

# ENVIRONMENTAL ASSESSMENT

## Rio Brazos Watershed Geographical Priority Area

2002

### INTRODUCTION

This environmental assessment (EA) is being prepared by the United States Department of Agriculture Natural Resources Conservation Service (NRCS) to comply with the requirements of the National Environmental Policy Act of 1969 and implementing regulations at 40 CFR Parts 1500-1508. The EA will assist NRCS in determining whether the proposed action will have a significant impact on the quality of the human environment and therefore requires preparation of an Environmental Impact Statement.

### NEED FOR PROPOSED ACTION:

**Purpose of and Need for Action:** There is a need in the Rio Brazos Geographic Priority Area (GPA) to improve irrigation water use efficiency on farms, stabilize stream bank erosion, reduce soil erosion in the watershed's upper headwaters, and enhance forage diversity.

### Background:

The Rio Brazos Watershed encompasses approximately 216 square miles in Northern Rio Arriba County and nourishes the heart of an area rich in land use traditions. Active efforts to sustain local Hispanic heritage are very intact today where 90% of this GPA is privately owned.

The Rio Brazos provides irrigation water for five Acequias, which in turn service all or parts of five local villages. The five acequias gravity irrigates approximately 3,200 acres of pasture and hay land. The traditional fields are long and narrow, averaging 10 to 50 acres each, with on farm irrigation efficiency seldom achieving 20%.

The loss in efficiency occurs because delivery systems (head gates) are dilapidated or in serious disrepair, and the slope of the land is too steep. The result is water cannot be applied in a timely manner.

Approximately 20% of the 138,240 acres identified of the Rio Brazos Watershed represent rangeland situated above 10,000 feet in the headwaters above the Brazos cliffs. Livestock operations are cow-calf and stockers grazing this native rangeland. Livestock producers have historically resided outside of New Mexico and have employed continuous summer and fall grazing on these areas for years. Subsequently streambank slough off, poor plant diversity and excessive soil erosion are very common.

Another 25-30% of the watershed is characterized by woodland and moderate to steep mountainous terrain, with elevations varying from about 8000 feet to over 11,000 feet. Two

percent of the watershed consists of lakes and streams, whereas 8000 acres of riparian areas exist within the project area. As might be expected, the Rio Brazos Watershed provides some of the finest wildlife habitat in the Southern Rocky Mountains. With heavy mountain run off spring flooding can be frequent for the Rio Brazos, which can change its course over night. Unusually high waters have severely damaged concrete headgate structures, also causing the river to breach streambanks and filling the ditches with sediment and debris.

## **ALTERNATIVES:**

Alternative 1. No Action

Alternative 2. Proposed Action: Use NRCS Environmental Quality Incentives Program (EQIP) authorities to assist farmers and ranchers within the watershed. Rangeland practices will comprise the following:  
Prescribed Grazing, Water Development, Fencing, Erosion Control, Brush Management, Planned Grazing systems, Pest Management, Forestland Management, Upland Wildlife Habitat Management, and Range Planting.

Forage Harvest Management on irrigated cropland will comprise the following:  
Prescribed Grazing, Fencing, Pasture Planting, Pasture & Hay land Management Structures for water control, Stream bank and shoreline protection and irrigation water management and Crop Residue Use.

Alternative 3. This alternative employs the same actions and practices as Alternative 2 except that it treats more acres with the application of the 319 program.

## **ALTERNATIVES CONSIDERED BUT NOT STUDIED IN DETAIL.**

One alternative was to use NRCS EQIP authorities to assist producers within the Rio Brazos GPA to address wildlife issues. While some pertinent issues were voiced during the Local work group meeting, these issues are beyond the scope of the NRCS activities.

Another alternative considered was to use EQIP authorities to address forest management issues within the GPA. These concerns are within State and Local Jurisdiction and not within the scope of the NRCS-EQIP authority.

## **SCOPING OF ISSUES FOR UNIQUE AND PROTECTED RESOURCES IN THE AREA:**

NRCS conducted a review of the area to identify unique and protected resources and other special issues of concern. Members of the public had an opportunity to provide comments and identify concerns during the Local Work Group Meeting on November 16, 2000, of the Upper Chama Soil and Water Conservation District. No controversy about the need for action or the actions themselves was raised during this meeting, and no resources or issues of concern were identified during the meeting or by NRCS or other Federal, State and Tribal agencies but those discussed in this EA.

