ENVIRONMENTAL ASSESSMENT

EQIP – DRY CROPLAND GPA

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 (NEPA) 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 require preparation of an Environmental Impact Statement.

NEED FOR PROPOSED ACTION:

Purpose of and Need for Action: There is a need within the Environmental Quality Incentives Program (EQIP) Dry Cropland Geographical Priority Area (GPA) of the Border, Central Curry, Roosevelt and Southwest Quay Soil and Water Conservation Districts to control wind and water erosion on dry cropland. The purpose of meeting these needs is to sustain the soil resource, reduce dust thereby improving air quality, increase crop yields and enhance habitat for quail, pheasant and mourning dove.

Background:

Dry cropland farming on the high plains of eastern New Mexico (HP-77) has traditionally been the major source of wind erosion problems within the project area. Limited precipitation, livestock grazing and poor residue management has accounted for this problem. Primary crops grown on dry cropland acreage includes wheat and milo. Generally, wheat and milo are grown in rotation, with a summer fallow period following the production of milo. Production within the area has averaged 15 bushels for wheat and 1500 pounds for milo, per acre.

There are approximately 1100 producers managing approximately 460,000 dry cropland acres within the proposed project area. At present, there are 69 contracts on approximately 24165 acres under an EQIP GPA that was initially funded in 1997. Approximately 35 percent of the dry cropland acreage within the proposed project area is enrolled in the Conservation Reserve Program (CRP).

The climate is semiarid, with the annual precipitation averaging 15 to 18 inches per year. Rainfall during the growing season, April 15 through October 15, averages 13 inches, or approximately 75 percent of the average annual precipitation. Much of this precipitation falls as brief, but heavy thunderstorms. Winds are predominantly from the southwest, and annual airspeed averages 12 miles per hour. Winds in excess of 15 miles per hour cause wind erosion. Approximately 70 percent of the erosive wind energy occurs during the critical erosion period, or November through May, with thirty two percent occurring in the months of April and May.

The predominant soils include: 1.) Pullman loam, 0-2% slopes, 2.) Amarillo loam, 0-2% slopes, 3.) Amarillo fine sandy loam, 0-2% slopes, 4.) Portales fine sandy loam, 0-2% slopes, and 5.) Amarillo loamy fine sand, 0-2% slopes. Wind erosion is moderate to severe on all of the above mentioned soils, and all soils within the project area have been determined to be highly erodible. No prime farmland is involved in this proposed GPA. However, all cropland within this GPA has been determined to be of statewide importance. This land will be maintained and/or improved to sustain continued use.

ALTERNATIVES:

Alternative 1: No Action

Alternative 2: Proposed Action: Use USDA Environmental Quality Incentives Program (EQIP) authorities to assist farmers in the Dry Cropland Geographic Priority Area (GPA) to apply conservation systems that includes contour farming, diversions, terraces and grassed waterways to control water erosion. Conservation crop rotation, residue management, both seasonal and mulch till, range seeding and/or pasture planting and windbreak/shelterbelt establishment will be applied to control wind erosion. Air quality concerns will be addressed by applying the aforementioned conservation crop rotation and residue management. Plant productivity and plant health will be addressed by implementing conservation crop rotation, residue management, and pest management and nutrient management. Implementing upland wildlife habitat management, wildlife watering facilities, the previously mentioned range planting, and tree and shrub establishment will address wildlife concerns.

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 meetings on April 5, 2001 by a locally convened work group responsible for recommending proposed EQIP actions. No controversy about the need for action or the actions themselves was raised during these meetings, and no resources or issues of concern were identified during the meetings or by NRCS or other Federal and/or State agencies but those discussed in this EA.

Threatened and Endangered Species and Species of Concern: A record search shows that several species are listed as endangered, threatened, or candidate species under the Endangered Species Act (ESA) and found within the project area. However, the species listed are rarely encountered on dry cropland. The NRCS has determined that none of these species will be affected by any alternatives or action considered in this EA.

Cultural Resources and Historic Properties: NRCS completed a search of cultural resource records and the density of such sites is low in this GPA. 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.

Wetlands: Wetlands, in the form of playa lakes, are a common occurrence on the high plains of eastern New Mexico. However, because they will not be drained to make possible the production of an agricultural commodity, swampbuster provisions do not pertain to this project.

