

**WATERSHED RESTORATION ACTION STRATEGY PLAN
(WRAS)**

**RIO QUEMADO WATERSHED PROJECT
(2003)**

**TRUCHAS LAND GRANT
(La Merced De Nuestra Senora Del Rosario, San Fernando Y Santiago)**

STAGE ONE

A.IDENTIFICATION OF CAUSES AND CONCERNS

The Rio Quemado is a tributary of the Upper Rio Grande watershed. The Rio Quemado confluences the Santa Cruz River in the village of Chimayo NM, and subsequently the Santa Cruz River confluences the Rio Grande at the city of Espanola, New Mexico. The headwaters of the Rio Quemado originate on the Westside of Sangre De Cristo Mountain Range in north-central New Mexico.

The Rio Quemado watershed is listed in the “WATER QUALITY AND WATER POLLUTION CONTROL IN NEW MEXICO 2000”, 305(b) report list on page B6 as a probable source(s) of pollutant/threat: Agricultural and Land Disposal while specific pollutant or threat are: Siltation, Temperature, and Stream Bottom Deposits.

The total area that encompasses the Rio Quemado from the headwaters to the Rio Grande is about 65 square miles. In this watershed area we find a diverse group of interested publics that use the Rio Quemado for all sorts of activities. There are many communities along this watershed that depend on Rio Quemado for personal and economical survival.

The most significant use of Rio Quemado water is for agricultural activity along the river. The surface flow is used for wildlife and livestock watering, while the communities along the river use it for flood irrigation of local crops such as chili, corn, beans, alfalfa, and grass hay. The potential for stream bottom deposits and silt infiltration arise from the fact that agricultural activities contribute substantial sediment deposition into the watershed. Agricultural crop soil tillage, a long with rural road construction and maintenance contribute to increase sediment yield from sheet flow during flood irrigation practices and rainstorm events. The streambanks along this watershed are in some places 20foot vertical slopes because of the lack of vegetation and the undercutting of bank slopes during heavy runoff, contribute to sediment loading and water temperature issues.

B. DATA ANALYSIS

The data process will be conducted by gathering information from the:

United States Department of Agriculture Forest Service (Carson & Santa Fe National Forests) on the amount of increase/decrease of livestock grazing the allotments, the amount of seed that will be broadcasted, the amount of seedlings that will be planted, the amount of rehabilitated riparian areas. These will be conducive to the Rio Quemado watershed.

Natural Resource Conservation Service (NRCS) on the amount of soil loss due to agricultural practices.

Rio Arriba/Santa Fe County Planning & Zoning Department's data of community growth along the watershed and road construction and maintenance,

Game & Fish Department and the amount of licenses issued on a yearly basis in comparison to the previous year,

The Santa Cruz Irrigation District Office and the data relevant to the amount of water that is utilized by farmers along the river during each planting season,

United States Department of Interior Bureau of Land Management (BLM) on the amount of increase/decrease of livestock grazing the allotments, amount of seed that will be broadcasted, the amount of seedlings that will be planted, the amount of rehabilitated riparian areas. This will be conducive to the Rio Quemado watershed.

C. CHALLENGES/OPPORTUNITIES

The challenges facing the Rio Quemado watershed group, which presently consists of the NMED/WPS, USDA Forest Service (Santa Fe & Carson National Forests), BLM, Rio Arriba County, NRCS, and the Santa Cruz Irrigation District are many. Like any other watershed plan the focus will be in gathering the many interested publics that have a stake in the watershed. The pre-planning stage is important because this will set the precedence of the guidelines and policies, which will be initiated for the watershed.

The watershed group will be able to be opportunistic in seeking funds because of the various groups and agencies involved within the watershed group. The funding sources may be from federal, state, county, and local agencies. Other sources of funding such as in-kind for matching purposes will be pursued. The watershed flows through various communities and community outreach will be requested. The communities throughout this watershed are not incorporated into village governments so local leaders such as acequia (ditch) associations or community groups will be contacts. Without community support the watershed group cannot accomplish the goal of maintaining a healthy watershed.

D. REDUCTIONS/OBJECTIVES

The Objectives of the Watershed Restoration Action Strategy Plan is:

1. Community Outreach Program
 - a. Educational Outreach in local community or public service centers
 - b. Introduction of water quality standards surface/sub-surface

2. Include School science departments
 - a. School science projects in watershed
 - b. Watershed field trips
 - c. Student training by agency professionals
3. Include private property owners
 - a. Site visits of Agricultural producers
 - b. Establish community groups
4. A 20% reduction of sediment load
 - a. 5% from road/maintenance
 - b. 5% from Truchas Land Grant
 - c. 5% from USDA Carson/Santa Fe National Forests
 - d. 5% from Agricultural activities along the watershed
5. B 15% increase in seedling (pine tree) plantings
 - a.5% from USDA Santa Fe/Carson National Forests
 - b.5% from Truchas Land Grant
 - c.3% from communities along the watershed
 - d.2% from volunteers
6. C 20% increase in grass growth
 - a.5% from Truchas Land Grant
 - b.5% from USDA Carson/Santa Fe National Forests
 - c.5% from communities along the watershed
 - d.3% from Irrigation Associations
7. D 18% increase in Wildlife habitat
 - a. 10% USDA Carson/Santa Fe National Forests
 - b. 3% Truchas Land Grant
 - c. 3% Bureau of Land Management
 - d. 2% NM Department of Game & Fish

Note: The Rio Quemado is part of the Upper Rio Grande watershed. The Upper Rio Grande watershed has not been approved for TMDL listing at present. The Total Maximum Daily Load (TMDL) data has been retrieved for this watershed, however the TMDL baseline data has to be approved by EPA and the NMED/SWQB for this segment to qualify for TMDL listing.