***Threatened and Endangered Species and Species of Concern:*** A record search shows there are 7 species listed as endangered under the ESA in Rio Arriba County. Bald Eagles are the only species that are known to live within the GPA lower reaches and the Brazos River is known to provide nesting habitat for these birds. NRCS funding for the GPA will not affect any nesting sites within the GPA. Prior to any construction consultation and coordination with the US Fish and Wildlife Service will be undertaken.

The county list of Threatened and Endangered Species list several other species, but NRCS has determined that none of these will be affected by any alternatives or action considered in this EA.

A funded 319 grant will be implemented within the lower reaches of the Rio Brazos that will address streambank stabilization. These activities are being coordinated with NRCS; USFWS NMED Surface water and any proposed activities will be coordinated to avoid bald eagle habitat.

***Cultural Resources and Historic Properties:*** NRCS completed a search of cultural resource records and the density of such sites. There are 43 previously recorded sites within the GPA. The sites comprise of Lithic scatters, aspen carvings, Acequia's and Historical communities. NRCS found the presence of ditches more than 150 years old in this GPA. Nonetheless, to ensure that unidentified sites are not adversely affected, all irrigation ditches/acequias will be treated as historical sites. Site specific field surveys will be done and consultation will be conducted with the New Mexico State Historic Preservation Officer (SHPO) before NRCS implements any ground disturbing activities. Native American tribes and pueblos have been invited to local meetings and have been consulted about the alternatives and actions. No concerns have been expressed.

***Wetlands:*** There are numerous pockets of artificial wetlands in the GPA that are caused by leaking ditches and irrigation induced high water tables. Because they are isolated wetlands and not connected to navigable waters, no permits are required even to implement actions that affect these wetlands.

## **IMPACTS AND EFFECTS OF ALTERNATIVES:**

Table 3 compares the overall effects of each of the alternatives discussed below.

### **Alternative 1. No Action**

There will be continued degradation of the resource base within the GPA. On Farm irrigation efficiencies will continue to be minimal with excessive amounts of irrigation water being lost through distribution.

Stream bank degradation will continue to accelerate at a rate that may not be economically feasible to correct in the future.

Grazing land conditions within the upper stretches of the watershed will continue to decline.

## **DISCUSSION OF IMPACTS AND EFFECTS OF ALTERNATIVE NO. 2:**

There are 3200 irrigated acres within the GPA with potential to benefit from the application of conservation systems that include improved irrigation delivery systems both with Acequia and individual on farm systems using IWM techniques. NRCS expects to treat only about 50% of this acreage, or 1500 acres with conservation systems funded by EQIP under this alternative because of the limited amount of EQIP funding available.

If Alternative 2 were implemented, there would be impacts to soil quality and erosion, water quantity and quality, air quality, crop production, fish and wildlife habitat, wetlands, quality of life and economics. As indicated above, steps would be taken on a site-specific basis to ensure no cultural resources or historic or traditional properties are adversely affected.

### **Forage Harvest Management and Dry Cropland**

#### **Irrigation Water Management:**

Involves educating the producers in the application of irrigation water and the required amounts. This will involve on site field visits with producers during the irrigation season. With improved irrigation water management come improved irrigation efficiencies. The objective is to achieve 30% irrigation efficiency that equates to water saving of 2,625 ac.ft.

#### **Land Smoothing:**

On average moves 10 cubic yards per acre. Based on its experience in the area, and the amount of EQIP funding available, NRCS estimates that implementation of this alternative will result in about 500 acres of land Smoothing, or a total of 10,000 cubic yards of soil and fill being moved under EQIP. Based on past trends and the needs of the area, NRCS estimates that cumulative land smoothing activities conducted through NRCS cost sharing, by landowners on their own and by other agencies will affect an estimated 1000 acres in the GPA.

Land Smoothing will provide smoother slopes/ grades on the field so that irrigation water will flow adequately to allow improved irrigation efficiencies.

Land smoothing and construction activities would impact soils and air quality on a short-term basis. The dust generated during the construction would only affect air quality.

#### **Structures for Water Control/Field ditches:**

Installation of structures for water control and field ditches would improve water delivery from the main systems to on farm delivery. Irrigation efficiencies would be improved to 30% on surface systems. Artificial wetlands caused by leaking ditches will be reduced or eliminated by improved field ditches. Improved field ditches would convey water that would otherwise be lost through seepage. All conveyance systems will be treated as historic sites and consultations with SHPO will be necessary.

