Appendix 14 - Catalogue of Programs & Projects

1. individuals

2. non-profit organizations

a. NM Cattle Growers' Association

The New Mexico Cattle Growers Association (NMCGA) has been the voice of beef cattle industry since 1914. Serving its membership in virtually every arena, NMCGA has been instrumental in protecting the interests of livestock producers, private property owners and taxpayers as a whole at the New Mexico Legislature. The organization also maintains contact with the Congressional delegation in Washington, DC to ensure that its membership's needs are considered in the national scope. It is NMCGA that is the primary contact for state and federal governmental agencies on issues facing beef producers.

New Mexico Cattle Growers' Association (NMCGA), the New Mexico Farm & Livestock Bureau (NMFLB) and the New Mexico Public Lands Council (NMPLC)

* Additional Contacts:

Sandoval County Farm Bureau - Elizabeth Pascoe -505-289-2001

Sandoval County Extension Office
PO Box 400 811 Camino del Pueblo
Bernalillo, NM 87004
Phone: 505-867-2582
Fax: 505-867-6918
Email: sandoval@nmsu.edu

b. Quivira Coalition
http://www.quiviracoalition.org

The Mission of the Quivira Coalition is to foster ecological, economic and social health on western landscapes through education, innovation, collaboration, and progressive public and private land stewardship.

Approach = The New Ranch. Elements include progressive ranch management, scientifically-guided riparian and upland restoration, land health assessment and monitoring, and bridge-building among ranchers, environmentalists, federal and state agency personnel, academics, and members of the Public. The principles of The New Ranch are promoted through workshops, Outdoor Classrooms, lectures, publications, site

tours, consultations, collaborative demonstration projects, awards, a regular newsletter, and an Annual Conference.

Example Project in area: The Señorito Creek Project - reclaiming land next to the Nacimiento Mine located on land owned by Aparcio Gurule; Terry Wheeler is project director.

c. Common Ground

Seeking Common Ground is a challenge-grant program administered by the National Fish and Wildlife Foundation. Contributors include the US Forest Service, the US Fish and Wildlife Service, the Bureau of Land Management and groups like the Rocky Mountain Elk Foundation. The Commission will be updated regarding a Seeking Common Ground initiative in the Jemez Mountains. February 22, 2000

Grants Awarded for Rangeland Conservation Projects - PARK RIDGE, Ill., March 24, 1998 -- Seeking Common Ground, a program that recognizes the multiple uses of America's rangelands and seeks cooperation to overcome conflicts, recently awarded 10 grants to help finance rangeland conservation projects in six western states. The grants totaled more than $426,000 in public and private funds.

"As the public's interest in the management of federal lands has grown, so has the potential of conflict over the use of these lands," said Herb Manig, coordinator of the program and a public policy specialist for the American Farm Bureau Federation (AFBF). "The same lands that are leased for livestock grazing also are relied on by wildlife, including big-game animals. Sharing Common Ground allows varied interests to approach conflicts in a spirit of creative cooperation. Projects that receive grants must meet those general guidelines."

Seeking Common Ground grants for 1998 have been awarded to the following entities:

USDA Forest Service, Santa Fe National Forest: To foster cooperative management of elk in the Jemez Mountains of New Mexico by developing a comprehensive strategy for elk and habitat management.

d. Valles Caldera Preserve
http://www.vallescaldera.gov

On July 25, 2000, the American people purchased approximately 89,000 acres of the Baca Ranch in northern New Mexico. The Valles Caldera Preservation Act designated these spectacular lands as the Valles Caldera National Preserve, a unit of the National Forest System. The Act also created the Valles Caldera Trust to manage the Preserve. The purposes of the Trust are to:

- Provide management and administrative services for the Preserve Establish and implement management policies which will best achieve the purposes and requirements of the Valles Caldera Preservation Act

- Receive and collect funds from private and public sources and to make dispositions in support of the management and administration of the Preserve
- Cooperate with Federal, State, and local governmental units, and with Indian tribes and Pueblos, to further the purposes for which the Preserve was established.

Programs include:

1. Closure Orders
2. Infrastructure Development
3. Recreation
4. Elk Hunts
5. Resource Utilization
6. 2003 Fishing Program
7. 2003 Hiking Program
8. 2003 Noxious Weeds
9. 2003 State Highway 4 Project
10. 2003 Van Tours
11. 2003 Vegetation Management
12. 2003 Wagon Rides
13. Grazing Program

e. Forest Guardians

Forest Guardians

River Preserves

Puerco Preserve
Map of the Rio Puerco Preserve, from Forest Guardians GIS
Size: 1,200 acres

Description: Like most parcels of state land with perennial water, this site is severely overgrazed. The cottonwood/willow forest, which once dominated this site, has been completely eliminated as a result of 250 years or more of livestock grazing. Beaver no longer occur on this site and would likely starve if reintroduced with the habitat in its current condition. If restoration efforts are successful, we intend to reintroduce beaver within 5 years.

The Rio Puerco is one of the most severely overgrazed watersheds in the West. The area, which was once considered "The Breadbasket of Northern New Mexico", today contributes over 70% of the sediment to the Rio Grande and less than 10% of the water. In addition to approximately 3 miles of this perennial stream, the site includes 500 + acres of a sagebrush/ grassland ecosystem. We acquired the parcel in October 1996 and will initiate restoration efforts including cottonwood and willow pole plantings in the Spring of 1997. Within 5 years we expect to have a young and thriving streamside forest that provides habitat for neotropical migratory songbirds, native fish and reduces sediment loads in the river.

Rio Puerco Restoration in the News:
7th Annual Rio Puerco Restoration Weekend -- Saturday & Sunday, April 26-27, 2003

Forest Guardians Wins New Mexico State Land Lease—Rio Puerco Preserve Grows to 1,200 Acres, 3 Miles of Riverside Habitat, Frontline 11-7-02
Forest Guardians win land lease, Santa Fe New Mexican 11-10-02

3. acequias

a. New Mexico Acequia Commission

Section in the Office of the State Engineer

b. New Mexico Acequia Association

http://www.acequiaweb.org

MISSION - The New Mexico Acequia Association (NMAA) is a statewide organization of acequias and regional associations of acequias. Our mission is to ensure the survival of agricultural and rural traditional communities in New Mexico by protectiong the historic water rights of the acequias through community education and involvement in policy. We work to protect the long-term viability of acequias as part of a way of life rooted in land-based culture, as institutions of government dedicated to water management at the local level, and as vital elements of the land-based economy of New Mexico's traditional communities.

- Agua, Cultura y Comunidad: Acequia Action Plan for 2003
- Congreso De las Acequias Annual Meeting

c. La Jara, RP

<u>Geographic Priority Area (GPA)</u>
Application was made to NRCS for funding under this program. While the program is no longer funded, the members of the La Jara Community Ditch Association intend to not let the effort go for naught.

4. mutual domestics

5. Villages

a. Cuba

b. San Ysidro

c. Jemez Springs

6. Pueblos

a. Rio Jemez (Abousleman) Indian Water Rights Settlement

RIO JEMEZ (ABOUSLEMAN) INDIAN WATER RIGHTS SETTLEMENT
PROPOSAL FOR INVESTIGATION

February 12, 2001
Prepared by:
Bureau of Reclamation for the Federal Team
Bureau of Indian Affairs for the Federal Team
Natural Resource Consulting Engineers, Inc. for the Pueblo of Jemez
Balleau Groundwater, Inc. for the Pueblo of Zia
Ayres Associates for the Pueblo of Santa Ana

TASK I: OWL SPRlNGS DAM AND RESERVOIR STUDY PUEBLO OF JEMEZ, NEW MEXICO

The proposed Owl Springs Dam and Reservoir is one of the settlement options discussed by the Federal Negotiating team which was appointed to assist the Jemez, Zia and Santa Ana Pueblos to pursue a negotiated settlement of their water rights. As a part of the Federal Team effort, Reclamation investigated three potential dam sites in the Jemez River Basin at the request of the Pueblo of Jemez.

The Owl Springs site was considered most practical in the January 29, 1997 Reclamation report "Assessment of Three Dam Sites, Jemez River Basin, Near Albuquerque, New Mexico". Reclamation performed subsequent field exploration and seepage analyses of the Owl Springs site, which is described in the October 19, 1998 report "Exploration Results and Seepage Study, Owl Springs Dam site, Jemez River Basin, Near Albuquerque, New Mexico."'

An appraisal level dam design concept has been developed. The proposed project is an off-stream facility, located about 1.5 miles west of the Pueblo of Jemez, in a small drainage to the west of (but tributary to) the Jemez River. The proposed dam is a 60-foot high embankment dam providing approximately 4,500 acre-feet of storage.

The purpose of the study is to further the Owl Springs Dam and Reservoir Project design to a level that will allow an economic assessment of the overall Owl Springs Project water development plan.

The proposed scope of work for the Owl Springs design includes the following sub-tasks:

1. Investigation of Environmental Impacts
2. Geological Analysis
3. Geological Analysis
4. Spillway and Outlet Structures
5. Hydrology/Water Supply

6. Diversion Demands
7. Evaluation of Groundwater Pumping
8. Design of Irrigation Distribution System
9. Reservoir Supply Canal or Pipeline Alternatives
10. Reservoir Operation Studies
11. Civil Sitework
12. Construction Cost Estimates

The proposed budget for the Owl Springs Study Design is $300,000.

TASK 2: JEMEZ BASIN SURFACE WATER OPERATIONS MODEL

The Jemez, Zia and Santa Ann Pueblos are in the process of establishing their water rights in the Jemez River Basin. The three Pueblos have agreed to cooperate to determine the impact of current and future water resources development in the basin on the water supply of the Jemez River. This will require the development and application of a hydrologic computer operational model for the basin. The model will be used to examine the effects of specific development scenarios of interest to the Pueblos, the United States, upstream non-Indian water users, the State of New Mexico, and other stakeholders.

Results of the operational studies will he used to assess implications on water rights and water resources development of the Pueblos and non-Indian water user. The Jemez River Operation Model will serve as the basis for developing a water management plan, which will comprehensively address future basin operations including water rights, water management and mitigation of adverse impacts.

The development of the basin operational model will include the following sub-tasks:

1. Collection and review of relevant documents and data
2. Detailed hydrologic and water use studies required to develop input data for the model
3. Selection, development, and verification of the water quantity models
4. Simulations and impact assessments of future alternatives of interest
5. Reporting and documentation

The operational model will be developed utilizing appropriate existing software for the simulation of water quantity. The quantity model will be sufficiently detailed so that it can analyze the impacts of individual and/or collective water claims in the basin.

The deliverables will include the following reports: (1) Report on the Operational Model of the Jemez River Basin, including User's Manual for the Model, and (2) Report on the Simulation and Impact Assessments of Various Alternatives. The deliverables will also include the model, input and output files, and supporting databases on CD-ROM media.

The model will allow the parties to examine scenarios of interest and will aid in the understanding and analysis of alternative settlement impacts. The proposed budget for this task is $250,000.

TASK 3: EAGLE PEAK DAMSITE APPRAISAL LEVEL STUDY

A second storage site on the Zia Pueblo, known as the Eagle Peak Dam site was identified and examined in a reconnaissance level study. Upon completion of the analysis the site was listed as a candidate for future study. It is proposed that this be analyzed at an appraisal level for its viability. This analysis would include preliminary geologic and hydrologic evaluations of site stability and potential reservoir yield. A budget of $50,000 is proposed.

TASK 4: RIO GRANDE COMPACT IMPACT ANALYSIS

The Office of the State Engineer has indicated concerns about expanded reservoir storage or water depletion and the effect on Rio Grande Compact delivery obligations of the State. The effect is uncertain until specific losses to the Compact delivery points are quantified.

A Rio Grande Compact impact assessment of change in water use at the Jemez River, using URGWOM or alternative models is suggested. A budget of $50,000 is proposed.

TASKS: REVIEW OF CAPABILIIY MW STATUS OF EXISTING GROUNDWATER MODELS.

Two U.S. Geological Survey groundwater model versions (Kernodle 1998[1], Tiedeman 1998[2]) and an SEO administrative model (Barroll 1999[3]), represent different concepts of the Jemez Basin aquifers and relationships to surface water. The content of the models needs to be understood by the parties.

The model versions will be distributed among the parties. Experts will examine them for concepts. functional relationships, capabilities and compatibility. The models' uncertainty will be used to guide the location and type of data to be collected under the drilling and testing program. A budget of $50,000 is proposed.

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[1] Kernodle M.J., 1998, Simulation of Ground-Water Flow in the Albuquerque Basin, Central New Mexico, 1901-95, With Projections to 2020. (Supplement Two to U.S. Geological Survey Water-Resources Investigations Report 94-4251), U.S.
Geological Survey, Open File Report 96-209.

[2] Tiedeman, C.R., Kernodle, J.M. and McAda, D.P., 1998, Application of Nonlinear-Regression Methods to a Ground-Water Flow Model of the Albuquerque Basin, New Mexico, U.S. Geological Survey, Water Resources Investigation Report 98-4172.

[3] Barroll, P., 1999, Draft, Documentation of the Administrative Groundwater Model for the Middle Rio Grande Basin New Mexico Office of the State Engineer, Technical Division, Hydrology Bureau Report 99-3.

TASK 6: JEMEZ BASIN-WIDE IRRIGATION SYSTEM IMPROVEMENT STUDY

Both Pueblo and non-Indian interests have requested an improved diversion, storage conveyance, and on-farm delivery system for the entire basin.

This Task is expected to include a study of basin-wide irrigation system improvement for Pueblo and non-Indian acreage, including upgrading diversion structures, gauging off-channel storage, Zia Dam enlargement, Zia Dam seepage management, sediment control and pressurized- conveyance (pipeline) systems, while protecting archaeology sites. A budget of $250,000 is proposed for this task. This task will also evaluate potentials for improving river efficiency by identifying areas for reducing phreatophytes non-beneficial use.

