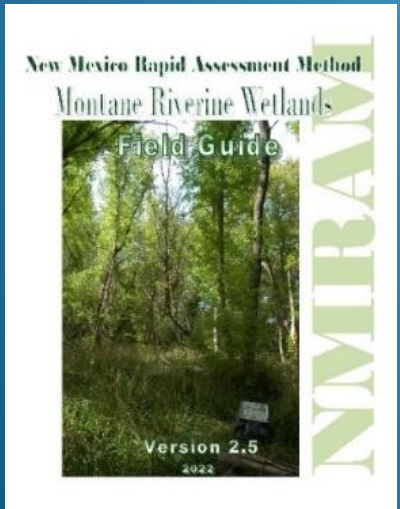
New Mexico Environment Department

New Mexico Rapid Assessment Method (NMRAM)

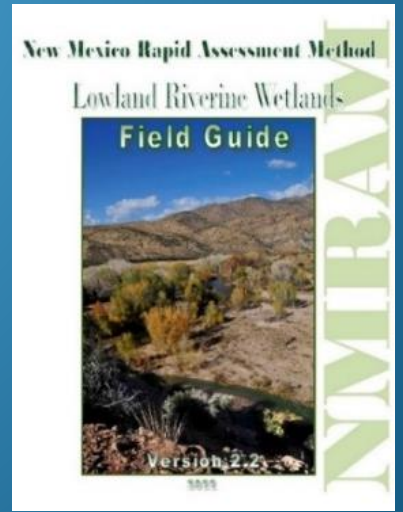
Riverine Wetlands

Stressor Checklist



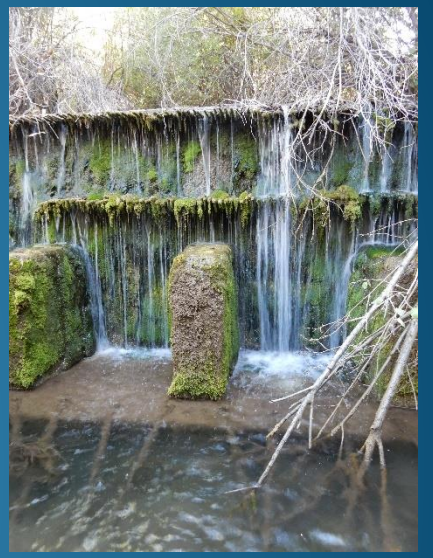
New Mexico Environment Department
Surface Water Quality Bureau
Wetlands Program