During the installation of water control structure and field ditches there will be minimal soil disturbance on the disturbed site. Sedimentation entering the ditch will be minimized because installation of structures or ditches will be done during periods of low flows.

Estimated cost for implementation of this alternative is \$225,000 for a five-year program.

**Rangeland:** If alternative 2 is used, there would be impacts to soil quality and erosion, water quantity and quality with improved range condition and diversified plant communities within the GPA. This can be accomplished by implementing the following practices:

- Prescribed Grazing
- Water development
- Fencing
- Erosion control
- Brush management
- Range planting

Prescribed grazing will enhance livestock distribution, forage utilization that will impact plant health and vigor along with plant diversity. Acreage being addressed with this practice is 30,000 acres of rangeland.

Fencing within the GPA will impact on grazing patterns and exclusion of livestock in riparian corridors during their most sensitive growing periods. Approximately 100,000 feet of fence will be constructed within the GPA. Minimal soil disturbance will be realized with fencing construction.

Planning/Construction considerations will address movement of wildlife through fenced pasture. Acreage being addressed with these practices are 27,600 acres of range land impact on wildlife migration patterns.

Erosion Control: Construction of practices will be installed on stream banks, gullies, head cuts and any critically eroding area within the GPA.

Grade stabilization structures, rock, and brush dams, Gabion Basket, Pole plantings and willow plantings will be used to address this stabilization. NRCS EQIP funding will assist with 10% of acres or 34,560 tons of soil saved by this measure at the lower elevations. With total involvement from NRCS, State and local funding and private owner funding, potential tons of soil saved through bank stabilization would be 345,600 tons. These tons of soil saved are primarily situated within the riparian corridor within the GPA.

Brush Management will be applied on the lower elevations of the GPA to address mostly big sagebrush and rubber rabbit brush. Brush management will reduce soil erosion and promote plant health, vigor, and diversity. Types of practices to be used would be:

Plowing, windrowing, EPA approved chemical application, prescribed burning.

Air quality will be affected during construction. Water utilization by native grasses will be enhanced with the removal of brush, increased plant diversity will be realized.

Approximately 500 acres will be treated with NRCS EQIP funding. With total involvement from NRCS, State and Local funding and private owner funding potential Total acres that can be treated would be 1000 acres. Tons of soil saved through brush management would be 2500 tons.

Air quality would be adversely affected in the short term by prescribed methods; Water quality may be affected with the chemical application.

Water Development will be accomplished within the GPA to improve livestock distribution. Practices to be implemented will include spring development and live stock pit/pond development.

Approximately 20 spring development practices will be installed, 10 pit/ponds will be constructed within the GPA. NRCS EQIP funding will be approximately \$50,000. Impacts on air and water quality will occur during construction. Grazing distribution will be enhanced with the installation of these water development practices.

Range Planting will be accomplished using native vegetative species within the GPA. Approximately 500 acres will be treated. NRCS EQIP funding will be approximately \$ 40,000.00

Range plant diversity will be improved. During installation of range planting practice air and water quality will be affected. Approximately 2500 tons of soil saved will be realized with range planting.

**TABLE 1, ALTERNATIVE 2.**

	<b>Treatment with NRCS EQIP Assistance Alone</b>	<b>Treatment by Landowner Initiative, Other Agency Assistance and NRCS Cumulatively</b>
Land Smoothing	500 acres	1000 acres
Structure for Water Control	75 ea.	100 ea.
Field Ditches	8000 feet	10,000 linear feet
Irrigation Water Management	2625 acre feet saved	5250 acre feet saved
Prescribed Grazing	30,000 acres	70,000 acres
Fencing	100,000 feet	200,000 feet
Erosion control	345,600 tons saved	500,000 tons saved
Brush Management	500 acres	1000acres
Water Development	30 structures	60 structures
Range Planting	500 acres	1000 acres

No prime farmland is involved in this GPA. Unique farmland will be maintained and improved to sustain continued use.

Other effects were considered in the discussions, but the effects in Table 3 relate to the needs and are the only ones used for comparison to make the final decision.

Comparison of Alternatives.

Table 3.

