effluent	
					Point source urban runoff	
					Factory, feedlot outfall	
					Agricultural irrigation ditch returns	
			Ф		Mining waste	
	Spino, m			CHAPTER S	Ground water pumping	
ļ					Urban depletions	
					Fracking	
			Ŋ		Agriculture irrigation wells	
					Watershed alteration	
					Extensive recent fires in watershed	
					Extensive recent timber harvest	
					Extensive open pit mining in watershed	7
					Livestock/wildlife overgrazing	
					Local biodiversity impacts	
					Evidence of excessive grazing (local)	
			Þ		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		DV THE	
SA Code SF2MI[	9 1 SA Name: Two	Mile Pond Reservoir		Project : B	iparian Asse	sement
/ )de Tsct [ 4	] AU Name : Tra	nsect [ 4]			Mile Pond	CE CONTROL PAGE
County Santa Fe			levation (ft) 72			
decommissione of water rights. Driving Directions Driving to Santa	and Boundary (Rationale m that leads into a pond l ed due to safety concerns a Fe from Albuquerque vo	e, comments) ocated on the east side o regarding the reservoir a	f Santa Fe borde nd a water diver	ering the Santa Fe N	ational Fore recently sh	ut down due to lack
	ntil you reach the reservo ure Conservative and The	in located to the North.	Data Sharing Restrictions	Results to client only.	Fish Obse Wetla	rved in
Surveyor Role		Surveyo	Charles and Charle		Wetla	Surveyor Initial
Landscape	Dustin					() e
Biotic	Annie 1	Dustin				1/2
Abiotic	Dustin	7 7 17				05
Stressors	Both					0)
Easting (m)	Northing (m)	Zone	Datum	1.00		N)
-105° 53' 24" W	35° 41' 23" N	13	NAD- 83 U	SAU TOUR	(DD ft)	Longitude (DD ft
Survey Date	5/15/24	Start Time	IVAD- 63 U	VSS		-105.89
)	JIIJET	SA Desc	4-172	End 1	ime	
A Biotic Condition	leaves budd,  (vegetation patterns, con	aposition and structure e	votics and inva	ilvos disturbance a	44	Charles Control
Spotte	Full of leaves, Towher, Stink June bugs	bug, Red	winged b	lack bird,	Amoric	sprouthy
A Abjotic Condition	(hydrological alternation	by pond				at Nobin
sturbance and othe	r site impacts; explain the	le.g., dams, walls etc.]; flood hydrologic breaks or oth	ooding characte er factors that d	eristics and evidence efine the SA limits)	of overban	k flooding; soil
sturbance and othe	r site impacts; explain the	le.g., dams, walls etc.]; flo hydrologic breaks or oth	ooding characte er factors that d	eristics and evidence efine the SA limits)	of overban	k flooding; soil
sturbance and othe	r site impacts; explain the	ere is slight	er factors that d	eristics and evidence define the SA limits) mor's f	of overban	k flooding; soil
isturbance and othe	r site impacts; explain the	ere is slight	er factors that d	eristics and evidence define the SA limits) mor's f	of overban	k flooding; soil

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SA Name: Two Mile Pond Reservoir Transect [ 4/ ]

Date: 5/15/24

Surveyor Initials: 05

MRAM - SA Rank Summar	Worksheet: Montane Riverine Wetlands 2.5
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Metric Description	Rating	Wt	Final Score
		Σ 1.0	3.25
andscape Context	3	0.25	0,75
1. Buffer Integrity Index	4	0.25	1.0
2. Riparian Corridor Connectivity	4	0.25	1.0
3. Relative Wetland Size	2	0.25	0.5
4. Surrounding Land Use		0,23	0.0
Siotic		Σ	
31. Relative Native Plant Community Composition	4	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	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	14	0.1	

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 WETLAN	D CONDITIO	N SCORE Σ	3.40
SA WETLAN	D RANK =		A

Rank	Score	Description
А	≥3.25 - 4.0	Excellent Condition
В	≥2.5 - <3.25	Good Condition
С	≥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 nater
			2
			3

tressor	Comments	(Evaluation	of risk)

Still no water From seep but plants budding around it,

SA CODE: SF2MI[4]

**SA Name:** Two Mile Pond Reservoir Transect [  $\checkmark$  ]

Date: 5/15/24

Surveyor Initials: DS

# **Landscape Context**

L, ,	Buffe	er Integrit	v Index		Lung	cape	COII	text					
<b>Worl</b> or are	<b>csheet</b> e exclu	1a. Buffer a	and RCC Checklist.	Check or r elemen	off land cover ts that disrup	elemen ot ecosy:	its with	in the buffe onnectivity.	er area	a or RCC c	orridors that are e agery type and d	either allowed late (season	
lmag			rth KMZ. file			Image	mage Date 6/23						
		fer/RCC lan	d cover elements			Exclud	ded noi	 n-buffer/RC	Clan	d cover el	ements		
Buffe	r RCC					Buffer	RCC	Janeine	C lui l	a cover en	ements		
X	x		semi-natural veget			X	X	Commerci dams, brid	al/res	sidential d	evelopments, pai s, and other struc	rking lots,	
X	X		ation ditches witho	ut levees			П				, sports fields	.tures	
		Old fields,	unmaintained			一百	一	Railroads			, sports ricius		
		Open rang	e land					Maintained materials, s	l leve	es, sedimo	ent piles, constru	ction	
X	X	Foot trails, intensity)	horse trails, unpaved bike trails (low								norse paddocks, fo	eedlots	
X	X		el open water  Intensive agriculture: maintained pasturow crops, orchards, and vineyards				ntained pastures, inevards	hay fields,					
X	X	Non-function naturally oc	ioning abandoned vegetated levees, or occurring levees			×	[V]		s or d	or developed second-order unpaved bu			
		unpaved tw	o tracks roads			X	X	Open water structure	bou	nded by a	levee or other ma	anmade	
		Other						Other					
, ben	meter i	composed o	rcent Sub-metric. If allowed buffer ele	amentc a	nd antar into	tha Du	۲۲ مر D			Tab	e L1a. Buffer Pe	rcent	
N DG	Ow. na	te the sub-m mary Worksh	netric using Table L	1a and e	nter the ratin	g on the	e Buffe	r		Rating	Buffer Po	ercent	
	•		Buffer Percer	nt (%)-	85%	***************************************			$\circ$	4	1009	%	
									Ø	3	≥80% - <	100%	
orksh GIS (	eet 1c. Or on th	Buffer Wid	th Sub-metric. Me	asure the	e length of ea	ch buff	er line i	n meters in	][으	2	≥50% - <	<80%	
0,5	71 011 (1	ic map. Avei	rage the line length ry Worksheet 1d.	is and rai	e using Table	e L1b. Er	nter the	rating on		1	< 509	%	
ne		fer Width (m)	Buffer Width (ft)	Line	Buffer W	idth	Buff	fer Width			le L1b. Buffer Wi	dth	
Α	16	4.26	538.91	E	( <b>m</b> ) 161,93	······································	F.	(ft)		Rating	Average buf	fer width	
В	12	5.25	410.92	F	231,48			31.26	<u></u>	4	≥190r		
		5.39						9.44	( <u>8</u> )	2	≥130 - <1		
			378.57	G	121.25		39	7.80		1	≥65 - <13 <65m		
)	11	1.07	364.40	Н	155.87		51	1.38	L3	-	70311	1	
	Avera		148.31 (m)		486.58		(ft)		Та	ble L1c. S	ummary Rating Integrity	for Buffer	
d L1b	above	to calculate	grity Summary. En	nter the s	sub-metric Ra	atings fr	om Tab	les L1a		Pating	J ,		

Buffer % Rating + Buffer Width Rating /2 = Buffer Integrity Index Score  3 + 3 /2 = 3	below. Using the	o calculate t Buffer Inteq ummary Wor	he Buffer Integrity I Jrity Index Score, er	ndex Scor	o-metric Ratings from Tables L1a re using the formula in the box I for Buffer Integrity in Table L1c
3 + 3 /2= 3	Buffer % Rating	t + Bufi	fer Width Rating	/2 =	Buffer Integrity Index Score
	3	+	3	/2 =	3

_		Integrity
į	Rating	Score
	○ 4	>3.5
	<b>(</b> ₹ 3	>2.5 - ≤3.5
	C 2	>1.5 - ≤2.5
	$\bigcirc$ 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 egment 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 otal 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.

Upstream	n Segment	Downstrea	m Segment	
Left Bank Right Bank		Left Bank	Right Bank	
0	0	0	0	
	0		0	
	0	0		
		0		
Zero dis	ruption notic	eable along	the banks.	
	Upstrear Left Bank 0	0 0	Upstream Segment Downstream Left Bank Right Bank Left Bank 0 0 0 0	

Table L2. RCC Rating							
Rating	Description						
	<b>0%</b> total disruption on both segments combined.						
O 3	<15% total disruption on both segments combined.						
O 2	≥15% - <40% total disruption on both segments combined.						
0 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	1	Historic Size		RSR	1	+	RSR	Х	100	=	RWSI (%)	
•	-	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
<b>(</b> 3	>10% - ≤40%	Wetland remains equal to or more than 60% of its natual size
C2	>40% - ≤70%	Wetland has been reduced by more than 40% its natural size
O1	>70%	Wetland has been reduced by more than 70% its natural size

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# L4 - Surrounding Land Use

prksheet 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
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. Suri	Table L4. Surrounding Land Use Rating						
Rating	LUI Score						
O 4	≥95 - 100						
O 3	≥80 - <95						
<b>⊗</b> 2	≥40 - <80						
O 1	<40						

SA CODE: SFZMI [ / ]

**Biotic Metrics** 

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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 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 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 6 % Cover	35 Invasive Exotic Species % Cover	Invasive Exotic Species (List Code(s))	Comments
-	IA1				
2	IA2				
m	llA1				
4	11811	1,59	None	None	Cat tails starting to grow are a cope
2	IIIC1	1604	None	None	Not much now like but getting greener.
9	IVEI				
7	IVF1				
8					
6					
10					
=					
12					
13					
4					
15					
16					
17					
18					
19					
70					

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SA Name: Two Mile Pond Reservoir Transect [ + ]

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**B1 - Relative Native Plant Community Composition** 

	Tall Woody Stratum <sup>1</sup>	Tall W	/oody	Tall Woody Stratum 1	11		Short Woody Stratum <sup>2</sup>	dy Stratu	um 2		Short Woody Stratum 2 Herbaceous/Sparse Stratum 3	s/Sparse	Stratum 3		CT Score 4	4 6	
Polygon Nos.	Nos.	Species 1		ш 2	Species 2	ш 2	Species 3	· Ш :	Species 4	ш :	Species 5	Ш	Species 6	Е	Raw4	ς <b>Δ</b> 5	Wt Score
S						z		2	C. o. x	z	Mechal	z 2	blocetm		1		אני אני אני
7-					Ž Ž		N. P.	200	To to	2 2	Catal	- Kin		2 2	5	5 00	
								9		2	5	>	100 m	?	2	5	
										-							
													PARAMETER STATE OF ST				
																:	
												Final	Final Woighted Core7	CroreZ			011

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. Page 7 of 17 SA CODE: SF2MI[ 4]

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T	able B1	. Relative Native Plant C	ommunity Composition Rating
R	ating	CT Fina	l Weighted Score
· .	4	≥ 3.75	<10% non-native
(	3	≥ 3.25 and <3.75	10% ≤20% non-native
7	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.
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

**Forksheet 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 time VST) x 100. Enter the total %SA for each VST below.

	VST 1	VST 2	VST 5	VST 6S	VST 6W	VST 6H	VST 7
	High Structure	Low Structure	Tall Shrubland	Short	Herbaceous	Herbaceous	Sparse
	Forest	Forest		Shrubland	Wetland	Vegetation	Vegetation
Fotal % of SA			58		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 low 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 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 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 lating on the SA Rank Summary Worksheet.

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

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# **B4 - Native Riparian Tree Regeneration**

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
C / 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.
<u> </u>	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.
0 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.

Invasive cover (%)

calculate

Table B5. Ra	tings for Invasive Exotic Plant Species Cover
Rating	Invasive Species Cover %
C 4	0%
C 3+	>0% - <1%
2	≥1% - <10%
C 1	≥10

### Additional CTs and Biotic Metric Comments:

Currant is full of green leaves same as

SA CODE: SF2MI[

Date:

SA Name:

Two Mile Pond Reservoir Transect [

Surveyor Initials:

# **Abiotic Metrics**

# A1 - Floodplain Hydrologic Connectivity

### Method 1

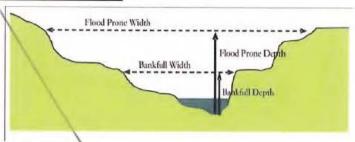
Worksheet 10a. Floodplain Hydrologic Connectivity Measurements. The following six steps are conducted at each of three cross-sections at the approximate mid-points along straight riffles and away from deep pools or meander bends. Use a measuring tape and temporary stakes for horizontal measurements, 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 Measure the distance between the right and left bankfull conto				
2: Maximum bankfull depth	Keeping the tape level between the right and left bankfull cont of the line above the thalweg (the deepest part of the channel). help here.	ours, measure the height . A pocket line level can			
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 (Ste	ep 1).			
6: Calculate average ratio	Calculate the average for Step 5 for all three replicate cross-sect using Table A1a. Enter the rating in the A1 box on the SA Rank	tions. Enter the average her Summary Worksheet.	e and r	ate	

Rating Method

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

Rating	Description
C 4	Average entrenchment ratio is ≥ 2.2;
O 3	Average entrenchment ratio is ≥1.9 - <2.2
O 2	Average entrenchment ratio is ≥1.5 - <1.9
0 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.

J	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			
0 4	Average entrenchment ratio is ≥ 1.9			
3	Average entrenchment ratio is ≥1.4 - <1.9			
0 2	Average entrenchment ratio is ≥1.2 - <1.4			
0 1	Average entrenchment ratio is < 1.2			

SA Name: Two Mile Pond Reservoir Transect [ ] Surveyor Initials:  Method 2	n, inset floodplain or devidence for overband on of the floodplain.  mmary Worksheet.  ain transition, with detation and shows odplain and preclude ation than fully.  Floodplain supports a
a A1c. Narratve Floodplain Hydrologic Connectivity Rating. Select the narrative description that best describes hydrologic connectivity. At each cross-section, use Worksheet 10b to record channel incision, bank modification, inset flotother hydrologic evidence that would preclude natural floodplain inundation. Conversely, assess indicators and evidence flow and floodplain inundation. Record whether beaver activity is obscuring bankful indicators due to Inundation of the Select a rating from the table below. Use data from Worksheets 10b to help select rating. Enter Rating on SA Summary WPhotographs are required at each cross-section and recorded in Table A1d.  Rating Description  Fully connected to the natural floodplain. Indicators of bankfull discharge are at the bank/floodplain transi over-bankfull flows likely to inundate a broad area of floodplain. Floodplain supports riparfan vegetation a signs of overbank sediment deposition. Or beaver ponds inundate the entire, normally active floodplain at the identification of bankfull indicators and the active floodplain with.  Flow access to the floodplain/moderately limited by incision, channelization. Less frequent inundation that connected streams described above (as noted by bankfull indicators below floodplain supporting riparian overstory, but some understory plants may be upland. An inset floodplain supporting riparian overstory, but some understory plants may be upland. An inset floodplain supporting riparian overstory, but some understory plants may be upland. An inset floodplain supporting riparian overstory, but some understory plants may be upland. An inset floodplain supporting riparian overstory, but some understory plants may be upland. An inset floodplain supporting riparian overstory, but some understory plants may be upland. An inset floodplain supporting riparian vergarian vegatation and sediment regimes. Or the stream has minimal access to the natural floodplain due to incisio channelization, or floodplain floodplain, either flyrough incision, ban	n, inset floodplain or devidence for overband on of the floodplain.  mmary Worksheet.  ain transition, with detation and shows odplain and preclude ation than fully.  Floodplain supports a
hydrologic connectivity, At each cross-section, use Worksheet 10b to record channel incision, bank modification, inset floother hydrologic evidence that would preclude natural floodplain inundation. Conversely, assess indicators and evidence flow and floodplain inundation. Record whether beaver activity is obscuring bankful indicators due to undation of the Select a rating from the table below. Use data from Worksheets 10b to help select rating. Enter Rating on SA Summary We Photographs are required at each cross-section and recorded in Table A1d.  Rating Description  Fully connected to the natural floodplain. Indicators of bankfull discharge are at the bank/floodplain transi over-bankfull flows likely to inundate a broad area of floodplain. Floodplain supports riparfan vegetation a signs of overbank sediment deposition. Or beaver ponds inundate the entire, normally active floodplain at the identification of bankfull indicators and the active floodplain width.  Flow access to the floodplain/moderately limited by incision, channelization. Less frequent inundation that connected streams described above (as noted by bankfull indicators below floodplain supporting riparian overstory, but some understory plants may be upland. An inset floodplain supporting riparian vegatation and sediment regimes. Or the stream has minimal access to the natural floodplain due to incision channelization, or flow modification, and the natural floodplain formed, which is regularly inundated and support relatively long-lived phreatophytes (e.g., vottonwood, salt cedar, etc.).  Fully disconnected from floodplain, either through incision, bank modification/channelization, or hydrolog modification (i.e., abandonment of floodplain due to descreased peak flows). Indicators may include uplance and lack of overbank sediment deposits on the floodplain, etc.  A. A. Photo Point Log for Cross-Section Photographs. For each cross-section record the digital names/numbers of ken looking Upstream and Downstream from the thalwegiand looking Bank Right a	n, inset floodplain or devidence for overband on of the floodplain.  mmary Worksheet.  ain transition, with detation and shows odplain and preclude ation than fully.  Floodplain supports a
Fully connected to the natural floodplain. Indicators of bankfull discharge are at the bank/floodplain transi over-bankfull flows likely to inundate a broad area of floodplain. Floodplain supports riparian vegetation a signs of overbank sediment deposition. Or beaver ponds inundate the entire, normally active floodplain are the identification of bankfull indicators and the active floodplain width.  Flow access to the floodplain/moderately limited by incision, channelization. Less frequent inundation that connected streams described above (as noted by bankfull indicators below floodplain supporting riparian overstory, but some understory plants may be upland. An inset floodplain supporting riparian veg also be present.  Incised, channelized or modified with an inset floodplain formed, which is regularly inundated and suppor vegetation and sediment regimes. Or the stream has minimal access to the natural floodplain due to incisic channelization, or flow modification, and the natural floodplain/goes not support riparian vegetation exceptatively long-lived phreatophytes (e.g., cottonwood, salt cedar, etc.).  Fully disconnected from floodplain, either through incision, bank modification/channelization, or hydrolog modification (i.e., abandonment of floodplain, due to decreased peak flows). Indicators may include uplant and lack of overbank sediment deposits on the floodplain, etc.  A1d. Photo Point Log for Cross-Section Photographs. For each cross-section record the digital names/numbers of the lood with SA name and Cross-section tape and flags indicating bankful in the ground when taking the Bank Right and Bank too board with SA name and cross-section information is helpful, "The bank of a stream or river on the right (left) of the cing in the direction of flow or downstream.) See Appendix E for additional details.  Forms Easting Northing (Longitude) Upstream Downstream Bank Right  Downstream Bank Right	etation and shows odplain and preclude ation than fully . Floodplain supports a
over-bankfull flows likely to inundate a broad area of floodplain. Floodplain supports riparian vegetation a signs of overbank sediment deposition. Or beaver ponds inundate the entire, normally active floodplain are the identification of bankfull indicators and the active floodplain width.  Flow access to the floodplain moderately limited by incision, channelization. Less frequent inundation that connected streams described above (as noted by bankfull indicators below floodplain supporting riparian veg also be present.  Incised, channelized or modified with an inset floodplain formed, which is regularly inundated and suppor vegetation and sediment regimes. Or the stream has minimal access to the natural floodplain due to incisic channelization, or flow modification, and the natural floodplaing/does not support riparian vegetation exceptatively long-lived phreatophytes (e.g., cottonwood, salt cedar, etc.).  Fully disconnected from floodplain, either through incision, bank modification/channelization, or hydrolog modification (i.e., abandonment of floodplain, either through incision, bank modifications and lack of overbank sediment deposits on the floodplain, etc.  A1d. Photo Point Log for Cross-Section Photographs. For each cross-section record the digital names/numbers of each looking Upstream and Downstream from the thalweg and looking Bank Right* and Bank Left* across the stream from too board with SA name and cross-section information is helpful. (*The bank of a stream or river on the right (left) of the ling in the direction of flow or downstream.) See Appendix E for additional details.  Flow a cross to the floodplain by the Bank Right and Bank Right Bank Right Right Right Bank Right	etation and shows odplain and preclude ation than fully . Floodplain supports a
connected streams described above (as noted by bankfull indicators below floodplain transition). Floodplain riparian overstory, but some understory plants may be upland. An inset floodplain supporting riparian veg also be present.  Incised, channelized or modified with an inset floodplain formed, which is regularly inundated and support 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 relatively long-lived phreatophytes (e.g., cottonwood, salt cedar, etc.).  Fully disconnected from floodplain, either through incision, bank modification/channelization, or hydrology modification (i.e., abandonment of floodplain due to decreased peak flows). Indicators may include uplant and lack of overbank sediment deposits on the floodplain, etc.  A1d. Photo Point Log for Cross-Section Photographs. For each cross-section record the digital names/numbers of ken looking Upstream and Downstream from the thalweg and looking Bank Right* and Bank Left* across the stream from soss-section. Leave the cross-section tape and flags indicating bankful in the ground when taking the Bank Right and Bank loto board with SA name and cross-section information is helpful. (*The bank of a stream or river on the right (left) of the ling in the direction of flow or downstream.) See Appendix E for additional details.  Tross Easting (Latitude) (Longitude) Upstream Downstream Bank Right  Downstream Bank Right  loodplain Hydrologic Connectivity Comments:	. Floodplain supports a
vegetation and sediment regimes. Or the stream has minimal access to the natural floodplain due to incisic channelization, or flow modification, and the natural floodplain does not support riparian vegetation excepted prelatively long-lived phreatophytes (e.g., cottonwood, salt cedar, etc.).  Fully disconnected from floodplain, either through incision, bank modification/channelization, or hydrolog modification (i.e., abandonment of floodplain due to decreased peak flows). Indicators may include uplant and lack of overbank sediment deposits on the floodplain, etc.  Ald. Photo Point Log for Cross-Section Photographs. For each cross-section record the digital names/numbers of ten looking Upstream and Downstream from the thalwey and looking Bank Right* and Bank Left* across the stream from the section. Leave the cross-section tape and flags indicating bankful in the ground when taking the Bank Right and Bank oto board with SA name and cross-section information is helpful. (*The bank of a stream or river on the right (left) of the direction of flow or downstream.) See Appendix E for additional details.  Toss  Easting (Longitude) Upstream Downstream Bank Right  Upstream Downstream Bank Right  Downstream Bank Right	d supports riparian
modification (i.e., abandonment of floodplain due to decreased peak flows). Indicators may include uplant and lack of overbank sediment deposits on the floodplain, etc.  1. Ald. Photo Point Log for Cross-Section Photographs. For each cross-section record the digital names/numbers of ken looking Upstream and Downstream from the thalwegrand looking Bank Right* and Bank Left* across the stream from the top board with SA name and cross-section information is helpful. (*The bank of a stream or river on the right (left) of the cing in the direction of flow or downstream.) See Appendix E for additional details.  1. Cross  Easting (Latitude)  Northing (Longitude)  Upstream  Downstream  Bank Right  1. Downstream  Bank Right  1. Downstream  Bank Right	e to incision, tion except for
sen looking Upstream and Downstream from the thalwey and looking Bank Right* and Bank Left* across the stream from obser-section. Leave the cross-section tape and flags indicating bankful in the ground when taking the Bank Right and Bank oto board with SA name and cross-section information is helpful. (*The bank of a stream or river on the right (left) of the cing in the direction of flow or downstream.) See Appendix E for additional details.    Pownstream	
1 2 3 loodplain Hydrologic Connectivity Comments:	ream from each side of and Bank Left photos.
3 loodplain Hydrologic Connectivity Comments:	
loodplain Hydrologic Connectivity Comments:	

