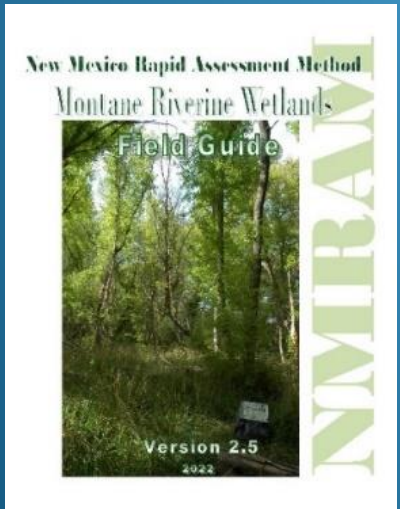
New Mexico Environment Department

New Mexico Rapid Assessment Method (NMRAM)

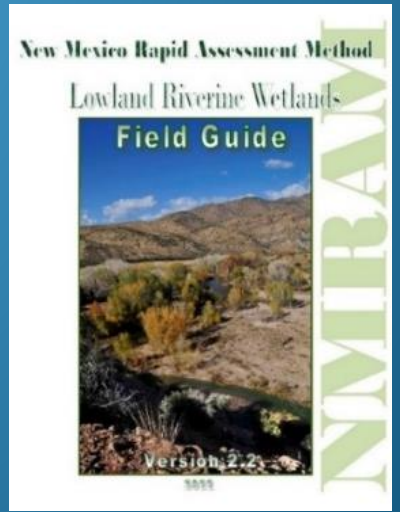
Riverine Wetlands

Riparian Corridor Connectivity



New Mexico Environment Department
Surface Water Quality Bureau
Wetlands Program

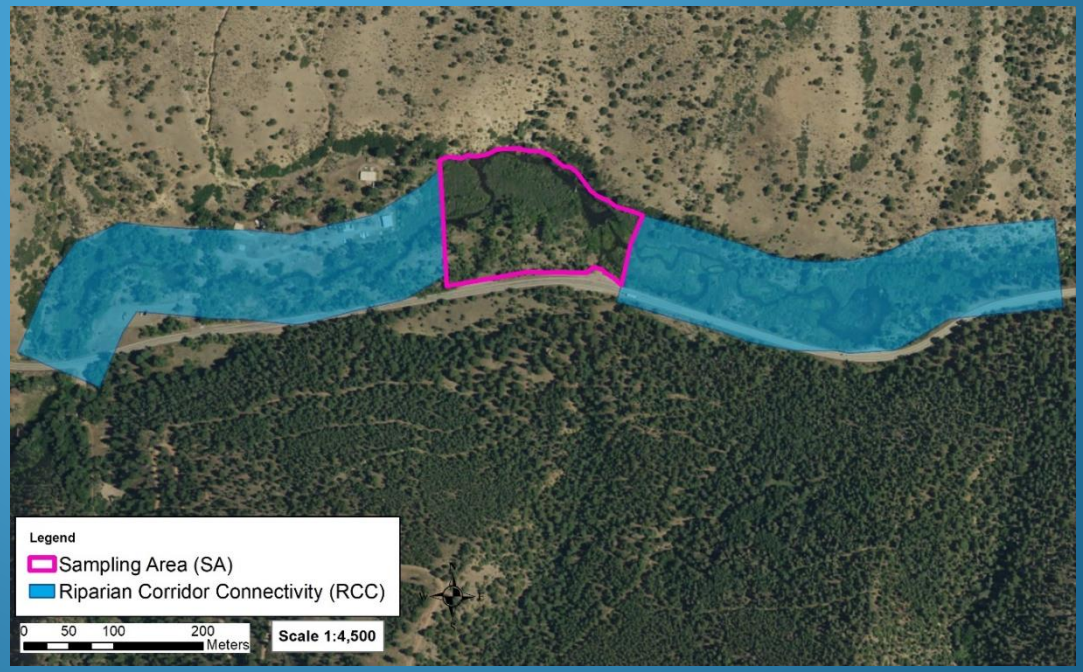
Natural Heritage New Mexico
University of New Mexico