Natural Heritage New Mexico
University of New Mexico



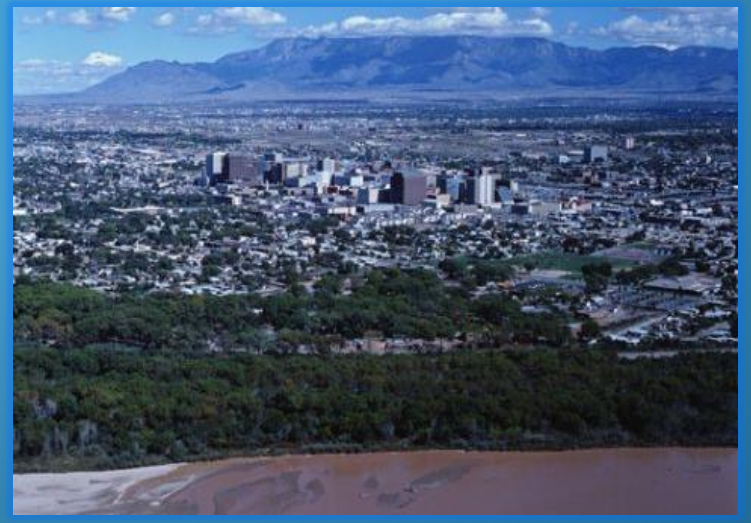
Stressor Checklist

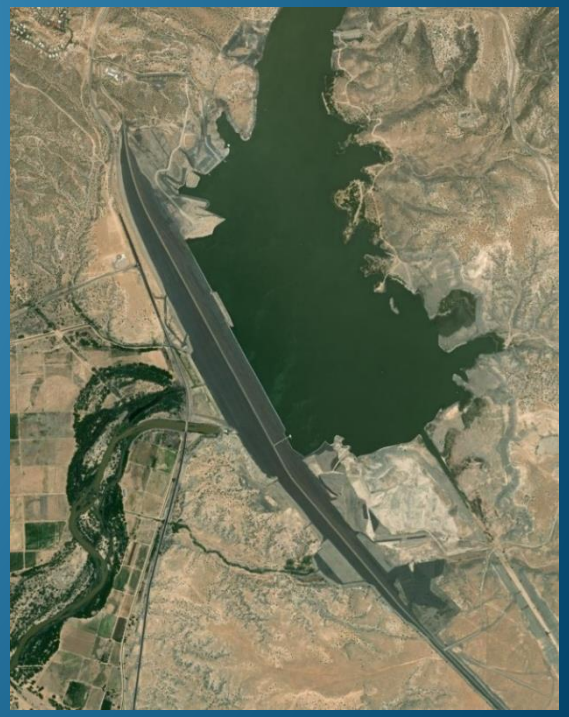
- The Stressor Checklist provides a guide for evaluating potential drivers of ecological condition at local to watershed scales that can inform management.
- Focused on factors that can impact the hydrological regime and associated ecological conditions of an SA.
- Does include some localized impacts that have an indeterminate footprint (grazing)
- Is not used directly in the scoring of wetland condition but informs the understanding of the wetland condition score
- Does not duplicate the Land Use Index



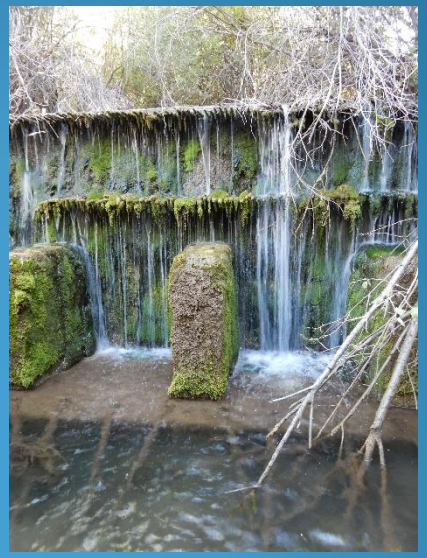
Stressor Checklist

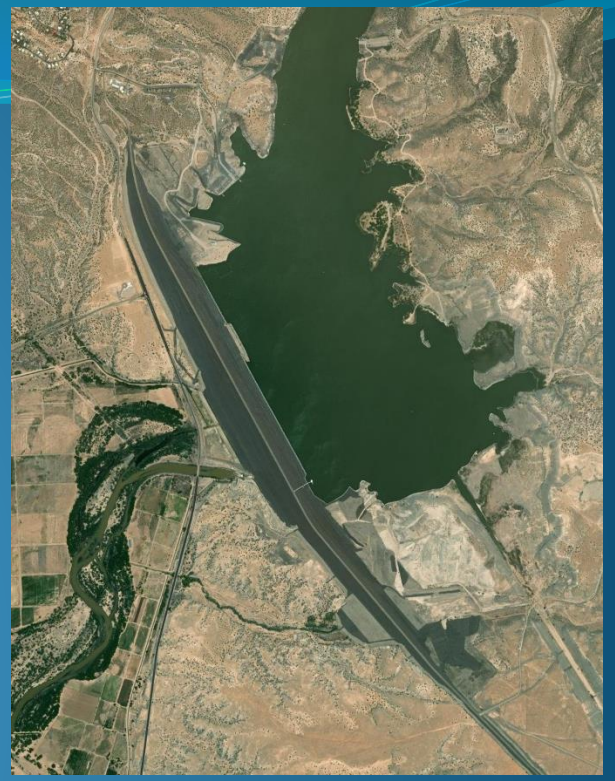
- Requires knowledge of the larger watershed
  - Maps – topographic and others that show potential impacts
    - Dams, mines, agriculture, towns/cities
  - Imagery – look for impoundments, surface mining, etc.
  - Local knowledge – talk to landowners, watershed groups and other local experts
- Worksheet 15 - checklist
  - Six major stressor categories:
    - Adverse water management
    - Adverse sediment management
    - Artificial water additions
    - Groundwater pumping
    - Watershed alteration
    - Local biodiversity impacts