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**SA Name:** Two Mile Pond Reservoir Transect [  $\mathcal{L}$  ]

Date: 5/15/24

Surveyor Initials:

# **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 Segmen		Lower Segment	Field Indicators (check all existing conditions)	
	<u>X</u>		Active side channels	
			Abandoned channels	
			Backwater/eddy	
			Riffles or rapids	
	囟		Shoals, sparely-vegetated bars	
	X		Channel boulders	
			Oxbow lakes/ponds on floodplains	
			Vegetated island and side bars	
	$\Box$		Terraces	
			Channel pools	
	X		Beaver ponds	
			Swales, depressional features on floodplains	
			Debris jams in channel	
			Woody wrack piles on the floodplain	
			Floodplain micro-topography (mounds, pits)	
			Downed logs	
	X		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					
C	4	<b>High</b> 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).					
A	3	<b>Moderate</b> 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).					
$\subset$	2	<b>Limited</b> 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).					
$\cap$	1	<b>Little</b> 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 ]

SA Name:

Two Mile Pond Reservoir Transect [ // ]

Date: 5/15/24

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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)	
		Q		The channel has a well-defined bankfull contour that clearly demarcates t point of incipient flooding where moderate frequent flow events spread facross the floodplain.	
				Perennial riparian vegetation is abundant and well established along the bankfull contour, but not below it.	
		7		There is leaf litter, thatch, or wrack in most pools.	
Indicators of		Į		The channel contains embedded woody debris of the size and amount consistent with what is naturally available in the riparian area.	
Channel Equilibrium				There is little or no active undercutting or burial of riparian vegetation.	
		Q		There are no bars that are densely vegetated with perennial vegetation (neither mid-channel bars or point bars).	
		Q		Channel and point-bars consist of well-sorted bed material.	
		Q		The channel bed is not planar and without an abundance of fine materials filling the interstitial spaces between larger stream substrate.	
		Q		There are channel pools at meander bends and some deep pools within the reach.	
				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.	
Indicators of Active Degradation				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.	
				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.	
Indicators of Active Aggradation				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.	

SF2MI[ 4] SA CODE:

Two Mile Pond Reservoir Transect [ / ] SA Name:

Date: 5/15/2/
Surveyor Initials: 065

Table A3. Rating for Channel Equilibrium						
Rating	Description					
<b>A</b>	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.					
<b>∩</b> 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.					
<u> </u>	There is evidence of severe aggradation or degradation throughout most of the channel through the SA. Circle primary process: aggradation or degradation.					
<u> </u>	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.

3 3/1 341	ading on the SA Suffillary Worksheet.						
Condition	Upper Segment	Middle Segment	Lower Segment	Field Indicators			
	<u></u> 4	<b>⋈</b> 4	<u></u> 4	Infrequent raw banks, less than 10% of steam bank under stress from trampling, slumping, vegetation removal or active erosion, etc.			
Indicators of Bank Soil Stability	<u></u> 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.			
Jon Stability	<u>2</u>	<b>□</b> 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.			
	<u></u> 4	<u></u> 4	<u></u> 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.			
	<u></u> 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.			
Indicators of Stream Bank Erosion Potential	<b>□</b> 2	<u></u> 2	<u> </u>	≥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.			
	<u> </u>	□1	<u></u> 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.			

	<u></u>
Average Indicator Score	

Table A4. Stream Bank Stability and Cover Rating					
Rating	Description				
<b>₹</b> 4	>3.5 - 4.0				
C 3	>2.5 - ≤3.5				
C 2	>1.5 - ≤2.5				
∩ 1	1.0 - ≤1.5				

SA CODE: SF2MI[ 4]

**SA Name:** Two Mile Pond Reservoir Transect [ 4 ]

Date: 5/15/24

Surveyor Initials: 065

# **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	Upper Segment   Middle Segment   Lower Segment		Field Indicators (Check all existing conditions)	
			Active erosion features due to anthropogenic disturbance (eg. rills, gullies, plant pedestals).	
	<b>[</b> 2]		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	
		77	

1	Table A5. Soil Surface Condition Rating								
Ra	ating	Description							
C	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.							
0	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.							
0	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.							
<u>ი</u>	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]

**SA Name:** Two Mile Pond Reservoir Transect [ 4 ]

Date: 5/15/24

Surveyor Initials:

Jorksheet 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 "Unknown ank Major Stressors in Dominant Stressor column(Pick up to 3)

Rank -	<u> </u>	Aft	fect		Strassov Cva - 15t	
iui IK	Major	Minor	Absent	Unknown	Stressor Group/Stressor	Comments
	History of the	11.			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	
	100	1000			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	
ditions	al Comment	tc				

ditional Comments

sion Date: 04/25/2022

Schema: Montane 2.5

# NMRAM Montane Riverine Wetlands Version 2.5

		SA Cover	· Worksheet	r Parker and			
SA Code SF2MI [ 4	' ] SA Name : Tw	o Mile Pond Reservoir		I	Project : R	iparian Assı	esement
Code Tsct [ 4 ]	AU Name : Tra	ansect [ 4 ]				Mile Pond	
County Santa Fe	HUC 12 Hea	dwaters Santa Fe River	levation (ft) 72		m) 2224.		oregion 6.0 NWFM
decommissioned of water rights. Driving Directions Driving to Santa	Fe from Albuquerque v	e, comments) located on the east side o regarding the reservoir ar ou head north on Old Peccori located to the North.	ila a water diver	ering the S	anta Fe Na area was	ational Fore	est. This reservoir wa nut down due to lack
Ownership The Natur		Santa Fe National Forest		Results to only.		Fish Obse Wetla	erved in
Surveyor Role		Surveyo	or Name			Wetta	Surveyor Initial
Landscape	Dustin Schwa	rtz					
Biotic	Annie McCoy						DS AM
Abiotic	Dustin Schwa	rtz					DS
Stressors	Dustin Schwa	rtz			· · · · · · · · · · · · · · · · · · ·		DS
Easting (m)	Northing (m)	Zone	Datum		Latitude	/DD (4)	
-105° 53' 24" W	35° 41' 23" N	13	NAD- 83 U1	ГМ	35.68972		Longitude (DD fi
					JJ100J1Z.	_	103.09
Survey Date	6/11/24	Start Time SA Descr			End T		15:00
A Biotic Condition (v	st (summarize the wetland from Raily)  Jesert Las  Some Const  Vegetation patterns, con	SA Description and structure of	ciption  Scape; include co	the stem	nd impact Powl then	last	tine.
A Biotic Condition (v	set (summarize the wetland from Raily desert Lass Some Construction patterns, con why black to ants an Brome Be	SA Description and surrounding lands a lot green a little process and lizards green and lizards green and lizards green and lizards	ription  scape; include compre black  exotics and invasing sound compre	ives, distur	then  bance evi  's	idence, fire	and herbivory) bug 70%
A Abiotic Condition (sturbance and others	set (summarize the wetland from Rain)  Jesert Las  Some Const  Jegetation patterns, con  why black and and Brome  Chydrological alterations site impacts; explain the	SA Description and surrounding lands  a lot green  a little  friction  mposition and structure, existed wheat graded lizards  get fly  see fly  see fly  see fly  see hydrologic breaks or other	experiment black compare black control compare black control compare compare compared compare	ives, distur	nd impact  Pond  then  bance evi  16, 18	idence, fire	and herbivory) bug 70%
A Abiotic Condition (sturbance and others	set (summarize the wetland from Raily desert has some constructions)  regetation patterns, con why black and and and Berome Berome Berome Berome water	SA Description and surrounding lands a lot green a little process a little process a little process a little process and lizards grade of lizards and lizards are fly as leagh, dams, walls etc.]; flow the hydrologic breaks or other is getting dams.	experience of the scape; include control of the scape; include control of the scape	ives, distur	bance evidence A limits)	idence, fire	and herbivory) bug 70%
A Abiotic Condition (sturbance and others	desart has some constructions site impacts; explain the water	SA Description and surrounding lands a lot green a little of truction and structure, exist a lizards of the hydrologic breaks or other is getting lands	experiment of the control of the con	ives, distur	bance evidence A limits)	idence, fire	and herbivory) bug 70%
A Abiotic Condition (sturbance and others	desart has some constructions site impacts; explain the water	SA Description and surrounding lands a lot green a little process a little process a little process a little process and lizards grade of lizards and lizards are fly as leagh, dams, walls etc.]; flow the hydrologic breaks or other is getting dams.	experiment of the control of the con	ives, distur	bance evidence A limits)	idence, fire	and herbivory) bug 70%

SA CODE: SF2MI[ 4 ]

**SA Name:** Two Mile Pond Reservoir Transect [ 1/2]

Date: 6/11/24

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
andscape Context	3	0.25	0.75
.1. Buffer Integrity Index	4	0.25	1.0
2. Riparian Corridor Connectivity	4	0.25	1.0
L3. Relative Wetland Size	2	0.25	0.5
L4. Surrounding Land Use			0.5
Biotic		Σ	
B1. Relative Native Plant Community Composition	4	0.2	
B2. Vegetation Horizontal Patch Structure	5	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	
	198	Σ	
Ablotic Compostivity		0.3	
A1. Floodplain Hydrologic Connectivity	3	0.2	
A2. Physical Patch Diversity	U	0.2	
A3. Channel Equilibrium	L/	0.2	
A4. Stream Bank Stability and Cover	7	0.1	
A5. Soil Surface Condition	7	0.1	

Major Attribute	Score	Wt.	Wt. Score
Landscape Context	3.25	0.3	0.975
Biotic	3	0.35	v.l
Abiotic	3,75	0.35	
SA WETLAN	D CONDITIO	N SCORE Σ	3,33
SA WETLAN	D RANK =		18

Rank	Score	Description
Α	≥3.25 - 4.0	Excellent Condition
В	≥2.5 - <3.25	Good Condition
С	≥1.75 - <2.5	Fair Condition
D	1.0 - < 1.75	Poor Condition

Stressor Summary	Major	Minor	Top Three				
	0	0	1	Not	45	much	nator
			2				
			3				

ssor Comments	(Evaluation of risk)			

SA CODE: SF2MI[4]

**SA Name :** Two Mile Pond Reservoir Transect [  $\mathcal{Y}$  ]

Date:

6/11/24

>1.5 - ≤2.5

≤1.5

Surveyor Initials: DS/AM

# **Landscape Context**

Work	sheet	r Integrity  1a. Buffer a	nd RCC Checklist.	Check of	ff land cover	elemen	ts with	in the buffer	area	or RCC co	orridors that are either allowe agery type and date (season	
and y	ear of i	magery).	sacrea non paner	cicinent	s triat disrup	t ecosys	stem co	onnectivity.	ndica	te the ima	agery type and date (season	
lmage	ery	Google Ear	th KMZ. file			lmage	Date	6/23				
Allow	ed bufi	er/RCC land	cover elements			Exclud	led nor	L n-buffer/RCC	land	coverele	monte	
Buffer				· · · · · · · · · · · · · · · · · · ·		Buffer		I-builel/ACC	ianu	cover ele	ments	
X	X	Natural or s	semi-natural vegeta	ation pat	ches	X	X				evelopments, parking lots, s, and other structures	
X	X	Small irriga	tion ditches withou	ıt levees		$I_{\Box}$	$\Box$				sports fields	
		Old fields, u	ınmaintained			Railroads						
		Open range	en range land					Maintained materials, st	levee	s, sedime	nt piles, construction	
X	X	Foot trails, I intensity)	norse trails, unpave	d bike tr	ails (low						orse paddocks, feedlots	
X	X	Non-channe	el open water					Intensive ag row crops, o			tained pastures, hay fields,	
X	Non-functioning abandoned v			egetated	l levees, or	X		Paved roads or developed second-order unpagraded roads				
П		unpaved tw	o tracks roads			×		Open water structure	water bounded by a levee or other manmade ure			
ال		Other						Other				
<b>Norksi</b> A peri	neet 1	o. Buffer Per	r <b>cent Sub-metric.</b> f allowed buffer ele	Measure	or estimate	the per	entage	e of the		Tabl	e L1a. Buffer Percent	
ox pei	ow. Ra	te the sub-m	netric using Table L	1a and e	nter the ratin	g on th	πer Per e Buffe	r		Rating	Buffer Percent	
ntegrit	y Sumi	mary Worksh					*******		0	4	100%	
	-		Buffer Percer		85%				<b>⊗</b>	3	≥80% - <100%	
orksh	eet 1c.	<b>Buffer Wid</b>	th Sub-metric. Me	asure the	e length of ea	ach buff	er line	in meters in		2	≥50% - <80%	
ie 012 (	זו טוו נו	ie map. Aver	age the line length ry Worksheet 1d.	is and rat	te using Table	e L1b. E	nter the	e rating on		1	<50%	
Line			Buffer Width	1.	Buffer W	/idth	Buf	fer Width		Tabl	e L1b. Buffer Width	
		(m)	(ft)	Line	(m)			(ft)	R	lating	Average buffer width	
Α	16	4.26	538.91	E	161.93		5	31.26		4	≥190m	
В	12	5.25	410.92	F	231.48	}	7:	59.44	8	3	≥130 - <190m	
С	11	5.39	378.57	G	121.25			97.80	$\circ$	2	≥65 - <130m	
D									$\circ$	1	<65m	
		1.07	364.40	Н	155.87		51	1.38				
	Avera	ge	148.31 ( <b>m</b> )		486.58		(ft)		Tal	ole L1c. S	ummary Rating for Buffer	
orksh	eet 1d	. Buffer Inte	grity Summary. E	nter the	sub-metric R	atings f	rom Tal	bles L1a	R	ating	Integrity	
eiow. C	ising tr	ie Buffer Inte	the Buffer Integrity egrity Index Score,	/ index S enter rat	core using th ina for Buffei	ie tormi Integri	ula in th tv in Ta	ne box	0	4	<b>Score</b> >3.5	
1 on t	he SA :	Summary Wo	orksheet.			cgii	- <i>y</i> 111 10	ZIC LIC	R	3	>3.5 >2.5 - ≤3.5	
uffer %	6 Ratin	g + Bu	ffer Width Rating	/2=	Buffer	Integri	ty Inde	x Score	$\overline{C}$	2	>1.5 - ≤2.5	

Buffer Integrity Index Score

**Buffer Width Rating** 

3

3

/2=

/2 =

SA CODE: SF2MI[4]

**SA Name:** Two Mile Pond Reservoir Transect [ 4 ]

Date: 6/11/24

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	n Segment	Downstream Segmen			
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	la la	0	0			
D) Total Disruption both segments	0					
E) % Total Disruptions = (D/2000)*100	Zero dis	ruption notic	eable along	the banks.		

Та	Table L2. RCC Rating								
Rating	Description								
<b>∞</b> 4	<b>0%</b> total disruption on both segments combined.								
O 3	<15% total disruption on both segments combined.								
C 2	≥15% - <40% total disruption on both segments combined.								
O 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								R	WSI		
Current Size	1	Historic Size	=	RSR	1	165	RSR	X	100	=	RWSI (%)
9	1	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				
O3	>10% - ≤40%	Wetland remains equal to or more than 60% of its natual size				
02						
01	>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 [  $\frac{4}{3}$  ]

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

Ta	Table L4. Surrounding Land Use Rating					
Ra	ating	LUI Score				
$\bigcirc$	4	≥95 - 100				
$\circ$	3	≥80 - <95				
<b>®</b>	2	≥40 - <80				
$\circ$	1	<40				

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**Biotic Metrics** 

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Species Cover (BS) 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 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 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 Listnumber 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 Appendix D). Use the comments box for documenting and describing vegetation community patch features.

Polygon No	Polygon B3 Vertical Structure No Type	B4 Tree Regeneration E % Cover	SS Invasive xotic species % Cover	Invasive Exotic Species (List Code(s))	Comments
-	IA1				
2	IA2				
М	IIA1				
4	IIIB1	01.9%	None	None	Cat tails hilling in around all waters mages
5	IIIC1	40%	None	None	Looks basically the some wheat goess, chimis, and rye
9	IVEI				
7	IVF1				
00					
6					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
	1				

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**B1 - Relative Native Plant Community Composition** 

Raw4 |% SA5 |Wt Score6 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 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 06 CT Score<sup>4</sup> 2. O 2,0 Species 6 E Currant bluestan W Herbaceous/Sparse Stratum <sup>3</sup> 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. 2 Species 5 E Madow られるジ ~  $\geq$ Species 4 E at a Chinx Short Woody Stratum 2  $\geq$ 2 Species 3 Soltbook 17.1/0 E 2 Species 2 Tall Woody Stratum 1 Species 1 Polygon Nos. S 7 ⋖ Ω U Δ ш ш G I ¥ Σ z

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 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. <sup>4</sup>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 Final Weighted Score<sup>7</sup> for Relative Native Plant Community Composition on the SA Rank Summary Worksheet.

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Ta	Table B1. Relative Native Plant Community Composition Rating						
Ra	al Weighted Score						
C	4	≥ 3.75	<10% non-native				
C	3	≥ 3.25 and <3.75	10% ≤20% non-native				
$\overline{C}$	2	> 2.0 and <3.25	20% ≤50% non-native				
$\cap$	1	≤2.0	>50% non-native				

# 32 - Vegetation Horizontal Patch Structure

**Norksheet 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.

	Datak	Churching		A D C	~ "	<b>D</b>
iorizontai	Patch	Structure	pattern	A,B,C,	or	U

				_
Table B2.	Rating for Vegetation He	orizontal Patch Struct	ure	

	Tuble ba. Italing for Vegetation Florizontal Factors
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.
<u> </u>	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.
<u> </u>	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		Torest	Sð	Sindbland	50	regenation	

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%
	. 1	5	6W and/or 6H
C 4	1 .	6W	
	2 or 1 and 2	5	6W and/or 6H
	1		
∂ 3	2 or 1 and 2	5	
3	2 or 1 and 2	6W	
<b>/</b>	5	6W	
	2 or 1 and 2		
<b>∩</b> 2	5		
	6W		
	6S		
C 1	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				
C 4	Native poles, sapling, and seedlings trees well represented, obvious regeneration, many patches or polygons with >5% cover, typically multiple size (age) classes.			
C 3	Native poles, saplings and/or seedlings common, scattered patches or polygons with 1% -5% cover, size classes few.			
<b>j</b> 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.			
O 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 %			
O 4	0%			
F 3×	>0% - <1%			
2	≥1% - <10%			
O 1	≥10			

Additional CTs and Biotic Metric Comments:

Red Lizards are very prominent

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# **Abiotic Metrics**

# A1 - Floodplain Hydrologic Connectivity

## Method 1

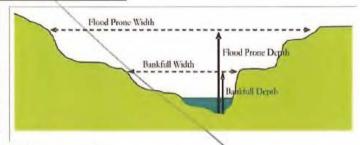
Worksheet 10a. Floodplain Hydrologic Connectivity Measurements. The following six steps are conducted at each of three crosssections at the approximate mid-points along straight riffles and away from deep pools or meander bends. Use a measuring tape and temporary stakes for horizòntal measurements, and 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 indicator Measure the distance between the right and left bankfull co				
2: Maximum bankfull depth	Keeping the tape level between the right and left bankfull of the line above the thalweg (the deepest part of the charmhelp 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 e from Step 3 to where it intercepts the right and left banks.	qual to the flood prone depth			
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- using Table A1a. Enter the rating in the A1 box on the SA Ra		e and r	ate	

Rating Method

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

meanacing	leandering single chainler time poor systems						
Rating	Description	1					
C 4	Average entrenchment ratio is ≥ 2.2;	1					
O 3	Average entrenchment ratio is ≥1.9 - <2.2						
O 2	Average entrenchment ratio is ≥1.5 - <1.9/						
O 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 seament

segine	erre.		\ /
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
0	4	Average entrenchment ratio is ≥ 1.9
0	3	Average entrenchment ratio is ≥1.4 - <1.9
0	2	Average entrenchment ratio is ≥1.2 - <1.4
0	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
O 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.
C 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.
C 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.).
O 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.

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	Þ	ownstream	Bank Right	Bank Left
1							
2			/				·
3		1					

			_/_		,	<b>\</b>	
Floodp	lain Hydrologic	: Connectivit	y co	Comments:			
		The second of				The second secon	
		the libertament and and					
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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.

	nter the rating on the SA Rank Summary Worksheet.						
Upper Segment	Middle Segment	Lower Segment	Field Indicators (check all existing conditions)				
	X		Active side channels				
			Abandoned channels				
			Backwater/eddy				
			Riffles or rapids				
	[X]		Shoals, sparely-vegetated bars				
	otin		Channel boulders				
			Oxbow lakes/ponds on floodplains				
			Vegetated island and side bars				
	X		Terraces				
			Channel pools				
	X		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				

Tabl	e A2. R	ating for Physical Patch Complexity
Rating		Description
C	4	<b>High</b> 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).
Ø.	3	<b>Moderate</b> 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).
C	2	<b>Limited</b> 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).
C	1	<b>Little</b> 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)
				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.
		Ø		Perennial riparian vegetation is abundant and well established along the bankfull contour, but not below it.
		Q'		There is leaf litter, thatch, or wrack in most pools.
Indicators of		Ø		The channel contains embedded woody debris of the size and amount consistent with what is naturally available in the riparian area.
Channel Equilibrium		Image: section of the content of the		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).
		ď		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.
				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.
Indicators of Active Degradation				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.
				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.
Indicators of Active Aggradation				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
<b>%</b> 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.
<b>○</b> 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.
C 2	There is evidence of severe aggradation or degradation throughout most of the channel through the SA. Circle primary process: aggradation or degradation.
C 1	The channel is artificially hardened, channelized, or is concrete throughout most of the SA.