Riparian Corridor Connectivity

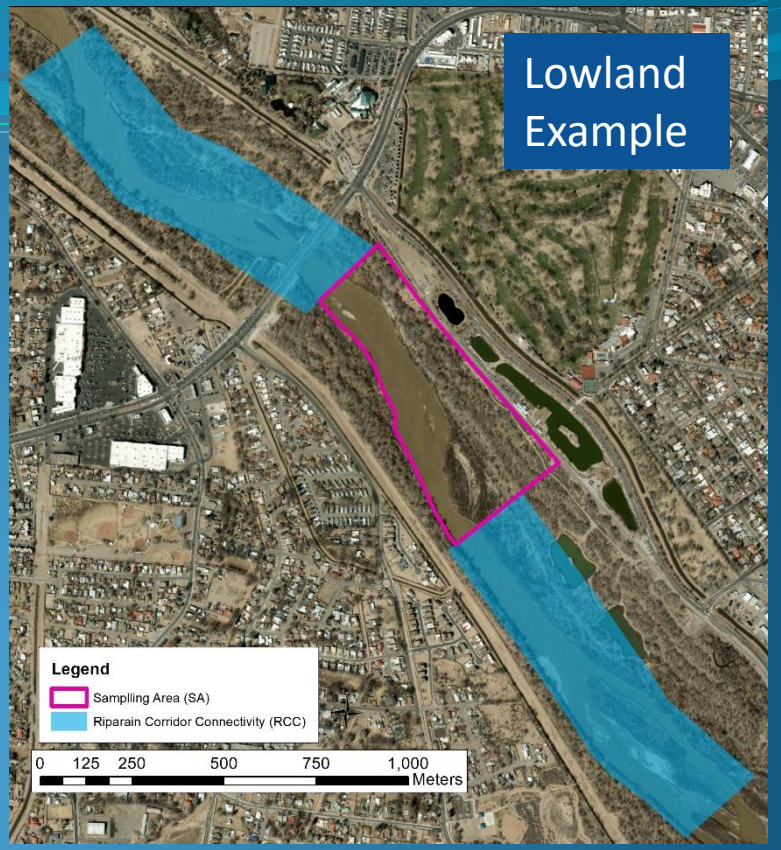
- Degree of connectivity of riparian corridor upstream and downstream of SA.
- Level 1: GIS and field verified
- Corridors allow uninterrupted movement of animals throughout the riparian zone as well as access to adjacent uplands
- Unimpeded propagation of plant populations

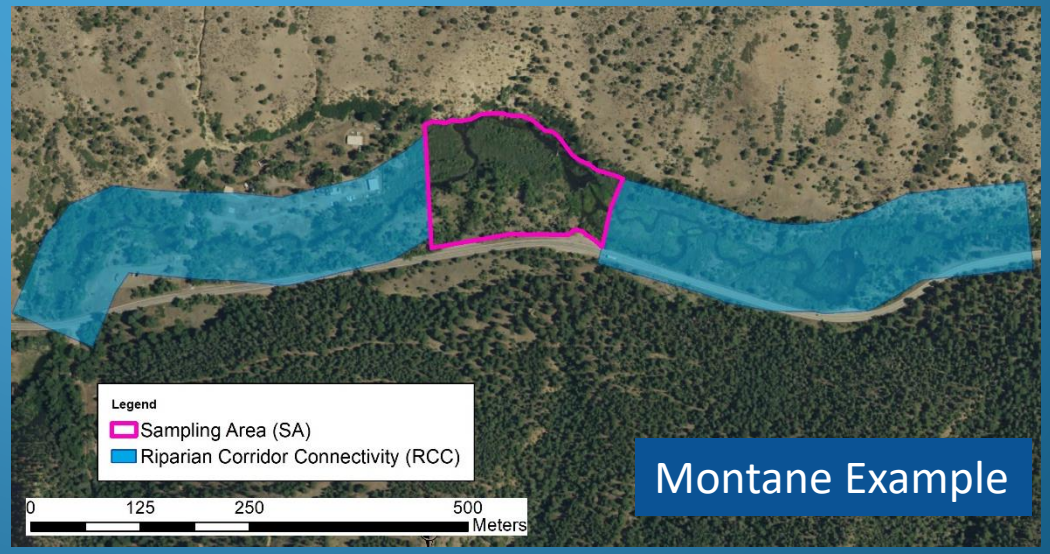
Emphasis on detecting intervening obstructions that might inhibit wildlife movement or fragment habitat and plant populations and physical processes