TASK 7: GROUNDWATER MODEL UPGRADE

The SEO has issued an administrative model and guidelines for state water permits in the Jemez Basin. The model is not adequately calibrated in the Jemez area for use in protecting in-basin users from effects of external or in-basin uses. A groundwater-model enhancement in the Jemez basin of the SEO water right administrative model (Barroll, 1999) for use in administering the effects of wells inside and outside the basin is needed. Field data and testing will be integrated into the administrative model. A budget of $100,000 is proposed for this task.

TASK 8: AQUIFER CHARACTERIZATION and STORAGE and RECOVERY

Existing data shows the aquifer resource is variable in productivity and quality. Layered lenses of saline and arsenic-laden waters have been found among fresh production zones. The best well field development plan is uncertain. Exploratory drilling and testing is needed. Understanding the groundwater throughout the whole basin is an essential component of this task.

The Santa Fe Group Aquifer under the Pueblo of Zia lands is the major fresh recharge zone for the Albuquerque Basin and is prospective for development. The Pueblo of Zia intends to use ground water in a sustainable rather than depletion mode. Using the aquifer storage in a sustainable mode requires that a balance with natural and artificial recharge be maintained. Basin-wide aquifer yield and protection strategy for alluvium and Santa Fe-Group aquifers, including drilling and testing six sites is planned for this task. A budget of $100,000 is proposed.

TASK 9: JEMEZ BASIN ADMINISTRATION AND MANAGEMENT PLAN

There is need to develop a Jemez River basin water management plan to evaluate institutional and administrative issues of alternatives providing for growth and flexibility in water use, owner control of water operations, protection for priority and traditional uses transfer of uses, and water use on or off the basin lands. Typically, a basin water management plan for implementation of an Indian water nights settlement is developed

after the negotiation of the settlement and the quantification of the tribe's claim. This is done in part as an effort to recognize the non-Indian component of water in the settlement. However, it may be useful in the Abousleman Settlement to begin to prepare a draft management and administration plan in conjunction with the operations model to be used as a negotiation tool for negotiations with the non-Indian/Acequia owners. The management and administration plan will be finalized as part of this task. A budget of $50,000 is proposed for this task.

a. Zia

b. Jemez

Environmental Assessment Of Environemtal Quality Incentives Program For Pueblo Of Jemez Tribal Trust Lands GPA 2002

Comparison of Alternatives – Effect on Needs
How will each alternative affect these needs and purposes?

	Alternative 1	**Alternative 2**
Water	Continue at Present Level Quality & Quantity	Increase irrigation system efficiency by 30%
Wildlife	Remain at Present Level	Potential to Benefit through Better Habitat
Threatened & Endangered	Remain at Present Level	Potential to Benefit through Better Habitat
Safety Issues	Ungulates Roaming Unrestricted and Trampling Riparian Areas	Traffic Safety & Decrease of Fecal Coliform by fencing
Socieo Economics	Production at Present Level for Crops and Livestock	Meet objective of increased production by 25%
Soils	Continued Erosion of Soil at 12 to 46 tons/acre/year	Decrease soil erosion to tolerable levels
Ecosystems	Remain at Present Levels	Meet Riparian Habitat improvement goal
Plant Diversity	Continue encroachment of Exotic plants and Noxious weeds	Increase Plant diversity and Reduce Exotics plants and Noxious weeds

Table 2. Environmental Assessment Of Environemtal Quality Incentives Program For Pueblo Of Jemez Tribal Trust Lands GPA 2002

7. Navajo

8. Bureau of Land Management

Rangeland Management Program focuses on improving livestock grazing practices to promote healthy ecosystems.

wrri.nmsu.edu/wrdis/fac/facsrch.html

Project Name: grassland/sagebrush maintenance
Lead Organization: BLM
Project Purpose: Part of ongoing program to maintain grassland ecosystems through reduction of sagebrush. This also results in reduction of nonpoint source pollution from erosion and sediment production. FY2000 project will cover about 5390 acres on various tracts.
Problem Targeted: soil erosion and sediment production from rangelands into stream channels that lead to the Rio Puerco and Rio Grande.
Progress: The Fy2000 project will be completed by 10/12/2000
Funding Source: BLM
Contact Person: Ed Williams
Address: BLM 435 Montano NE Albuquerque, NM 87107
Watershed: 13020204-RIO PUERCO
Major Land Resource Area: wp1
Sub-watershed Name: 13020204
County or Counties in area: Sandoval Co.
Date of data: 9/25/2000

Project Name: Stove Block (Ladrone Mountain)Mechanical Treatment, 200 acres
Lead Organization: Bureau of Land Management
Project Purpose: Cut and lop pinon and juniper stands
Problem Targeted: decrease watershed conditions because of increase of pinon and juniper
Funding Source: BLM funds
Start Date: 6-1-01
End Date: 7-31-01
Contact Person: Clarence Seagraves or Carlos Madril
Address: Bureau of Land Management 198 Neel Ave, NW
Phone: 505-838-1282
Fax: 505-835-0223
Email: clarnce_seagraves@nm.blm.gov
Watershed: 13020204-RIO PUERCO
Major Land Resource Area: -
Sub-watershed Name: 13020204 110
Streams or Lakes in area: Coyote Arroyo
County or Counties in area: West Side of Ladrones Mountian
Date of data: 7-23-01

Project Name: Sagebrush treatment-Canada Lucero Spike
Lead Organization: Bureau of Land MAnagement, Albuquerque, NM
Other Organizations:
Project Purpose: reduction of sagebrush and release of native grasses, reduction of soil erosion and runoff. Treated 1740 acres with chemical Spike.
Problem Targeted: NPS-sediment production from surface runoff and soil erosion.
Funding Source: Federal
Start Date: 010101
End Date: 123101
Contact Person: Tom Gow
Address: BLM 435 Montano NE Albuquerque, Nm 87107
Phone: 761-8700
Keywords: sagebrush, soil erosion, sediment, spike
Watershed: 13020204-RIO PUERCO
Date of data: 09/06/01

"Rio Puerco Resource Management Plan Updates."
http://www.nm.blm.gov/aufo/rmp_update/aufo_rmp_update.PDF
Resource Management Plan
Albuquerque Field Office
United States Department of the Interior
Bureau ofLandManagement
Albuquerque Field Office
UPDATE DOCUMENT
1999-2000

a. Rio Puerco Management Committee

Activity: Restoration/Conservation Project
Description: Section 401(c) of Public Law 104-333, the Omnibus Parks and Public Lands Management Act of 1996 established the Rio Puerco Management Committee (RPMC) to carry out a broad-based collaborative effort to restore and manage the Rio Puerco Watershed in northwest New Mexico. This watershed has gained notoriety as a severely degraded basin where soil erosion surpasses that of any other watershed in the country, according to the Corps of Engineers. Beginning in February, 1997, the RPMC has evolved into a cohesive organization focused on the primary goals of sediment reduction, vegetation and habitat improvement, and promotion of interagency and public cooperation, socio-economic benefits, education and participation. The RPMC is presently active implementing several Clean Water Act section 319 projects through the NM Environment Dept. and EPA (stream restoration and subwatershed projects), and are participating in a number of watershed and educational projects throughout the watershed, developed under funding provided via an appropriation through the U.S. Department of the Interior and the Bureau of Land Management.
Address: c/o Bureau of Land Management, 435 Montano NE
Albuquerque, New Mexico 87107

EPA Initiative Targets Arkansas, New Mexico Watersheds

Last year EPA's administrator asked state governors and tribal leaders to suggest their most deserving watersheds to compete for 20 grants to help boost local clean water efforts. From 176 watersheds, EPA chose 20 established local organizations that had demonstrated the ability to achieve on-the-ground environmental results. In May EPA announced nearly $15 million available to the selected 20 watershed organizations.

Three of the nation's top watershed improvement efforts are underway in Arkansas and New Mexico. As part of a new nationwide watershed initiative, EPA has set aside $1.6 million to support watershed efforts in the Upper White River Basin in Arkansas and Missouri, the Bayou Bartholomew Watershed in Arkansas, and the Rio Puerco Watershed in New Mexico.

Rio Puerco

The Rio Puerco Watershed is located in northwest New Mexico. The lead watershed organization, the Rio Puerco Management Committee, is a congressionally mandated committee formed in 1997 to tackle the many environmental problems facing the watershed.

Extending for 120 miles in north central New Mexico, the Rio Puerco Watershed suffers from serious erosion problems on what once was grazing land. Too much dirt and sand washing down the Rio Puerco threatens both the Rio Grande and the Elephant Butte Bayou Reservoir downstream.

The Rio Puerco Management Committee is the largest such group in the south central states, including members from EPA-Dallas and nine other federal agencies, seven New Mexico state departments, six native American pueblos and tribes, four soil and water conservation districts, a growing number of business and environmental groups, and private landowners and individuals.

Funding from EPA's Watershed Initiative will enable the committee to move forward with projects like stream restoration, altering channel flow and topography, implementing livestock grazing management practices and programs to educate the public. The EPA Watershed Initiative has set aside $700,000 to support the Rio Puerco.

RIO PUERCO MANAGEMENT COMMITTEE PROJECT LIST

RIO PUERCO MANAGEMENT COMMITTEE PROJECT LIST

PROJECT NAME	PROJECT PROPONENT	TOTAL PROJECT	FISCAL YEAR						IMPLEMENTATION FOCUS	STATUS
			98	99	00	01	02	03		
Acequia	Rio Puerco Watershed Committee (Cuba)	$ 19,200	X						Piping irrigation water to control erosion	Completed
Sagebrush Control	R.W. Johnson	$ 18,000	X						Tebuthiuron treatment	Completed
Vicente Arroyo	Torreon Chapter	$ 24,300	X						Tebuthiuron treatment	Completed
Bluewater Ranch	Tree New Mexico	$ 47,430		X	X				Grazing mgmt, erosion control, riparian restoration	Incomplete, terminated
Range Improvements—Pueblo of Laguna	Pueblo of Laguna	$ 17,000		X					Cross fencing, livestock water	Completed
Thompson Spring Range Unit	Pueblo of Jemez	$108,800		X		X	X		Grazing mgmt, erosion control, riparian protection	Completed
Cactus Flat Watershed Restoration	Torreon Chapter	$ 62,230				X	X	X	Community outreach and education	Ongoing
Gibson Ranch Holistic Demonstration	Tree New Mexico, Savory Center	$142,100				X	X		Demonstration of holistic decision making	Incomplete, terminated
Cuba Grade Stabilization	Cuba SWCD	$ 62,000					X		Rebuilt failed grade structure and streambanks	Ongoing
Meander Cut-Off	R.W. Johnson	$ 43,200					X		Prevent headcutting, stabilize eroding banks	Ongoing
Ojo Encino Range Management	Ojo Encino Chapter	$137,140					X		Tebuthiuron treatment, cross fencing, grazing mgmt.	Ongoing
Rabbit Ear Mesa Erosion Control	Ojo Encino Chapter	$ 54,092					X	X	Community outreach, youth education	Ongoing
San Pablo	RPMC	$366,000					X	X	319 project to address	Ongoing

PROJECT NAME	PROJECT PROPONENT	TOTAL PROJECT	FISCAL YEAR						IMPLEMENTATION FOCUS	STATUS
			98	99	00	01	02	03		
Subwatershed									nonpoint source pollution	
Whitehorse Lake Chapter Workshops	Whitehorse Lake Chapter	$ 20,460					X		Youth education	Completed
Zeedyk Train the Trainer	Quivira Coalition	$ 3,200					X		Train project leaders in induced meandering	Completed
Cañada Lucero Erosion Control	Timothy Johnson	$ 48,500						X	Erosion control	Ongoing
Cerros Colorado Erosion Control	R. W. Johnson	$ 38,500						X	Develop methods to deal with headcuts, proper road maintenance	Ongoing
Dragonfly Range Erosion Control	Pueblo of Jemez	$ 55,922						X	Improve grazing mgmt.	Ongoing
Independent Monitoring	RPMC Monitoring Subcommittee	$ 20,000						X	Train project implementers to monitor	Ongoing
Noxious Weed Control	Cuba SWCD	$ 22,300						X	Treat weed infestation, outreach	Ongoing
Pueblo Pintado Chapter Public Education	Pueblo Pintado Chapter	$ 21,384						X	Youth education, erosion control	Completed
Rio Puerco Channel Restoration at La Ventana	NMED	$730,000						X	319 project to restore river to meandering channel	Ongoing
Starr Allotment Erosion Control	Red Mtn. Ranch	$ 28,500						X	Proper road maintenance, relocate road segments	Ongoing
Watershed Restoration Handbook	Navajo Nation WMB	$ 21,384						X	Public education	Ongoing
Whitehorse Lake Chapter Earthen Dam Repair	Whitehorse Lake Chapter	$45,585						X	Repair stock tanks, retain sediment	Ongoing

Señorito Canyon

Señorito Canyon has become a model of effective riparian recovery of a semi-arid watershed

Señorito Canyon, 1990

Señorito Canyon, 1993

Señorito Canyon, 1995

http://www.nm.blm.gov/misc/riparian/riparian_aufo.html

For a number of years, the Rio Puerco Watershed has been a focus of concern, considerable study, and restoration efforts. The Omnibus Parks and Public Land Management Act of October 1, 1996 included a section known as the Rio Puerco Watershed Act that spoke specifically to the Rio Puerco Drainage Basin. The legislation directed the BLM to establish the Rio Puerco Management Committee (RPMC), a partnership consensus group charged with compiling data and developing best management pract ices (BMPs) to reduce erosion, increase native vegetation, and improve riparian habitat while supporting the rural, agrarian character of the drainage basin. The committee's current membership includes State, Federal and tribal agencies, soil and water conservation districts, residents from rural communities in the watershed, environmental and conservation groups, and the public-at-large. The RPMC has developed goals for watershed restoration, on-the-ground projects, and a unique collaborative process which involves a broad-based, watershed-wide stewardship commitment. (*Resource Management Plan 1999-2000*, Albuquerque Field Office, Bureau of Land Management, United States Department of the Interior, http://www.nm.blm.gov/aufo/rmp_update/aufo_rmp_update.PDF[4])