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# 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.

ating on the SA Summary Worksheet.					
Condition	Upper Segment	Middle Segment	Lower Segment	Field Indicators	
	□4	<b>☆</b> 4	<u></u> 4	Infrequent raw banks, less than 10% of steam bank under stress from trampling, slumping, vegetation removal or active erosion, etc.	
Indicators of Bank	□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.	
Soil Stability	<u></u> 2	<u></u> 2	<u></u> 2	Significant raw banks and loose soil, 25%-50% of stream bank under stress, trampled, slumping or eroding etc.	
	_1	<u></u> 1	<u></u> 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.	
	□4	<u></u> 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.	
Indicators of Stream Bank Erosion Potential	<b>□</b> 2	<u></u> 2	<u>.</u> 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.	
	<b>□</b> 1	<b>□</b> 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	
-------------------------	--

Rating	Description
₹ 4	>3.5 - 4.0
3	>2.5 - ≤3.5
2	>1.5 - ≤2.5
7 1	1.0 - ≤1.5

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# A5 - Soil Surface Condition

Vorksheet 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).
П			Multiple livestock and other (fishing, hiking) trails,
П			Vehicle tracks including off-road and construction, etc.
			Impervious compacted surfaces or pavement
			Grading or plowing
			Fill
			Gravel pits
П			Anthropogenic levees and berms
			Irrigation-driven salinity and mineral crusts
			Fire pits
			Other:
			Estimate % soil disturbance by segment area

Average % Soil Disturbance:	71
-----------------------------	----

	Table A5. Soil Surface Condition Rating
Rating	Description
O 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.
C 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.
C 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.
O 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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Rank		Af	fect			
(d) in	Major	Minor	Absent	Unknown	Stressor Group/Stressor	Comments
	Г <u>, , , , , , , , , , , , , , , , , , , </u>	Т	Г	T	Adverse water management	
					Extended low flow dam releases	
					Timing of flow releases not concordant	
					Extended high flow dam releases	
					Agriculture/Urban flow diversion upstream	
	100				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	
			l Marine		Watershed alteration	
					Extensive recent fires in watershed	
					Extensive recent timber harvest	
					Extensive open pit mining in watershed	
					Livestock/wildlife overgrazing	
		14 of 11			Local biodiversity impacts	
					Evidence of excessive grazing (local)	
					Excessive noise affecting wildlife	
	0	0		0 0	Counts by Intensity	

ersion Date: 04/25/2022

Schema: Montane 2.5

		SA Cover	Worksheet		
SA Code SF2MI [ 5	] SA Name : Two	Mile Pond Reservoir		Project : Riparia	an Assesement 449, 124
de Tsct [5]	AU Name : Trar	nsect [5]			Pond Reservoir
County Santa Fe	HUC 12 Head	waters Santa Fe River	levation (ft) 7299	(m) 2224.7	Ecoregion 6.0 NWFM
A riparian system decommissioned of water rights. Driving Directions Driving to Santa	and Boundary (Rationale that leads into a pond lo due to safety concerns Fe from Albuquerque yo til you reach the reservoi	ocated on the east side of egarding the reservoir a	nd a water diversio	n to the area was rece	al Forest. This reservoir was ently shut down due to lack Monte Sol and right on
Ownership The Natu	re Conservative and The	Santa Fe National Forest	1 7	esults to client Fis	h Observed in Wetland?
Surveyor Role		Survey	or Name		Surveyor Initials
Landscape	Dustin				DS .
Biotic	Annie +1	) ustih			DS
Abiotic	Pustin				05
Stressors	Bath				D c
Easting (m)	Northing (m)	Zone	Datum	Latitude (DI	Oft) Longitude (DD ft)
-105° 53′ 24" W	35° 41′ 23" N	13	NAD-83 UTA	1 35.689722	-105.89
Survey Date	4/9/24	Start Time		End Time	1
			1	,	
Ven l	y Very vinter. Ar	dry area looks li	still de ke it	rmant from	n don plant remains
					n ed on plant remails
SA Biotic Condition $\mathcal{N}_{arphi}$	(vegetation patterns, coincide $\mathcal{B}$ , of $\mathcal{A}$ , $\mathcal{C}$	nposition and structure,	exotics and invasion	ves, disturbance evide	nce, fire and herbivory)
SA Biotic Condition $N_{\mathscr{O}}$ $M_{\mathscr{C}}$	(vegetation patterns, con Biotic adaw grass	mposition and structure,  a c Hirly ex  es Lich s (e.g., dams, walls etc.);	exotics and invasions of the popping characters	ves, disturbance evide	nce, fire and herbivory) and willows yelburg
SA Biotic Condition $N_{\mathcal{O}}$ $M_{\mathcal{C}}$ SA Abiotic Condition disturbance and other	(vegetation patterns, con Biotic adam grass.  (hydrological alteration r site impacts; explain the Land Si	mposition and structure,  a c the layer of t	exotics and invasion	ves, disturbance evide  ome ry e  ing up and  istics and evidence of fine the SA limits)	nce, fire and herbivory)  and  willows yelburg  overbank flooding; soil
SA Biotic Condition  No  Me  SA Abiotic Condition disturbance and other	(vegetation patterns, con Biotic adaw grass.  (hydrological alteration r site impacts; explain the Land Significance of large	s (e.g., dams, walls etc.); e hydrologic breaks or or college was	exotics and invasive cept s  are poppi flooding character ther factors that de safter the field data	istics and evidence of fine the SA limits)  Let y connormal services and evidence of fine the SA limits)  Let y connormal services are so collected.)	nce, fire and herbivory)  and  willows yellowing  overbank flooding; soil  i's full  vd to moisture tes
SA Biotic Condition  No  Me  SA Abiotic Condition disturbance and other	(vegetation patterns, con Biotic adaw grass.  (hydrological alteration r site impacts; explain the Land Significance of large	s (e.g., dams, walls etc.); e hydrologic breaks or or college was	exotics and invasive cept s  are poppi flooding character ther factors that de safter the field data	istics and evidence of fine the SA limits)  Let y connormal services and evidence of fine the SA limits)  Let y connormal services are so collected.)	nce, fire and herbivory)  and  willows yelburg  overbank flooding; soil

SA CODE: SF2MI[5]

SA Name: Two Mile Pond Reservoir Transect [ 5 ]

Date: 4/9/24

Surveyor Initials: D5

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	Ÿ	0.1	

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 WETLAN	D CONDITIO	SCORE Σ	
SA WETLAN	D RANK =		3.5

Rank	Score	Description
Α	≥3.25 - 4.0	Excellent Condition
В	≥2.5 - <3.25	Good Condition
С	≥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 strossors along this transect,

SF2MI[ 5] SA CODE:

Ly - Ruffer Integrity Index

**SA Name:** Two Mile Pond Reservoir Transect [ 5]

Date: 4/9/24

>3.5

>2.5 - ≤3.5

>1.5 - ≤2.5

≤1.5

(X

3

2

Surveyor Initials:

# **Landscape Context**

and L1b	above	to calculate	the Buffer Ir	ı <b>aı y.</b> E itegrit	y Index S	core using t	saungs he form	irom la Iula in t	the box	R	lating	Sc	ore
		l. Buffer Inte			nter the			***	blos I 1a			Integrity	g
	Avera		148.31	(m)	11	486.58		(ft)	11,30	Та	ble L1c. S	ummarv Rat	ing for Buffer
D		11.07	364.40		Н	155.8			11,38	$\subseteq$	1	<(	65m
С	1	15.39	378.57		G	121,2	5		97.80	$\Box$	2		<130m
В	12	25.25	410.92		F	231.4	8	7	759.44	R	3	≥130	- <190m
Α	16	54.26	538.91		E	161.93	3	5	531.26		4	_	.90m
Line	Buf	fer Width (m)	Buffer W (ft)	idth	Line	Buffer V (m)		Bu	ffer Width (ft)	<u> </u>  -	Tab Rating	le L1b. Buffer Average I	Width Ouffer width
he Buffe	er Inte	ne map. Aver grity Summa	ry Workshee	t 1d.	ns and rat	te using Tabl	le L1b. E	nter th	e rating on		1	1	50%
Vorksh	eet 1c	. Buffer Widt	h Sub-metr	ic. Me	asure the	length of e	ach buf	fer line	in meters in		2		6 - <80%
										(X	3	<u> </u>	- <100%
incynt	y Juin	mary Worksh	Buffer	Percer	nt (0%)_	85%				$\overline{C}$	4		00%
SA peri Box bel	meter ow. Ra	composed of te the sub-m	fallowed bu etric using T	ffer ele	ements a	nd enter into	o the Bu	ıffer Pe	rcent		Tabl Rating	e L1a. Buffer Buffe	Percent  r Percent
Worksl	neet 1	b. Buffer Per	cent Sub-m	etric.	Measure	or estimate	the per	centag	e of the	Г	T_I-1	-11- P-#	D
		Other							Other		******		
7		unpaved two	o tracks roac	ls			x	x	Open water structure	boun	ded by a	levee or other	manmade
X	х	Non-function			egetated	l levees, or	x	X	Paved roads graded road		veloped:	second-order	unpaved but
X	x	Non-channe	•						Intensive ag row crops, o			tained pasture neyards	s, hay fields,
X	X	Foot trails, h intensity)	orse trails, u	npave	d bike tr	ails (low			Intensive liv	estoc	k areas, h	orse paddocks	, feedlots
		Open range							Maintained materials, st			nt piles, const	ruction
		Old fields, u	nmaintained						Railroads				
x	X	Small irrigat	ion ditches v	vithou	ıt levees				<del> </del>			sports fields	
X	x	Natural or se	emi-natural	vegeta	ition pate	thes	X	X				velopments, p , and other str	
Buffer	RCC						Buffer						
Allowe	d buff	er/RCC land	cover eleme	nts			Exclud	led nor	L n-buffer/RCC	land	cover ele	ments	
lmage	ry	Google Eartl	h KMZ. file				lmage	Date	6/23				
or are and ye	exclud ar of in	led and consi magery).	dered non-k	ouffer (	elements	that disrup	t ecosys	tem co	nnectivity. Ir	ndicat	e the ima	gery type and	date (season
Works	heet 1	l a. Buffer an	d RCC Chec	klist.	Check off	land cover	elemen	ts with	in the buffer	area d	or RCC co	rridors that are	e either allowed
AND DESCRIPTION OF THE PARTY OF													

**Buffer Integrity Index Score** 

below. Using the Buffer Integrity Index Score, enter rating for Buffer Integrity in Table L1c

/2 =

/2 =

**Buffer Width Rating** 

3

on the SA Summary Worksheet.

Buffer % Rating +

3

SA CODE: SF2MI[5]

SA Name: Two Mile Pond Reservoir Transect [ 5 ]

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Surveyor Initials :

05

# 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	n Segment	Downstrea	m 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		(	)		
E) % Total Disruptions = (D/2000)*100	Zero dis	ruption notice	eable along	the banks.	

Та	ble L2. RCC Rating
Rating	Description
	0% total disruption on both segments combined.
C 3	<15% total disruption on both segments combined.
C 2	≥15% - <40% total disruption on both segments combined.
C 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		197			30 - W	R	WSI		1
Current Size	1	Historic Size	=	RSR	1	-	RSR	X	100	=	RWSI (%)
9	1	10	79	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
C 3	>10% - ≤40%	Wetland remains equal to or more than 60% of its natual size
C 2	>40% - ≤70%	Wetland has been reduced by more than 40% its natural size
C1	>70%	Wetland has been reduced by more than 70% its natural size

SA CODE:

SA Name:

SF2MI[5]

Two Mile Pond Reservoir Transect [ 5 ]

Surveyor Initials :

Date: 4/9/24

**L4 - Surrounding Land Use** 

prksheet 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
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)	8.0	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
C 4	≥95 - 100
<b>○</b> 3	≥80 - <95
Ø 2	≥40 - <80
C 1	<40

SA Name: Two Mile Pond Reservoir Transect [ > ] SA CODE: SPZIMI [ / ]

Surveyor Initials:

Date: 4/9/24

**Biotic Metrics** 

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 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 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 number assigned from the SA Biotic Map. Each polygon is evaluated with respect to Vegetation Vertical Structure (83), Native Tree Regeneration (84), and Invasive Exotic Plant Appendix D). Use the comments box for documenting and describing vegetation community patch features.

Polygon	R3 Vertical Structure	B4 Tree	85 Invasive	Invasive Exotic Species	
No	No Type	Regeneration   % Cover	Exotic Species % Cover		Comments
1	IA1				
2	IA2				
3	IIA1				
4	IIIB1	80%	Mullery	Muller some Musicyd	How edge down to cat trils stabled willass
5	IIIC1				
9	IVEI				
7	IVF1				
00					
6					
10					
=					
12					
13					
14					
15					
16					
17					
18					
19					
20					

SA CODE - SF2MI[ 5]

**SA Name:** Two Mile Pond Reservoir Transect [  $\supset$  ]

Date: 4/9/2 % Surveyor Initials:

# **B1 - Relative Native Plant Community Composition**

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 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 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.

Notices 2 E Species 3 E Species 4 E Species 5 E Species 6 E Specie	Tall Woody Stratum <sup>1</sup> Short Woody Stratum <sup>2</sup> Herbaceous/Sparse Stratur			Tall Woody Stratum 1	Stratum		Ś	Short Woody Stratum 2	y Stratur	n 2		Herbaceou	is/Sparse	Herbaceous/Sparse Stratum <sup>3</sup>		CT Score 4	4	
4 Miles Mark Mark Mark Mark Mark Mark Mark Mark	T	lygon Nos.		Species 1	ш Z	ecies 2	Ş	ecies 3 E		ies 4		Species 5	ш Z	Species 6		Raw4 9	6 SA <sup>5</sup> V	Nt Score <sup>6</sup>
	-							1.16.00	Partition of the last of the l	74	>	No New	Ш	Madon	$\nearrow$	3.35	00)	ę
	80													·				
	υ																	
	۵																	
	ш								1000									
	ц																	
	ט																	
	工																	
	_																	
	ſ																	
	ᅩ																	
	Σ									-								
	z																	
Final Weighted Score 7	0																	
			-				_						Fina	<b>Il Weighte</b>	d Score			3333

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 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 1. Trees and shrubs > 6 m (20 Teet) and > 25% total stratum cover; 2. Trees and shrubs soin (20 Teet) and 2 for Relative Native Plant Community Composition on the SA Rank Summary Worksheet. SA CODE: SF2MI[5]

**SA Name :** Two Mile Pond Reservoir Transect [ ]

Date: 4/9/29

Surveyor Initials:

05

	Table B1	. Relative Native Plant C	Community Composition Rating
	Rating		al Weighted Score
X	4	≥ 3.75	<10% non-native
Ć	3	≥ 3.25 and <3.75	10% ≤20% non-native
$\subset$	2	> 2.0 and <3.25	20% ≤50% non-native
$\cup$	1	≤2.0	>50% non-native

# 32 - Vegetation Horizontal Patch Structure

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

orizontal Patch S	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.					
	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	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 from 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			80%		20%		vegetation

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 string on the SA Rank Summary Worksheet.

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

SA CODE: SF2MI[ 51

Date: 4/9/24

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Surveyor Initials: 05

# **B4 - Native Riparian Tree Regeneration**

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
<b>X</b> 4	Native poles, sapling, and seedlings trees well represented, obvious regeneration, many patches or polygons with >5% cover, typically multiple size (age) classes.
C 3	Native poles, saplings and/or seedlings common, scattered patches or polygons with 1% -5% cover, size classes few.
C 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.
C 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. Rating	s for Invasive Exotic Plant Species Cover
Rating	Invasive Species Cover %
C 4	0%
7 3 X	>0% - <1%
2	≥1% - <10%
C 1	≥10

### Additional CTs and Biotic Metric Comments:

Still dry but some grasses coming back Rye, Mendon, Rush grasses seen. Willows turning Yellow

SA CODE:	SF2MI[ 💆 ]
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Date: 4/9/24

**SA Name:** Two Mile Pond Reservoir Transect [ 5 ]

Surveyor Initials:

# **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)
	[ <u>]</u>		Active side channels
			Abandoned channels
			Backwater/eddy
			Riffles or rapids
	×		Shoals, sparely-vegetated bars
			Channel boulders
			Oxbow lakes/ponds on floodplains
	X		Vegetated island and side bars
	(X)		Terraces
	(x)		Channel pools
	A		Beaver ponds
			Swales, depressional features on floodplains
	ļ <sub>k</sub>		Debris jams in channel
	X		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

-		ating for Physical Patch Complexity
Rati	ng	Description
C	4	<b>High</b> 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	<b>Moderate</b> 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).
C	2	<b>Limited</b> 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).
C	1	<b>Little</b> 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, $\leq 5$ unique indicators are present in the SA.

SA CODE: SF2

SF2MI[ 5]

Date: 4/9/24

SA Name:

Two Mile Pond Reservoir Transect [ 5 ]

**Surveyor Initials:** 

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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 Middle Segment Segment		Lower Segment	Field Indicators(check all existing conditions)		
		ÞÍ		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.	
		ÌД		Perennial riparian vegetation is abundant and well established along the bankfull contour, but not below it.	
		[X]		There is leaf litter, thatch, or wrack in most pools.	
Indicators of		Ø		The channel contains embedded woody debris of the size and amount consistent with what is naturally available in the riparian area.	
Channel Equilibrium		Г <u>М</u>		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).	
		X		Channel and point-bars consist of well-sorted bed material.	
		D.		The channel bed is not planar and without an abundance of fine materials filling the interstitial spaces between larger stream substrate.	
i i		Ø		There are channel pools at meander bends and some deep pools within the reach.	
				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.	
Indicators of Active Degradation				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.	
				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.	
Indicators of Active Aggradation				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					
<b>%</b> 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.					
<b>○</b> 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.					
<b>←</b> 2	There is evidence of severe aggradation or degradation throughout most of the channel through the SA. Circle primary process: aggradation or degradation.					
C 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 Middle Segment Segment		Lower Segment	Field Indicators		
	<u></u> 4	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	<b>□</b> 4	Infrequent raw banks, less than 10% of steam bank under stress from trampling, slumping, vegetation removal or active erosion, etc.		
Indicators of Bank Soil Stability	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.		
Jon Stability	<u> </u>	<u>2</u>	□2	Significant raw banks and loose soil, 25%-50% of stream bank under stress, trampled, slumping or eroding etc.		
	1	<u></u> 1	<u> </u>	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.		
	<u></u> 4	<u> </u>	<u></u> 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.		
Indicators of Stream Bank Erosion Potential	□2	<b>□</b> 2	<b>□2</b>	≥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		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				
C 3	>2.5 - ≤3.5				
C 2	>1.5 - ≤2.5				
C 1	1.0 - ≤1.5				

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SA	CODE:	SF2MI[	$\geq$	]

Date: 4/9/24

**SA Name:** Two Mile Pond Reservoir Transect [5]

Surveyor Initials:

# **A5 - Soil Surface Condition**

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).
	M		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

	Table A5. Soil Surface Condition Rating						
Rating	Description						
<b>Ø</b> 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.						
<b>○</b> 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.						
C 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.						
C 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	]
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Date:

4/9/24

**SA Name:** Two Mile Pond Reservoir Transect [ 5 ]

**Surveyor Initials:** 

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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				Shrana Grana IS			
varik	Major	Minor	Absent	Unknown	Stressor Group/Stressor	Comments		
			T		Adverse water management			
					Extended low flow dam releases			
				Ž	Timing of flow releases not concordant			
					Extended high flow dam releases	,		
				N	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			
				1	Sewer treatment effluent			
				A.	Point source urban runoff			
				*	Factory, feedlot outfall			
				<b>E</b>	Agricultural irrigation ditch returns			
					Mining waste			
		10.01			Ground water pumping			
				À	Urban depletions			
					Fracking			
					Agriculture irrigation wells			
					Watershed alteration			
					Extensive recent fires in watershed			
					Extensive recent timber harvest			
				Ņ	Extensive open pit mining in watershed			
				T.	Livestock/wildlife overgrazing			
		77 6	-		Local biodiversity impacts			
					Evidence of excessive grazing (local)			
					Excessive noise affecting wildlife			
	0	0		0	Counts by Intensity			
ditiona	l Commen	ts						

sion Date: 04/25/2022

Schema: Montane 2.5

# **NMRAM Montane Riverine Wetlands Version 2.5**

		SA Cove	er Worksheet			21 2 2 3	
SA Code SF2MI [ 5 ] SA Name : Two Mile Pond Reservoir Project : Riparian Asse							
ode Tsct [5]	AU Name : Tran	Mile Pond	Reservoir				
County Santa Fe	coregion 6.0 NWFM						
A riparian system decommissioned of water rights. Driving Directions Driving to Santa	and Boundary (Rationale, n that leads into a pond lo I due to safety concerns r Fe from Albuquerque you til you reach the reservoi	ocated on the east side regarding the reservoir u head north on Old Pe	and a water diversi	ion to the area was	recently sh	nut down due to lack	
Ownership The Natu	re Conservative and The S	Santa Fe National Fore		Results to client only.	Fish Obse		
Surveyor Role		Surve	yor Name			Surveyor Initial	
Landscape	Dustih			l l		115	
Biotic	3 1 0	Dustin				DS	
Abiotic	Dustin					DS	
Stressors	B.+6					ns	
Easting (m)	Northing (m)	Zone	Datum	Latitude	(DD ft)	Longitude (DD f	
-105° 53′ 24" W	35° 41' 23" N	13	NAD- 83 UT	M 35.68972	22	-105.89	
Survey Date	5/15/24	Start Time		End 1	Гime		
	-and still branches of	willow	coming is	1			
A Biotic Condition	(vegetation patterns, con	mposition and structure	e exotics and invas	ives disturbance e	vidence fir	o and harbivary)	
Green	(hydrological alterations	up, Chickon	ee, Some	grass will	ows star	ting to green,	
Po	ad filling in	with new	eat tails				
ssessment Summa	ry (Overall site condition :	summary and commer	nts after the field da	ata is collected.)			
)	ite seem	s well	but I in	ery b			
)				er			

**SA Name:** Two Mile Pond Reservoir Transect [ 5 ]

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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	Ÿ	0.2	
A4. Stream Bank Stability and Cover	1,4	0.2	
A5. Soil Surface Condition	4	0.1	

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 WETLAN	D CONDITION	N SCORE Σ	
SA WETLAN	D RANK =		3.7

SA Wetland Rank		
Rank	Score	Description
Α	≥3.25 - 4.0	Excellent Condition
В	≥2.5 - <3.25	Good Condition
С	≥1.75 - <2.5	Fair Condition
D	1.0 - <1.75	Poor Condition

itressor Summary	Major	Minor	Top Three			
	0	0	1	Seems	like	Soil drainabes
			2	Deesnit	set	enouch Nio
			3		J	