Stressor Checklist





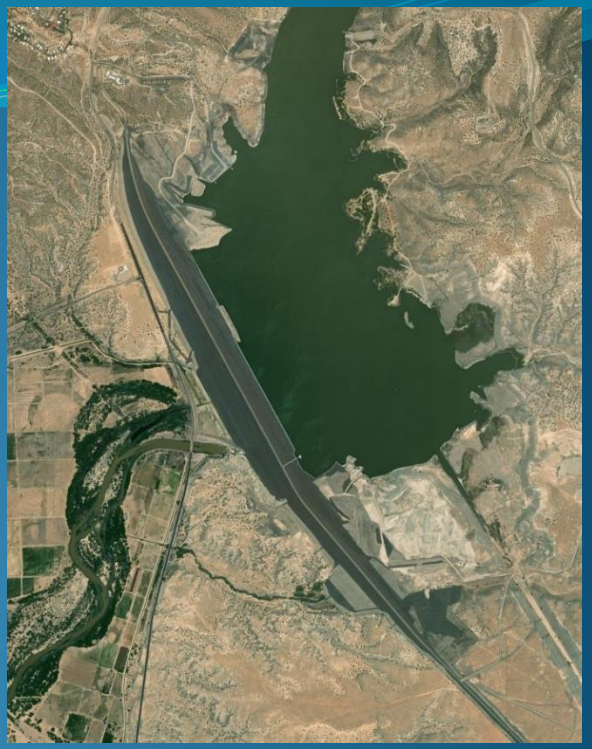
- Worksheet 15
  - Evaluate each stressor for:
    - Presence in the watershed
    - Impact on Ecologic condition of SA
      - Major
      - Minor
      - Absent
      - Unknown
    - Rank the Major stressors by their importance in terms drivers of SA condition
      - Top 5 only
    - Comments about stressors of significance or unknowns
    - Sum Major and Minor stressors on Rank Summary Sheet

Stressor Checklist – Worksheet 15

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

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

Additional Comments



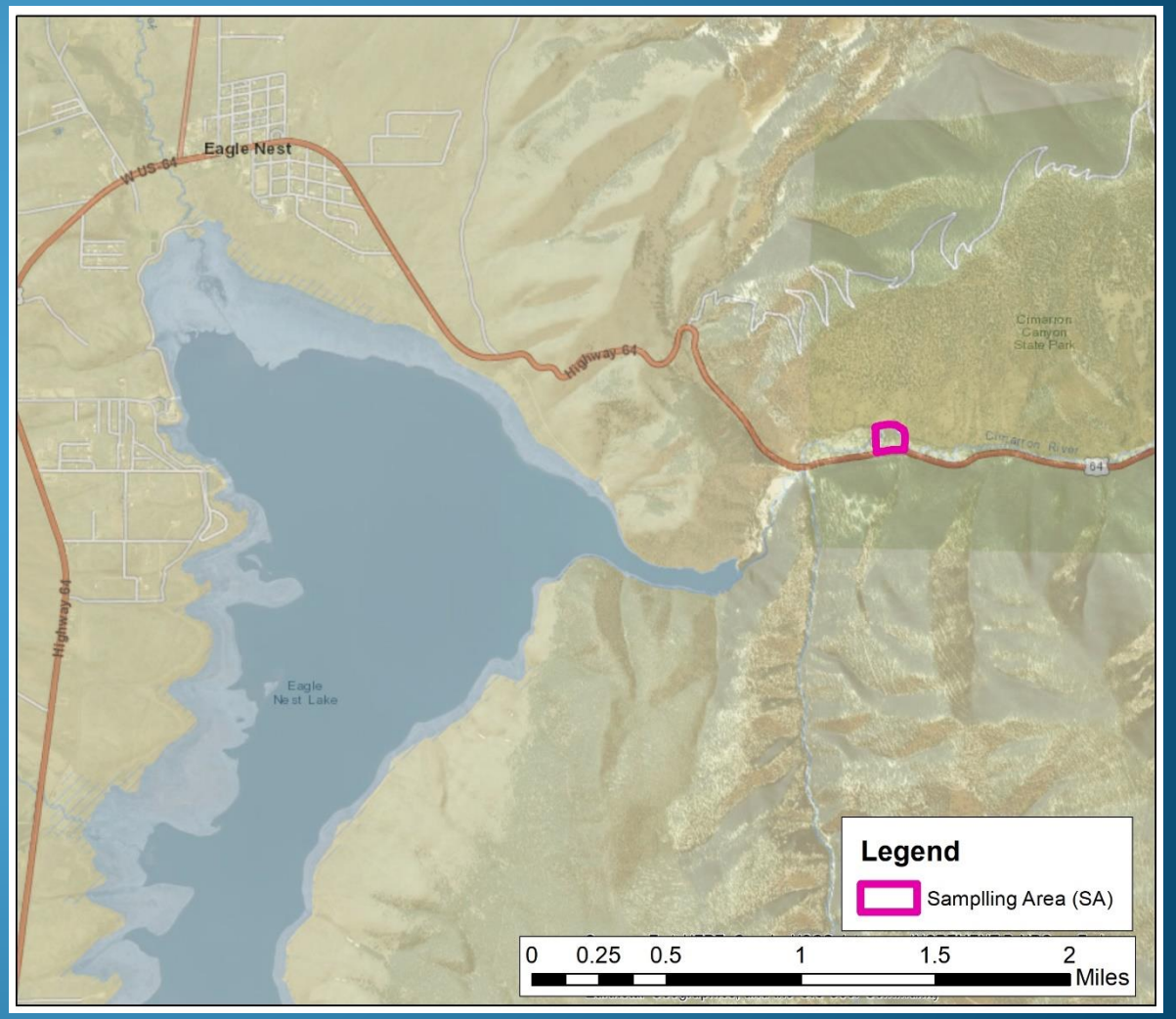
Stressor Checklist – Worksheet 15 – Montane Example