Señorito Canyon is a perennial stream system within the northern Rio Puerco Basin. The confluence of the Rio Puerco and Señorito Canyon is located approx. five miles south of Cuba, NM. The watershed drainage area of 34,000 acres is comprised of four sub-watersheds, the Arroyo Hondo, San Pablo, San Miguel and Señorito Creek. The four

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an be seen in the Updates to Action Plan, found in the

photographs illustrate the improvements that have occurred since 1990 within an enclosure constructed near the confluence of the Señorito and the Rio Puerco. The BLM has been actively working to improve the watershed conditions within the Rio Puerco basin for several decades. Recently, part of the work has focused on riparian habitat restoration. Señorito Canyon has become a model of effective riparian recovery with a semi-arid watershed. The rapid growth of sedges and willows along Señorito Canyon have narrowed and deepened the stream channel, resulting in several benefits. The stream banks have become more stable, and less susceptible to erosion. The lush vegetation improves the ability of the channel to slow down water flows following storms and spring snow melt.Grasses and trees can filter and trap sediment that enters the area from upstream. The water that is held by the vegetation improves the recharge of groundwater. Since the soils are no longer washing away, the native plant species the BLM has planted within the channel are now effectively competing with upland plants such as rabbitbrush, and non-native plants, such as salt cedar, that had invaded the area over decades past. Stream bank vegetation is protected from livestock use resulting in stable banks that are functioning properly. Many meanders within this area had severe cutbanks and no vegetation growing at their base. Now, the bases have good vegetative cover and strong root support. Overall water quality has improved, particularly since less sediment is transported downstream, and the watertable in the channel has risen. Beaver have now made their home in the Señorito, with small dams and sturdy lodges. Wintering elk and deer are enjoying lush vegetation and more nutrition. The layers of vegetation now present afford the opportunity to attract migratory neo-tropical birds, the insects they feed on, as well as amphibians that share the bounty. It is the cooperation and support of the various landowners within the Señorito Canyon, as well as other watersheds that can assure the long term success and stability of riparian area restoration projects.

At the 2003 DOI Conference on the Environment, Phoenix, Arizona, May 13-15, 2003. The conference theme was “Partnering for Environmental Stewardship – Resource Conservation for the Future.”

Stephen Fischer, Bureau of Land Management, Rio Puerco Management Committee
Track: Environmental Remediation and New Technologies
Title: Collaboration in the Rio Puerco Watershed
Phone: 505-761-8993

Abstract narrative: In contrast to previous watershed improvement efforts that were largely disjointed and non-collaborative, the Rio Puerco Management Committee (RPMC) has been successful in initiating restoration work in the Rio Puerco Watershed, a large and severely degraded basin in northwestern New Mexico. This work is being accomplished by a consensus-based partnership of tribal governments, federal and state agencies, non-profit organizations, and interested citizens. The Committee was established by an act of Congress but had antecedents in a local citizens group in Cuba, New Mexico. Several examples of projects completed by the RPMC demonstrate the power and value of partnering. In an effort to save money during the mid-1960s, the New Mexico State Highway and Transportation Department redirected a 2.2 mile meandering reach of the Rio

Puerco into a 1.1 mile straight channel segment. The action has caused the erosion of an average of 20 tons of sediment per year, eventually threatening the highway. The RPMC convinced the Highway Department to include bridges in the design for a recent highway widening project and signed a historic MOU to return the Rio Puerco to its stable natural channel. During the last two years, RPMC has provided technical assistance and financial support to the Torreon/Star Lake Navajo Chapter's Summer Youth Employment Program. After training in effective low tech methods using available materials and basic monitoring techniques, the students have built several thousand small structures to hold water and soil in place to address the region's eroding landscapes. A number of Navajo students have expressed interest in careers in land management and most have improved scores in their high school science classes as a result of their participation. (http://oepc.doi.gov/conference/abdetails.cfm?ID=166)

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Bingaman: Panel Gives Initial Approval to Funding for N.M. Water Projects
FOR IMMEDIATE RELEASE: Wednesday, July 16, 2003

WASHINGTON – A key Senate panel today gave initial approval to a spending bill that contains millions of dollars requested by U.S. Senator Jeff Bingaman for water projects across the state of New Mexico.

The Senate Energy and Water Development Appropriations Subcommittee today approved the fiscal year 2004 Energy and Water Development Appropriations Bill. That measure contains funding requested by Bingaman for several key water projects in New Mexico. With action today by the subcommittee, the full Senate Appropriations Committee can now consider the spending bill. That action will clear the way for consideration by the full Senate. Because the measure is still working its way through Congress, it is subject to change.

"Water is a precious resource in our state, and we must do everything we can to conserve the water we have and work to find new sources. This funding for various projects across the state will help accomplish that," Bingaman said.

Among the projects funded in the spending measure are:

•$6 million to continue a Sandia National Laboratories program that aims to develop innovative technologies to remove arsenic from drinking water.

•$6 million for the Army Corps of Engineers to continue a program that supports drinking water, wastewater, and flood control projects in Bernalillo, Sandoval and Valencia counties. A portion of this funding – $1 million – is set aside for the Black Mesa Flood Management project in the south Valley.

•$4 million to continue construction of the Tularosa Basin desalination research facility in New Mexico. An additional $2.6 million is set aside to continue national research and development desalination efforts.

•$7 million for the Middle Rio Grande Endangered Species Act Collaborative Program. This funding would be used by the collaborative program to support endangered species recovery efforts in the Middle Rio Grande, including habitat improvements, water acquisition, water quality investigations, water use efficiency improvements, and enhancement of endangered species populations.

•$600,000 to finalize evaluation of reconstructing 43.5 miles of levees along the Rio Grande, including rehabilitation of the San Marcial railroad bridge. This work is critical to complying with the biological opinion affecting the silvery minnow.

•$600,000 for Middle Rio Grande flood protection. This funding will be used to raise and rehabilitate 50 miles of levees along the Middle Rio Grande to provide additional flood protection, create wetlands, and acquire land for fish and wildlife mitigation purposes.

•$1.5 million to continue development of the so-called Upper Rio Grande Water Operations Model. This work will contribute to the effort to optimize water operations in the Rio Grande for the benefit of water users and environmental needs.

•$100,000 for the Arch-Hurley Conservancy District to conduct a preliminary evaluation of a water conservation project that could reduce water diversions in the district and potentially allow a transfer of some water to other important needs in New Mexico.

•$2.5 million for an Acequia Irrigation System Rehabilitation Program. This funding would be used to conduct new studies and implement rehabilitation projects for acequias in New Mexico.

9. Santa Fe Forest Service

Santa Fe National Forest
NEPA Schedule of Proposed Projects
June 2003 – October 2003

Cuba-Jemez Resource Area

Cuba Ranger District, Steve Romero, District Ranger (505) 289-3264
P.O. Box 130, Cuba, New Mexico 87013

Project Name, Description, Location, Acres/Miles, & NEPA Document Type	Status of Scoping, Analysis & Comment Period	Est. Decision & Implementation Dates	Project Contact
Oil & Gas Leasing Forest Plan Amendment, T21-26N, R1E-1W, Regional Forester Decision, EIS	Scoping, planning, & analysis Fall 2003 - 2005	ROD 2005	Larry Gore
Peñas Negras, Palomas, Ojito Frio, & Vacas Cattle Allots Mgnt, ±37,120 ac, T20-21N, R1-3E, EA	Scoping completed; planning & analysis in progress	DN/FONSI Fall 2003, Implement Summer 2004	Rita Skinner (505) 829-3535
BMG Wildfire Salvage Sale, ±200 acres, T25N, R1E, EA	EA Comment period complete	DN/FONSI June 2003, Implement ASAP	Rita Skinner
Pollywog, Ojitos, Llaves, Chiquito Range Allotment Mgnt, ±60,000 acres T25-26N, R1W-R1E, EA	Scoping, planning, & analysis Fall 2003 - Summer 2004	DN/FONSI Fall 2004, Implement Spring 2005	Rita Skinner
Deer Lake Estates WUI Phase II (Eureka Mesa), thin & Rx burn, ±800 acres T21N, R1E, DM	Scoping, planning, & analysis Summer-Fall 2003	CE/DM Winter 2003, Implement Spring 2004	Rita Skinner
Misc. Range Allotment Facilities, various locations, DMs	Scoping, planning, & analysis when proposed	CE/DMs Summer-Fall 2003	Jim Eaton

Jemez Ranger District

John Peterson, District Ranger, (505) 829-3535
P.O. Box 150, Española, New Mexico 87025

Project Name, Description, Location, Acres/Miles, & NEPA Document Type	Status of Scoping, Analysis & Comment Period	Est. Decision & Implementation Dates	Project Contact
San Diego Cattle Allot Mgnt Plan, ±91,800 ac, T17-18N, R1-2E, EIS	Scoping complete; planning & analysis in progress	FEIS/ROD Fall-Winter 2003, Implement Winter 2003-04	Rita Skinner
Virgin Hazardous Fuels Thin & Rx Burn Project, ±16,000 ac, T18-19N, R2-3E, EA	Scoping complete; planning & analysis in progress	DN/FONSI Fall-Winter 2003, Implement Spring 2004	Marie Rodriguez (505) 289-3264
Jemez Wildland Urban Interface Hazard Reduction Project, thinning and prescribed burning, EA Thompson Ridge WUI, ±2,100 ac, T18-19N, R3E Los Griegos WUI, ±1,000 ac, T18N, R3-4E Seven Springs WUI, ±1,500 ac, T19-20N, R3E Cochiti Mesa WUI, ±600 ac, T18N, R4-5E	EA Revision Comment Period complete	DN/FONSI June 2003, Implement Spring 2004	Marie Rodriguez
Lakes Wildfire Salvage Sale, 750 acres, T19N, R2E, EA	EA Comment period complete	DN/FONSI June 2003, Implement ASAP	Rita Skinner
Guadalupe Dispersed Recreation Sites, ±1,000 ac, S1, 12, 13, 24, 25, 36, T18N, R1E, DM	Scoping, planning, & analysis Spring - Summer 2003	CE/DM Fall 2003, Implement ASAP	Anne Ferrell
Monument Canyon Research Natural Area Restoration, Thin & Rx Burn, ±640 ac, T18N, R3E, S9, DM (Coop w / Univ. of Arizona)	Scoping complete; planning & analysis Summer-Fall 2003	CE/DM Fall - Winter 2003-04, Implement Summer 2004	Rita Skinner
Pines Canyon WUI, Thin & Helispot Const, ±1,800 ac. T18N, R5E, DM	Scoping complete; planning & analysis, Fall 2003	CE/DM Fall 2003, Implement Spring 2004	Lance Elmore
Oaks–West Mesa Rx Burn, Wildlife Improvement, ±5,500 ac., T17N, R4-5E, DM	Scoping, planning & analysis, Fall 2003	CE/DM Spring 2004	Rita Skinner
Paliza, Redondo, San Antonio, Jemez Falls Campground Forest Health Project, Vegetation treatments, ±200 ac, T17-19N, R3E, DM	Scoping complete; planning and analysis Summer 2003	CE/DM Summer 2003	Anne Ferrell
Coyote Flat piñon/juniper reduction project ~80 acres, T17N, R1E, DM	Scoping, planning, & analysis Fall 2003	CE/DM Spring 2004	Derek Padilla
Misc. Range Allotment Facilities, various locations, DMs	Scoping, planning, & analysis when proposed	CE/DMs Summer - Fall 2003	Derek Padilla

PROJECTS WITH DECISIONS SINCE LAST SOPA

Project Name, Location, NEPA Document Type	Resource Area	Decision Date	Project Contact
Jemez Nat'l Recreation Area Mgnt Plan & Forest Plan Amendment, ±57,000 acres, T17-19N, R1-5E, EA	Jemez-Cuba	1-21-03	Rita Skinner
Cochiti Mesa Fire House, ±1 ac., Sec 12, T18N, R4E, DM	Jemez-Cuba	4-10-03	Anne Ferrell
Insecticide Treatment of Engraver & Western Pine Beetle, ±2 ac, Sec 16, T17N, R3E, DM	Jemez-Cuba	3-12-02	Anne Ferrell

10. Cuba Soil & Water Conservation District

11. Natural Resource Conservation Service

Help Farmers Help the Environment

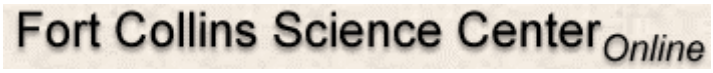
FUNDS TO HELP FARMERS AND ENVIRONMENT: Working farms provide habitat for wildlife and can be managed to reduce air and water pollution. But, America loses over 1 million acres of farmland every year, or two acres every minute. Between 1992 and 1997, we developed more than 6 million acres of agricultural land—an area the size of Maryland.The 2002 Farm Bill provided large funding increases for conservation programs to help farmers manage their working lands to protect air and water quality. These working lands programs provide farmers the tools and incentives they need to help meet our major environmental challenges.

BUREAUCRATIC OBSTACLES: Despite funding increases, most farmers and ranchers are still rejected when they seek USDA conservation funds. They face huge funding backlogs -- $1.5 billion in the Environmental Quality Incentives Program alone. These backlogs were only exacerbated this spring when USDA diverted more than $100 million from private lands conservation incentive programs to pay for the cost of administering the Conservation Reserve Program (CRP) and the Wetlands Reserve Program (WRP). This diversion was a clear betrayal of the 2002 Farm Bill, which intended USDA to use these funds for conservation purposes only. The diversion also betrayed farmers trying to help the environment.