<i>Comparison of Alternatives</i> Effects on Needs EQIP funds					
<b>Alternatives</b>	Irrigation Efficiency (%)	Water Supply without improvement ac. ft. used	Water Supply with improvement ac. ft. saved	Rangeland Improvement Tons of soil saved	Installation Costs
<b>1. No action</b>	20%	8750 ac.ft.	0		0
<b>2. Improved Irrigation Systems</b>	30%		+2625 ac.ft.	-345,600 tons	225,000.00
<b>Rangeland Improvements</b>	30,000 ac.			345,6000 tons	100,000.00

**PERSONS AND AGENCIES CONSULTED:**

Upper Chama Soil and Water Conservation District Board and attendees at November 16,2000 meeting. See minutes, attached as Appendix A.

Conservation Officer, State Department of Game and Fish  
Chama, NM

US Fish and Wildlife Service  
Albuquerque, NM

NM State Historic Preservation Office  
Santa Fe, NM

**REFERENCES:**

NRCS Field Office Technical Guide, Section III, Quality Criteria.

NRCS Field Office Technical Guide, Section IV, Standards and Specifications.

NRCS Field Office Technical Guide, Section IV, Conservation Effects

US Fish & Wildlife Service  
Endangered Species List for Rio Arriba  
County

USDA-Carson National Forest  
Tres Piedras

NMED, Surface Water Quality Bureau  
Santa Fe, NM

NM State Forestry  
Los Ojos, NM

NMED, Ground Water Quality Bureau  
Santa Fe, NM

Rio Arriba County  
Commission

NM Extension Service  
Alcalde, NM

Ensenada/Parkview/Porviner Acequia  
systems  
Tierra Amarilla, NM

**Finding of No Significant Impact  
For the Implementation of EQIP  
in the Rio Brazos Geographic Priority Area**

**INTRODUCTION**

The Rio Brazos GPA is a federally assisted action under the Environmental Quality Incentives Program (EQIP), with assistance from the Natural Resources Conservation Service (NRCS). An environmental assessment was undertaken in connection with the development of this proposed action. This assessment was conducted in consultation with Local, State and Federal agencies and tribes. Data developed during the assessment are available, upon request, from:

U. S. Department of Agriculture  
Natural Resources conservation Service  
Chama Field Office  
Chama, New Mexico

The Environmental Assessment (EA) is attached for reference.

**DETERMINATION OF SIGNIFICANCE**

Table 1. Determination of Significance of Proposed Action.

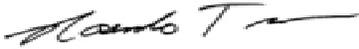
<i>CONTEXT</i>	<i>INTENSITY</i>	<i>REASONS FOR NON-SIGNIFICANCE</i>
<b>Water saved</b> – 10 % of total water used by agriculture(2625 Ac.Ft.) is saved.	Permanent water savings each year.	Water saved will only be noticeable in dry years. Annual Precipitation is beyond the control of NRCS.
<b>Rangeland ( 345,600 tons of soil saved (% of total range effected?)</b>	Improved plant diversity and Vigor.	Soil savings inhibits degradation of resource base Say what?
<b>Public Health and Safety (Air Quality)</b> – Disturb 10% of agricultural area.	Temporary dust during construction, scattered over time and location.	Rural character of the area precludes air quality problems at any one place or any one time.
<b>Cumulative impacts</b> – 23% of agricultural area will be affected.	Increased irrigation efficiency and soil reductions on treated acres will continue for life of practices and management is permanent.	EQIP is only 50% of the total effect on the ag area.

Other considerations related to context and intensity is discussed as follows: Farms are similar through out the area and are unique compared to other irrigated farms in the state. No issues or concerns have been expressed at any public meetings, so controversy is small. Results of actions are known from past experience in the area, thus uncertainty and risk is low. Precedent for future action will be very limited because nearly all farmers interested in this proposal are going

to participate in the first round. Ditches in the GPA are more than 150 years old and will require Consultation and coordination between the NM State Historic Preservation Office. No national, state, local or tribal laws will be violated by this action.

Finding of No Significant Impact:

This finding is based on the evidence presented in the environmental assessment of impacts and alternatives for this geographic priority area. Based on the assessment and the reasons given in table three, I find that the alternatives analyzed in the EA will have no significant impact on the quality of the human environment. Therefore, an environmental impact statement will not be prepared.



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**ROSENDO TREVINO**  
State Conservationist

*February 8, 2002*

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Date