E. DATA DOCUMENTATION/DECISION PROCESS

The watershed group will retrieve and research data from the New Mexico Environment Department's Surface Water Quality Bureau's Monitoring and Assessment Section. The information can be compared with future data that may be retrieved from the Monitoring and Assessment Section and other source groups such as high school science classes or college science projects. The watershed group can retrieve information constantly and the new data can be compared to past data. The data will be shared amongst the group and will be kept as a record for the watershed. The acquired data will be a public record document for any interested person/persons interested in it.

The decision making process will be made by the Rio Quemado watershed group. The Watershed Protection Section oversight project officer working on the Rio Quemado project will help organize the various groups. Once the organizational structure is implemented the Rio Quemado watershed group will be established. The group will delegate authority to sub-groups if they need to work on specialty activities. Only the original group (see Challenges/Opportunities section for group structure) will make the final decisions regarding the watershed's activities. This process will help maintain order and will keep confusion within the group in line. There will be other independent groups working within the watershed, at any given time, on various activities. The watershed group will try to work and encourage them to join and share their work with the group.

STAGE TWO/THREE

| Objective | * Selected Alternative | * Action | * Responsible | * Time Frame | * Cost |
|------------------------------------------------------|--------------------------------------------|-----------------------------------------------------------------------------------------|----------------------------------------------------|--------------|--------------------|
| Sediment load reduction/increase in vegetative cover | Rio Quemado Watershed Proj. 319(h) program | Work with Truchas Land Grant on BMP implementation | NMED/WPS Truchas Land-Grant | Fall 2006 | \$84,200 |
| | Reduce road construction impact | Work with Forest Service on erosion control measures | Santa Fe & Carson National Forest district offices | Summer 2006 | \$500,000 proposed |
| | | Work with County Road Dept.on road management practices | Rio Arriba & Santa Fe Co. road depts. | Summer 2006 | \$100,000 proposed |
| | | Work with BLM on land management erosion control | Range management specialist | Summer 2008 | \$50,000 proposed |
| | Reduce crop land runoff/sheet flow | Natural Resource Conservation Service | Field Management techs | Summer 2008 | \$50,000 proposed |
| | | Santa Cruz Irrigation District/irrigation management techniques all along the watershed | Irrigation District Director | Summer 2008 | \$20,000 proposed |
| | Reduce Urban Runoff | County Planning & Zoning dept. will Conduct community meetings | Santa Fe-Rio Arriba P&Z dept | Summer 2008 | \$25,000 proposed |

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|-------------------|-----------------------------------------------------------------------|--------------------------------------------------|----------------------|
| Public Out-Reach | water quality monitoring | Community Science Dept | Summer Outreach 2006 |
| | Present watershed activities through local media | College bulletin local newspaper | Annually “ |
| | acknowledge individuals/communities on positive watershed initiatives | State water quality agency-EPA | Annually “ |
| Monitor turbidity | Use thermographs to monitor stream flow | Community College & high school science depts... | Annually “ |
| | Present data at annual watershed meeting | College/High school students | Annually “ |
| Monitor Temp | Use thermographs to monitor stream temperature | Community College & high school science depts. | Annually “ |

CONCLUSION

The Watershed Restoration Action Strategy Plan is a living document and will be changing constantly while activities in the watershed are occurring. The concept for the WRAS document is for all present and future activities of the watershed. It will be impossible for all activities within the watershed to be monitored so as many will be reviewed as possible.

It will be that the Rio Quemado Watershed Group which include and are not limited to the NMED/WPS, USDA Forest Service (Santa Fe & Carson National Forests), BLM, Rio Arriba County, NRCS, and the Santa Cruz Irrigation District will review, implement, and design proposals relative to the Rio Quemado watershed. The watershed group will have or possess the best interest of the watershed because they have constant contact with activities in the watershed. The communities and their leaders will be involved as the watershed group grows. The agricultural practices within each community will play a vital role since these activities affect the watershed. Educational outreach will be a focus that will be constantly evolving in the protection of the watershed and its outcomes.

REFERENCES:

“WATER QUALITY AND WATER POLLUTION CONTROL IN NEW MEXICO 2000”, State of New Mexico Water Quality Control Commission, Pursuant to Section 305(b) of the Federal Clean Water Act.

“STATE OF NEW MEXICO STANDARDS FOR INTERSTATE AND INTRASTATE SURFACE WATERS”, 20.6.4 as amended through October 11, 2002

McCammon, Bruce; Rector, John; Karl, Gebhart; “A FRAMEWORK for Analyzing the Hydrologic Condition of Watersheds”, June 1998, U.S. Department of Agriculture Forest Service, U.S. Department of Interior Bureau of Land Management. BLM Technical Note 405.

DeBano, Leonard F.; Schmidt, Larry J.; “IMPROVING SOUTHWESTERN RIPARIAN AREAS THROUGH WATERSHED MANAGEMENT”, United States Department of Agriculture Forest Service, Rocky Mountain Forest and Range Experiment Station, General Technical Report RM-182.