TAKE ACTION!
The Leahy-Snowe Amendment would restore the intent of the 2002 Farm Bill by ensuring that conservation funds flow to farmers, not bureaucrats. Tell your senators to support the Leahy-Snowe Amendment, for the good of farmers and our environment.For more information about efforts to protect farmland and farm conservation programs, visit Environmental Defense online.Read the Leahy-Snowe Amendment online.Or read our Leahy-Snowe Conservation Amendment factsheet.

12. Bureau of Reclamation

13. USGS Jemez Mountains Field Station



http://www.fort.usgs.gov/research/field_stations/jmfs/jmfs.asp

FORT > Science Programs > Field Stations > Jemez Field Station

Jemez Mountains Field Station

The Jemez Mountains Field Station develops and maintains ecological research, inventory, and monitoring information needed to support effective ecosystem management action in southwestern landscapes. Work is directed toward integrated, long-term, landscape-scale ecological research in Bandelier National Monument (BAND), the Jemez Mountains, and the southwestern United States. This place-focused work includes determination of ecological patterns and processes at multiple spatial scales in current and past landscapes, and the establishment and utilization of long-term, ecological monitoring networks (see map). The Station funds, oversees, and collaborates in research by a variety of external scientists. Major research partnerships occur with the University of New Mexico (UNM), Los Alamos National Laboratory (LANL), University of Arizona (includes UA Tree-Ring Lab [TRL]), Northern Arizona University (NAU), Texas Tech University (TTU), Colorado State University (CSU), USGS Water Resources Division (WRD), and USDA Forest Service (USFS).

Staffing

This field station is located at Bandelier National Monument and functions as a hybrid operation (the "Ecology Group") through close interactions with National Park Service (NPS) staff. Permanent staff are:

USGS Staff

Craig D. Allen, Research Ecologist and Station Leader (Ph.D., Wildland Resource Science, University of California-Berkeley; B.A., M.S., Geography, University of Wisconsin-Madison). Topical expertise in landscape ecology, fire ecology, conservation biology, hillslope hydrology and erosion, historical ecology, forest ecology, and restoration ecology. Place-focused associations with landscapes of the Jemez Mountains in particular, and the Southwest in general.

John T. Hogan, Physical Scientist (B.S., Biology, University of New Mexico). Conducts biological and physical science field activities, as well as data management and analyses. Also involved in establishment of community-based science activities and environmental education efforts.

NPS Staff (functionally supervised by Craig Allen)

Kay L. Beeley, Information Management Specialist (B.A., Biology, University of California-Davis). Supervises and conducts field data collection operations. Responsible for data management. Operates joint GIS.

Current Research Topics and Collaborators

- Fire history and fire ecology in the Southwest: Holocene fire histories through lake sediments (NAU); associated dendrochronological fire histories (TRL); crown fire histories (TRL); prehistoric fire activity modeling (UA); nitrogen cycling (UNM); interactions of spruce budworm outbreaks and fire histories (TRL, USFS); and continued development of one of the most detailed landscape-scale dendro fire histories in the world (TRL, USFS).

- Fire effects on watersheds in the western U.S., core team member: Integrated science look at effects of intense fires, and potential role of USGS in addressing these issues, with participation of multiple site visits by a large group of scientists involving all four disciplines of the USGS (Water Resources Discipline [WRD], Biological Resources Discipline [BRD], Geologic Discipline [GD], National Mapping Discipline [NMD]).

- Vegetation change and landscape histories in New Mexico: Historic photograph retakes and archival research (e.g., V. Bailey physiography reports), with USFS, NPS, WRD, and independent researchers.
- Effects of fire on Mexican Spotted Owl habitat, territorial use, reproductive success, and diet (Jemez Mountains, with NPS, USFS, and independent contract researchers), and GIS-based habitat modeling for the entire Southwest (independent researchers and BRD).

- Piñon-juniper woodlands: Ecology, runoff, and erosion dynamics: (Intensive watershed work in Jemez Mountains (LANL, NPS, CSU).

- Sensitivity of semiarid woodlands and forests to climate-induced disturbances in the southwestern U.S.: BRD Global Change Program with UA, NAU, UNM, LANL, WRD, NPS, USFS.

- Ecological restoration of forests and woodlands in the Southwest: Experimental treatments in piñon-juniper in Jemez Mountains (NPS, CSU) and reviews of ponderosa pine region-wide (multi-agency).
- Elk movements and ecosystem effects in the Jemez Mountains: Integrated studies, including radiotelemetry and exclosures (TTU, LANL, NPS).

- Long-term ecological monitoring across landscape gradients in the Jemez Mountains: Includes multiple datasets of ~10 years running on vegetation, tree growth (TRL, LANL), erosion, and arthropods (UNM, LANL, NPS).

Technical Assistance

As a park-based USGS field station, we routinely provide technical assistance on a wide array of natural and cultural resource activities at Bandelier National Monument. For example, we constantly provide ecological reference materials and customized data summaries to park staff, because the USGS field station is the focal for such information at BAND. We have developed the GIS program at BAND and created most of the park-specific data layers, and Dr. Allen supervises the NPS GS-9 specialist (Kay Beeley) who operates the GIS system for both USGS and NPS purposes. (We currently run ARCINFO on networked high-end PC's, with over 15 gigabytes of GIS data covering Bandelier and the Jemez Mountains.) Since 1989, Dr. Allen has served as the primary scientific consultant to the Superintendent and the Chief of Resources Management on significant natural resource issues, and routinely represents park-related science issues in meetings with other agencies and the public. The research conducted by this field station is integral to addressing the major resource management issues at Bandelier.

We also routinely respond to many requests for technical advice and assistance from other agencies in the region, including the Rocky Mountain Region of the National Park Service, individual parks in this and other regions (particularly El Malpais National Monument, Pecos National Historical Park, Mesa Verde National Park, and Chaco Culture National Historical Park), other DOI Bureaus (including Fish and Wildlife Service, Bureau of Land Management, and Bureau of Indian Affairs), Native American communities, various USDA Forest Service entities, State of New Mexico Environment Department, Los Alamos National Laboratory, Los Alamos County, and many non-governmental organizations.

Most recently (2002) we have been providing substantial support to the newly established Valles Caldera National Preserve toward the establishment of an incipient natural resource inventory, monitoring, and research program.

Contact Information:
U.S. Geological Survey
Fort Collins Science Center
Jemez Mountains Field Station
HCR 1, Box 1, #15
Los Alamos, NM 87544
(505) 672-3861 ext. 541
(505) 672-9607 (fax)
e-mail:craig_allen@usgs.gov

14. Other

http://www.nmenv.state.nm.us/swqb/wpstop.html

a. Watershed Protection SWQB [Surface Water Quality Bureau]

Our mission is to develop and implement a program which will reduce human-induced pollutants from nonpoint sources entering surface and ground waters of the State to the extent both economically and technologically feasible.

The Watershed Protection Section (WPS) develop workplans and secures grant funding which help identify and coordinate efforts by state, federal, and local agencies along with other groups and private citizens to reduce and prevent nonpoint source pollution.

The WPS provides a major component of the protection of surface water resources in the state, and includes a combination of regulatory and voluntary programs to reduce nonpoint source pollution. Staff members within the section cooperatively work to educate others and implement *best management practices* to reduce nonpoint-source pollutants from entering the surface and ground water resources of New Mexico. Workplans developed and funded under Section (§) 319(h) of the Clean Water Act include a variety of efforts, including watershed association development, riparian area restoration, certification of CWA § 404 permits, spill response, and treatment of abandoned mines.

There are two offices maintained by Watershed Protection Section, one in Santa Fe, and a field office located in Silver City. Activities conducted in these offices are very similar, with the only difference being the locations in which the work is conducted. The Silver City office handles issues and workplans in the southwest quarter of New Mexico, and was created due to increasing interest in water quality by residents in the area.

b. EDUCATION

OSE's Water Conservation Program

Project WET

Project WILD

What is Project WILD?
Project WILD is an interdisciplinary conservation and environmental education program emphasizing wildlife. The program is designed for educators of kindergarten through twelfth grade. Project WILD capitalizes on the natural interest children and adults have in wildlife by providing hands-on activities that enhance student learning in all subject and skill areas. Project WILD educational materials are provided to educators through practical, interactive workshops.

Project WILD is **:**

- An international network of students, educators, parents, community leaders, educational administrators, representatives of resource agencies and conservation groups.
- Ideal for teaching science, social studies, language arts, math, art, physical education, and music.
- Innovative techniques for teaching basic skills.
- Balanced and fair, neither pro nor con on value-sensitive issues.
- Designed for diverse teaching and learning styles.
- Effective methods for teaching problem-solving and decision-making.
- Extensively reviewed, tested and evaluated.

How do I attend a Project WILD workshop?

- Workshops are free, exciting, indoors and outdoors, hands-on, and interactive!
- At each workshop (usually 7 hours long), educators receive the Project WILD and Aquatic WILD Activity Guides as well as practical training, free posters, coloring books and more.
- Workshops are scheduled throughout the year and state.

Contact **Kevin Holladay**, Project WILD Coordinator e-mail Kholladay@state.nm.us or at New Mexico Game and Fish, POB 25112, Santa Fe, NM 87504, (505) 476-8095, fax (505) 476-8128.

New Mexico Aquatic Resources Education Program

The Aquatic Resources Education (ARE) program has three related projects that are designed to promote learning about the aquatic environment, angling skills, outdoor ethics and fishing opportunities in the state. The program is mostly funded by anglers through the money provided by the Sports Fish Restoration Act- a federal program that taxes the equipment used by anglers.

1) Aquatic Resource Investigations (ARI):
Tromp around in streams and ponds with your students! Discover the amazing diversity of life found in our aquatic habitats!

- The ARI project is a state-wide education program on aquatic life, water quality, riparian ecosystems, and fisheries management.
- Offers teacher training programs in the classroom or field on many aquatic resource topics.
- Offers aquatic education activities and programs for students with all the equipment needed to explore streams, rivers, ponds, and bosque ecosystems.
- A partner in the Bosque Education Program offering workshops using the Bosque Education Guide and Model.
- Works with many citizen groups and agencies in presenting teaching activities on riparian systems, watersheds and stream restoration.
  Contact Colleen Welch, Project WILD-Aquatic, Assistant Coordinator, email cewelch@state.nm.us or at New Mexico Game and Fish, POB 25112, Santa Fe, NM 87504, (505) 476-8119, fax (505) 476-8128.

2) Fishing Clinics and Skills:
Learn how to cast, tie flies, set a hook, clean a fish, catch and release and more! See how angling can promote learning in many different subject areas!
This project presents fishing clinics around the state for children and other audiences. All the equipment and training is provided.

- Promotes fishing through the National Fishing Week, Free Fishing Days, and Hooked on Fishing-Not On Drugs.

Contact Project WILD Coordinator, email kholladay@state.nm.us or at New Mexico Game and Fish, POB 25112, Santa Fe, New Mexico 87504, (505) 476-8095, fax (505)476-8128 to schedule a fishing clinic or fishing skills program.

3) Watershed Watch:

Learn how to monitor watershed health using the latest techniques and technology!

- This program is a long-term watershed monitoring project by high school students who adopt a watershed in their area.
- Watershed Watch is concerned with watershed management practices, benthic invertebrates, water quality, and their relationship to fish habitat. The program consists of laboratory work and field sessions on stream collection and analysis.
- Long range goal is to develop these analyses to make recommendations to the Department for future fisheries management in selected streams.

Schools are provided with water testing equipment that includes: spectrophotometer, turbidity meter, reagent kits for heavy metals and the Watershed Watch Handbook.

For more information contact Kevin Holladay, Project WILD Coordinator, email kholladay@state.nm.us, or New Mexico Game and Fish, POB 25112 Santa Fe, NM 87504 (505) 476-8095, fax (505) 476-8128

Coloring Books:

Posters on wildlife of New Mexico and Videos (for loan)

http://efotg.nrcs.usda.gov/treemenuFS.aspx?Fips=35043&MenuName=menuNM.zip

NRCS FIELD OFFICE TECHNICAL GUIDE

Technical guides are the primary technical references for NRCS. They contain technical information about the conservation of soil, water, air, and related plant and animal resources.

Technical guides used in each field office are localized so that they apply specifically to the geographic area for which they are prepared. These documents are referred to as Field Office Technical Guides (FOTGs). The FOTG is maintained in each NRCS field office as a compilation of technical knowledge, resource data references and conservation practice standards.

Appropriate parts of the Field Office Technical Guides are automated as databases, computer programs, and other electronic-based materials such as those included in these web pages.

Section I - General Resource References

This section provides general state maps, descriptions of Major Land Resource Areas, watershed information, and links to NRCS reference manuals and handbooks. This information helps people understand the natural resources within the field office service area and helps them make decisions about resource use and management systems. It also provides references or electronic links to researchers, universities, and cooperating agencies, as well as conservation practice costs, agricultural laws and regulations, and computer-based tools used in resource analysis.

Section II – Natural Resource Information

This section contains information, data, and interpretations about soil, water, air, plant, and animal resources. This information includes soils information; climatic data; cultural resources information; threatened and endangered species lists; ecological site descriptions; and forage suitability group descriptions.

Section III - Resource Management Systems and Quality Criteria

Quality Criteria are used to establish treatment levels necessary to adequately address natural resource concerns and human considerations that help provide sustained and enhanced use of natural resources.