Stressor Comments (Evaluation of risk)

3

3

/2 =

**SA Name:** Two Mile Pond Reservoir Transect [ ) ]

Date: 5/15/24

Surveyor Initials: D5

# **Landscape Context**

Mark Contract Contract	Buffer Integrity									•
To: ai.	ksheet 1a. Buffer a e excluded and con: year of imagery).	<b>nd RCC Checklist.</b> sidered non-buffer	Check o element	ff land cover s that disrup	elemen t ecosys	ts withi stem co	n the buffer nnectivity. I	area ( ndicat	or RCC co	orridors that are either allowed agery type and date (season
lmag	ery Google Ear	th KMZ. file			Image	Date	6/23			
	ed buffer/RCC land	d cover elements			Exclud	led non	L ı-buffer/RCC	land	cover ele	ements
Buffe	r RCC				Buffer	RCC				
X	X Natural or s	semi-natural veget	ation pat	tches	X	X	Commercia dams, brido	l/resio	dential de vetment	evelopments, parking lots, s, and other structures
X		tion ditches witho	ut levees		$\Box$	П				, sports fields
	🔲 Old fields, ι	unmaintained					Railroads			, opono menas
	Open range	e land					Maintained materials, st			ent piles, construction
X	Foot trails, intensity)	horse trails, unpave	ed bike tr	ails (low						norse paddocks, feedlots
X		el open water					Intensive ag			itained pastures, hay fields, ineyards
X		oning abandoned v curring levees	egetateo	d levees, or	X			or de		second-order unpaved but
	unpaved tw	o tracks roads			X		Open water structure	boun	ded by a	levee or other manmade
	Other						Other			
Works	heet 1b. Buffer Pe	rcent Sub-metric.	Measure	or estimate i	the perc	entage	of the			
рж per	imeter composed o	f allowed buffer ele	ements a	nd enter into	the Ru	ffor Dor	cont	_		le L1a. Buffer Percent
integri	low. Rate the sub-m ty Summary Worksh	reet 1d.	ia and e	nter the ratin	g on th	e Buffei	r	F	Rating	Buffer Percent
		Buffer Percer	nt (%)=	85%				0	4	100%
Novlesk								<u>(X)</u>	3	≥80% - <100%
he GIS	neet 1c. Buffer Widtor on the map. Aver	<b>th Sub-metric.</b> Me	asure the	e length of ea	ch buff	er line i	n meters in		2	≥50% - <80%
he Buff	er Integrity Summa	ry Worksheet 1d.	is allu la	te using labit	e LID. CI	nter the	rating on		1	<50%
Line	Buffer Width	Buffer Width	Line	Buffer W	/idth	Buff	fer Width		Tab	le L1b. Buffer Width
	(m)	(ft)	LIIIE	(m)			(ft)	R	ating	Average buffer width
Α	164.26	538.91	E	161.93		53	31.26		4	≥190m
В	125.25	410.92	F	231.48	}	75	9.44	R	3	≥130 - <190m
C	115.39	378.57	G	121.25			7.80	0	2	≥65 - <130m
D	111.07	364.40	Н	155.87				$\circ$	1	<65m
							1.38			
	Average	148.31 <b>(m)</b>		486.58		(ft)		Tab	ole L1c. S	iummary Rating for Buffer
Norksh	eet 1d. Buffer Inte	grity Summary. E	nter the	sub-metric R	atings fi	rom Tab	oles L1a	<u> </u>	- •	Integrity
ina LIE	above to calculate	the Buffer Integrity	v Index S	core usina th	e formi	ıla in th	e hov	<u> </u>	ating	Score
on i	Jsing the Buffer Inte the SA Summary Wo	gnty muex score, orksheet.	enter rat	ing for Buffer	ıntegri	ty in Tal	ole L1c		4	>3.5
			,_			_		ß	3	>2.5 - ≤3.5
uner 7	% Rating + Bu	ffer Width Rating	/2 =	=  Buffer	Integrit	ty Inde	x Score	$\bigcirc$	2	>1.5 - ≤2.5

SA Name: Two Mile Pond Reservoir Transect [ 5 ]

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# .2 - Riparian Corridor Connectivity (RCC)

Norksheet 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.

	Parties and a viscous series	NAME OF TAXABLE PARTY.	ST NEWS STANKS	
Segments	Upstream	n Segment	Downstrea	ım 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)	7	0	9	0
C) % Segment Disruption = (B/1000)*100		0	(	)
D) Total Disruption both segments		(	)	
E) % Total Disruptions = (D/2000)*100	Zero dis	ruption notic	eable along	the banks.

Та	ble L2. RCC Rating
Rating	Description
	<b>0%</b> total disruption on both segments combined.
C 3	<15% total disruption on both segments combined.
O 2	≥15% - <40% total disruption on both segments combined.
O 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 Worksher

		RSR						R	WSI		
Current Size	1	Historic Size	=	RSR	1		RSR	X	100	-	RWSI (%)
9	1	10	=	0.9	1	-	0.1	Х	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
<b>C</b> 3	>10% - ≤40%	Wetland remains equal to or more than 60% of its natual size
C 2	>40% - ≤70%	Wetland has been reduced by more than 40% its natural size
C1	>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
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

T	able L4. S	urrounding Land Use Rating
R	ating	LUI Score
$\bigcirc$	4	≥95 - 100
$\circ$	3	≥80 - <95
(X)	2	≥40 - <80
$\overline{\cap}$	1	<40

SA CODE: SFZMI [ ) ]

**Biotic Metrics** 

SA Name: Two Mile Pond Reservoir Iransect [ ] ]

Surveyor Initials:

Date: > 15/27

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 -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 Appendix D). Use the comments box for documenting and describing vegetation community patch features.

No Type	Regeneration	so invasive exotic	Invasive Exotic Species (List Code(s))	Comments
1 IA1				
2 IA2				
3 IIA1				
4 11181	60%	NA	No mullen ground	Willow trees until water line, they cat tails.
5 IIIC1				
6 IVEI				
7 IVF1				
8				
6				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

SA Name: Two Mile Pond Reservoir Transect [ )

Date: Surveyor Initials:

# **B1 - Relative Native Plant Community Composition**

Worksheet 6. CT Plant Species and Bol

$\dashv$				Tall Wc	Tall Woody Stratum <sup>1</sup>	tum <sup>1</sup>		Short Woody Stratum <sup>2</sup>	ody Strat	um 2		Short Woody Stratum 2 Herbaceous/Sparse Stratu	Is/Spars	Herbaceous/Sparse Stratum 3		CT Score 4	4	
<u>~</u>	Polygon Nos.	los.	ļ	Species 1	S 1 E	Species 2	шZ	Species 3	ш Z	Species 4	ш 2	Species 5	шΖ	Species 6	ш 2	Raw4	% SA5	% SA5 Wt Score6
V V								Willow	3	Cattail	2	Mullein	LL	Texas C	2		2	4
В																<b>\</b>		?
J																		
ш																		
ш																		
9																		1000
ェ																		
~																		
Σ																		
z																		
														10000				
													i		r			1

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. the percentage of the SA area covered by the CT and expressed as a decimal number; the total area %SA must

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Table B1	.Relative Native Plant	Community Composition Rating
Rating	CT Fin	al Weighted Score
4	≥ 3.75	<10% non-native
` <sub>/</sub> 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.

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.
ζ 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 or Worksheet 6 calculate the total area of the SA occupied by each VST using the formula VST(type) = Sum (%SA for CTs with time VST) x 100. Enter the total %SA for each VST below.

	VST 1	VST 2	VST 5	VST 6S	VST 6W	VST 6H	VST 7
	High Structure	Low Structure	Tall Shrubland	Short	Herbaceous	Herbaceous	Sparse
	Forest	Forest		Shrubland	Wetland	Vegetation	Vegetation
Fotal % of SA			80			ι0	

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 low 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 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 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 lating on the SA Rank Summary Worksheet.

Rating	Dominant VST	Co- or Sub-dominant VST ≥15%	Sub-dominant VST ≥5%
	1	5	6W and/or 6H
` 4	1	6W	
	2 or 1 and 2	5	6W and/or 6H
	1		
	2 or 1 and 2	5	
3	2 or 1 and 2	6W	
	5	6W	
	2 or 1 and 2		
2	5		
	6W		
	65		
1	6H		
	7		

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SA Name:

Two Mile Pond Reservoir Transect [ 5]

**Surveyor Initials:** 

DS

															q						

**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
<u>ල</u> 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.
∑ <sup>2</sup> 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.
O 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. Rating	s for Invasive Exotic Plant Species Cover
Rating	Invasive Species Cover %
O 4	0%
( 3 X	>0% - <1%
2 /	≥1% - <10%
O 1	≥10

Additional CTs and Biotic Metric Comment	dditional (	CTs and	<b>Biotic Met</b>	ric Com	ment
--	-------------	---------	-------------------	---------	------

Area has mullein but no sign of New life

Two Mile Pond Reservoir Transect [ 5 ]

Date: 5/15/24

Surveyor Initials:

# **Abiotic Metrics**

# A1 - Floodplain Hydrologic Connectivity

#### Method 1

SA Name:

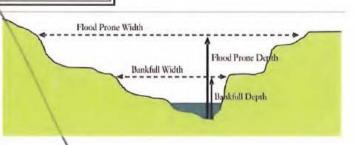
Worksheet 10a. Floodplain Hydrologic Connectivity Measurements. The following six steps are conducted at each of three cross-sections at the approximate mid-points along straight riffles and away from deep pools or meander bends. Use a measuring tape and temporary stakes for horizontal measurements, 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 in Measure the distance between the right and left ban				
2: Maximum bankfull depth	Keeping the tape level between the right and left bar of the line above the thalweg (the deepest part of the help here.				
3: Flood-prone depth	Double the estimate of maximum bankfull depth from	m Step 2.			
4: Flood-prone width	Using a tape, measure the length of a level line at a h from Step 3 to where it intercepts the right and left b				
5: Calculate Entrenchment Ratio	Divide the flood-prone width (Step 4) by the bankful	l width (Step 1).			
6: Calculate average ratio	Calculate the average for Step 5 for all three replicate using Table A1a. Enter the rating in the A1 box on the		e and i	ate	

Rating Method

UM

Table A1a. Rating for Floodplain Hydrologic Connectivity in meandering single-channel riffle-pool systems					
Rating	Description				
C 4	Average entrenchment ratio is $\geq 2.2$ ;				
C 3	Average entrenchment ratio is ≥1.9 - <2.2				
C 2	Average entrenchment ratio is ≥1.5 - <1.9				



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

Indicator

Average entrenchment ratio is < 1.5

	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

Average entrenchment ratio is ≥ 1.9

Average entrenchment ratio is ≥ 1.4 - < 1.9

Average entrenchment ratio is ≥ 1.2 - < 1.4

Average entrenchment ratio is < 1.2

SA	CODE:	SF2MI[ 5 ]				Date:	5/15/2	4
SAI	Name:	Two Mile Pond	d Reservoir Transect	:15 1	Surveyo	r Initials :	DS	,
letho	d 2							
hydrold other h flow an Select a	ogic cor nydrolog nd flood a rating	nectivity. At each gic evidence that plain inundation. from the table be	n cross-section, use v would preclude nat Record whether be glow. Use data from	nectivity Rating. Sel Worksheet 10b to rec cural floodplain inunc eaver activity is obscu Worksheets 10b to h d recorded in Table A	cord channel incis dation. Conversely Iring bankful indic nelp select rating. E	ion, bank mo , assess indic ators due to	odification, inse ators and evid inundation of	et floodplain or ence for overbank the floodplain.
Rati	ing		\	Des	scription			
C 4	4   C	over-bankfull flow igns of overbank he identification	s likely to inundate sediment depositio of bankfull indicato	olain. Indicators of ba a broad area of flood on. Or beaver ponds i rs and the active floo	dplain. Floodplain nundate the entire odplain width.	supports rip e, normally a	arian vegetatio ctive floodplai	on and shows n and preclude
∩ 3	3	onnected stream iparian overstory Ilso be present.	ns described above ( , but some understo	ately limited by incision (as noted by bankfull bry plants may be up	indicators below land. An inset floo	floodplain tr dplain suppo	ansition). Flood orting riparian	dplain supports a vegetation may
C 2	2 \rangle \ran	regetation and se hannelization, or elatively long-live	diment regimes. Or flow modification, a ed phreatophytes (e	an inset floodplain to the stream has mini and the natural flood e.g., cottonwood, salt	mal access to the r Iplain does not su cedar, etc.).	natural flood pport riparia	plain due to in n vegetation e	cision, xcept for
O 1	.  r	nodification (i.e.,	abandonment of flo	ither through incisio podplain due to decr sits on the floodplain	eased peak flows).			
ken loo oss-sec noto bo	oking Up tion. Le pard wit	stream and Dow ave the cross-sect or SA name and cr	nstream from the th tion tape and flags i oss-section informa	tographs. For each a nalweg and looking E indicating bankful in ation is helpful. (*The opendix E for additio	Bank Right* and Bank Ground when bank of a stream of the s	ank Left* acr taking the B	oss the stream ank Right and	from each side of Bank Left photos.
ross ection	East (Latit	ng Northir	ng / unsam		wnstream	Bank I	Right	Bank Left
1					**			
2			/					
3			~					
loodpla	ain Hyd	rologic Connectiv	vity Comments:			Market Market Company		
					,			

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**SA Name:** Two Mile Pond Reservoir Transect [5]

Surveyor Initials:

# 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
	$\square$		Shoals, sparely-vegetated bars
			Channel boulders
			Oxbow lakes/ponds on floodplains
			Vegetated island and side bars
			Terraces
	Ø		Channel pools
	Z		Beaver ponds
			Swales, depressional features on floodplains
	$\square$		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

Tabl	Table A2. Rating for Physical Patch Complexity					
Rati	ng	Description				
Ĉ	4	<b>High</b> 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).				
7	3	<b>Moderate</b> 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).				
C	2	<b>Limited</b> 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).				
C-	1	<b>Little</b> 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, $\leq 5$ unique indicators are present in the SA.				

**SA Name:** Two Mile Pond Reservoir Transect [ 5 ]

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95

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)
		Ŕ		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.
		Ø		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.
Indicators of		Ø		The channel contains embedded woody debris of the size and amount consistent with what is naturally available in the riparian area.
Channel Equilibrium				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.
				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.
Indicators of Active Degradation		. 🗆		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.
				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.
Indicators of Active Aggradation				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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SA Name:

Two Mile Pond Reservoir Transect [ 5 ]

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Table A3. Rating for Channel Equilibrium					
Rating	Description				
<b>√</b> 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.				
<b>∩</b> 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				
<b>∩</b> 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
	<u></u> 4	⊠4	<u></u> 4	Infrequent raw banks, less than 10% of steam bank under stress from trampling, slumping, vegetation removal or active erosion, etc.
Indicators of Bank Soil Stability	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.
	<u></u> 2	2	<b>□</b> 2	Significant raw banks and loose soil, 25%-50% of stream bank under stress, trampled, slumping or eroding etc.
	1	1	<u></u> 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.
	<u></u> 4	1⊠4	<u></u> 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.
	<u></u> 3	<u></u> 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.
Indicators of Stream Bank Erosion Potential	<u></u> 2	<u></u> 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		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	

Description
>3.5 - 4.0
>2.5 - ≤3.5
. 2.3 23.3
>1.5 - ≤2.5
1.0 - ≤1.5

**SA Name:** Two Mile Pond Reservoir Transect [ 5 ]

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Surveyor Initials: 5

### **A5 - Soil Surface Condition**

rksheet 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).
	Ø		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%

1	Table A5. Soil Surface Condition Rating						
Rating							
<b>₹</b> 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.						
O 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.						
C 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.						
O 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 ]
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**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 "Unknor Rank Major Stressors in Dominant Stressor column(Pick up to 3)

-		A	ffect			
Rank	Major	Minor	Absent	Unknown	Stressor Group/Stressor	Comments
Description		· - /			Adverse water management	
					Extended low flow dam releases	
					Timing of flow releases not concordant	
					Extended high flow dam releases	
			$\square$		Agriculture/Urban flow diversion upstream	
T			<b>.</b>		Adverse sediment management	
					Adverse sediment retention by dams	
			Ø		Sediment loss by dredging	
					Adverse sediment input (roads/development)	
			0.44		Artificial water additions	
			Ø		Sewer treatment effluent	
			Ø		Point source urban runoff	
			Ø		Factory, feedlot outfall	
			Ø		Agricultural irrigation ditch returns	
			Ø		Mining waste	
			1	100	Ground water pumping	
			4		Urban depletions	
			Ø		Fracking	
					Agriculture irrigation wells	
					Watershed alteration	
			Ø		Extensive recent fires in watershed	
					Extensive recent timber harvest	
			Ø		Extensive open pit mining in watershed	
			$\Box$		Livestock/wildlife overgrazing	
T	i i	<del></del>	- /-		Local biodiversity impacts	
					Evidence of excessive grazing (local)	
					Excessive noise affecting wildlife	
	0	0		0 0	counts by Intensity	
litional	Commen	h-				

litional Comments

sion Date: 04/25/2022

Schema: Montane 2.5

	Established	SA Cover	Worksheet			
SA Code SF2MI[5	] SA Name : Two	Mile Pond Reservoir		Project : Ri	parian Asses	sement
Code Tsct [5]	AU Name : Tran	sect [ 5 ]		WOI : Two	Mile Pond R	eservoir
County Santa Fe	HUC 12 Heady	waters Santa Fe River	Elevation (ft) 7299	(m) 2224.7	7 Eco	region 6.0 NWFM
A riparian system t decommissioned of of water rights. Driving Directions Driving to Santa Fo	due to safety concerns r	ocated on the east side of egarding the reservoir a 	nd a water diversio	on to the area was	recently shu	ut down due to lack
Ownership The Nature	Conservative and The S	Santa Fe National Forest	1 21	Results to client only.	Fish Obse Wetlar	1
Surveyor Role		Survey	or Name			Surveyor Initials
Landscape	Dustin Schwart	Z		And the state of t		DS
Biotic	AM					
Abiotic		DS				
Stressors	Dustin Schwar	tz				DS
Easting (m)	Northing (m)	Zone	Datum	Latitude	e (DD ft)	Longitude (DD ft)
-105° 53' 24" W	35° 41' 23" N	13	NAD- 83 UTI	M 35.68972	22	-105.89
Survey Date	6/11/24	Start Time	9:00	End '	Time	15:00
		SA Des	cription			
SA Landscape Contex	<b>ct</b> (summarize the wetla	nd and surrounding lan	dscape; include co	ndition and impac	cts)	
Look	,	lar to last thee and A			1	721 State
SA Biotic Condition (\		mposition and structure,				and herbivory)
M	Srass is	etill brown	12 16 67	Harries La	. / /	1 la
s <i>H][</i> [	recovering	still brown catt his	ls in	pord con	ning ba	ek substantials
		s {e.g., dams, walls etc.]; e hydrologic breaks or o				nk flooding; soil
Assessment Summary	(Overall site condition	summary and commen	ts after the field da	ta is collected.)		
- American						
Provisional Rank	Surveyor(s)	DS/AM Final 5	. // Rank /	Initials 🗥	ς [	Date 6/11/24

SA Name: Two Mile Pond Reservoir Transect [ 5 ]

Date: 6/11/24

Surveyor Initials: DS/AM

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	Ч	0.2	

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 WETLAN	D CONDITIO	N SCORE Σ	
SA WETLAN	D RANK =		3.11

A5. Soil Surface Condition

Rank	Score	Description
Α	≥3.25 - 4.0	Excellent Condition
В	≥2.5 - <3.25	Good Condition
С	≥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 wat	er,
			3	

Date:

**SA Name:** Two Mile Pond Reservoir Transect [5]

Surveyor Initials: DS/AM

6/11/24

# **Landscape Context**

\$1500 (00 cm mm m m m m m m m m m m m m m m m m		egrity Ind											
or are e	heet 1a. B excluded a ar of image	nd consider	<b>CC Checklist.</b> Ched non-buffer ele	eck off land ments that	cover e disrupt	lement: ecosyst	s within em con	n the buffer ar nnectivity. Ind	ea or icate	RCC corri the imag	idors that are either allowed, ery type and date (season		
lmager	y Goo	gle Earth K	MZ. file			lmage	Date	6/23					
Allowe	d buffer/R	CC land cov	er elements	7		Exclud	ed non	-buffer/RCC la	and co	over elem	ents		
Buffer	RCC					Buffer	RCC						
X	X Nat	ural or semi	-natural vegetation	on patches		X	X			esidential developments, parking lots, , revetments, and other structures			
X	X Small irrigation ditches without levees							Lawns, parks,	golf	golf courses, sports fields			
Hat		l fields, unm						Railroads					
	□ Ор	en range lar	nd					Maintained le materials, sta	d levees, sediment piles, construction staging areas				
Foot trails, horse trails, unpaved bike trails (low intensity)					low			Intensive live	stock	areas, ho	rse paddocks, feedlots		
X	X No	n-channel o	pen water					Intensive agri			ained pastures, hay fields, neyards		
X	Non-functioning abandoned vegetated levees, o					X	X	Paved roads of graded roads		eloped s	econd-order unpaved but		
		oaved two t				X	X	Open water b structure	ounc	led by a le	evee or other manmade		
、村	Oth	ner						Other					
Morks			<b>nt Sub-metric.</b> N	leasure or e	stimate	the per	centac	e of the		Table	e L1a. Buffer Percent		
SA peri	meter cor	nposed of al	llowed buffer eler ric using Table L1	nents and e	nter int	o the Bu	uffer Pe	ercent	F	Rating	Buffer Percent		
		ry Workshee		-		J			0	4	100%		
			Buffer Percent	(%)=	35%						100/0		
i			Danie	( , - ,					Ø	3	≥80% - <100%		
<u> </u>	44.5				oth of	asch bu	ffor line	o in meters in	⊗  ○	3			
Worksh the GIS	neet 1c. Bu	uffer Width	<b>Sub-metric.</b> Mea	sure the ler	ngth of e	each bu	ffer line	e in meters in			≥80% - <100%		
the GIS	or on the	map. Averag		sure the ler	ngth of e sing Tab	each bu	ffer line Enter tl	e in meters in he rating on		2	≥80% - <100% ≥50% - <80% <50%		
the GIS the Buff	or on the l fer Integrit	map. Averag y Summary	Sub-metric. Mea ge the line lengths Worksheet 1d. Buffer Width	sure the ler	sing Tab Buffer	ole L1b.   Width	Enter tl	affer Width	00	2 1 <b>Tab</b> l	≥80% - <100%  ≥50% - <80%  <50%		
the GIS	or on the fer Integrit Buffer (1	map. Averag y Summary · Width n)	Sub-metric. Mea ge the line length: Worksheet 1d. Buffer Width (ft)	sure the ler	sing Tab Buffer (m	Width	Enter tl	uffer Width (ft)	(C) (C) (F)	2	≥80% - <100%  ≥50% - <80%  <50%  Le L1b. Buffer Width  Average buffer width		
the GIS the Buff	or on the fer Integrit Buffer	map. Averag y Summary · Width n)	Sub-metric. Mea ge the line lengths Worksheet 1d. Buffer Width	sure the ler	sing Tab Buffer	Width	Enter tl	affer Width		2 1 Tables	≥80% - <100%  ≥50% - <80%  <50%  L1b. Buffer Width  Average buffer width  ≥190m		
the GIS the Buff <b>Line</b>	or on the fer Integrit Buffer (1	map. Averag y Summary • Width n)	Sub-metric. Mea ge the line length: Worksheet 1d. Buffer Width (ft)	sure the ler	sing Tab Buffer (m	Width  )  93	Bu	uffer Width (ft)		2 1 Tab Rating 4 3	≥80% - <100% ≥50% - <80% <50%  L1b. Buffer Width  Average buffer width ≥190m ≥130 - <190m		
the GIS the Buff Line A B	or on the fer Integrit  Buffer (1  164.	map. Averag y Summary • Width n) 26	Sub-metric. Mea ge the line length: Worksheet 1d. Buffer Width (ft) 538.91	sure the lers and rate use.  Line  E	Buffer (m	Width  1)  93	Bu	uffer Width (ft) 531.26		2 1 Tablesting 4 3 2	≥80% - <100% ≥50% - <80% <50%  Le L1b. Buffer Width  Average buffer width ≥190m ≥130 - <190m ≥65 - <130m		
the GIS the Buff Line A B	or on the fer Integrit  Buffer (1  164  125.  115.	map. Averag y Summary • Width n) 26 25	Sub-metric. Mea ge the line lengths Worksheet 1d. Buffer Width (ft) 538.91 410.92 378.57	sure the lers and rate us  Line  E  F	Buffer (m 161.9 231.4	Width  n)  93  48	Bu	affer Width (ft) 531.26 759.44 397.80		2 1 Tab Rating 4 3	≥80% - <100% ≥50% - <80% <50%  L1b. Buffer Width  Average buffer width ≥190m ≥130 - <190m		
the GIS the Buff Line A B	or on the fer Integrit  Buffer (1 164 125 111	map. Averag y Summary • Width n) 26 25 39	Sub-metric. Mea ge the line lengths Worksheet 1d. Buffer Width (ft) 538.91 410.92 378.57 364.40	sure the lers and rate use.  Line  E	Buffer (m 161.9 231.4 121.1 155.4	Width n) 93 48 25	Bu Bu	uffer Width (ft) 531.26		2 1 Table Rating 4 3 2	≥80% - <100% ≥50% - <80% <50%  le L1b. Buffer Width  Average buffer width ≥190m ≥130 - <190m ≥65 - <130m <65m		
the GIS the Buff Line A B C	or on the fer Integrit  Buffer (1  164.  125.  111.  Average	map. Averag y Summary • Width n) 26 25 39	Sub-metric. Mea ye the line lengths Worksheet 1d. Buffer Width (ft) 538.91 410.92 378.57 364.40 148.31 (m)	sure the lers and rate un	Buffer (m 161.9 231.4 121.5 486.5	Width n) 93 48 25 87	Bu (ft)	ne rating on  uffer Width (ft)  531.26  759.44  397.80  511.38		2 1 Table Rating 4 3 2	≥80% - <100% ≥50% - <80% <50%  Le L1b. Buffer Width  Average buffer width ≥190m ≥130 - <190m ≥65 - <130m		
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the GIS the Buff Line A B C D	or on the fer Integrit  Buffer (1 164 125 1115 1111 Average heet 1d. E b above to	map. Averagy Summary Width n) 26 25 39 07 Buffer Integ	Sub-metric. Mea ye the line lengths Worksheet 1d.  Buffer Width (ft) 538.91 410.92 378.57 364.40 148.31 (m)  Irity Summary. E he Buffer Integrity	sure the lers and rate use and rate use the lers and rate use the	Buffer (m 161.9 231.4 155.4 486.5 po-metric re using	Width n) 93 48 25 87 8 E Rating:	Bu (ft)	14 rating on 15 ra	C C	Table Adding 4 3 2 1	≥80% - <100%  ≥50% - <80%  <50%  Le L1b. Buffer Width  Average buffer width  ≥190m  ≥130 - <190m  ≥65 - <130m  <65m  Summary Rating for Buffer Integrity		
the GIS the Buff  Line  A  B  C  D  Works and L1 below.	or on the fer Integrit  Buffer (1)  164  125.  111.  Average heet 1d. I b above to Using the	map. Averagy Summary Width n) 26 25 39 07 Buffer Integ	Sub-metric. Mea ye the line lengths Worksheet 1d.  Buffer Width (ft) 538.91 410.92 378.57 364.40 148.31 (m)  Irity Summary. E he Buffer Integrity grity Index Score,	sure the lers and rate use and rate use the lers and rate use the	Buffer (m 161.9 231.4 155.4 486.5 po-metric re using	Width n) 93 48 25 87 8 E Rating:	Bu (ft)	14 rating on 15 ra	C C F C © C C	Table Rating  4 3 2 1 ble L1c. Stating	≥80% - <100%  ≥50% - <80%  <50%  le L1b. Buffer Width  Average buffer width  ≥190m  ≥130 - <190m  ≥65 - <130m  <65m  Summary Rating for Buffer Integrity  Score		
Line A B C D Works and L1 below.	or on the fer Integrit  Buffer (1  164  125.  111.  Average heet 1d. I b above to Using them the SA Su	map. Averagy y Summary Width n) 26 25 39 07 e Buffer Integ to calculate to Buffer Integ to many Wor	Sub-metric. Mea ge the line lengths Worksheet 1d.  Buffer Width (ft) 538.91 410.92 378.57 364.40 148.31 (m)  Irity Summary. E he Buffer Integrity grity Index Score,	sure the lers and rate uses an	Buffer (m 161.9 231.4 155.4 486.5 po-metric re using for Buff	Width  )  93  48  25  87  Rating: the fori	(ft) s from mula in grity in	uffer Width (ft) 531.26 759.44 397.80 511.38 Tables L1a the box Table L1c	C C	Table Rating  4 3 2 1 ble L1c. Seating 4	≥80% - <100%  ≥50% - <80%  <50%  le L1b. Buffer Width  Average buffer width  ≥190m  ≥130 - <190m  ≥65 - <130m  <65m  Summary Rating for Buffer Integrity  Score  >3.5		
Line A B C D Works and L1 below.	or on the fer Integrit  Buffer (1)  164  125.  111.  Average heet 1d. I b above to Using the	map. Averagy y Summary Width n) 26 25 39 07 e Buffer Integ to calculate to Buffer Integ to many Wor	Sub-metric. Mea ye the line lengths Worksheet 1d.  Buffer Width (ft) 538.91 410.92 378.57 364.40 148.31 (m)  Irity Summary. E he Buffer Integrity grity Index Score,	sure the lers and rate uses an	Buffer (m 161.9 231.4 155.4 486.5 po-metric re using for Buff	Width  )  93  48  25  87  Rating: the fori	(ft) s from mula in grity in	rables L1a the box	C C C C C C C C C C C C C C C C C C C	Table Rating  4 3 2 1 ble L1c. Seating  4 3	≥80% - <100%  ≥50% - <80%  <50%  le L1b. Buffer Width  Average buffer width  ≥190m  ≥130 - <190m  ≥65 - <130m  <65m  Summary Rating for Buffer Integrity  Score  >3.5  >2.5 - ≤3.5		

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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	n Segment	<b>Downstream Segment</b>			
Banks	Left Bank	Right Bank	Left Bank	Right Bank		
A) Total Bank Disruption (m)	0	0	0	0		
B) Total Disruption by Segment (m)	t (m) 0 0		0			
C) % Segment Disruption = (B/1000)*100		0				
D) Total Disruption both segments		C				
E) % Total Disruptions = (D/2000)*100	Zero disi	uption notice	able along t	he banks.		

Table L2. RCC Rating								
Rating	Description							
	0% total disruption on both segments combined.							
O 3	<15% total disruption on both segments combined.							
C 2	≥15% - <40% total disruption on both segments combined.							
O 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								R	WSI		
Current Size	1	Historic Size	=	RSR	1	-	RŞR	Х	100	=	RWSI (%)
9	1	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
<b>C</b> 3	>10% - ≤40%	Wetland remains equal to or more than 60% of its natual size
		Wetland has been reduced by more than 40% its natural size
C1		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	
LUI Score= Coefficient * % LUZ Area		100	75

T	able L4	. Surrounding Land Use Rating
R	ating	LUI Score
	4	≥95 - 100
	3	≥80 - <95
<b>(X)</b>	2	≥40 - <80
	1	<40

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# **Biotic Metrics**

umbe	number assigned from the SA Biotic Map. Each polygon is evaluated wit Species Cover (BS) metrics. Enter the Vertical Structure Type (VST) for B3, the Tables in Appendix B and the Field Guide for metric instructions. Ent Appendix D). Use the comments box for documenting and describing ver	e SA Biotic Mal s. Enter the Ver and the Field C	p. Each polygor rtical Structure Suide for metric r documenting	n is evaluated with respect Type (VST) for B3, tree rege c instructions. Enter the spe and describing vegetation	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.
he Tab				,	
Polygon	B3 Vertical Structure Type	B4 Tree Regeneration 6 % Cover	B5 Invasive Exotic Species % Cover	Invasive Exotic Species (List Code(s))	Comments
-	IA1				
2	IA2				
m	llA1				
4	IIIB1	20%	None	1	7
5	IIIC1				and the state of t
9	INEI				
7	IVF1				
00					
6					
10					
1					
12					
13					
14					
15					
16					
17					
18					
19					
20					

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# **B1 - Relative Native Plant Community Composition**

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 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 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 <sup>1</sup>	v Stratur	Tall Woody Stratum 1		Short Woody Stratum 2	dv Strati	Jm 2		Herbaceous/Sparse Stratum <sup>3</sup>	erbaceous/Sparse Stratu	Stratum 3		CT Score 4	4	
t	Polygon Nos.	los.		1 2	Species 1	Ш	ecies 2	ш	Species 3	`ш	ies 4	ш	Species 5	- ш	Species 6	ш ;	Raw4 %	SA5	Wt Score <sup>6</sup>
⋖					-	z		z				Z				~	3778		K
				+								2	110000	7	1000	1	@/\ @/\	3	)   
В																			,
U														~	-		N.		
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ш				1															
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エ										-									
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_																			
Σ																			
z																			
0																			
	· ·													Fina	Final Weighted Score <sup>7</sup>	Score <sup>7</sup>			W
,	-	-	;	-			1	,		, 00,			,	:	,		-		

equal 1; 6Wt. 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 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 for Relative Native Plant Community Composition on the SA Rank Summary Worksheet.

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Table B1	. Relative Native Plant C	ommunity Composition Rating
Rating	CT Fina	al Weighted Score
<b>○</b> 4	≥ 3.75	<10% non-native
C 3	≥ 3.25 and <3.75	10% ≤20% non-native
<b>(</b> *< 2	> 2.0 and <3.25	20% ≤50% non-native
C 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.

		Table B2. Rating for Vegetation Horizontal Patch Structure
Rat		Description
<u> </u>	1	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	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.
<u> </u>	)	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		لـــــ	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%
	1	5	6W and/or 6H
C 4	1	6W	
	2 or 1 and 2	5	6W and/or 6H
/	1		
3	2 or 1 and 2	5	
	2 or 1 and 2	6W	
	5	6W	
	2 or 1 and 2		
C 2	5		
	6W		***************************************
	6S		
C 1	6H		
	7		

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Z	L Bank S		'A高 A	nva							233

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
	Native poles, sapling, and seedlings trees well represented, obvious regeneration, many patches or polygons with >5%
() 4	cover, typically multiple size (age) classes.
$\bigcirc$ $\stackrel{\cdot}{}$	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.
0 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 %					
C 4	, 0%				
3 7/	>0% - <1%				
2	≥1% - <10%				
Ó 1	≥10				

Additional	CTs and	<b>Biotic Metric</b>	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.

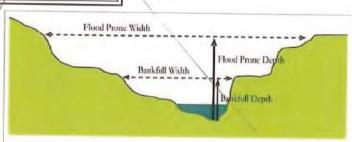
Steps	Description Cross-section:	1	2	3
1: Bankfull width	This is a critical step requiring familiarity with field indicators of the bankfull contour.  Measure the distance between the right and left bankfull contours with a tape.			
2: Maximum bankfull depth	Keeping the tape level between the right and 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 her using Table A1a. Enter the rating in the A1 box on the SA Rank Summary Worksheet.	e and r	ate	

Rating Method

ML

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

Rating	Description	
0 4	Average entrenchment ratio is $\geq$ 2.2;	
O 3	Average entrenchment ratio is ≥1.9 - <2.2	
O 2	Average entrenchment ratio is ≥1.5 - <1.9	
0 1	Average entrenchment ratio is < 1.5	



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

Indicator

 		NAME OF TAXABLE PARTY O			
		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			
		nset 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			
	П	Floodplain inundation due to beaver activity			

10.00	Table A1b. Rating for Floodplain Hydrologic Connectivity in single-channel step-pool systems					
R	Rating Description					
0	4	Average entrenchment ratio is ≥ 1.9				
0	3	Average entrenchment ratio is ≥1.4 - <1.9				
0	2	Average entrenchment ratio is ≥1.2 - <1.4				
0	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
C 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.
O 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.
C 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.).
O 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.

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			And the same of th			

Floodplain Hydrologic Connectivity Comments:

1			•

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**SA Name:** Two Mile Pond Reservoir Transect [5]

Surveyor Initials:

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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 3A, count the number of unique patch types and rate using Table 42 in combination with the payrative described					
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		
	X		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								
Ratio		Description						
C	4	<b>High</b> 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).						
<b>A</b>	3	<b>Moderate</b> 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).						
$\subset$	2	<b>Limited</b> 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).						
$\subset$	1	<b>Little</b> 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 Name:

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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	Middle	Lower	Field Indicators(check all existing conditions)	
Condition	Segment	Segment	Segment		
		Q		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.	
t <sup>v</sup>	` .			There is leaf litter, thatch, or wrack in most pools.	
Indicators of				The channel contains embedded woody debris of the size and amount consistent with what is naturally available in the riparian area.	
Channel Equilibrium		ļ-		There is little or no active undercutting or burial of riparian vegetation.	
·		网		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.	
				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.	
Indicators of Active Degradation				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.	
				There is abundant fresh splays of coarse sediment covering the floodplain above the natural point bar elevation.	
Indicators of Active Aggradation				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.					
<u> </u>	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.					
C 2	There is evidence of severe aggradation or degradation throughout most of the channel through the SA. Circle primary process: aggradation or degradation.					
$\bigcap$ 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.

	daing on the SA Summary Worksneet.					
Condition	Upper Segment	Middle Segment	Lower Segment	Field Indicators		
	<u></u> 4	<b></b>	<u></u> 4	Infrequent raw banks, less than 10% of steam bank under stress from trampling, slumping, vegetation removal or active erosion, etc.		
Indicators of Bank Soil Stability	□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.		
Son Stability	<u>2</u>	<u></u> 2	<u></u> 2	Significant raw banks and loose soil, 25%-50% of stream bank under stress, trampled, slumping or eroding etc.		
	1	1	<u></u> 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.		
	<u></u> 4	<u></u> 4	<u></u> 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	<u></u> 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.		
Indicators of Stream Bank Erosion Potential	<u></u> 2	<u></u>	<u> </u>	>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.		
	<u></u> 1	□1	<u> </u>	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	
-------------------------	--

Rating	Description			
√ 4	>3.5 - 4.0			
C 3	>2.5 - ≤3.5			
C 2	>1.5 - ≤2.5			
C 1	1.0 - ≤1.5			

**Date:** 6/11/24

**SA Name:** Two Mile Pond Reservoir Transect [5]

Surveyor Initials: DS/AM

# **A5 - Soil Surface Condition**

Vorksheet 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).
	\(\overline{\pi}\)		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	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.					
<b>V</b> 4						
<b>O</b> 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.					
O 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.					
O 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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**SA Name:** Two Mile Pond Reservoir Transect [ 5 ]

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II);

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				St	<b>C</b>		
Marik	Major	Minor	Absent	Unknown	Stressor Group/Stressor	Comments		
			<b>T</b>		Adverse water management			
		D			Extended low flow dam releases			
					Timing of flow releases not concordant			
			Ø		Extended high flow dam releases			
					Agriculture/Urban flow diversion upstream			
					Adverse sediment management			
			位		Adverse sediment retention by dams			
			Q		Sediment loss by dredging			
			Ø		Adverse sediment input (roads/development)			
					Artificial water additions			
			Ø		Sewer treatment effluent			
			Q		Point source urban runoff			
	. 🗆		$\square$		Factory, feedlot outfall			
			Ø		Agricultural irrigation ditch returns			
					Mining waste			
					Ground water pumping			
			血		Urban depletions			
			Ù		Fracking			
					Agriculture irrigation wells			
					Watershed alteration	A PROPERTY OF THE ANALYSIS OF THE STATE OF T		
					Extensive recent fires in watershed			
					Extensive recent timber harvest			
					Extensive open pit mining in watershed			
					Livestock/wildlife overgrazing			
					Local biodiversity impacts	entranium sundinum en kai nyikensan nahisamankai autokatan si katamin marajin s		
					Evidence of excessive grazing (local)			
					Excessive noise affecting wildlife			
	0	0		0	Counts by Intensity			
dditiona	l Commen							

ersion Date: 04/25/2022

Schema: Montane 2.5

# NMRAM Montane Riverine Wetlands Version 2.5

Canyon Road until yo	oundary (Rationale, co	ect [ / ] aters Santa Fe River comments) ated on the east side	Elevation (ft) 729	Project : Rip WOI : Two N (m) 2224.7	Mile Pond Re				
County Santa Fe  SA General Location and B A riparian system that decommissioned due of water rights.  Driving Directions Driving to Santa Fe fro Canyon Road until yo	HUC 12 Headwa	nters Santa Fe River comments) nated on the east side	<u> </u>						
A General Location and B A riparian system that decommissioned due of water rights. Driving Directions Driving to Santa Fe fro Canyon Road until yo	oundary (Rationale, co	omments) ated on the east side	<u> </u>	(m) 2224.7	Ecor	region 6.0 NWFM			
A riparian system that decommissioned due of water rights. Driving Directions Driving to Santa Fe fro Canyon Road until yo	leads into a nond loca	ated on the east side			Floc 12 Fleadwaters Santa Fe fiver   Listense (19, 725)				
	om Albuquerque you u reach the reservoir l	head north on Old Pe	and a water divers	sion to the area was I	recently shu	it down due to lack			
Ownership The Nature Co			Data Sharing Restrictions	Results to client only.	Fish Obser Wetlar	1 .			
Surveyor Role		Surve	yor Name		and the second	Surveyor Initials			
Landscape	Dustin	garante e e e e e e e e e e e e e e e e e e				Ds			
Biotic	Annie					PS			
Abiotic	Dustin					DS			
Stressors	Both				1100	D)			
Easting (m)	Northing (m)	Zone	Datum	Latitude	e (DD ft)	Longitude (DD ft			
	35° 41′ 23" N	13	NAD- 83 U	JTM 35.68972	22	-105.89			
Survey Date	4/9/24	Start Time	20 S	End	Time				
	Il dry a		,						
SA Biotic Condition (ve						,			
	Some bladd	er worl	growing	on the	Por	<b>ッ</b> ひ			
SA Abiotic Condition (hadisturbance and other si	te impacts; explain the	e hydrologic breaks c	or other factors tha	it define the SA limit	S)				
Ave	a is s	till very	dry ar	nd recov	eving	from			
h	inter	,							
Assessment Summary	(Overall site condition	summary and comm	ents after the field	d data is collected.)					
I	Area is	5+111	recoverib	is from	winte	W			
,	1.00	t .		/					
	Area is Not ma	ch now	life (	yet,					

SA CODE: SF2MI[ | ]

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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	5	0.5	
B1. Relative Native Plant Community Composition	1 2	0.2	
B2. Vegetation Horizontal Patch Structure	2 3	0.2	+
B3. Vegetation Vertical Structure	2	0.2	
84. Native Riparian Tree Regeneration	Lj Lj	22,1/2	
B5. Invasive Exotic Plant Species Cover	7	0.2	
Abiotic		0.2	
A1. Floodplain Hydrologic Connectivity		2	
A2. Physical Patch Diversity		0,3	
A3. Channel Equilibrium	2	0.2	
A4. Stream Bank Stability and Cover	4	0.2	
14. Stream bank Stability and Cover	L/	0.7	

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 WETLANI	CONDITION	V SCORE Σ			
SA WETLANI	RANK =		3.//		

A5. Soil Surface Condition

Rank	Score	Description
Α	≥3.25 - 4.0	Excellent Condition
В	≥2.5 - <3.25	Good Condition
С	≥1.75 - <2.5	Fair Condition
D	1.0 - <1.75	Poor Condition

Not Many Stessors Present her
ess Water

tressor Comments (Evaluation of risk)

Good Area chance of changes from less water

SF2MI[6] SA CODE:

**SA Name:** Two Mile Pond Reservoir Transect [ 6 ]

Date: 4/9/24
Surveyor Initials: DS

# **Landscape Context**

20000000000000000000000000000000000000		r Integrity Index			To Parket I		
lo. a.c	CACIGO	1a. Buffer and RCC Checklist. Check off land cover educated and considered non-buffer elements that disrupt magery).	elemen t ecosys	ts with stem co	in the buffer a	area or RCC co dicate the ima	rridors that are either allowed gery type and date (season
_	Imagery Google Earth KMZ. file		lmage	Date	6/23	6/23	
		fer/RCC land cover elements	Exclud	led nor	n-buffer/RCC	land cover ele	ments
Buffer	RCC		Buffer		T		Herry
X	x	Natural or semi-natural vegetation patches	X	X		residential developments, parking lots, es, revetments, and other structures	
X	X	Small irrigation ditches without levees				s, golf courses,	
		Old fields, unmaintained			Railroads		
		Open range land				ined levees, sediment piles, construction als, staging areas	
X	X	Foot trails, horse trails, unpaved bike trails (low intensity)			Intensive live	tensive livestock areas, horse paddocks, feedlots	
X	X	Non-channel open water			Intensive agriculture: maintained pastures, hay field row crops, orchards, and vineyards		
X	x	Non-functioning abandoned vegetated levees, or naturally occurring levees	X		Paved roads or developed second-order unpaved but graded roads		
		unpaved two tracks roads	X		Open water bounded by a levee or other ma structure		evee or other manmade
		Other			Other		
Vorksl	neet 1	b. Buffer Percent Sub-metric. Measure or estimate t	he perc	entage	of the		
na perii	neter	composed of allowed buffer elements and enter into	the Ru	ffar Dar	cont	Table	L1a. Buffer Percent
ox per	ow. Ka	te the sub-metric using Table L1a and enter the rating mary Worksheet 1d.	g on th	e Buffe	r	Rating	Buffer Percent
egiit,	y Juiin	Buffer Percent (%)= 85%				C 4	100%
		Builet Fercent (%)= 85%				<b>(</b> ₹ 3	≥80% - <100%

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
В	125.25	410.92	F	231.48	759.44
c	115.39	378.57	G	121.25	397.80
D	111.07	364.40	н	155.87	511.38
	Average	148.31 (m)		486.58	(ft)

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	+ Buff	er Width Rating	/2 =	Buffer Integrity Index Score
3	+	3	/2 =	3

Table L1a. Buffer Percent				
Rating	Buffer Percent			
C 4	100%			
<b>☼</b> 3	≥80% - <100%			
C 2	≥50% - <80%			
O 1	<50%			

Table L1b. Buffer Width				
Rating	Average buffer width			
<u> </u>	≥190m			
<b>(</b> ₹ 3	≥130 - <190m			
<u>2</u>	≥65 - <130m			
C 1	<65m			

**Table L1c. Summary Rating for Buffer** Integrity Rating Score 4 >3.5 R 3 >2.5 - ≤3.5 2 >1.5 - ≤2.5 1 ≤1.5

SA Name: Two Mile Pond Reservoir Transect [ 💪 ]

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### 2 - Riparian Corridor Connectivity (RCC)

Norksheet 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	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	ion = (B/1000)*100		0		
D) Total Disruption both segments	0				
E) % Total Disruptions = (D/2000)*100	Zero disruption noticeable along the bank		the banks.		