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

Rank	Affect				Stressor Group/Stressor	Comments
	Major	Minor	Absent	Unknown		
					Adverse water management	
	☐	☐	☐	☒	Extended low flow dam releases	
	☐	☒	☐	☐	Timing of flow releases not concordant	
	☐	☐	☐	☒	Extended high flow dam releases	
1	☒	☐	☐	☐	Agriculture/Urban flow diversion upstream	Eagle Nest dam less than 1 mile upstream
					Adverse sediment management	
3	☐	☒	☐	☐	Adverse sediment retention by dams	Dam likely holds sediment, but system is rocky
	☐	☐	☒	☐	Sediment loss by dredging	
	☐	☒	☐	☐	Adverse sediment input (roads/development)	Possibly some from highway construction in past
					Artificial water additions	
	☐	☐	☐	☒	Sewer treatment effluent	Possibly from Angel Fire above the dam
	☐	☒	☐	☐	Point source urban runoff	Angle Fire above dam
	☐	☐	☒	☐	Factory, feedlot outfall	
	☐	☐	☐	☒	Agricultural irrigation ditch returns	Possibly above dam
	☐	☐	☐	☒	Mining waste	Above the dam possilbly
					Ground water pumping	
	☐	☐	☒	☐	Urban depletions	
	☐	☐	☒	☐	Fracking	
	☐	☒	☐	☐	Agriculture irrigation wells	Small amount possible nearby and above dam
					Watershed alteration	
	☐	☐	☐	☒	Extensive recent fires in watershed	Not in nearby watershed
	☐	☐	☒	☐	Extensive recent timber harvest	
	☐	☐	☒	☐	Extensive open pit mining in watershed	
	☐	☐	☒	☐	Livestock/wildlife overgrazing	
					Local biodiversity impacts	
	☐	☐	☒	☐	Evidence of excessive grazing (local)	
2	☐	☒	☐	☐	Excessive noise affecting wildlife	Two lane highway adjacent to SA
	1	6		6	Counts by Intensity	

Additional Comments

Example Site Watershed Context



Stressor Checklist – Worksheet 15 – Lowland Example

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

Rank	Affect				Stressor Group/Stressor	Comments
	Major	Minor	Absent	Unknown		
					Adverse water management	
1	☒	☐	☐	☐	Extended low flow dam releases	
2	☒	☐	☐	☐	Timing of flow releases not concordant	
	☐	☐	☒	☐	Extended high flow dam releases	
	☒	☐	☐	☐	Agriculture/Urban flow diversion upstream	
					Adverse sediment management	
3	☒	☐	☐	☐	Adverse sediment retention by dams	
	☐	☒	☐	☐	Sediment loss by dredging	
	☐	☐	☒	☐	Adverse sediment input (roads/development)	
					Artificial water additions	
	☒	☐	☐	☐	Sewer treatment effluent	
5	☒	☐	☐	☐	Point source urban runoff	
	☐	☐	☐	☒	Factory, feedlot outfall	
	☒	☐	☐	☐	Agricultural irrigation ditch returns	
	☐	☐	☒	☐	Mining waste	
					Ground water pumping	
4	☒	☐	☐	☐	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	
	9	3		1	Counts by Intensity	

Additional Comments

Example Site Watershed Context