Section IV - Practice Standards and Specifications

Section IV contains the standards for each of the conservation practices adopted for use within a State. Practice standards establish the minimum level of acceptable quality for planning, designing, installing, operating, and maintaining conservation practices. Practice specifications establish the technical details and workmanship required to install a practice on specific sites and the quality and extent of the materials to be used.

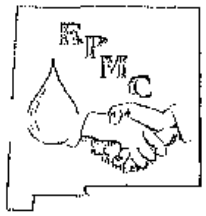
Section V - Conservation Effects

Conservation Effects provides background information on how the implementation of Conservation Practices affects each identified resource concern in the state.

Technical guides provide:

1. Soil interpretations and potential productivity within alternative levels of management intensity and conservation treatment (Section II);
2. Technical information for achieving objectives of the NRCS and decision maker (All sections);
3. Information for interdisciplinary planning for the conservation of soil, water, and related resources (Section III);
4. A basis for identifying resource management system (RMS) options and, when needed, guidance on options and components thereof (Section III);
5. Information on effects of resource management systems, acceptable management systems, and their component practices (Section V);
6. Criteria to evaluate the quality of RMS options and components thereof (Section III);
7. Standards and specifications for conservation practices (Section IV);
8. Information for evaluating the economic feasibility of conservation practices and resource management system options;(Section I)
9. Information for locating and identifying cultural resources and methods to account for their significance (Section II); and

Technical material for training employee's, partners and third party vendors (All sections).



RIO PUERCO MANAGEMENT COMMITTEE

Creating a Healthy Watershed Through Collaboration

COOPERATING AGENCIES

Federal

Army Corps of Engineers
Bureau of Indian Affairs
Bureau of Land Management
Bureau of Reclamation
Environmental Protection Agency
Fish and Wildlife Service
Forest Service
Geological Survey
Natural Resources Conservation Service
Southwest Strategy

Tribal

Jicarilla Apache Tribe
Pueblo of Acoma
Pueblo of Isleta
Pueblo of Jemez
Pueblo of Laguna
Navajo Nation

State of New Mexico

Acequia Commission
Bureau of Mines
Department of Game and Fish
Environment Department
NMSU Cooperative Extension Service
State Engineer
State Highway & Transportation Department
State Land Office
Cuba Soil & Water Conservation District
Cuba Soil & Water Conservation District
Jemez Soil & Water Conservation District
Valencia Soil & Water Conservation District
Sandoval County Commission

Private

Albuquerque Wildlife Federation
Cabezon Water Pipeline Association
Center for Holistic Management
National Audubon Society
Quivira Coalition
Rio Puerco Watershed Committee
Society for Range Management
Trees New Mexico
Private landowners
Public at large

Watershed Restoration Action Strategy (WRAS)

for the

Rio Puerco Watershed

Prepared by the
Rio Puerco Management Committee
Albuquerque, New Mexico

May 31, 2001

Established November 12, 1996, through Public Law 104-333

INTRODUCTION

The Federal Clean Water Action Plan (CWAP) of 1998 was developed to help meet the goals of the Clean Water Act through state-led cooperative efforts. These efforts attempt to identify and prioritize watersheds with water quality concerns. Consequently, the New Mexico Unified Watershed Assessment (1998) was conducted by a statewide task force in response to the actions mandated in the CWAP. New Mexico's Unified Watershed Assessment identified 21 out of New Mexico's 83 watersheds as "in need of restoration" (Category I). The Rio Puerco Watershed is included as a New Mexico Category I watershed.

This Watershed Restoration Action Strategy (WRAS) for the Rio Puerco Watershed is a comprehensive planning document with a focus on restoring and protecting the health of water bodies that are impaired in this Category I watershed. The WRAS is a required product of the CWAP process, and has been developed for a variety of planning, reporting, and funding purposes by the Rio Puerco Management Committee.

This WRAS contains the following components:

- A description of the Rio Puerco Watershed and water bodies of concern and a profile of the Rio Puerco Management Committee, the authors of this plan.

- The public outreach structure and methods that have been, and continue to be used to engage and maintain public involvement including local, state, federal, and tribal governments.

- Monitoring and evaluation activities based on water quality and other goals and outcomes needed to refine the problems or assess progress towards achieving these goals.

- The specific water quality problems to be addressed, the sources of pollution, and the relative contribution of sources.

- A blueprint of the actions to be taken and desired water quality, natural resources, socioeconomic and other goals and outcomes, i.e., implementation of pollution control and natural resource restoration measures.

- A schedule for implementation of restoration measures and identification of appropriate lead agencies or cooperators to oversee implementation,

maintenance, monitoring and evaluation.

- Funding needs to support the implementation and maintenance of restoration measures.

Watershed Setting/Water Quality Concern

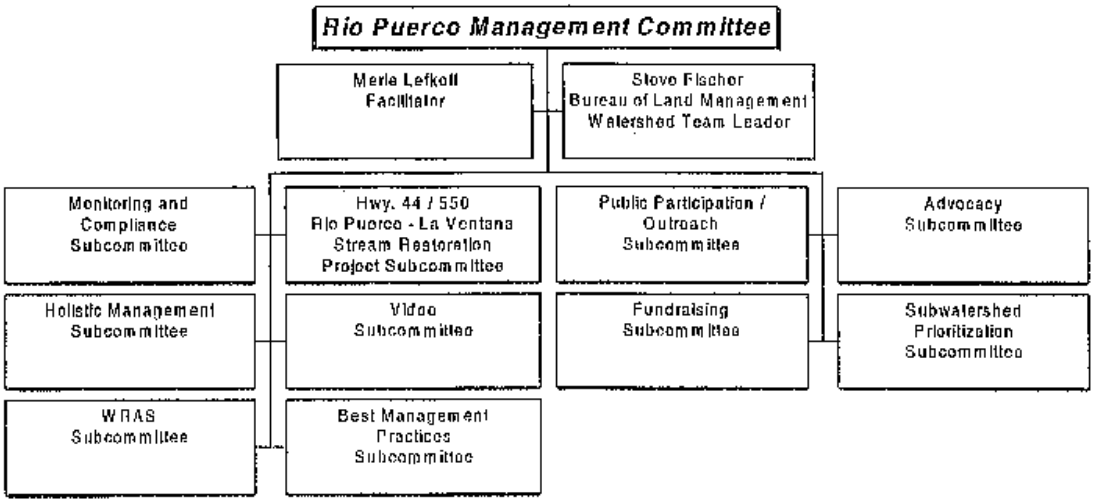
The Rio Puerco Watershed, in west central New Mexico, is the largest tributary to the middle Rio Grande Basin. The major drainages in the watershed are the Rio Puerco, Arroyo Chico, and the Rio San Jose. The Rio Puerco basin includes nine large physiographically defined subwatersheds, draining portions of seven counties, west of the greater Rio Grande Basin in northwest end west-central New Mexico. Originating along the eastern edge of the Continental Divide, the watershed encompasses approximately 7,350 square miles (4.7 million acres/over I .9M hectares) that contribute flow to the Rio Grande at Bernardo, NM (see map). The geological setting dominantly involves relatively soft sedimentary strata, intruded and capped by younger volcanic rocks. The watershed has been studied in great detail by a variety of noted investigators including geologists, geomorphologists, habitat and range management specialists, social scientists, and others.

The Rio Puerco has acquired a worldwide renown as a severely impacted and degraded watershed, synonymous with accelerated erosion processes. While the watershed contributes less than 10 percent of the total flow, it is a primary source of sediment to the Rio Grande, contributing a disproportionately large percentage of silt and debris to that system.

Rio Puerco Management Committee

The Rio Puerco Management Committee (RPMC), based in Albuquerque, New Mexico, is a collaborative watershed organization established by Congress through the *Rio Puerco Watershed Act,* Section 401 of the *Omnibus Parks and Land Management Act of 1996.* The RPMC was formed in February 1997, building on an initiative begun by the Rio Puerco Watershed Committee, a locally led stakeholders group based in Cuba, New Mexico. Passage of the Rio Puerco Watershed Act formalized an organization to carry out a broad-based, collaborative effort to restore and manage the watershed. RPMC membership includes state, federal, and tribal agencies, soil and water conservation districts, representatives of county government, residents from the rural communities within the watershed, environmental and conservation groups, and the public-at-large.

RPMC Organizational Chart Showing Established Subcommittees



The mixed land status of the watershed, including large tracts of Federal, Tribal, State, and private lands, contributes to the complexity of the situation and makes it necessary to enlist the support and cooperation of numerous diverse interests in organizing and implementing projects. The forum provided by the RPMC is an effective approach to the multi-jurisdictional situation.

In passing this legislation. Congress was demonstrating their commitment and support for the collaborative approach to improving the impaired watersheds condition. This WRAS summarizes the recognized conditions and identifies necessary efforts and mechanisms to be used by the broad-based membership of the RPMC to pursue improved water quality and watershed restoration activities. The Bureau of Land Management (BLM) has assumed a vital leadership role in the development and support of the RPMC.

The WRAS is the support document that will be used by the RPMC to apply for watershed restoration and nonpoint source pollution control project funding under Clean Water Act Section 319 (h). In addition, as a living, expandable and updateable watershed planning document, it may appropriately be attached to applications for other avenues of funding, and can be updated and submitted in compliance with the RPMC's obligation to report biannually to the Secretary of the Interior, who presents the report to Congress.

Previous Work

Through their work in the watershed, various state and federal agencies, tribal governments, local communities, private landowners, and environmental interest groups have made numerous attempts to improve ground cover and vegetation conditions, protect habitat, improve water quality and quantity, establish valid land management practices, and arrest the erosion processes (discussed later in this WRAS). These past efforts can, in some ways, be characterized as

disjointed, disorganized, largely non-collaborative, and not fully holistic in their approach. The Rio Puerco Watershed Act formalized a coordinated effort to restore and maintain this critical watershed by organizing the disparate interests, consolidating available data, and developing sound approaches to watershed restoration. The committee is focused on reducing erosion, increasing native vegetation, and improving riparian habitat. Employing these and other approaches, the RPMC intends to achieve the watershed restoration arid water quality goals expressed in this WRAS.

SECTION I -- PUBLIC OUTREACH

This section identifies agencies and organizations responsible for the development of the WRAS and implementation of the public outreach components. The RPMC has already taken a number of steps to ensure that the voice of the stakeholders are heard and to keep interested parties informed of the RPMCs progress.

The RPMC is the lead organization for watershed plan development. The committee, through its Public Participation Subcommittee, will play a major role in developing, coordinating, and implementing public outreach activities within the watershed.

The Rio Puerco Management Committee was formed in February 1997, building on an initiative begun by the Rio Puerco Watershed Committee, a locally led stakeholders group based in Cuba, New Mexico. Passage or the Rio Puerco Watershed Act of 1996 established the RPMC to carry out a broad-based, collaborative effort to restore and manage the watershed.

The varied composition of the RPMC lends itself to widespread gathering and dissemination o[information through its constituent agencies and organizations. Public outreach is built into all aspects of the committee's work, from identifying problems and setting priorities to writing and carrying out a restoration plan. Input from the members, as well as from outside of the committee, is being used to develop and review this WRAS.

Currently, the major water quality concern in the Rio Puerco is the extremely high sediment loading that gives the river its name. The Rio San Jose and the main stem Rio Puerco are scheduled for development of Total Maximum Daily Loads (TMDLs) in 2001. Because the majority of the problem is due to the effects of nonpoint source pollution, the New Mexico Environment Department's Surface Water Quality Bureau, as the state's technical lead nonpoint source agency, will work with the RPMC to supplement the public outreach program.

WRAS Development

The Rio Puerco Management Committee initiated development of a WRAS as a logical step toward its stated goals and objectives. The WRAS Subcommittee consisted of participants from the following agencies and organizations:

- Albuquerque Wildlife Federation
- Bureau of Land Management, Albuquerque Field Office

- Ciudad Soil and Water Conservation District
- Navajo Nation, Environment Department
- New Mexico Bureau of Mines/New Mexico Tech
- New Mexico Environment Department, Surface Water Quality Bureau
- New Mexico State Land Office
- Quivira Coalition
- Sandoval County Commission
- US. Geological Survey

Changes suggested by reviewers were incorporated into the final WRAS after consideration and agreement by the committee as a whole.

WRAS Implementation

The success of water quality protection programs in the watershed depends on the approval and cooperation of the local landowners and various government agencies. The Rio Puerco Management Committee will be the primary mechanism through which this is accomplished. The composition of the RPMC and its subcommittees have been developed to ensure the success of this function.

The Public Participation Subcommittee will be one of the primary avenues for public outreach in the Rio Puerco watershed. Involvement of locally-led organizations such as watershed groups, soil and water conservation districts, and local units of government will help ensure full stakeholder representation. Members of the RPMC's constituent agencies will provide technical expertise. Other state and federal programs provide public involvement and education that can be used to complement the group's outreach efforts.

The RPMC has evolved from a gathering of individuals and entities with varying degrees of self-interest to a cohesive organization focused on restoring the environmental and socio-economic health of the watershed and its inhabitants. The membership has survived the growing pains that accompany attempts at consensus by such diverse interests, and matured to the point where issues can be raised and resolved by keeping the committee's goals in mind. In fact, the RPMC has been recognized for collaboration by the U.S. Environmental Protection Agency with its 1998 Environmental Excellence Award and by the Bureau of Land Management with its 1999 Legacy of the Land Award.

The diversity of the RPMC's members, and their collective experience in collaborative efforts, will enhance the Committee's public outreach activities.

Public Outreach Efforts To Date

During its four years of existence, the RPMC has made significant strides toward its goal of public involvement. Actions taken to date include:

- Working groups. Early on, RPMC established two geographically-defined working groups, which drew in participants from the respective regions to describe the major problems

faced by the watershed's residents and join the effort to restore it. One is composed of participants from the northern watershed, beginning at the headwaters of the Rio Puerco and stretching to the confluence with the Rio San Jose. The second group focused on the drainage basin from the Rio San Jose southward to the junction with the Rio Grande at Bernardo, New Mexico.