Riparian Corridor Connectivity

- Delineate a corridor upstream and downstream of SA that is centered on the “river available floodplain”
  - 1000 m long and 250 m wide for Lowland
  - 500 m long and 100 m wide for Montane
- Evaluate each side of corridor for connectivity and non-connectivity elements
- Record total length of disruptions per segment (up or down-stream) and by bank (left or right)
  - Minimum length for non-connectivity element to be recorded is 10 m (assign minimum widths for special class elements – see table L2a)
- Calculate percentage of non-connectivity per bank and then per segment
- Rate with Table L2 based on percentage total disruption

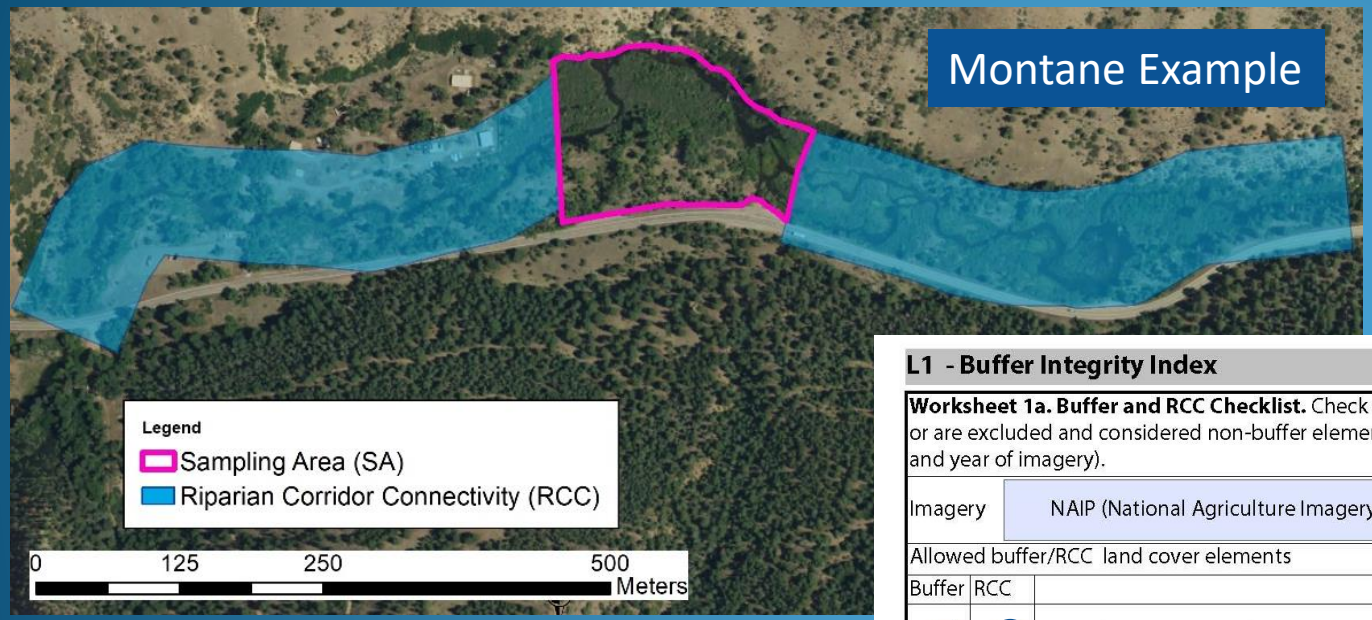




Riparian Corridor Connectivity

Use same list of Connectivity and Non-connectivity elements provided on Worksheet 1a (page 4 of datasheets) to determine breaks in RCC.

- Check off present allowed and excluded RCC features on Worksheet 1a.