There may be some instances where the uplands adjacent to the playa will be developed to provide habitat for wildlife.

IMPACTS AND EFFECTS OF ALTERNATIVES:

Alternative 1: No Action

Landowners do not apply conservation systems that are needed to control water erosion on dry cropland acreage within the project area. Erosion control practices are not installed due to the expense of installing the needed conservation practices. Wind erosion will continue to occur, but at rates less than those experienced prior to the 1985 Farm Bill. Air quality too, has benefited as a result of farm bill activities, but is still of concern. Plant productivity and plant health continue to suffer due to drought conditions, a lack of nutrient management, and the encroachment of noxious weeds and insect pests. Habitat for wildlife species, including mourning dove, pheasant, and quail, will continue to deteriorate, as cropland resources are not managed to their potential and capabilities.

Alternative 2: Proposed Action

There are approximately 460,000 acres of dry cropland within the proposed project area with approximately 1100 producers managing this acreage. This acreage has the potential to benefit from the application of conservation systems that control wind and water erosion. NRCS expects to treat about 25,000 acres with funding made available through EQIP.

This alternative includes management practices, including conservation crop rotations, residue management, contour farming, nutrient management, pest management and upland wildlife habitat management. Additionally, facilitating practices such as diversions, terraces, grassed waterways, windbreak/shelterbelt establishment, range seeding/pasture planting, tree and shrub planting and wildlife watering facilities will be constructed and/or installed.

A conservation crop rotation includes growing different crops in a recurring sequence on the same field. Residue management includes managing the amount, orientation and distribution of crop residues on the soil surface during the critical erosion period. Following established grades of terraces or diversions when preparing the land for planting and when cultivating is contour farming. All management practices would involve teaching farmers to follow NRCS standards so practices would be applied in accordance with crop needs and field conditions. Practice applications would be adjusted as soil quality and field conditions change.

Diversions are installed at the upper end of fields to control the outside water, or water that originates on adjacent cropland that the affected landowner has no control. This water is directed to a channel, or grassed waterway that will safely dispose of this water. A terrace system is installed below the diversion and has a dual purpose, 1. Safely intercepts and stores runoff between structures and 2. Diverts excess runoff into the grassed waterway. These structures are built with soil materials that are at hand. I.e. a diversion and terrace consist of soil that is mounded to a height of from 1 foot to 2.5 feet high, with a top width of approximately 4 feet and a bottom width of 10 to 30 feet, depending on both the height and side slope of the structure. The grassed waterway is a ditch, generally 1 to 2 feet deep and approximately 15 to 30 feet wide.

Once constructed, the bottom of the waterway is planted to a cover crop of millet, milo or wheat, and the following year drilled to a native perennial grass mix. The purpose of a diversion, terrace system and a grassed waterway is to control water erosion.

Windbreaks/shelterbelt establishment involves the planting of native or introduced evergreen and/or deciduous trees on the windward side of the field. Species considered for planting in the project area include plants native to New Mexico such as Rocky Mountain Juniper, 4-wing saltbush and winterfat, and introduced species such as but not limited to Eastern Red Cedar, Austrian Pine, Keteller Juniper, Sycamore, and Green Ash. The purpose of a windbreak is to provide protection from wind erosion on cropland fields and to provide habitat for wildlife.

Range planting involves the establishment of adapted perennial vegetation onto marginal cropland, corners of irrigated circles, and grassed waterways. Native species to be considered include but are not limited to blue grama, sideoats grama, western wheatgrass, switchgrass and plains bristlegrass. Forbs and legumes, as well as shrubs can be included to improve quality and quantity of forage as well as habitat for wildlife. Pasture planting includes the planting of introduced plant materials onto the corners of irrigated circles and marginal cropland. Species to be considered include but are not limited to weeping lovegrass and Old World bluestems. The purpose of these practices is to reduce erosion and provide food and cover for wildlife.