- Newsletter Publication. Feature articles introduced the RPMC to readers and described the organizational achievements that led the EPA to select the Committee as a recipient for its regional Environmental Excellence Award. One thousand copies were printed and distributed.

- Contacts with Congress. The RPMC has kept the New Mexico congressional delegation informed of its progress by direct communications with the congressmen and staffers. The committee submitted a formal report to Congress in 1998.

- Video production. The RPMC produced a five-minute video to supplement its written report to Congress. Additional footage has been collected and archived with the intent of producing a second video geared toward the general public.

- Field trips. The RPMC and several of its constituent agencies and organizations have sponsored tours of many parts of the watershed to examine existing field conditions, view locations for proposed on-the-ground activities, evaluate projects in progress, learn about innovative land management techniques, and meet with local residents on their own turf.

- Listening sessions". A series of meetings were held in communities located in the sub-watersheds designated by the RPMC as high priority areas. The purpose was to confirm the choice of these areas, based on remote sensing data, during the RPMC's sub-watershed prioritization process. This was done by soliciting the residents' views on the nature and severity of the resource concerns and associated problems within their immediate areas, and gauging their interest in solving those problems. The three listening sessions held to date in Cuba, Torreon, and Ojo Encino were so successful that more are planned for the near future.

- Formation of a Public Participation Subcommittee, which planned and carried out several of the activities listed above. The subcommittee's plans for this year include a work day at one of the project sites, publication of a second newsletter, and follow-ups to the initial listening sessions.

SECTION 2 -- MONITORING AND EVALUATION

Monitoring, compliance, and evaluation of Rio Puerco Management Committee projects has been an objective since the committee's inception in 1997. Development of a consistent methodology for baseline data collection, verification monitoring, data inventory, and compliance review has been the task of the RPMC Monitoring and Compliance Sub-committee. The following narrative describes the sub-committee's activities and monitoring and compliance protocols to date. These

protocols will serve as templates for consistent and compatible monitoring data collection and fair and accountable compliance review. As with RPMC projects, monitoring and compliance protocols will be reviewed, evaluated for effectiveness, and amended on a regular basis.

The Monitoring and Compliance Sub-committee has undertaken a discussion and review of appropriate monitoring methodologies for the various projects and approaches to solving watershed problems. Our intention is to use methodologies that will actually show the changes and anticipated improvements in the parameters for which restoration projects have been implemented. Another aim of our review is to choose monitoring techniques that can be understood and implemented by all cooperators with different levels of technical expertise. A third aim is consistent and compatible data collection throughout the watershed that will ultimately show watershed-wide trends and changes due to restoration efforts.

Monitoring

The goal of our monitoring plan is to develop a long-range monitoring program that focuses on two objectives: (1) targeting the implementation of BMPs on lands and land uses that have the greatest potential of contributing loads to the Rio Puerco, and (2) tracking trends in reducing loads and improving overall health of the watershed. Monitoring will be directed at tracking and developing trends with regard to water quality and the condition of other natural and socioeconomic resources. Reference conditions/reaches/areas will be identified and monitored to serve as goals for restoration and protection. The success of our projects will depend on the continued implementation of restoration activities and maintenance of completed projects. A long-range monitoring program will assure that project activities are tracked and evaluated beyond the implementation of individual projects. Milestones will keep us on track for restoring the watershed.

Our monitoring plan includes the development of individual project monitoring plans. Technical assistance for the development of project monitoring plans by project proponents will be in the form of periodic workshops conducted by the RPMC Monitoring and Compliance Sub-committee. The workshops will be open to the public and will focus on how to develop a monitoring plan. We propose to use the Quality Assurance Project Plan for Water Quality Management Proqrams 2001 produced by the Surface Water Quality Bureau of the New Mexico Environment Department as a basis for our training sessions. Other monitoring procedures will be evaluated and accepted by the sub-committee.

Appropriate monitoring techniques will be chosen to produce valid data that reflects both the successes and shortfalls of the projects. Before project implementation, baseline conditions will be established and monitored. A monitoring schedule will be developed based on the type of project and timing of implementation. Project proponents will report monitoring results in quarterly reports to be submitted to the RPMC Monitoring and Compliance Sub-committee for technical review and tracking. Funding for the monitoring component of individual projects will be included in the grant request.

There are some basic needs that must be met for our monitoring plan to be successful. First, we need continuous database management. This is to ensure that monitoring efforts are coordinated to

meet the needs of agencies and stakebolders and to maximize the usefulness of the data obtained. Second, we need to establish a cadre of trained monitoring volunteers to help with projects and to help establish baseline conditions throughout the watershed. Third, we need to create a library of monitoring resources for project proponent's use for developing their monitoring plan. Fourth, we would like to develop an information hotline possibly through the creation of a Rio Puerco web page and through a column in the RPMC newsletter. The hotline would provide a means for stakebolders to access data and provide monitoring updates. Fifth, with the first four needs in place, we would hold regular monitoring task force meetings to sustain the monitoring initiative and to ensure that enough people and resources are available to continue monitoring.

The implementation of this monitoring plan will produce the following results:

- It will help us meet the goals of the Rio Puerco Watershed Act of 1996 and the commitments associated with any funding we obtain for Rio Puerco restoration activities.

- It is essential for evaluation of the effectiveness of Best Management Practices (BMPS) to produce long-term benefits and to reach project goals.

- We will have hard data to show successes of project implementation.

- Collection of these data will improve our understanding of processes that cause resource degradation, social deterioration and financial losses in the Rio Puerco Watershed.

Compliance and Project Evaluation

The goal of our compliance review plan is to meet project objectives within a scheduled timeframe; to ensure the use of available funding effectively and consistently with the stated project implementation plan; to ensure continued suitability of BMPS; to achieve resource restoration and protection during implementation of the project; and to guarantee maintenance of installed BMPs and completed projects.

The Monitoring and Compliance Sub-committee has committed to continuous involvement in compliance review. The compliance plan involves the assignment of a three-person RPMC compliance review team to be assigned to each individual project to monitor compliance to the project proposal and goals. The compliance review team and project proponent will meet initially to review compliance expectations, including completion of any National Environmental Policy Act (NEPA) and State Historic Preservation Act requirements. A site inspection by the compliance review team would occur within the first six months after project initiation. The compliance review team will then set up a schedule of additional field reviews as needed. The project proponent will submit quarterly reports describing actions, finances, and project progress. A final report will be required at project completion.

With the help of the Monitoring and Compliance Sub-committee, the compliance review team would be responsible for recommendations regarding project amendments, additional funding, project termination, or continuing phased and multi-year projects. The recommendations would then be made to the RPMC for consideration and future planning. Project proponents will be

expected to include funding needs for compliance reporting as part of each grant.

The expected results of the compliance plan are the following:

- Compliance with the National Environmental Policy Act and other pre-project requirements.
- Completion of approved projects as proposed.
- Continued maintenance of installed projects and other long-range commitments
- Financial accountability of project proponent.
- Documentation of what works.

SECTION 3 - DEFINING SPECIFIC WATER QUALITY PROBLEMS

The Rio Puerco Watershed, defined under the United States Geological Survey Hydrologic Unit Codes 130204-130207, is divided into two primary stream segments by the current version of the New Mexico Water Quality Control Commission's (WQCC's) "*State of New Mexico Standards for Interstate and Intrastate Streams"* (October 2000). Segment #2-107, the perennial reach and tributaries to the Upper Main Stern (UMS) of the Rio Puerco gather headwaters from the western edge of the Nacimiento Mountains (see attached maps). Segment #2-107 also includes the Rio San Jose, on the western side of the watershed, with tributaries emanating from the San Mateo and Zuni Mountains. In addition, the state-listed area includes segment #2-l05, the intermittent or ephemeral flow (generally the central and southern areas of the watershed) below the perennial reaches of the Rio Puerco, which enters the main stem of the Rio Grande.

Several reaches of the Rio Puerco and its tributaries are listed as impaired, that is, they fail to fully meet the stream's designated uses. These are defined in *Water Quality and Water Po!Iution Contro! in New Mexico,* Appendix B - the State's 305(b) Report (2000), end in the 2000-2002 S*tate of New Mexico CWA Section 303-D List for Assessed Stream and River Reaches*. These documents list non-attained uses for individual perennial to intermittent reaches including the Rio Puerco, Nacimiento Greek. Rio San Jose, La Jara Creek, San Pablo Creek, Rito Leche, Rito de Los Pinos, Bluewater Creek, Rio Paguate, and Rio Moquino. Current designated uses for coldwater fishery, and a select reach designated as a high quality coldwater fishery, are listed under categories ranging from "impacts observed" to "partially supporting" to "nonsupport." The Rio San Jose's listed reach has a drinking water source (DWS) designation, and tributaries to the Rio Puerco UMS are known to provide water for irrigation purposes. The monitored or evaluated impairments of concern include temperature exceedances, stream bottom deposits, plant nutrients, metals, turbidity, dissolved oxygen, and pH. These effects are largely due to a lack of vegetative density end diversity in a region of high erosion potential and impacts resulting from habitat alteration, agriculture, rangeland impacts, resource extraction, reduction of riparian vegetation, streambank destabilization, and road maintenance activities. The total effected stream reach is listed at 223.1 miles (359 kilometers) in state documents, but the UWA prioritization listing is currently focused on a total of 110 stream miles (191.5 km).

The region has historically been used for agriculture, grazing, logging, mining, and a wide range of recreational purposes, and though relatively sparsely populated, the encroachment of urban development is increasing. Presently, agriculture is the dominant watershed-wide activity. The specific causes of watershed decline result from the combination of these land uses and their impact on a relatively vulnerable landscape. The listed causes are reflected in the RPMC's stated watershed restoration priorities, and they essentially define the general targets for improvement that this WRAS is pursuing. Specific sites for project implementation (within certain prioritized subwatersheds, as described below) are still being identified.

Subwatershed Prioritization

The RPMC, presently the region's most active and influential watershed organization, is conducting a thorough analysis of the condition of the lands in this watershed as part of their ongoing restoration initiative. A direct effort has been put into characterizing the truly influential ambient, environmental, or land management factors affecting this watershed. This is expected to lead to a recognition and prioritization of locations, natural setting, and management practices contributing to the watershed's present impacted condition. The prioritization effort was organized by a technical subcommittee composed of staff from the USGS, NMED, BLM, NRCS, the Navajo Nation, and interested residents. A comprehensive approach was taken to define the watershed's physical condition by delineating its geologic, geomorphic, and vegetative settings, and the microclimatic subdivisions in the watershed for the purpose of comparing distinct subwatersheds. Land management, social, and cultural factors are being evaluated, as well.

Initially, a watershed hierarchy was defined for the region. This incorporates the graphic subdivision of the watershed as presented in Attachment 3. The example shown below describes the hierarchy for the Rio Puerco Watershed, specifically at the site of the Highway 44/ Rio Puerco Stream Restoration Project:

Watershed Hierarchy

Region:	American Southwest
Provinces:	Southeastern Colorado Plateau (along transition zone to E. Basin and Range)
River Basin:	Rio Grande Basin
Subbasin:	Middle Rio Grande
Watershed:	Rio Puerco
Subwatersheds:	Upper Main Stem
Drainage:	Rio Puerco-La Ventena Roach
Site:	Rio Puerco at La Guzpa Canyon / "Two Bridges Riparian *Enclosure*"
Surveyed Location:	Sections 17-20, Township 19 North, Range 1 West (New Mexico Principal Meridian); Sandoval County, New Mexico

As a primary step, the RPMG researched how and where the land's natural components, past or present management practices, and current land use or development is directly contributing to the degraded watersheds condition. Data and graphic information was gathered from a wide variety of

existing sources (geologic, soil, erosion and vegetation maps, professional papers, agency files, precipitation data, previous Rio Puerco studies), and new surface geology and vegetation information was generated via USGS satellite photo studies. The prioritization progressed by focusing on some or all of the following factors (with *Preferred Conditions* underlined):

> Dense versus sparse vegetative cover, taking into consideration the dominant type of vegetation, its appropriateness for altitude and slope aspects, high vs. low species composition, and diverse vs. limited age-class distribution;
>
> Presence or absence, and health of riparian habitat;
>
> High versus low percentage of bare ground;
>
> Geologic surface units (soil, residuum or bedrock) that are either susceptible to or resistant to erosion;
>
> High or low density, and proper or poor condition of roads;
>
> Favorable or degraded condition of woodlands;
>
> Good or poor water quality (and the types of conditions impacting streams and spring sources).

The RPMC's prioritization effort incorporated consideration of additional social, political, and cultural conditions recognized by the region's residents. The process also put an emphasis on analysis of the listed impairments and causes of pollution identified in state and federal water quality documents. The greatest opportunities to protect water quality obviously occur in the headwaters regions where perennial to intermittent streams are developed.

Locations rising to the top of the prioritization list were found to be at a relative disadvantage when compared to regions displaying some or all of the preferred conditions. As an additional intangible consideration, our prioritization was tempered by the advice and opinion *of* knowledgeable local residents regarding areas that are deemed likely to provide valid restoration opportunities. They suggested locations that might have an increased likelihood of gaining local consent and participation and contributed their knowledge of a landowner's current management practices and willingness to alter management styles in order to seek improvements. This information was combined with the technical determinations of where ground conditions appear to be conducive to restoration (not too far impacted to expect improvement) and areas with a seasonal precipitation regime supporting revegetation and restoration efforts. In other words, the RPMC does not believe it can support developing projects in areas where a combination of factors make it unlikely that our efforts could succeed.