L1 - Buffer Integrity Index

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

Imagery	NAIP (National Agriculture Imagery Program)	Image Date	2020

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

Riparian Corridor Connectivity

This Montane example SA has paved road on south (right bank) both up and downstream from the SA. There is also a recreation area with buildings, a parking lot, and maintained lawns on the upstream left bank. Additionally there are two bridges inside the upstream RCC segment, a bridge for the highway, and another that goes into the recreation area. Measure bridges based on the road type from Table L2a which can be found in Appendix B.

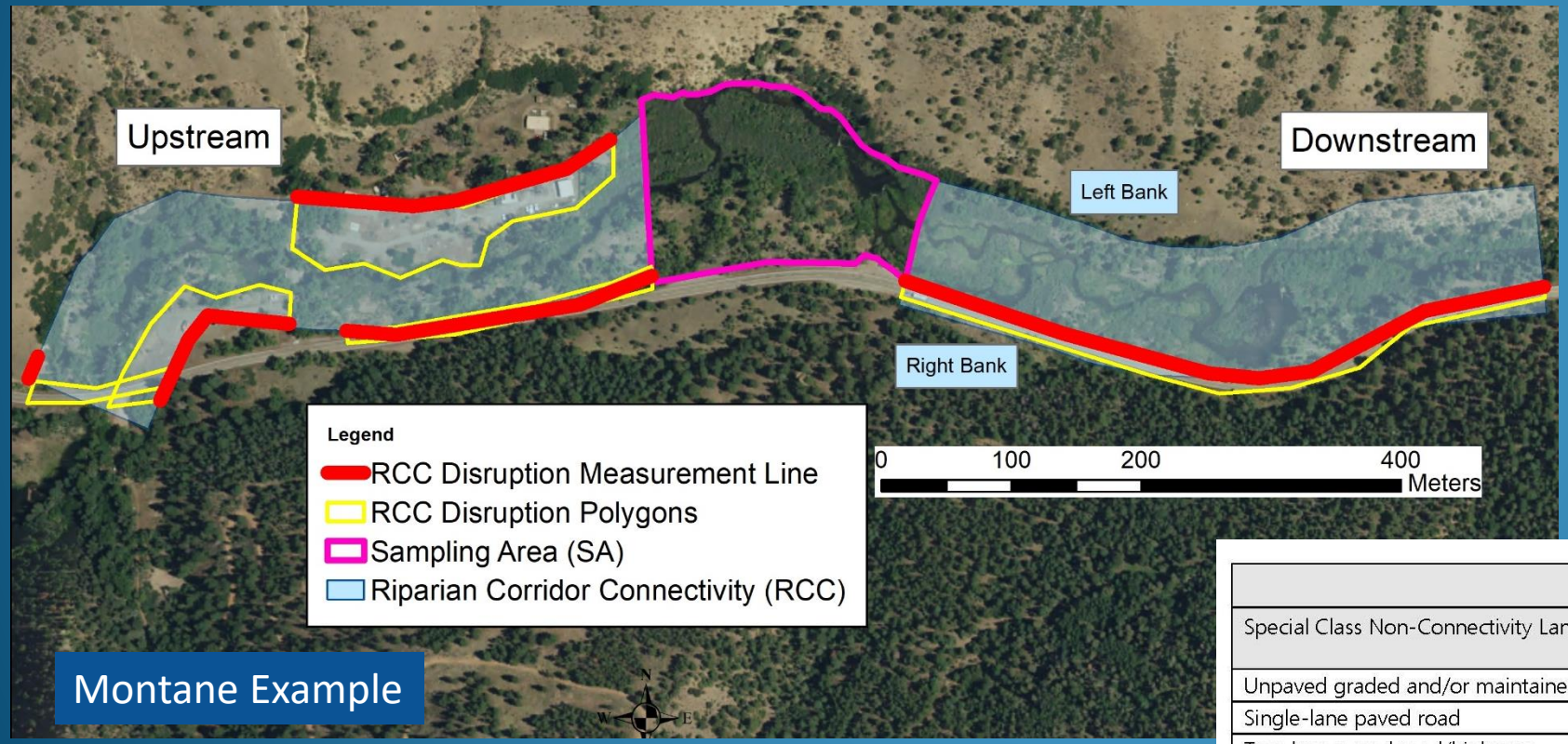


Table L2a	
Special Class Non-Connectivity Land Cover Elements	Minimum Assigned Impairment
Unpaved graded and/or maintained roads	10 m
Single-lane paved road	20 m
Two-lane paved road/highway	50 m
Four-lane paved road/highway	100 m
Railroad	50 m
Concrete diversion or retention dams	25 m
Small non-concrete (wood, earth) diversion dams	10 m