Table L2. RCC Rating					
Rating	Description				
	<b>0%</b> total disruption on both segments combined.				
C 3	<15% total disruption on both segments combined.				
C 2	≥15% - <40% total disruption on both segments combined.				
C 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						R	WSI		
Current Size	1	Historic Size	=	RSR	1	2	RSR	X	100	=	RWSI (%)
9	1	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
C3	>10% - ≤40%	Wetland remains equal to or more than 60% of its natual size
C 2	>40% - ≤70%	Wetland has been reduced by more than 40% its natural size
C1	>70%	Wetland has been reduced by more than 70% its natural size

SA CODE:

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SA Name:

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Surveyor Initials :

& DS

### **L4 - Surrounding Land Use**

brksheet 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
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. Suri	ounding Land Use Rating
Rating	LUI Score
C 4	≥95 - 100
C 3	≥80 - <95
<b>(</b> ₹ 2	≥40 - <80
C 1	<40

SA CODE: SPZIMI [ ]

**Biotic Metrics** 

SA Name: Two Mile Pond Reservoir Iransect [ 6 ]

Surveyor Initials:

Date: 4/9/27

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. 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

olygon	Polygon B3 Vertical Structure No Type	B4 Tree Regeneration % Cover	B4 Tree B5 Invasive Regeneration Exotic % Cover Species % Cover	Invasive Exotic Species (List Code(s))	Comments
-	IA1				
2	IA2				
8	IIA1				
4	111811	60%	< 5%	Hallein	Still dry No New life of willow Cattels
2	IIIC1	902-09	= 20%	Muster d/Chertquass	Alit of cheat grass. 1sts of Now small like
9	IVEI				
7	IVF1				
00					
6					
10					
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13					
4					
15	v				
16					
17					
18					
19					
20					

Page 6

SA CODF SF2MI[ & ]

**SA Name:** Two Mile Pond Reservoir Transect [ 6 ]

Date: 4/9/5 / Surveyor Initials:

# **B1 - Relative Native Plant Community Composition**

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 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 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.

	The same control of a new Color of the payage of the payage of the payage of the payage.	T-11 W 4-5	יייייי ל	3   5	חוב שוווב כבייו	ייי יייייייייייייייייייייייייייייייייי	2   -	רובמורה יר	יווב ארי	ygui.			_	
		I all Woody Stratum			Short Woody Stratum 4			Herbaceous/Sparse Stratum	/Sparse	stratum 2		CT Score 4	<b>t</b>	
<u>교</u> 다	Polygon Nos.	Species 1 E	Species 2	E Spe	Species 3 E	Species 4 R	ъ́s	Species 5	w шZ	pecies 6	7	3aw4	% SA5 √	Raw4 % SA5 Wt Score6
A				Se!	Housh N	Climisa		cheat grass	m)	E Mes N 20	2	2.0	2/09	
8				7	Villac V	catha)		Tullein	Ш	chest f	$\geqslant$	QΉ	2,02	
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o														
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7														
Σ														
Z														
0														
								7,	Final	Final Weighted Score <sup>7</sup>	Score7			2.8
1 Troop	The second minimal least 103C x but (took) OC) m3/ shinds but social C monor minimals least (%SC x but (took) OC) m3/ shinds but social is	1-+0+ 7030 - 1	T C 20000	do bac soc.	, UC) 427 74	Can land	4-4-4 /	4.	- 1   C	-,			;	

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 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 for Relative Native Plant Community Composition on the SA Rank Summary Worksheet.

**SA Name:** Two Mile Pond Reservoir Transect [ / ]

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Surveyor Initials:

05

Table B1.	. Relative Native Plant C	ommunity Composition Rating
Rating	CT Fina	al Weighted Score
C´4	≥ 3.75	<10% non-native
3	≥ 3.25 and <3.75	10% ≤20% non-native
<b>?</b> ∼ 2	> 2.0 and <3.25	20% ≤50% non-native
( 1	≤2.0	>50% non-native

### 2 - Vegetation Horizontal Patch Structure

**Forksheet 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.

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

**Forksheet 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 low 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 me 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 sting on the SA Rank Summary Worksheet.

Rating	Dominant VST	Co- or Sub-dominant VST ≥15%	Sub-dominant VST ≥5%
	1	5	6W and/or 6H
4	1	6W	<u> </u>
	2 or 1 and 2	5	6W and/or 6H
	1		
3	2 or 1 and 2	5	
3	2 or 1 and 2	6W	
	5	6W	
	2 or 1 and 2		A THE STATE OF THE
2	5		
	6W		
	6S		
1	6H		
	7		

SA Name:

SA CODE: SF2MI[6]

Two Mile Pond Reservoir Transect [ 💪 ]

Date: 4/9/24

Surveyor Initials:

### **B4** Native Riparian Tree Regeneration

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
152 4	Native poles, sapling, and seedlings trees well represented, obvious regeneration, many patches or polygons with >5% cover, typically multiple size (age) classes.
C 3	Native poles, saplings and/or seedlings common, scattered patches or polygons with 1% -5% cover, size classes few.
C 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.
C 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 (%)

calculate

Table B5. Ratings for Invasive Exotic Plant Species Cover				
Rating	Invasive Species Cover %			
C 4	0%			
7 3	>0% - <1%			
2×	≥1% - <10%			
C 1	≥10			

### Additional CTs and Biotic Metric Comments:

Duck on pond. lots of new green grasses and herbacios cover but mostly dry Chimisa greening up

SF2MI[6] SA CODE:

Date: 4/9/29

SA Name: Two Mile Pond Reservoir Transect [ 6 ]

Surveyor Initials :

# **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
	R		Vegetated island and side bars
	N N		Terraces
			Channel pools
			Beaver ponds
			Swales, depressional features on floodplains
		<u> </u>	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

Tab	le A2. I	Rating for Physical Patch Complexity						
Rating		Description						
C	4	<b>High</b> 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).						
C	3	<b>Moderate</b> 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	<b>Limited</b> 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).						
$\subset$	1	<b>Little</b> 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:

SA Name:

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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	I Seament   Seament   Seament		Field Indicators(check all existing conditions)	
		Ø		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.
		図		There is leaf litter, thatch, or wrack in most pools.
ndicators of		Ø		The channel contains embedded woody debris of the size and amount consistent with what is naturally available in the riparian area.
Channel Equilibrium		Ø		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).
	· 🔲	郊		Channel and point-bars consist of well-sorted bed material.
		Ø		The channel bed is not planar and without an abundance of fine materials filling the interstitial spaces between larger stream substrate.
N.				There are channel pools at meander bends and some deep pools within the reach.
``				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.
Indicators of Active Degradation				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.
				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.
Indicators of Active Aggradation				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:

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Two Mile Pond Reservoir Transect [ 6 ] SA Name:

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	Table A3. Rating for Channel Equilibrium							
Rating	Description							
<b>6</b> 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 are equilibrium condition. Circle primary process: aggradation or degradation							
2	rnere is evidence of severe aggradation or degradation throughout most of the channel through the SA. Circle primary process: aggradation or degradation.							
<u> </u>	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.

raurig on the SA Summary Worksheet.				The table A4 and enter the	
Condition	Upper Segment	Middle Segment	Lower Segment	Field Indicators	
	<u></u> 4	<b>½</b> ]4	<u></u> 4	Infrequent raw banks, less than 10% of steam bank under stress from trampling, slumping, vegetation removal or active erosion, etc.	
Indicators of Bank Soil Stability	□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.	
,	<u> </u>	<u></u> 2	<b>□</b> 2	Significant raw banks and loose soil, 25%-50% of stream bank under stress, trampled, slumping or eroding etc.	
	1	<u></u> 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.	
	<u>4</u>	<b>∮</b> 4	<u></u> 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	<u></u> 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.	
Indicators of Stream Bank Erosion Potential	<u></u> 2	<u></u> 2	<b>□</b> 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	<u></u> 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
	L

able A4. Stream Ba Rating	Description
4	>3.5 - 4.0
` 3	>2.5 - ≤3.5
2	>1.5 - ≤2.5
1	1.0 - ≤1.5

**SA Name:** Two Mile Pond Reservoir Transect [ 6 ]

Date: 4/9/24

Surveyor Initials: D5

### **A5 - Soil Surface Condition**

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).	
	X		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:

<u> </u>	Table A5. Soil Surface Condition Rating							
Rating	Description							
<b>⋈</b> 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.							
<b>○</b> 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.							
<u> </u>	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 appropriate degradation to the soil surface is greater than 5% or less than 10% of the SA.							
<u> </u>	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 Name:** Two Mile Pond Reservoir Transect [ 6 ]

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05

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 and Mary of the stressor column (Pick up to 3)

lank	Affect					
ank	Major	Minor		Unknown	Stressor Group/Stressor	Comments
	200 (0000)	en grane and	<del>, '</del>		Adverse water management	
	_ <u> </u> X _				Extended low flow dam releases	
			Ď,		Timing of flow releases not concordant	
					Extended high flow dam releases	
					Agriculture/Urban flow diversion upstream	1
	- Communication of the Communi			- Company	Adverse sediment management	
			Q		Adverse sediment retention by dams	
			Q		Sediment loss by dredging	
			口		Adverse sediment input (roads/development)	
					Artificial water additions	
			_ \(\bar{Q}\)		Sewer treatment effluent	
			Q		Point source urban runoff	
					Factory, feedlot outfall	
					Agricultural irrigation ditch returns	
					Mining waste	
				n i	Ground water pumping	
					Urban depletions	
					Fracking	
					Agriculture irrigation wells	
					Watershed alteration	
_					Extensive recent fires in watershed	
					Extensive recent timber harvest	
			Ø		Extensive open pit mining in watershed	
			Ď		Livestock/wildlife overgrazing	
					Local biodiversity impacts	
					Evidence of excessive grazing (local)	
					Excessive noise affecting wildlife	
	0	0		0 0	ounts by Intensity	
onal (	Comments					

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ion Date: 04/25/2022

Schema: Montane 2.5

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

### **Photo Point Log**

ksheet 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.

photographer.	\					/	<del></del>
Photo PT File	AZM	Easting	Northing	Latitude	Longitude	Description	Initial
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## MMRAM Montane Riverine Wetlands Version 2.5

		SA Cover I	Worksheet		
A Code SF2MI[6	] SA Name : Two N	lile Pond Reservoir		Project : Riparian Ass	sesement
de Tsct[6]	AU Name : Trans	ect [ 6 ]		WOI : Two Mile Pond	d Reservoir
ounty Santa Fe			levation (ft) 7299	(m) 2224.7 E	coregion 6.0 NWFM
A riparian system decommissioned of water rights.	nd Boundary (Rationale, o that leads into a pond loo due to safety concerns re	cated on the east side of garding the reservoir ar	nd a water diversion to	the area was recently	snut down due to lack
Canyon Road unt	e from Albuquerque you il you reach the reservoir	located to the North.			oserved in
wnership The Natur	e Conservative and The S	anta Fe National Forest	Restrictions only.		tland?
Surveyor Role		Survey	or Name		Surveyor Initials
Landscape	Dustin				DS
Biotic	Annie				D5
Abiotic	Dustin				p5
Stressors	Both				05
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	
So	me cat tail	ls and vi	llows budd.h	9	
D	(vegetation patterns, con (purple flower, are green ca	2 41	-		, Mallard
SA Abjotic Conditio	n (hydrological alteration	ns fe.g., dams, walls etc.	; flooding characterist	ics and evidence of ov	
SA Abiotic Condition disturbance and oth Lan	on (hydrological alteration er site impacts; explain the	ns {e.g., dams, walls etc. ne hydrologic breaks or	; flooding characterist other factors that defir	ics and evidence of ove ne the SA limits)	erbank flooding; soil
SA Abiotic Condition disturbance and oth Lan	er site impacts; explain the description	ns (e.g., dams, walls etc.) ne hydrologic breaks or Svery gu	; flooding characterist other factors that defin of kly with	ics and evidence of over ne the SA limits)	erbank flooding; soil
SA Abiotic Condition disturbance and oth Lan	on (hydrological alteration er site impacts; explain the	ns {e.g., dams, walls etc. ne hydrologic breaks or wery gu	i; flooding characterist other factors that defin i'ckly with	ics and evidence of over the SA limits)  Change is collected.)	erbank flooding; soil

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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				
B1. Relative Native Plant Community Composition	1 2	0.2		
B2. Vegetation Horizontal Patch Structure	2	0.2		
B3. Vegetation Vertical Structure	2	0.2		
B4. Native Riparian Tree Regeneration	- L	0.2		
B5. Invasive Exotic Plant Species Cover	1	0.2		
Ablotic		5.0		
A1. Floodplain Hydrologic Connectivity		0.3		
A2. Physical Patch Diversity	7	0.2		
A3. Channel Equilibrium	L	0.2		
A4. Stream Bank Stability and Cover				
A5. Soil Surface Condition	Ч //	0.2		
TOUT   1-1-1-100   ACM   100   MAN   10   M   10   M	14	0.1		

SA Conditio	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 WETLANI	CONDITION	SCORE Σ			
SA WETLAND	RANK =		3,11		

Rank	Score	Description
Α	≥3.25 - 4.0	Excellent Condition
В	≥2.5 - <3.25	Good Condition
С	≥1.75 - <2.5	Fair Condition
D	1.0 - <1.75	Poor Condition

Stressor Summary	Major	Minor	Top Three	
	0	0	-1	
			2	
			3	

tressor Comments (Evaluation of risk)

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### **Landscape Context**

LB	uffer	Integrity Index			
or are	exclude	<ul> <li>a. Buffer and RCC Checklist. Check off land cover eed and considered non-buffer elements that disrupt nagery).</li> </ul>	element ecosys	s withi tem co	n the buffer area or RCC corridors that are either allowed, nnectivity. Indicate the imagery type and date (season
lmage	у	Google Earth KMZ. file	lmage	Date	6/23
Allowe	d buffe	er/RCC land cover elements	Exclud	ed nor	n-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
	一一	Old fields, unmaintained			Railroads
		Open range land			Maintained levees, sediment piles, construction materials, staging areas
×	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
					Open water bounded by a levee or other manmade structure
L		Other			Other
		b. Buffer Percent Sub-metric. Measure or estimate composed of allowed buffer elements and enter int			

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%

**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)
Α	164.26	538.91	E	161.93	531.26
В	125.25	410.92	F	231.48	759.44
С	115.39	378.57	G	121.25	397.80
D	111.07	364.40	Н	155.87	511.38
	Average	148.31 <b>(m)</b>		486.58	(ft)

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 pn the SA Summary Worksheet.

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

	Table L1a. Buffer Percent				
R	ating	Buffer Percent			
0	4	100%			
(X)	3	≥80% - <100%			
0	2	≥50% - <80%			
$\circ$	1	<50%			

	Table L1b. Buffer Width				
Rating		Average buffer width			
$\overline{C}$	4	≥190m			
(X)	3	≥130 - <190m			
$\cap$	2	≥65 - <130m			
$\circ$	1	<65m			

Table L1c. Summary Rating for Buffer Integrity				
Rating		Score		
C	4	>3.5		
Ø	3	>2.5 - ≤3.5		
$\circ$	2	>1.5 - ≤2.5		
$\cap$	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	n Segment	Downstrea	m 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	O	) i
D) Total Disruption both segments		C	)	
E) % Total Disruptions = (D/2000)*100	Zero disr	uption notice	able along t	he banks.

Table L2. RCC Rating						
Rating	Description					
	<b>0%</b> total disruption on both segments combined.					
O 3	<15% total disruption on both segments combined.					
C 2	≥15% - <40% total disruption on both segments combined.					
0 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 Worksher

		RSR				,		R	WSI		
Current Size	1	Historic Size	=	RSR	1		RSR	Х	100	=	RWSI (%)
9	1	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
<b>○</b> 3	>10% - ≤40%	Wetland remains equal to or more than 60% of its natual size
<b>∩</b> 2		Wetland has been reduced by more than 40% its natural size
C1	>70%	Wetland has been reduced by more than 70% its natural size

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### L4 - Surrounding Land Use

prksheet 4. Surrounding Land Use. Enter the percent area occupied by a given Land Use Element in the Land Use Zone (LUZ) purrounding 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	
LUI Score= Coefficient * % LUZ Area		100	75

Table L4. Surr	ounding Land Use Rating
Rating	LUI Score
O 4	≥95 - 100
O 3	≥80 - <95
<b>⊗</b> 2	≥40 - <80
$\bigcirc$ 1	<40

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# **Biotic Metrics**

Species Cover (BS) 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 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 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 -Cheatgrass, Allysum, por wheel Appendix D). Use the comments box for documenting and describing vegetation community patch features. Comments Invasive Exotic Species (List Code(s)) Allysum Pinseed B4 Tree B5 Invasive
Regeneration Exotic
% Cover Species % Cover 50% 10% Work & Herb B3 Vertical Structure Type Mic V A III BI IIA1 IIIB1 10 ME INF1 50 Polygon No Apr # 9 1 00 6 10 7 12 13 14

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# **B1 - Relative Native Plant Community Composition**

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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 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 which it is more abundant. Fach polygon is either assigned to the same (T if it has the same composition or a new (T is created for the polygor

Decies 2 E Species 3 E Species 5 E Species 6 E Species	!	Tall Woody Stratum 1   Short Woody Stratum 2   Herbaceous/Sparse Stratu	Tall Woody Stratum 1	Stratum	_		Short Woo	dy Strati	ım 2		Herbaceon	c/Sparse	Stratum 3		CT Score 4		
9 S S S S S S S S S S S S S S S S S S S		Polygon Nos.	Species 1	шΖ	secies 2	<u>ш</u> 2	Species 3	ы Z	ies 4		Species 5	E E			w4 %	SA5 Wt So	core6
S	٧	7					1	>		2			1_	5	20 6	0	
Final Weighted Score?	8	<u> </u>			J.%.~	2	Cothi		M. Non	Ш	1587 2687		Printery.	4	5 0,	200%	
Final Weighted Score?	U																
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Final Weighted Score?	Ш												-				
Final Weighted Score?	ட														·		
Final Weighted Score <sup>7</sup>	9																
Final Weighted Score <sup>7</sup>	I					-											
Final Weighted Score7	_														-		
Final Weighted Score7	ſ																
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Final Weighted Score7																	
	Σ														:		
Final Weighted Score <sup>7</sup>	z																
	0													<u></u>	·		
_												Final	Weighted 5	core7		2	c×

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 stratum cover. <sup>4</sup>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 for Relative Native Plant Community Composition on the SA Rank Summary Worksheet.