After beginning with an effort to generate individual restoration projects across the entire 4.7M acre watershed, the RPMC was advised to concentrate efforts on a smaller, better defined, and more manageable region. This prioritization has led us to focus on an area of approximately 595,000 acres comprising the Upper Main Stem and Torreon Wash subwatersheds. Taking

additional steps, these two subwatersheds are being further evaluated to identify the most important sites for restoration project work in individual targeted drainage systems (see maps 2 and 3).

In light of the area's natural conditions, the project efforts we intend to implement are expected to result in improvements to the physical setting and the management of these lands. Project efforts will focus upon improvement of water quality, vegetative diversity and soil stability. These are perceived to be vital elements to achieving measurable watershed restoration and improvement.

SECTION 4 -- ACTIONS TO BE TAKEN AND DESIRED WATER QUALITY GOALS AND OUTCOMES

Background

The Rio Puerco Watershed Act grew out of the work begun by the Rio Puerco Watershed Committee, a subcommittee of the Cuba Region Economic Development Board that was established in 1993. Within the first three years, using funding provided by US Department of Agriculture (USDA), the committee sponsored a riparian pole planting, acequia improvements, and over 12,000 acres of aerially applied tebuthiuron treatments to control sagebrush.

During this period, the Bureau of Land Management (BLM) was actively pursuing watershed restoration projects in the Rio Puerco. These included construction of check dams, repair of large detention dams, riparian restoration efforts, reforestation of ponderosa pine sites, encouraging grazing management practices, and sagebrush control. Since 1965, BLM has treated over 49,000 acres of sagebrush and improved over 850 acres of riparian habitat.

In the early 1990's, the U.S. Forest Service Rocky Mountain Forest and Range Experimental Station in Albuquerque released several studies of the vegetation and soils of the upper Rio Puerco.

Also in 1993, the Bureau of Reclamation began a review and a new study of the impact of the Rio Puerco on the Rio Grande and Elephant Butte Reservoir. Besides their own in-house study, they contracted with the New Mexico Bureau of Mines and Mineral Resources to compile an annotated bibliography of previous work done on the Rio Puerco (well over 1,100 references) and a human-resource catalog of people interested in the Rio Puerco. These two compilations were put in separate computerized databases maintained by the Bureau of Reclamation (Davis and Cross 1994). Gorbach and others (1996) summarized the findings of the previous work, discussed the expected impacts of sediments from the Rio Puerco on the Rio Grande between Bernardo and Elephant Butte Dam, and investigated sediment control alternatives.

The United States Geological Survey (USGS) has conducted several studies in the Rio Puerco under the auspices of global climate change research. Pertinent to this discussion is a sediment budget study by Allen Gellis who instrumented two small basins to evaluate erosion within sites that have contrasting land uses. Jonathon Friedman is trenching various portions of the Rio Puerco channel to date the sediment deposits. Much of the information collected has been made

available to the public via the USGS website: http://*climchange.cr.usgs.gov/rio* puerco/. This site includes a paper authored by RPMC members in support of the Highway 44 stream restoration project (Coleman, Gellis, Love. and Hadley, 1998).

The NMED-SWQB has completed a number of projects with a variety of approaches to control and prevent nonpoint source pollution impacts, including best management practice (BMP) implementation and working with ranching interests. One project of note is the Quivira Coalition's Senorita Creek Project, a two-year effort to stabilize the slopes of the Nacimiento Mines overburden pile using intensive cattle use. The project, using Terry Wheeler's Holistic Remediation Process, was funded by NMED through the EPA, BLM, and Teva Corporation.

Current Goals and Actions

The Rio Puerco Management Committee collaboratively established three goals (priorities) to affect beneficial change in the Rio Puerco Watershed. Projects funded by the committee will address:

Goal 1: SEDIMENT REDUCTION
- Sediment Retention
- Erosion Control

Goal 2: VEGETATION AND HABITAT IMPROVEMENT
- Appropriate Vegetative Species and Densities
- Improved Upland, Riparian and Stream Habitats

Goal 3 SUPPORT AND PROMOTION OF OTHER WATERSHED FACTORS
- lnterjurisdictional and Interagency Cooperation
- Socio-economic Benefits
- Recognition and Protection of Cultural Resources
- Public Awareness, Education and Participation

To achieve these goats, the Rio Puerco Management Committee will focus on implementing these objectives:

- Work collaboratively using a consensus-based decision making process that includes and encourages broad participation.

- Collect and manage comprehensive data and information relating to the Rio Puerco Watershed.

- Research and develop best management practices that address site-specific problems in the Rio Puerco Watershed.

- Provide public participation opportunities and educate private landowners, communities other interested publics, and each other in Rio Puerco Watershed history, geomorphology, concerns, problems and solutions.

- Support and assist in the implementation of site-specific projects that demonstrate best management practices. Projects are ranked for approval based on criteria developed by the Management Committee. Innovation is encouraged.

Based on these goals and objectives, the Rio Puerco Management Committee has accomplished the following:

A. Highway 550/44 Project

During the construction of State Highway 44 in the rnid-1960s, the river was diverted from its original meander and channelized to avoid costly bridge crossings. Over the past 35 years, this has caused a severe channel erosion problem creating extreme road hazards and significant downstream impacts. Several miles of flourishing riparian habitat were lost, and today the highly erosive river threatens sections of the highway. On January 11, 1999, the RPMC and the New Mexico State Highway and Transportation Department signed a precedent-setting Memorandum of Understanding (MOU) to initiate the a stream reintroduction and riparian restoration effort. An offshoot of a major highway widening and reconstruction project on State Highway 44, the La Ventana-Rio Puerco Restoration Project has the potential to significantly increase water quality in the Rio Puerco and Rio Grande.

B. Navajo Nation Assistance Agreement

The BLM and the Navajo Nation have entered into an ongoing cooperative agreement to ensure that land users in the 14 Navajo chapters within the Rio Puerco basin are involved at the grassroots level in the watershed restoration effort. These communities are located at the headwaters of major drainages that are the areas most in need of restoration. Under this agreement the Navajo Nation Department of Water Resources is providing outreach, education, and community involvement to motivate land users to implement conservation practices that will benefit water quality.

C. Bluewater Ranch Restoration

The purposes of this project were to improve 10 miles of riparian habitat, develop livestock water and cross fencing, and institute rotational grazing on this Navajo Nation ranch. The project was designed to be a demonstration project for the Baca/Haystack Chapter through hands-on field training sessions to educate land users. The project was started but will not be completed because of the chapters inability to secure the lease for the ranch.

D. Thompson Spring Range Improvement

This ongoing project focuses on erosion control on this range unit of Jemez Pueblo. It is designed to reduce sediment flows and improve water quality by remediating headcuts and improving upland livestock management practices.

E. Acequia Improvements

Acequia associations near Cuba, NM were provided with a small grant to install pipeline to

enhance water distribution and reduce stream erosion.

F. Sagebrush Control

Initial funding was provided to control sagebrush on private, public, and tribal lands through tebuthiuron application. Removal of woody species increases native grass production, thereby stabilizing soil and reducing surface erosion.

G. Pueblo of Laguna Range Improvements

A small grant was provided to enable the Pueblo of Laguna to begin improving range management on over 190,000 acres of tribal lands.

H. Sub-basin Prioritization

In 1999 the RPMC began a process to focus on the areas most in need of improvement (refer to the discussion in Section 3). The process used basin-wide scientific data to rank the nine sub-basins on upland watershed function, riparian function, erosion/sediment occurrence, and water quality. The committee is attempting to further refine the focus on subbasins within the Upper Main Stem and Torreon Wash, the chosen sub-basins. The current work is incorporating field visits and town hall meetings to assess the degree of interest and concern of local residents. These town hall meetings have been held in the village of Cuba and the Torreon and Ojo Encino Navajo Chapters.

Future Actions

Implementation efforts will focus on the following categories of actions that will be necessary to restore water quality and healthy watershed function in the Upper Main Stem and Torreon Wash sub-basins. Priority actions are preceded by (*).

Public Outreach

- *Train a cadre of community volunteers to gather baseline data and assist with monitoring.
- *Provide workshops to local landowners on best management practices such as grazing management, erosion control, wetlands protection, road management. noxious weeds, thinning.
- *Continue to work with local people, particularly when it comes to project implementation.

  Continue listening sessions.
  Target future newsletters to selected subwatersheds.
  Develop website.
  Create traveling poster display.
  Complete video project.

- Coordinate management plans with other agencies.
- Support Cuba Outdoor Classroom Project.
- Continue to sponsor field visits for elected representatives and other VIPs.
- Provide a presentation to the RPMC about cultural resources and traditional uses.
- Hire a full-time coordinator. Develop 501 (c)(3) status.

On-the-Ground Project Work

- *Construct structures to divert Rio Puerco into its original channel at La Ventana. Restore riparian habitat in channel through grazing exclosure and native plantings.
- *Develop showcase project(s) to remediate an impaired area using a mix of the following practices:

  Control big sagebrush using tebuthiuron, fire, and/or animal impact to reduce woody species and promote native grasses.

  Repair or rebuild erosion control structures that are in poor and unsatisfactory condition.

  Implement road maintenance BMPs. Inventory and close unneeded roads.

  Work with landowners, permittees and lessees to institute improved livestock grazing management.

  Restore riparian habitat through grazing management or exclusion and plantings of native vegetation.

  Inventory and control noxious weed infestations.

  Manage woodland density to restore forest health.

  Reinstitute prescribed and prescribed natural fire.

- Repair headcut at Thompson Spring and develop projects for grazing management (ongoing project).
- Apply Holistic Remediation Process (from Nacimiento Mine) elsewhere while attempting to reduce cost.
- Establish a learning/demonstration project for Holistic Resource Management.
- Support roundup of stray horses.

Data Gathering and Monitoring

- *Measure flow and monitor water quality in the main stem and major tributaries of Rio Puerco. Maintain USGS gaging stations.
- *Monitor in support of TMDLs.
- Support continuous data gathering.
- Inventory headcuts.
- Gather road inventory data.
- Prioritize dam repair needs through analysis of data.
- Gather wildlife, T&E data.
- Gather demographic, socio-economic, and cultural resource information.

SECTION 5 -- IMPLEMENTATION SCHEDULE

As an illustration of our efforts to achieve the future actions described above, this segment of the WRAS presents a cross section of projects in the Rio Puerco Watershed that have been completed, are currently underway, are planned and scheduled by cooperating agencies, or are under consideration by the RPMC for the near future.

Lead Agency[1]	Project	Duration	Status
BLM and cooperators	50,000 acres tebuthiuron treatments	1985-present	ongoing
BLM	Rito Leche riparian area	1986	completed
USFS	Bluewater watershed projects	1989-	completed
BLM	Bluewater Canyon riparian area	1989-1992	completed
BLM	Señorito Creek riparian area	1992-1998	completed
NMED-SWQB: 319(h)	Bluewater Creek Streambank Stabilization (FY93-B)	1993-1998	completed
Rio Puerco (Cuba) Watershed Committee	Sagebrush control, acequia improvements, plantings	1993-present	ongoing
BLM	Wilson Canyon riparian area, pond construction	1993-1998	completed
NMED-SWQB: 319(h)	Rio Puerco Mining Impacts (FV94-D)	1994-2000	completed

Lead Agency[1]	Project	Duration	Status
BLM	Lost Valley riparian pasture and exclosure	1994-1997	completed
BLM	Spring and wetland riparian protection	1994-present	ongoing
NMED 319(h), NMSH&TD, RPMC, BLM, EPA, BOR, TNM	Rio Puerco-La Ventana Stream Restoration Project (FY95-K. 99-I, 00-L)	1999-2003?	underway
BLM	Coal Creek riparian area	1996-1998	completed
BLM	Arroyo Chico-Charlotte's Well riparian area	1996-1999	completed
RPMC, Cuba Acequia Association	Los Utes Acequia improvements	1998	completed
RPMC, Torreon Navajo Chapter, BIA	Vicente Arroyo Project	1998-	underway
Forest Guardians [NMED-SWOB: 31901)]	Rio Puerco Riparian Demonstration Project (FY98-l)	1998-2001	underway
BLM	Arroyo Chico-Azabache riparian area	1998	completed
RPMC, TNM, Baca Navajo Chapter	Bluewater Ranch Restoration Project	1999-2000	discontinued
RPMC, Jemez Pueblo, BIA	Thompson Spring Range Unit Project	1999-present	ongoing
RPMC, Pueblo of Laguna	Range improvements	1999-	unknown
Quivera Coalition [NMED-SWQB: 319(h)]	Señorito Creak Watershed: Using the New Ranch (Fy97-J)	1999-2001	ongoing
RPMC, TNM, Savory Center for Holistic Management, Jackson Gibson Ranch	Holistic Demonstration Project	2001-?	ongoing
USFS	Nacimiento community ditch repairs	2001	ongoing
RPMC and cooperators	Upper Main Stem and Torreon Wash subwatershed projects (refer to Section 4)	2001-	proposed projects
RPMC and cooperators	Greater Rio Puerco watershed projects addressing other subwatersheds—desired long-term watershed restoration program	2003-?	desired long-term proposed program

Note: [1]Acronyms are as follows: BIA—Bureau of Indian Affairs, BLM—Bureau of Land Management, BOR—Bureau of Reclamation, EPA -Environmental Protection Agency, NMED—New Mexico Environment Department, NMSH&TD—New Mexico State Highway and Transportation Department, RPMC—Rio Puerco Management Committee, SWQB - Surface Water Quality Bureau, TNM - Tree New Mexico, USFS—United States Forest Service

SECTION 6 -- FUNDING NEEDS

Project accomplishments to date have resulted from the contributed efforts of RPMC members and some funding from the diverse group of agencies and organizations that make up the RRMC. With a committed group of members in place, the RPMC is now seeking to expand its accomplishments through additional funding from outside sources such as existing federal programs, grant applications, and environmental improvement funding from private foundations.