Riparian Corridor Connectivity

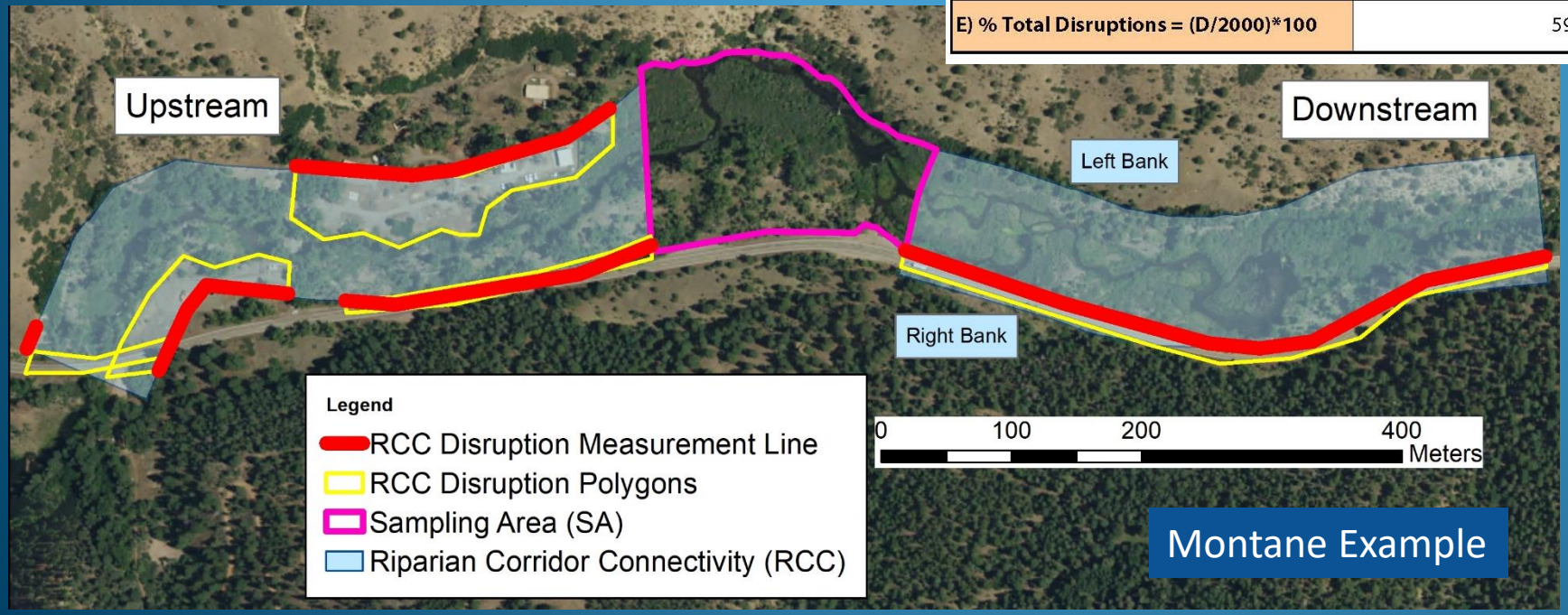
L2 - Riparian Corridor Connectivity (RCC)

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

Segments	Upstream Segment		Downstream Segment	
Banks	Left Bank	Right Bank	Left Bank	Right Bank
A) Total Bank Disruption (m)	210	475	0	500
B) Total Disruption by Segment (m)	685		500	
C) % Segment Disruption = (B/1000)*100	68.5		50	
D) Total Disruption both segments	1,185			
E) % Total Disruptions = (D/2000)*100	59.25			

Table L2. RCC Rating

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



Montane Example