Tree and shrub establishment involves the planting of woody plants for the purpose of providing erosion control, reduce pollution of both air and water, and provide wildlife habitat. Wildlife watering facilities will include the construction of a watering place for wildlife or the modification of existing facilities and the purpose of course is to provide water for wildlife. Upland wildlife habitat management includes creating, maintaining, or enhancing areas to provide food, cover and shelter for upland wildlife. The purpose is the same, to provide for the creation, maintenance and enhancement of habitat suitable for sustaining desired upland wildlife. The previously described practices address both wind and water erosion control on the soil resource. Other resources that will be impacted include air, plants and animals. Air quality will be improved by actions previously described, including conservation crop rotation, and residue management. The plant resource will also be benefited by practices including conservation crop rotation and residue management. Additionally, both nutrient management and pest management will impact plants. Nutrient management is managing the amount, form, placement and timing of applications of plant nutrients. The purpose of nutrient management is to supply plant nutrients for optimum forage and crop yields, minimize entry of nutrients to surface and groundwater, and to maintain or improve the chemical and biological condition of the soil. Pest management is managing agricultural pest infestation (including weeds, insects and diseases) and the purpose is to reduce adverse effects on plant growth, crop production and environmental resources. The animal resource, including wildlife species such as mourning dove, quail and pheasant, will benefit from all of the management practices previously mentioned as well as tree and shrub establishment, wildlife watering facilities, range seeding and upland wildlife habitat management.

An estimate of the extent to which each of these practices would be implemented within the GPA is shown on Table 1.

DISCUSSION OF IMPACTS AND EFFECTS OF ALTERNATIVE NO. 2:

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

Management practices, including conservation crop rotation, residue management, and contour farming will improve air and water quality by preventing soil particles from being available for detachment and transportation. Soil tilth, surface crusting, infiltration and compaction will be improved through the combination of these practices. Nutrient and pest management techniques will improve water quality. Application of fertilizers, based on crop needs as determined from soil tests, would reduce the amount of nitrates in the groundwater. Management of the application of pesticides would reduce soil contamination and exposure to birds and mammals. Pesticides will always be applied according to their label, thus keeping effects of those pesticides within levels determined by the Environmental Protection Agency (EPA) to be acceptable.

The construction of diversions, terraces, and grassed waterways moves approximately .75 to 2 cubic yards of soil per foot of length of structure. Based on its experience in the area and the amount of EQIP funding available, NRCS estimates that implementation of this alternative will result in approximately 300,000 cubic yards of soil being moved under EQIP. Based on past trends and the needs of the area, NRCS estimates that cumulative construction work conducted through USDA cost share programs and landowners on their own initiative, 7500 acres will be affected in the GPA

Construction activities will impact soil and air quality on a short-term basis. Air quality would only be affected by the dust generated during the construction period and would clear when construction ended.

Range seeding and/or pasture planting will be applied on approximately 1500 acres. Soil erosion on dryland corners of irrigated center pivot irrigation systems will be reduced from approximately 15 tons per acre to 1 ton per acre once permanent vegetation is established. This of course positively impacts water and air quality as soil particles, nutrients and pesticides remain in place. Both the soil and plant resources on adjoining cropland acreage are benefited as windborne soil particles can create dunes or cause severe damage to young crop seedlings. Wildlife is particularly benefited as habitat is created. Wildlife habitat evaluation guides (WHEG) for mourning dove, quail and pheasant show an increase in the indices for each of these species as a result of establishing food, cover and shelter.

Windbreak/shelterbelt establishment and tree and shrub planting reduce soil erosion and improve water quality. Adjoining crops and fields are benefited as damaging winds and windborne soil particles are lifted over areas that are intended for protection. Wildlife again is the primary benefactor in the establishment of either of these practices. WHEG indices for mourning dove, quail and pheasant show an increase when trees and shrubs are established.

Activities associated with the planting of permanent vegetative cover, trees and shrubs will have little impact on the environment. Native plant materials are recommended in most situations, and only those introduced species that have been tried and tested are allowed in all other

situations. Air quality would only be affected by the dust generated during the planting of grass, and possibly during the planting of trees if planted by mechanical means.

Land uses may change as a result of implementing this alternative. Cash flow may increase for individuals, but investment requirements will increase with improvements. This system should reduce labor and fuel requirements. Management knowledge and ability to manage these systems may need to increase. Risk of investment loss is moderate. Profitability will remain static. Overall, client and community well being will be improved.