The present form of this WRAS places immediate focus on the prioritized northern subwatersheds. Attention will be turned to other subbasins as work is completed in the Upper Main Stem and Torreon Wash.

We believe the original legislation and its expected funding level was appropriate to initiate restoration in this large watershed. Therefore, the funding table that follows contains a forecast for future funding needs that reflects and exceeds the full level of original funding authorized by Congress.

Table of Funding Requirements

Task	Funding				Status
	Federal	State	Other	Total	
Sub-basin prioritization	$ 66,000			$ 66,000	Completed
Highway 550/44 Project–Feasibility & Engineering Design (NMED FY 95-K / 97-Q)	100,000	50,000	(additional match being sought)	167,000	Underway
Highway 550/44 Project–Construction & River Restoration Phase (NMED FY 98-*)	600,000	250,000	150,000 match being sought	1,000,000	Need non-Fed match
Rio Puerco Restoration: Monitoring & Enhancement (NMED FY 99-I)	105,500	70,000	(additional match being sought)	175,500	Will follow 98-* implementation
Big sagebrush treatments–40,000 acres					Proposed project
Repair erosion control structures–150 structures	7,500,000			7,500,000	Proposed project
Riparian habitat restoration	1,000,000		250,000	1,250,000	Proposed project
Town of Cuba Reach of the Rio Puerco (Series of erosion and sedimentation, control, channel restoration and cleanup projects)	300,000	100,000	200,000	600,000	Segments underway, additional projects proposed
RPMC administrative costs				30,000	

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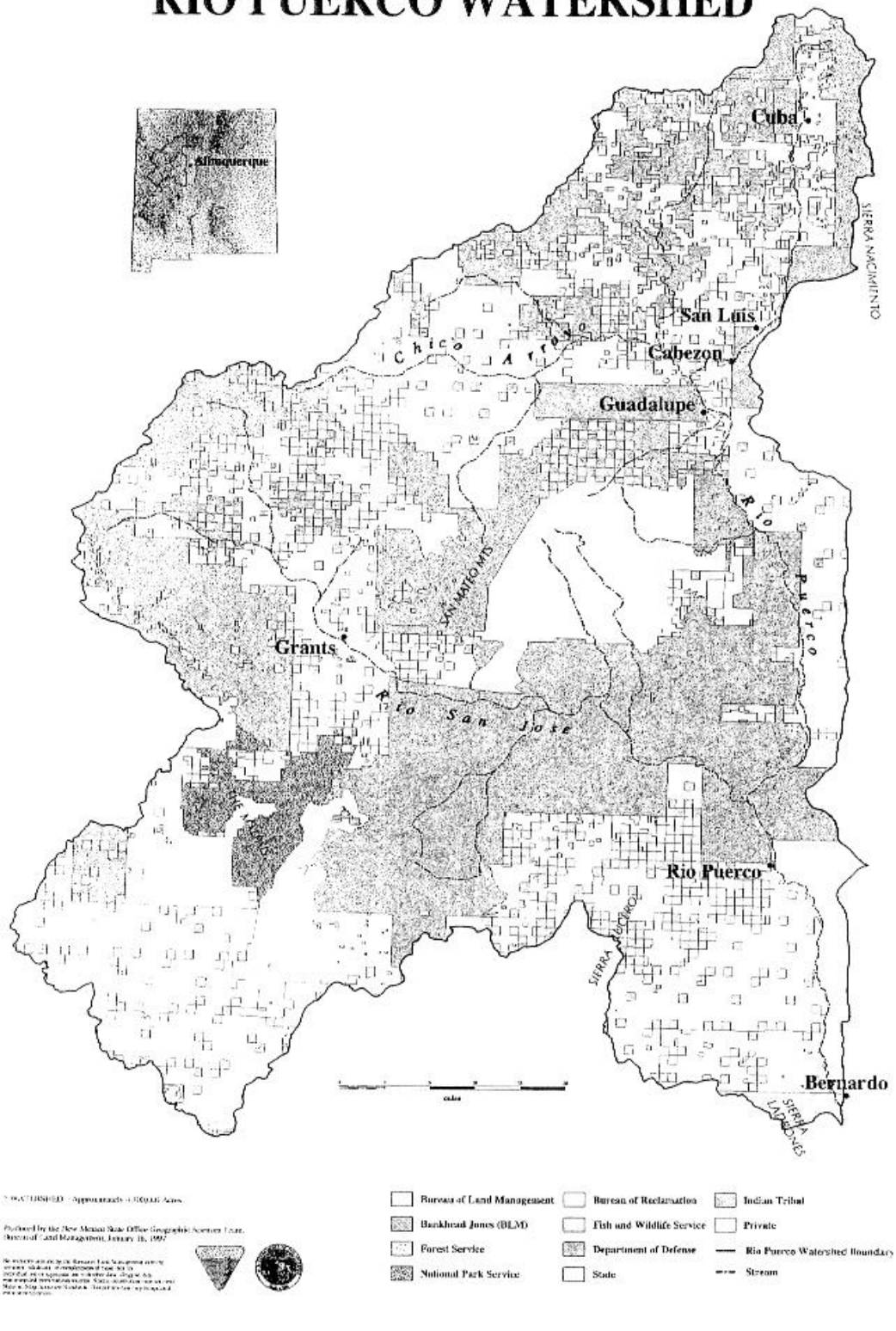
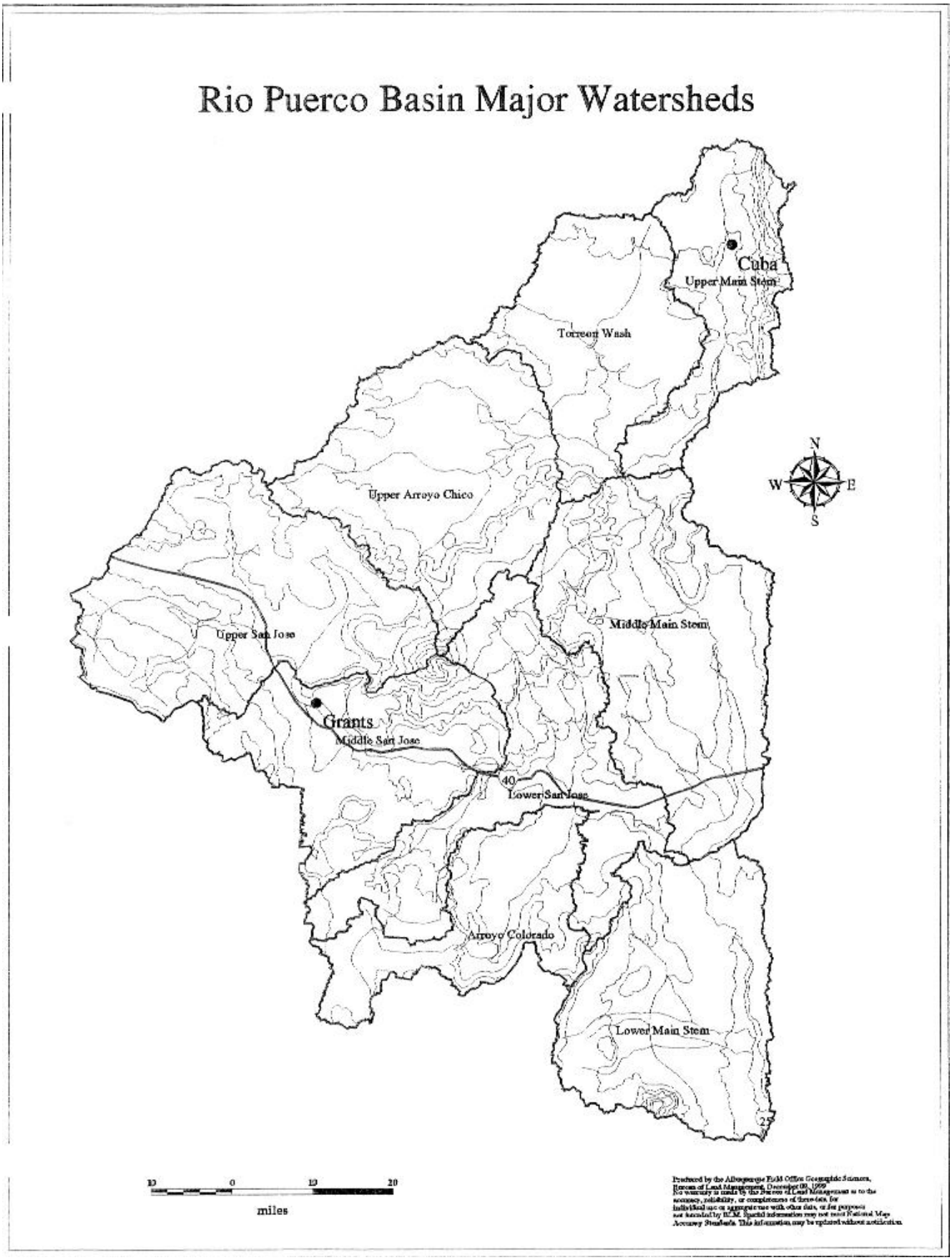
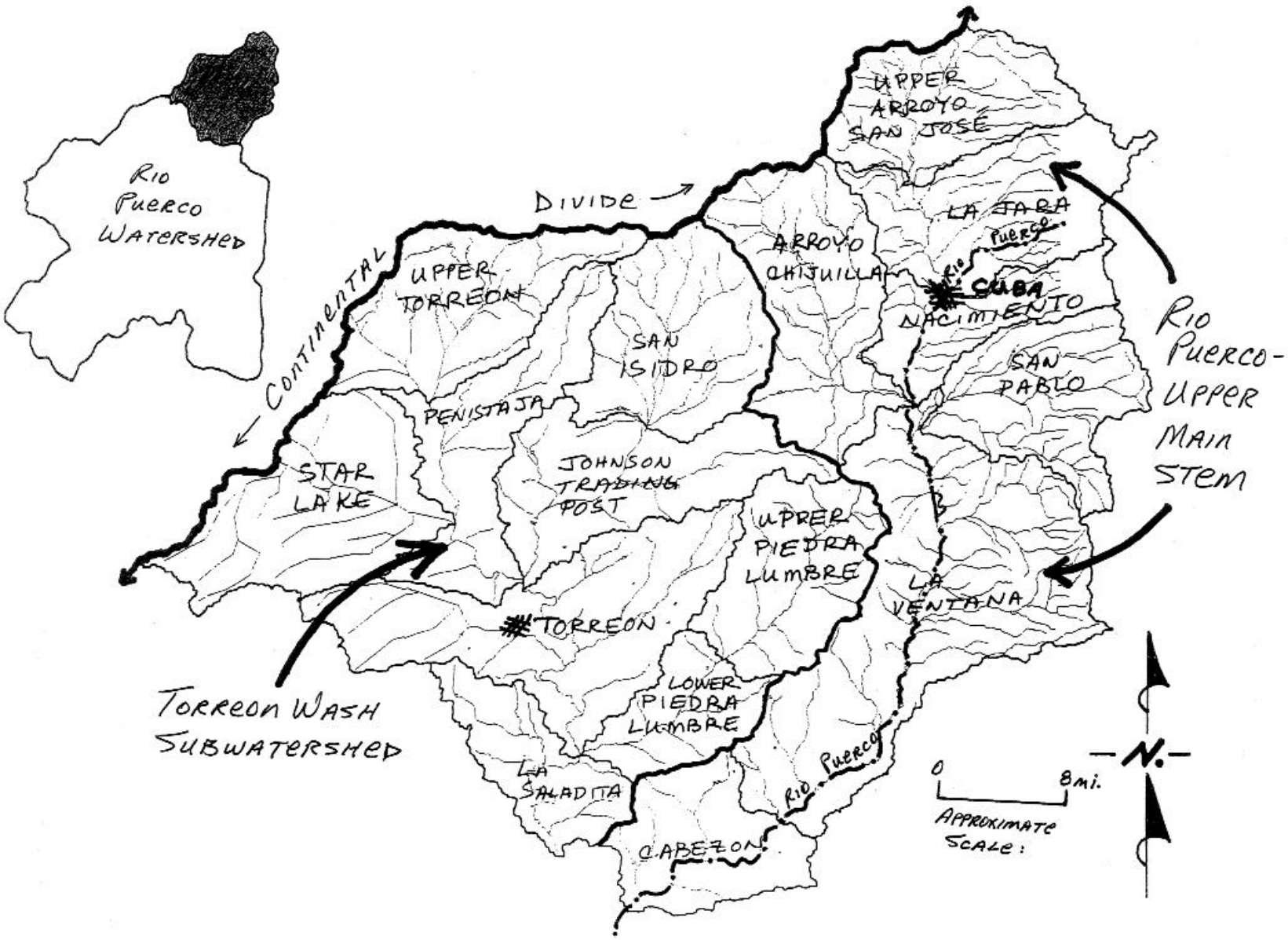
RIO PUERCO WATERSHED




Rio Puerco Basin Major Watersheds
Cuba
Upper Main Stem
Torreon Wash
Upper Arroyo Chico
N
W
E
S
Upper San Jose
Middle Main Stem
Grants
Middle San Jose
40
Lower San Jose
Arroyo Colorado
Lower Main Stem
25
10
0
10
20
miles


Rio Puerco Watershed
Divide
Continental
Upper Arroyo San José
La Jara
Rio Puerco
Arroyo Chijuilla
Rio Puerco-Upper Main Stem
Cuba
Nacimiento
San Pablo
Upper Torreon
San Isidro
Penistaja
Star Lake
Johnson Trading Post
Upper Piedra Lumbre
La Ventana
Torreon
Torreon Wash Subwatershed
Lower Piedra Lumbre
La Saladita
Rio Puerco
Cabezon
0
8mi.
Approximate Scale:
N.