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Table B1	. Relative Native Plant C	ommunity Composition Rating
Rating	CT Fina	al Weighted Score
<u> </u>	≥ 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
<u> </u>	≤2.0	>50% non-native

### 2 - Vegetation Horizontal Patch Structure

**forksheet 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
R	ating	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 ime 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 ble 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%
	1	5	6W and/or 6H
` 4	1	6W	
	2 or 1 and 2	5	6W and/or 6H
	1		
3	2 or 1 and 2	5	
. 3	2 or 1 and 2	6W	
	5	6W	
	2 or 1 and 2		
2	5		
	6W		
	6S		
1	6H		
	7		

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04 Nativo Dinavian Tree Degene	20	$\sim 1$		
34 - Native Riparian Tree Regene	E	au	L.F.A	100

**T. 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
X	4	Native poles, sapling, and seedlings trees well represented, obvious regeneration, many patches or polygons with >5% cover, typically multiple size (age) classes.
$\overline{\bigcirc}$	3	Native poles, saplings and/or seedlings common, scattered patches or polygons with 1% -5% cover, size classes few.
0	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.
$\overline{\Box}$	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 %			
0 4	0%			
<u>3</u>	>0% - <1%			
2	≥1% - <10%			
0 1	≥10			

Additional CTs and Biotic Metric Comments:						
, word all the						

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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	Steps Description Cross-section:					
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.	1				
2: Maximum bankfull depth						
3: Flood-prone depth	Double the estimate of maximum bankfull depth from Step 2.					
4: Flood-prone width	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).					
Calculate average Calculate the average for Step 5 for all three replicate cross-sections. Enter the average here ratio  Calculate the average for Step 5 for all three replicate cross-sections. Enter the average here ratio						

Rating Method

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

Rating	Description
0 4	Average entrenchment ratio is $\geq 2.2$ ;
O 3	Average entrenchment ratio is ≥1.9 - <2.2
2	Average entrenchment ratio is ≥1.5 - <1.9
0 1	Average entrenchment ratio is < 1.5

Flood Prone Width

Bankfull Width

Bankfull Depth

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

5	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

Rating	Description
O 4	Average entrenchment ratio is ≥ 1.9
C 3	Average entrenchment ratio is ≥1.4 - <1.9
O 2	Average entrenchment ratio is ≥1.2 - <1.4
0 1	Average entrenchment ratio is < 1.2

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ethod						
hydrolo other hy flow and Select a	egic conn ydrologio d floodpl rating fr	ectivity. At each cross evidence that would ain inundation. Reco om the table below.	s-section, use Worksheet 1 d preclude natural floodpl rd whether beaver activity	ting. Select the narrative of 10b to record channel incis ain inundation. Conversely vis obscuring bankful indic s 10b to help select rating. I n Table A1d.	ion, bank modification, , assess indicators and e ators due to inundation	inset floodplain or vidence for overbank of the floodplain.
Rati	ng			Description		
C 4	ov sig	er-bankfull flows like gns of overbank sedir e identification of ba	ly to inundate a broad are nent deposition. Or beave nkfùll indicators and the a	ors of bankfull discharge a a of floodplain. Floodplain r ponds inundate the entir ctive floodplain width.	súpports riparian veget e, normally active flood	plain and preclude
C 3	co rip als	nnected streams des parian overstory, but s so be present.	cribed above (as noted by some understory plants m	by incision, channelization bankfull indicators below ay be upland. An inset floo	floodplain transition). F odplain supporting ripar	ian vegetation may
C 2	ve ch re	getation and sedime annelization, or flow latively long-lived ph	nt regimes. Or the stream modification, and the nat reatophytes (e.g., cottonw	odplain formed, which is rong has minimal access to the ural floodplain does not surod, salt cedar, etc.).	natural floodplain due t pport riparian vegetatio	o incision, on except for
O 1	lm.	odification (i.e., aban	n floodplain, either throug donment of floodplain du ediment deposits on the fl	h incision, bank modificat e to decreased peak flows) oodplain, etc.	ion/channelization, or h . Indicators may include	ydrologic upland vegetation
ken loo oss-sec	king Ups tion. Leav ard with	tream and Downstre ve the cross-section t SA name and cross-s	am from the thalweg and	or each cross-section record looking Bank Right* and E ankful in the ground when ful. (*The bank of a stream or additional details.	ank Left* across the stre taking the Bank Right a	eam from each side of and Bank Left photos. <i>F</i>
ross ection	Eastin (Latitue		Upstream	Downstream	Bank Right	Bank Left
1		,				
2		<i>'</i>				
3						
i		1				

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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
	X		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
	K		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								
Rati	ing	Description							
<b>○ 4</b>		<b>High</b> 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).							
<b>○ 3</b>		<b>Moderate</b> 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).							
X	2	<b>Limited</b> 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).							
$C_{-}$	1	<b>Little</b> 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 ]

**SA Name:** Two Mile Pond Reservoir Transect [ 6 ]

Date: 5/15/24

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 !!!!		Lower Segment	Field Indicators(check all existing conditions)	
		Ă		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.
		X		Perennial riparian vegetation is abundant and well established along the bankfull contour, but not below it.
		Ø		There is leaf litter, thatch, or wrack in most pools.
Indicators of		囟		The channel contains embedded woody debris of the size and amount consistent with what is naturally available in the riparian area.
Channel Equilibrium		Ø		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).
		Ø		Channel and point-bars consist of well-sorted bed material.
		Ø		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.
				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.
Indicators of Active Degradation				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.
				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.
Indicators of Active Aggradation				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	CO	DE	:	SF2MI	[	6	]

**SA Name :** Two Mile Pond Reservoir Transect [

Date: 5/15/24

Surveyor Initials:

09

	Table A3. Rating for Channel Equilibrium								
Rating	Description								
<b>☆</b> 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.								
<b>○</b> 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.								
<u> </u>	There is evidence of severe aggradation or degradation throughout most of the channel through the SA. Circle primary process: aggradation or degradation.								
C 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 Middle Segment Segment		Lower	Field Indicators		
			Segment 4	Infrequent raw banks, less than 10% of steam bank under stress from trampling, slumping, vegetation removal or active erosion, etc.		
Indicators of Bank	□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.		
Soil Stability	□2	<u>2</u>	<b>□</b> 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.		
	<u></u> 4	<u></u> 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.		
Indicators of Stream Bank Erosion Potential	<u></u> 2	<u> </u>	<u> </u>	≥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	<u></u> 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					
<b>○</b> 3	>2.5 - ≤3.5					
<b>○</b> 2	>1.5 - ≤2.5					
C 1	1.0 - ≤1.5					

**SA Name:** Two Mile Pond Reservoir Transect [ 6 ]

Date: 5/15/24

Surveyor Initials: 05

### **A5 - Soil Surface Condition**

rksheet 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).	
	K		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						
<b>X</b> 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.						
C 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.						
O 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 [ 💪	]

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 "Unknown and Major Stressors in Dominant Stressor column(Pick up to 3)

Affect

ank	Allect			Channel Court (C)	Comm			
LUTIK	Major	Minor	Absent	Unknown	Stressor Group/Stressor	Comments		
		Г	I	T	Adverse water management			
		Ž			Extended low flow dam releases			
					Timing of flow releases not concordant			
					Extended high flow dam releases			
			Ò		Agriculture/Urban flow diversion upstream			
	1810				Adverse sediment management			
					Adverse sediment retention by dams			
					Sediment loss by dredging			
			Ò		Adverse sediment input (roads/development)	·		
					Artificial water additions			
			Ď		Sewer treatment effluent			
			Ż		Point source urban runoff			
					Factory, feedlot outfall			
			Ď		Agricultural irrigation ditch returns			
			Ė		Mining waste			
					Ground water pumping			
					Urban depletions			
			Q		Fracking			
			Q		Agriculture irrigation wells			
					Watershed alteration			
					Extensive recent fires in watershed			
					Extensive recent timber harvest			
					Extensive open pit mining in watershed			
					Livestock/wildlife overgrazing			
	100			300 0000	Local biodiversity impacts			
					Evidence of excessive grazing (local)			
					Excessive noise affecting wildlife			
	0	0		0 (	Counts by Intensity			
	Common							

sion Date: 04/25/2022

Schema: Montane 2.5

## NMRAM Montane Riverine Wetlands Version 2.5

		SA Cove	er Worksheet			
SA Code SF2MI[6	] SA Name: Two	Mile Pond Reservoir		Project : Riparia	an Assesement	
Code Tsct [6]	Code Tsct [6] AU Name : Transect [6] WOI : Two Mile					
County Santa Fe	HUC 12 Head	waters Santa Fe River	Elevation (ft) 7299	(m) 2224.7	Ecoregion 6.0 NWFM	
A riparian system decommissioned of water rights. Driving Directions Driving to Santa I	due to safety concerns	ocated on the east side regarding the reservoir		the area was rece	nal Forest. This reservoir was ently shut down due to lack ————————————————————————————————————	
Ownership The Natur	e Conservative and The	Santa Fe National Fore	st   Data Sharing   Resul Restrictions   only.		sh Observed in Wetland?	
Surveyor Role		Surve	eyor Name		Surveyor Initials	
Landscape	Dustin Schwar	tz			DS	
Biotic	Annie McCoy				AM	
Abiotic	Dustin Schwa	rtz			DS	
Stressors	Dustin Schwa	rtz	4,41,4,		DS	
Easting (m)	Northing (m)	Zone	Datum	Latitude (DI	D 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	e 15:00	
		SA De	escription			
SA Landscape Conte	ext (summarize the wetl	and and surrounding la	ndscape; include condit	ion and impacts)		
I q	t has b	eon rain, area is	hy the very wet	past to	rowing,	
			re, exotics and invasives,			
Red n	ing black bird	, musterd has	grown in fast	t 2 feet h	igh and flowering	
			pond, Brown e			
Cat	tails around	elge of	fond gum:	reed, 1	90% ground coverage	
		<del>-</del>	.]; flooding characteristic other factors that define		f overbank flooding; soil	
			the days 9		very covered	
		•	6.71 turb 16.			
Assessment Summa	<b>ry</b> (Overall site condition	n summary and comme	ents after the field data is	collected.)		
	Site seems	, to be	comins in	densc	with 90%	
	ground cove	er, Mustar	d coming for	51		
Provisional Field Score 3,04 Rai	nk B Surveyor(s)	DS/AM Final Score	3,04 Rank 13	Initials DS/A	Date 6/11/24	

SA Name: Two Mile Pond Reservoir Transect [ 6 ] Surveyor Initials: DS/AM

Date: 6/11/24

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		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		

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 WETLANI	D CONDITION	SCORE Σ	
SA WETLANI	D RANK =		3,04

A5. Soil Surface Condition

Rank	Score	Description
Α	≥3.25 - 4.0	Excellent Condition
В	≥2.5 - <3.25	Good Condition
С	≥1.75 - <2.5	Fair Condition
D	1.0 - <1.75	Poor Condition

0.1

Stressor Summary	Major	Minor	Top Three					
	0	0	1	Less	Water	to	Mis	gum
			2					
			3					

tressor Comments	(Evaluation of risk)
------------------	----------------------

Not a lot of stressors here.

**SA Name:** Two Mile Pond Reservoir Transect [ 6 ]

**Date:** 6/11/24

Surveyor Initials: DS/AM

**Landscape Context** 

127800000000000	Buffer														
Work	sheet 1a	. Buffer and	d RCC Checklist.	Check off	land c	over e	elemen	ts with	in the bu	ıffer	area d	or RCC co	rridors that are	either allowe	
and ye	excluded ear of im-	a and consid agery).	dered non-buffer (	elements	that di	isrupt	ecosys	stem co	onnectivi	ity. lı	ndicat	te the ima	agery type and c	date (season	
lmage	ry G	ioogle Earth	n KMZ. file				lmage	e Date	6/2	23					
Allowe	ed buffer	/RCC land	cover elements				Exclud	Excluded non-buffer/RCC land cover elemer							
Buffer	RCC				Buffer	RCC									
X	X N	Natural or se	emi-natural vegeta	mi-natural vegetation patches							al/residential developments, parking lots, ges, revetments, and other structures				
X	X S	mall irrigati	ion ditches withou	ıt levees					Lawns,	park	s, gol	f courses,	sports fields		
		Old fields, ur	nmaintained						Railroac	ds					
		)pen range	land						Maintai materia				ent piles, constru	ıction	
X	IXII	oot trails, he	, horse trails, unpaved bike trails (low						Intensiv	e liv	estoc	k areas, h	orse paddocks,	feedlots	
X	XN	lon-channel	n-channel open water								riculture: maintained pastures, hay fields, orchards, and vineyards				
X	1011		ning abandoned v	egetated	levees	, or	x	X	Paved ro	oads	or de		second-order u	npaved but	
			tracks roads				  X	X	1	ater		ded by a	levee or other m	nanmade	
H									structur	e					
Ш		ther				- 1	1 1 1	1 1 1	Other						
					<del></del>	l									
Works	heet 1b.	Buffer Per	cent Sub-metric.	Measure	or estir	mate t	he per	centag	e of the			Tabl	e L1a. Buffer P	ercent	
SA peri Box bel	meter co low. Rate	mposed of the sub-me	allowed buffer ele etric using Table L	ements ar	nd ente	er into	the Bu	ıffer Pe	e of the			Tabl Rating	1	ercent Percent	
SA peri Box bel	meter co low. Rate	mposed of	allowed buffer ele etric using Table L eet 1d.	ements ar 1a and er	nd ente nter the	er into e ratin	the Bu	ıffer Pe	e of the		$\overline{\bigcirc}$		1	Percent	
SA peri Box bel Integrit	meter co low. Rate y Summ	omposed of the sub-me ary Workshe	allowed buffer ele etric using Table L eet 1d. Buffer Percen	ements ar 1a and er nt (%)=	nd ententer the	er into e ratin	the Bug on th	uffer Pe ne Buffe	e of the rcent er		○ ⊗	Rating 4 3	Buffer I 100 ≥80% -	Percent 0% <100%	
SA peri Box bel Integrit Vorksh	meter co low. Rate by Summ eet 1c. B	emposed of the sub-me ary Workshe Buffer Widt	allowed buffer ele etric using Table L eet 1d. Buffer Percen h Sub-metric. Me	ements ar 1a and er at (%)=	85%	er into	g on th	uffer Pe ne Buffe	e of the rcent er	rs in	 	Rating 4 3 2	Buffer I  100 ≥80% - ≥50% -	Percent 0% <100% - <80%	
SA peri Box bel Integrit Vorksh he GIS o	meter co low. Rate by Summ eet 1c. E	emposed of the sub-me ary Workshe Buffer Widtl map. Avera	allowed buffer ele etric using Table L eet 1d. Buffer Percen h Sub-metric. Me age the line length	ements ar 1a and er at (%)=	85%	er into	g on th	uffer Pe ne Buffe	e of the rcent er	rs in on	○ ⊗	Rating 4 3	Buffer I 100 ≥80% -	Percent 0% <100% - <80%	
SA peri Box bel Integrit Vorksh he GIS o	meter co low. Rate by Summ eet 1c. E or on the er Integr	emposed of the sub-me ary Workshe Buffer Widtl map. Avera	allowed buffer ele etric using Table L eet 1d. Buffer Percen h Sub-metric. Me	ements ar 1a and er at (%)= asure the as and rat	85% lengthe	er into e ratin 6 n of ea	o the Bug on the	offer Pe ne Buffe fer line Enter th	e of the rcent er	on	 	<b>Rating</b> 4  3  2  1	Buffer I  100 ≥80% - ≥50% -	Percent  0%  <100%  - <80%  0%	
SA peri Box bel Integrit Vorksh he GIS o	meter colow. Rate by Summ eet 1c. E or on the er Integr	emposed of the sub-me ary Worksho suffer Widtl map. Avera ity Summar	allowed buffer ele etric using Table L eet 1d. Buffer Percen h Sub-metric. Me age the line length y Worksheet 1d.	ements ar 1a and er at (%)=	85% lengthe	er into	o the Bug on the	offer Pe ne Buffe fer line Enter th	e of the rcent er	on		<b>Rating</b> 4  3  2  1	Buffer I  100 ≥80% - ≥50% - <50  le L1b. Buffer V	Percent  0%  <100%  - <80%  0%  Vidth	
SA peri Box bel Integrit Vorksh he GIS o	meter colow. Rate by Summ eet 1c. E or on the er Integr	emposed of the sub-me ary Workshe Buffer Widtl map. Avera ity Summar er Width (m)	allowed buffer ele etric using Table L eet 1d.  Buffer Percen  h Sub-metric. Meage the line length y Worksheet 1d.  Buffer Width	ements ar 1a and er at (%)= asure the as and rat	85% lengthe using	er into e ratin 6 n of ea g Table	o the Bu g on the ech buf e L1b. E	offer line	e of the rcent er in meter er rating	on		Rating 4 3 2 1 Tab	Buffer I  100 ≥80% - ≥50% - <50  le L1b. Buffer V  Average bu	Percent  0%  <100%  -<80%  0%  Vidth  uffer width	
SA peri Box bel Integrit Vorksh he GIS of he Buffo	meter co low. Rate by Summ eet 1c. E or on the er Integr	Suffer Widtle map. Averality Summar Width (m)	allowed buffer ele etric using Table L eet 1d.  Buffer Percen  h Sub-metric. Me age the line length y Worksheet 1d.  Buffer Width (ft)	ements ar 1a and er at (%)= asure the as and rat	85% lengthe using	er into e ratin 6 n of ea g Table (m)	o the Bu g on th ach buf e L1b. E	fer line Enter th	e of the rcent er in meter e rating (ft) 531.26	on		Rating  4  3  2  1  Tab  Rating	Buffer I  100 ≥80% - ≥50% - <50  le L1b. Buffer V	Percent  0%  <100%  - <80%  0%  Vidth  uffer width  0m	
SA peri Box bei Integrit Vorksh he GIS of he Buffo Line A B	meter colow. Rate by Summ  eet 1c. Ever on the er Integr  Buffe  164	suffer Widtle map. Averaity Summar Width (m)	allowed buffer ele etric using Table L eet 1d.  Buffer Percen h Sub-metric. Me age the line length y Worksheet 1d.  Buffer Width (ft)  538.91  410.92	ements ar 1a and er at (%)= asure the as and rate  Line E F	85% lengthe using	er into e ratin 6 n of ea g Table (m) 61.93	o the Bug on the	fer line Enter th	e of the rcent er in meter er ating (ft) 531.26	on		Rating  4 3 2 1 Tab Rating 4	Buffer I  100 ≥80% - ≥50% - <50  le L1b. Buffer V  Average bu ≥19	Percent  0%  <100%  - <80%  0%  Vidth  uffer width  0m  <190m	
SA peri Box bei Integrit  Vorksh he GIS of he Buffor  Line A B C	meter colow. Rate by Summ  eet 1c. Ever on the er Integr  Buffe  164  125	Buffer Widtle map. Averaity Summar Width (m)26	allowed buffer ele etric using Table L eet 1d.  Buffer Percen h Sub-metric. Me age the line length y Worksheet 1d.  Buffer Width (ft)  538.91  410.92  378.57	ements ar 1a and er  at (%)=  asure the as and rate  Line  E  F  G	85% lengthe using  But	er into e ratin 6 n of ea g Table (m) 61.93 231.48	o the Bu g on the ech buf e L1b. E	fer line Enter th	e of the rcent er in meter er ating ffer Wid (ft) 531.26	on	C & C C C & C & C & C & C & C & C & C &	Rating  4 3 2 1 Tab Rating  4 3	Buffer I  100  ≥80% -  ≥50% -  <50  L1b. Buffer V  Average bu  ≥19  ≥130 - «	Percent  0%  <100%  -<80%  0%  Vidth  uffer width  0m  <190m	
SA peri Box bei Integrit Vorksh he GIS of he Buffo Line A B	meter colow. Rate by Summ  eet 1c. Ever on the er Integr  Buffe  164	Buffer Widtle map. Averaity Summar Width (m)26	allowed buffer ele etric using Table L eet 1d.  Buffer Percen h Sub-metric. Me age the line length y Worksheet 1d.  Buffer Width (ft)  538.91  410.92  378.57  364.40	ements ar 1a and er at (%)= asure the as and rate  Line E F	85% lengthe using  But	er into e ratin 6 n of ea g Table (m) 61.93 231.48	o the Bu g on the ech buf e L1b. E	fer line Enter th	e of the rcent er in meter er ating (ft) 531.26	on		Rating  4  3  2  1  Tab  Rating  4  3  2  1	Buffer I  100 ≥80% - ≥50% - <50  le L1b. Buffer V  Average bu ≥130 -  ≥65 - < <65	Percent  0%  <100%  -<80%  0%  Vidth  uffer width  0m  <190m  130m  5m	
SA peri Box bei Integrit  Vorksh he GIS of he Buffor  Line A B C	meter colow. Rate by Summ  eet 1c. Ever on the er Integr  Buffe  164  125	Buffer Widtle map. Averaity Summar Width (m)262539	allowed buffer ele etric using Table L eet 1d.  Buffer Percen h Sub-metric. Me age the line length y Worksheet 1d.  Buffer Width (ft)  538.91  410.92  378.57	ements ar 1a and er  at (%)=  asure the as and rate  Line  E  F  G	85% lengthe using  But	er into e ratin 6 n of ea g Table (m) 61.93 231.48	o the Bu g on the ech buf e L1b. E	fer line Enter th	e of the rcent er in meter er ating ffer Wid (ft) 531.26	on		Rating  4  3  2  1  Tab  Rating  4  3  2  1	Buffer I  100 ≥80% - ≥50% - <50  le L1b. Buffer V  Average bu ≥130 - < ≥65 - < <65  Summary Ratin	Percent  0%  <100%  -<80%  0%  Vidth  uffer width  0m  <190m  130m  5m	
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Vorksh he GIS o he Buffo  Line  A B C D	meter colow. Rate by Summ  eet 1c. Every on the er Integrence 164  125  111  Average 111	suffer Widtle map. Averality Summar width (m) .26 .25 .39 .07 e Buffer Integrated and summary Wo	allowed buffer electric using Table Leet 1d.  Buffer Percent Sub-metric. Meage the line length y Worksheet 1d.  Buffer Width (ft)  538.91  410.92  378.57  364.40  148.31 (m)  grity Summary. Ethe Buffer Integrity grity Index Score, orksheet.	ements ar 1a and er at (%)= asure the as and rate  Line E G H  nter the s y Index Se enter rati	lengthe using  But  1  48  sub-mecore us	er into e ratin 6 n of ea g Table (m) 61.93 231.48 121.25 155.87 86.58	atings ne form	fer line  fer line  To the state of the stat	e of the rcent er in meter er ating ffer Wid (ft) 531.26 259.44 197.80 11.38	on		Rating  4 3 2 1 Tab Rating 4 3 2 1 ble L1c. Stating 4 3	Buffer I  100 ≥80% - ≥50% - <50  le L1b. Buffer V  Average bu ≥130 - < ≥65 - < 65  Summary Ratin Integrity  Sco >3. >2.5 -	Percent  0%  <100%  -<80%  0%  Vidth  uffer width  0m  <190m  130m  5m  g for Buffer  re  5 ≤3.5	
Vorksh he GIS o he Buffo  Line  A B C D	eet 1c. Eor on the er Integr Buffe 164 125 111 Averag eet 1d. above t Using the	suffer Widtle map. Averality Summar width (m) .26 .25 .39 .07 e Buffer Integrated and summary Wo	allowed buffer electric using Table Leet 1d.  Buffer Percent Sub-metric. Meage the line length y Worksheet 1d.  Buffer Width (ft)  538.91  410.92  378.57  364.40  148.31 (m)  grity Summary. Ethe Buffer Integrity grity Index Score,	ements ar 1a and er at (%)= asure the as and rate  Line E G H  nter the s y Index Se enter rati	85% lengthe using Buf 1 48 sub-mecore using for	or into e ratin 6 n of ea g Table (m) 61.93 231.48 121.25 155.87 86.58 etric R Sing th Buffer	atings ne form	fer line fer line fer th  Bu  7  (ft)  from Tanula in trity in T	e of the rcent er in meter er ating ffer Wid (ft) 531.26 259.44 197.80 11.38	on the second se		Rating  4 3 2 1 Tab Rating 4 3 2 1 ble L1c.:	Buffer I  100 ≥80% - ≥50% - <50  le L1b. Buffer V  Average bu ≥130 -  ≥65 - < 65  Summary Ratin Integrity  Sco >3.	Percent  0%  <100%  - <80%  0%  Vidth  uffer width  0m  <190m  130m  5m  g for Buffer  re  5  ≤3.5  ≤2.5	

Date: 6/11/24

SA Name: Two Mile Pond Reservoir Transect [ 6 ]

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	m Segment	<b>Downstream Segment</b>		
Banks	Left Bank	Right Bank	Left Bank	Right Bank	
A) Total Bank Disruption (m)	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 dis	ruption notic	eable along	the banks.	