The estimated cost for implementation of this alternative is $800,000 for a five-year program.

TABLE 1, ALTERNATIVE 2

PRACTICES	TREATMENT WITH NRCS EQIP ASSISTANCE ALONE	TREATMENT BY LANDOWNER INITIATIVE AND NRCS, CUMULATIVELY
CONSERVATION CROP ROTATION	25,000 ACRES	30,000 ACRES
RESIDUE MANAGEMENT, SEASONAL	25,000 ACRES	30,000 ACRES
RESIDUE MANAGEMENT, MULCH TILL	20,000 ACRES	25,000 ACRES
CONTOUR FARMING	15,000 ACRES	17,500 ACRES
NUTRIENT MANAGEMENT	25,000 ACRES	30,000 ACRES
PEST MANAGEMENT	25,000 ACRES	30,000 ACRES
UPLAND WILDLIFE HABITAT MANAGEMENT	25,000 ACRES	30,000 ACRES
DIVERSIONS	75,000 FEET	80,000 FEET
TERRACES	200,000 FEET	210,000 FEET
GRASSED WATERWAY	50,000 FEET	50,000 FEET
RANGE SEEDING/ PASTURE PLANTING	1250 ACRES	1500 ACRES
WINDBREAK/SHELTER -BELT ESTABLISHMENT	50 ACRES	55 ACRES
TREE AND SHRUB PLANTING	25 ACRES	30 ACRES

COMPARISON OF ALTERNATIVES:

ALTERNATIVE	SOIL LOSS	CROP YIELDS	WHEG Mourning Dove
ALTERNATIVE 1: NO ACTION	15 TONS/ACRE/YEAR	WHEAT – 15 BU/YEAR MILO – 1500 LBS/YEAR	.5
ALTERNATIVE 2: PROPOSED ACTION	5 TON/ACRE/YEAR	WHEAT – 17 BU/YEAR MILO – 1750 LBS/YEAR	.75

PERSONS AND AGENCIES CONSULTED:

Local Work Group Meeting. See list of persons/agencies invited to attend and minutes from meeting. See attached as Appendix A and B, respectively.

Central Curry Soil and Water Conservation District and attendees. See minutes attached as Appendix C.

Border Soil and Water Conservation District and attendees. See minutes attached as Appendix D.

Roosevelt Soil and Water Conservation District and attendees. See minutes attached as Appendix E.

Southwest Quay Soil and Water Conservation District and attendees. See minutes attached as Appendix F.

REFERENCES:

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

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

FINDING OF NO SIGNIFICANT IMPACT FOR THE IMPLEMENTATION OF EQIP IN THE DRY CROPLAND GPA

INTRODUCTION

The Dry Cropland GPA for Curry and Roosevelt Counties 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. Data developed during the assessment are available, upon request, from:

U.S. Department of Agriculture
Natural Resources Conservation Service
Clovis Field Office or Portales Field Office
Clovis, New Mexico or Portales, New Mexico

The Environmental Assessment (EA) is attached for reference.

DETERMINATION OF SIGNIFICANCE

Table 1. Determination of Significance of Proposed Action.

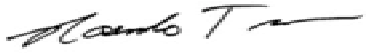
CONTEXT	INTENSITY	REASONS FOR NON-SIGNIFICANCE
SOIL SAVED	Permanent soil savings each year	Small acreage as compared to project area
HABITAT IMPROVED	Native grasses, forbs and shrubs established to provide food and cover for dove, pheasant and quail.	Project area is small as compared to areas having dove, pheasant and quail.
PUBLIC HEALTH & SAFETY	Improved air quality from reduced airborne dust.	Small acreage compared to project area.
CUMULATIVE IMPACTS	Stable environmental conditions on soil and water resources.	Small acreage treated compared to total acreage.

Other considerations related to context and intensity are discussed as follows: Farms are similar in the area and are not unique compared to other dry land farms within the major land resource area. No issues or concerns have been expressed at any public meetings, so controversy is small. Results of similar 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 the proposal are going to participate in the first or second round. There will be no impact to National Register of Historic Places or cultural resources because there are no structures that are more than 50 years old. 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 one, 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.



ROSENDO TREVINO
State Conservationist

December 10, 2001
Date