Table L2. RCC Rating									
Rating	Description								
<b>∞</b> 4	0% total disruption on both segments combined.								
C 3	<15% total disruption on both segments combined.								
C 2	≥15% - <40% total disruption on both segments combined.								
O 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 Workshoot

		RSR			RWSI						
Current Size	1	Historic Size	Ħ	RSR	1	12	RSR	X	100	=	RWSI (%)
9	1	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						
O2	>40% - ≤70%	Wetland has been reduced by more than 40% its natural size						
01	>70%	Wetland has been reduced by more than 70% its natural size						

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Two Mile Pond Reservoir Transect [ 6 ]

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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	1 0
Dredging, borrow pits, abandoned mines, water-filled artificial impoundments (ponds and reservoirs)	0,1		0
rilling or dumping of sediment or soils		0	
Intense recreation (all-terrain vehicle use, camping, popular fishing spot, etc.)	0.1	<u> </u>	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)  Ski area	0.3	0	0
Dam sites and flood-disturbed shorelines around water storage reservoirs	0.4	0	0
Abandoned artificial in a second 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)  Mature restorations	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							
O 4	≥95 - 100							
C 3	≥80 - <95							
<b>⊗</b> 2	≥40 - <80							
O 1	. <40							

**Biotic Metrics** 

**Date:** 6/11/24 SA Name: Two Mile Pond Reservoir Transect [  $\bigcirc$  ]

Surveyor Initials: DS/AIM

				Biotic Metrics	etrics
Worksl numbe Species the Tab	r assigned from the sCover (BS) metrics. Sles in Appendix B are also the structure of the s	Community SA Biotic May Enter the Ver and the Field G	Patch Polygon  p. Each polygon rtical Structure suide for metric	Data for Biotic Metrics I is evaluated with respect Type (VST) for B3, tree reginstructions. Enter the spinal describing vegetation	<b>Worksheet 5. Vegetation Community Patch Polygon Data for Biotic Metrics B3, B4, and B5 for Polygons from 5A Biotic Map.</b> Enter data for each polygon are solded 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 Noxious Weed List 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 - International Appendix B and the Field Guide for metric instructions. Enter the species codes for the invasive exotic species found in the polygon (from NM Actions Advisors Appendix B and the Field Guide for metric instructions vegetation community patch features.
Append Polygon No	dIX D). Use the Colling B3 Vertical Structure Type	84 Tree Regeneration % Cover	BS Invasive Exotic Species % Cover	Invasive Exotic Species (List Code(s))	Comments
4	all A	1,08 *	20%	Musterd	
× ×	1711/18	20%	9,9	Algue	
m	IIA1				
*	IIIB1				
Tity.	IIIC1				
v	IVEI				
7	IVF1				
00					
0					
10					
1					
12					
13					
14					
15					
16					
17					
18					
19					
20					
	1				Page to of 17

SA CO SF2MI[ 6]

B1 - Relative Native Plant Community Composition

**SA Name:** Two Mile Pond Reservoir T -ect [G]

**Date:** 6/11/24

Surveyor Initials: ` \M

Raw4 |% SA5 |Wt Score6 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 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 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. <sup>4</sup>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 0 CT Score 4 5 W Herbaceous/Sparse Stratum 3 Species 6 Ble ster da.5y 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. 19/06 mon 1/2 Species 5 Maskal шΖ Species 4 Short Woody Stratum 2  $\geq$ Species 3 L:4, Say 674 ш Z Species 2 Tall Woody Stratum 1 Species 1 Willow Polygon Nos. ⋖ Ω U ۵ ш ш G I  $\mathbf{x}$ \_ Σ z 0

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

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SA CODE:

SA Name:

SF2MI[6]

Two Mile Pond Reservoir Transect [ 6 ]

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DS/AM

Table B1. Relative Native Plant Community Composition Rating									
Rating CT Final Weighted Score									
	≥ 3.75	<10% non-native							
7 2	≥ 3.25 and <3.75	10% ≤20% non-native							
7 2	> 2.0 and <3.25	20% ≤50% non-native							
2	<2.0 <2.0	>50% non-native							
1	52.0								

# 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	<b>Description</b> Most closely matches Pattern A. SA has a diverse patch structure (≥4 patch types) and complexity. A dominant patch type would								
4	to make to a literatural make								
<b>Z</b> 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	be present, although the other patch types would be well represented and have more than one that one than one that one than one that one than one than one than one than one than one than one that one that one than one than one than one that one than one that one t								
C 1	Pattern D. SA has essentially little to no patch diversity of complexity. The SA is dominated by the SA is dominat								

## 33 - 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 SA for CTs withsame VST)  ${\sf x}$  100. Enter the total %SA for each VST below.

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	•	Herbaceous Wetland	Herbaceous Vegetation	Sparse Vegetation	
Total % of SA	Tolesc			50		50		
TOTAL % OF 3A					L + O wata tha S	A based on the	riteria in Table B3	

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.

	ank Summary Worksheet.	Co- or Sub-dominant VST ≥15%	Sub-dominant VST ≥5%
Rating	Dominant VST		6W and/or 6H
	1	5	
~ 4 <del>                                   </del>	1	6W	6W and/or 6H
C 4	2 or 1 and 2	5	6W and/or on
C 3	1		
	2 or 1 and 2	5	
	2 or 1 and 2	6W	
	5	6W	
	2 or 1 and 2		
7 2	5		
	6W		
	6S		
1	6H		
·	7		

SA CC	DDE: SF	2MI[ 6 ]					Date:	6/11/24	
SA Na	ame: Tw	vo Mile Pon	d Reservoir	Transect [	6 1	Surveyo	r Initials :	DS/AM	
34 - Nati	ve Riparia	n Tree Re	generation						
! B4.	Native Ripa	rian Tree Re	generation ra	ting. Using t	he polygon per	ent cover of	native tree s	eedlings, saplir	ngs and poles from
Vorksheet	5, rate the S	A based on p	olygon percer	nt cover and p	oatch density. E	nter the ratin	g on the SA I	Rank Summary	Worksheet.
Rating	_								
7 4	cover, typically multiple size (age) classes.								
<b>5</b> 3	Native po	oles, saplings	and/or seedlir	ngs common,	scattered patch	es or polygo	ns with 1% -	5% cover, size c	lasses few.
O 2	<1% cove	er, little size o	lass differentia	ation.		estricted to	one or two p	atches or polyg	ons with typically
<u>0 1 </u>	Native po	oles, saplings,	and/or seedli	ngs absent (0	% cover).				
			cies Cover				Hippis Care of could		
					ate the percenta Summary Work		nvasive exot	ic species for th	e SA and enter
Rati	ng Method				Invasive co	ver (%)		cald	culate
Table B	5. Ratings fo	or Invasive E	xotic Plant Sp	ecies Cover					
Ratin	g	Invasive S	Species Cover	%					
O 4			0%		1				
3		>(	0% - <1%						
2		≥1	% - <10%						
√ 1			≥10						
Additiona	l CTs and Bio	otic Metric Co	omments:						
l									

SA Name: Two Mile Pond Reservoir Transect [6]

Date: 6/11/24

Surveyor Initials: DS/AM

#### **Abiotic Metrics**

### A1 - Floodplain Hydrologic Connectivity

#### Method 1

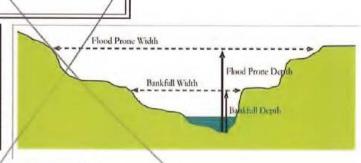
Worksheet 10a. Floodplain Hydrologic Connectivity Measurements. The following six steps are conducted at each of three cross-sections at the approximate mid-points along straight riffles and away from deep pools or meander bends. Use a measuring tape and temporary stakes for horizontal measurements, 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 Measure the distance between the right and left bankfull cor				
2: Maximum bankfull depth	Keeping the tape level between the right and left bankfull co of the line above the thalweg (the deepest part of the chann- help here.	ontours, measure the height el). A pocket line level can			
3: Flood-prone depth	Double the estimate of maximum bankfull depth from Step 2	2.			
4: Flood-prone width	Using a tape, measure the length of a level line at a height ed from Step 3 to where it intercepts the right and left banks.	qual to the flood prone depth			
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-susing Table A1a. Enter the rating in the A1 box on the SA Rai		e and r	ate	

Rating Method

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

Rating	Description
O 4	Average entrenchment ratio is $\geq$ 2.2;
C 3	Average entrenchment ratio is ≥1.9 - <2.2
C 2	Average entrenchment ratio is ≥1.5 - <1.9
C 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	IVI	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					
0 4	Average entrenchment ratio is ≥ 1.9					
O 3	Average entrenchment ratio is ≥1.4 - <1.9					
C 2 Average entrenchment ratio is ≥1.2 -						
C 1	Average entrenchment ratio is < 1.2					

**Date:** 6/11/24

SA Name:

Two Mile Pond Reservoir Transect [6]

Surveyor Initials:

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#### Method 2

Je 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
O 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.
C 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.).
O 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.

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			/			

3			/		
Floodp	lain Hydrologic	: Connectivity Co	omments:		
		a common and			

2MI [ 6 ] Date: 6/11/24

SA Name: Two Mile Pond Reservoir Transect [ 6 ] 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
	X		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
	Ø		Natural levees
			Standing snags
			Variegated, convoluted, or crenulated foreshore
			Undercut banks in channels
			No. of unique Patch Types

Tabl	able A2. Rating for Physical Patch Complexity						
Rati	ng	Description					
C	4	<b>High</b> 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).					
C	3	<b>Moderate</b> 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).					
X	2	<b>Limited</b> 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).					
$\cap$	1	<b>Little</b> 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, $\leq 5$ unique indicators are present in the SA.					

SA CODE:

SF2MI[6]

**Date:** 6/11/24

SA Name:

Two Mile Pond Reservoir Transect [ 6 ]

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)
		×		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.
		Ż		Perennial riparian vegetation is abundant and well established along the bankfull contour, but not below it.
		囟		There is leaf litter, thatch, or wrack in most pools.
Indicators of		×		The channel contains embedded woody debris of the size and amount consistent with what is naturally available in the riparian area.
Channel Equilibrium		图		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).
		図		Channel and point-bars consist of well-sorted bed material.
		Ø		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.
				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.
Indicators of Active Degradation				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.
				There is abundant fresh splays of coarse sediment covering the floodplain above the natural point bar elevation.
Indicators of Active Aggradation				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.

**Date:** 6/11/24

SA Name:

Two Mile Pond Reservoir Transect [ 6 ]

Surveyor Initials:

DS/AM

	Table A3. Rating for Channel Equilibrium					
Rating	Description					
	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.					
<b>○</b> 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.					
<b>∩</b> 2	There is evidence of severe aggradation or degradation throughout most of the channel through the SA. Circle primary process: aggradation or degradation.					
C 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.

idening of the S/t Suf	drig off the SA Summary Worksneet.					
Condition	Upper Segment	Middle Segment	Lower Segment	Field Indicators		
	<u></u> 4	<b>⊠</b> ′4	\(\) 4	Infrequent raw banks, less than 10% of steam bank under stress from trampling, slumping, vegetation removal or active erosion, etc.		
Indicators of Bank Soil Stability	□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.		
Jon Stability	<u></u> 2	<u></u> 2	<u></u> 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	<u></u> 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.		
	<u></u> 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.		
	<u></u> 2	□2	<u> </u>	≥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.		
	<u></u> 1	<b>□</b> 1	<u></u> 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.		

|--|

Rating	ank Stability and Cover Rating
nating	Description
× 4	>3.5 - 4.0
` 3	>2.5 - ≤3.5
` 2	>1.5 - ≤2.5
` 1	1.0 - ≤1.5

**Date:** 6/11/24

**SA Name:** Two Mile Pond Reservoir Transect [6]

Surveyor Initials: DS/AM

#### **A5 - Soil Surface Condition**

Vorksheet 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:	
-----------------------------	--

Ĵ <del></del>	Table A5. Soil Surface Condition Rating							
Rating	Description							
<b>4</b>	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.							
C 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.							
C 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.							
O 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.							

**Date:** 6/11/24

**SA Name:** Two Mile Pond Reservoir Transect [ 6 ]

Surveyor Initials:

: DS/AM

	ics asing	an cer evi	GCIICE WI	icie avalial	stressors by intensity category that may be affect to or your best professional judgement otherwi tumn(Pick up to 3)	rting wetland ecological condition of the SA and WOI. Assign ise. If the presence of the stressor is uncertain, mark as "Unknow"
Rank	Δffect		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	
			I		Adverse sediment management	
					Adverse sediment retention by dams	
					Sediment loss by dredging	
					Adverse sediment input (roads/development)	
T					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	
		<del>- 1</del>		71 - 12 - 12 - 1	Watershed alteration	
					Extensive recent fires in watershed	
					Extensive recent timber harvest	
					Extensive open pit mining in watershed	
					Livestock/wildlife overgrazing	·
		- The state of the	and the second		Local biodiversity impacts	a entropica (in action (2000) e esta a companye in tropica (in action entropica entropica entropica entropica e
					Evidence of excessive grazing (local)	
	Ш				Excessive noise affecting wildlife	
	0	0		0 (	Counts by Intensity	
dditional	Comment	ts				

ersion Date: 04/25/2022

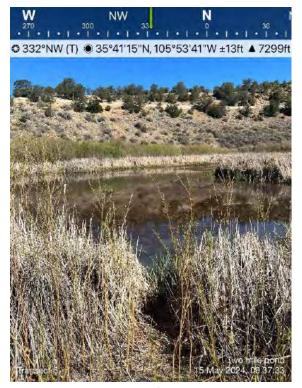
Schema: Montane 2.5

Appendix E.

**Field Photos** 



March 7<sup>th</sup> 2024 Transect 6



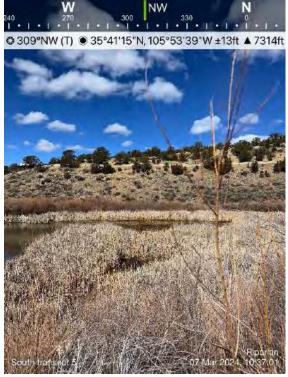
May 15<sup>th</sup> 2024 Transect 6



April 9<sup>th</sup> 2024 Transect 6



June 11<sup>th</sup> 2024 Transect 6



March 7<sup>th</sup> 2024 Transect 5



May 15<sup>th</sup> 2024 Transect 5



April 9<sup>th</sup> 2024 Transect 5



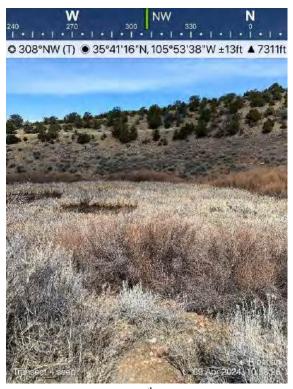
June 11<sup>th</sup> 2024 Transect 5



March 7<sup>th</sup> 2024 Transect 4



May 15<sup>th</sup> 2024 Transect 4



April 9<sup>th</sup> 2024 Transect 4



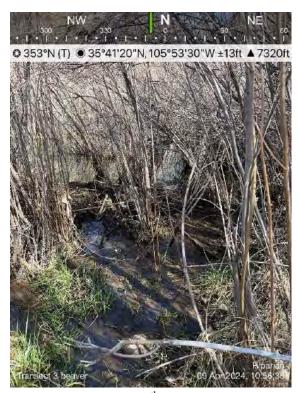
June 11<sup>th</sup> 2024 Transect 4



March 7<sup>th</sup> 2024 Transect 3



May 15<sup>th</sup> 2024 Transect 3



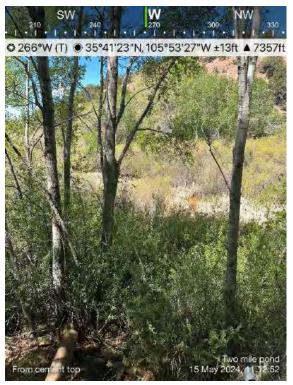
April 9<sup>th</sup> 2024 Transect 3



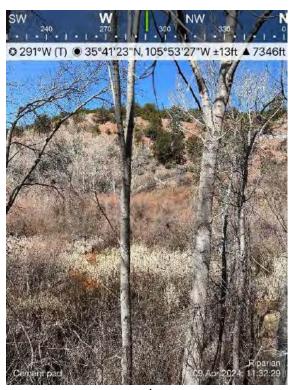
June 11<sup>th</sup> 2024 Transect 3



March 7<sup>th</sup> 2024 View from top of dam.



May 15<sup>th</sup> 2024 View from top of dam.



April 9<sup>th</sup> 2024 View from top of dam.



June 11<sup>th</sup> 2024 View from top of dam.



March 7<sup>th</sup> 2024 Transect 1



Red Stem Storks An exotic plant here in Santa fe



June 11<sup>th</sup> 2024 Transect 1



Spreading Fleabane A native wildflower in the Southwest.



Large Box Elder bug.



Spotted Towhee



Goldfish in pond.



Mule Deer



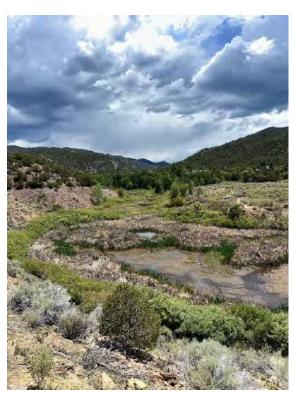
March 7<sup>th</sup> 2024 Two Mile Pond



May 15<sup>th</sup> 2024 Two Mile Pond



April 9<sup>th</sup> 2024 Two Mile Pond



June 11<sup>th</sup> 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 18<sup>th</sup>, 2024 field collection

		Percent of	
		total	
Species	Count	sample	WNV vector
Aedes increpitus	1	1.52%	
Aedes trivittatus	11	16.67%	
Anopheles			
freeborni	6	9.09%	
Culextarsalis	18	27.27%	yes
Culiseta incidens	4	6.06%	
Culiseta increpitus	1	1.52%	
Culiseta inornata	25	37.88%	

Appendix G.

Soil moisture maps

JSAI Appendix G.

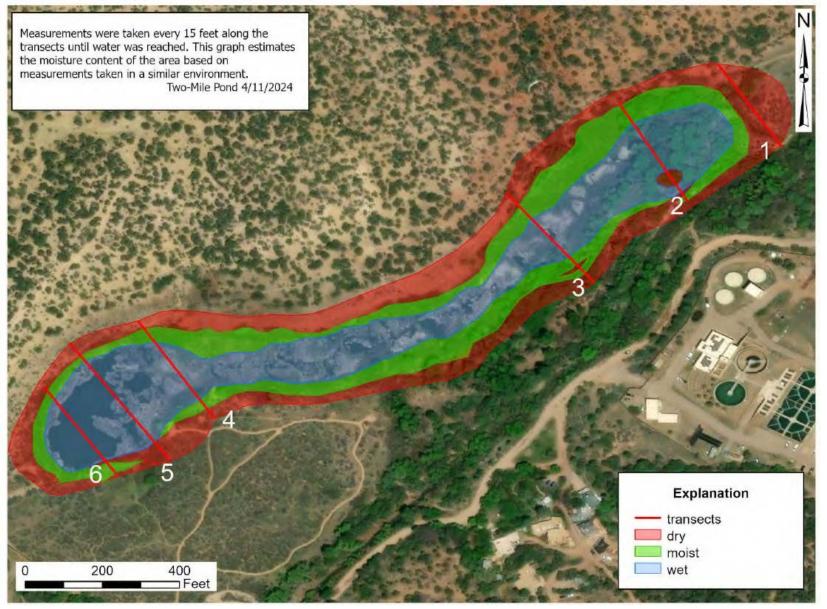


Figure G1. Moisture map April 11, 2024.

JSAI Appendix G.

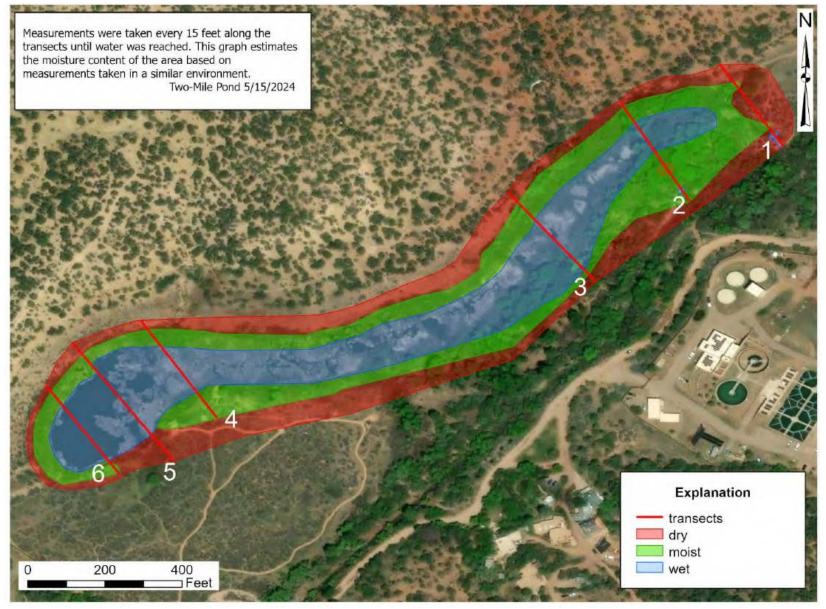


Figure G2. Moisture map May 15, 2024.

JSAI Appendix G.

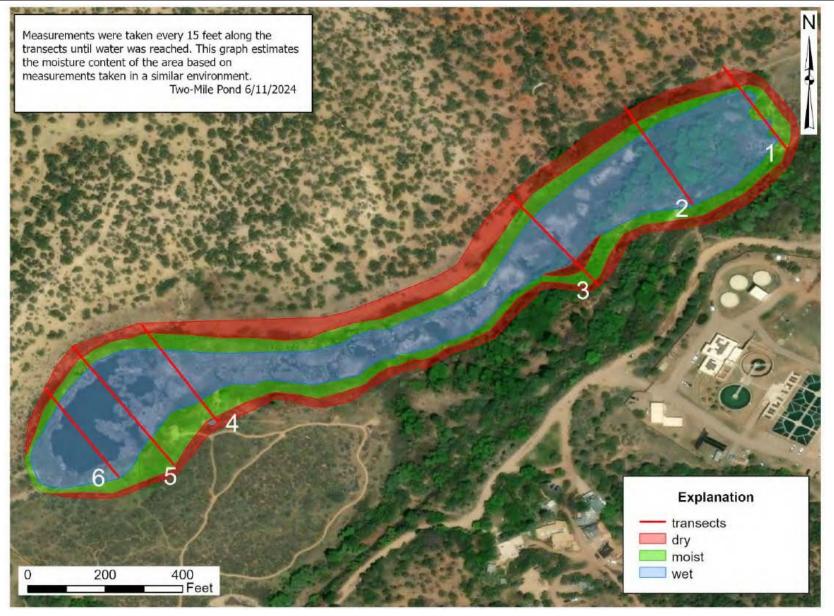


Figure G3. Moisture map June 11, 2024.