

UNITED STATES DEPARTMENT OF AGRICULTURE

FARM SERVICE AGENCY

**Programmatic Environmental Assessment
Upper Arkansas River Basin
Conservation Reserve Enhancement Program (CREP)**

November 2006



COVER SHEET

- Proposed Action:** The United States Department of Agriculture (USDA), Commodity Credit Corporation and the State of Kansas have agreed to implement the Upper Arkansas River Conservation Reserve Enhancement Program (CREP), a component of the Conservation Reserve Program (CRP).
- The USDA is provided the statutory authority by the provisions of the Food Security Act of 1985, as amended (16 U.S.C. 3830 et seq.) and the regulations at 7 CFR 1410. In accordance with the 1985 Act, USDA is authorized to enroll lands through TBD.
- The Farm Service Agency (FSA) of the USDA proposes to enter into a CREP agreement with the State of Kansas. CREP is a voluntary land conservation program for State agricultural landowners.
- Type of Statement:** Programmatic Environmental Assessment (PEA)
- Lead Agency:** United States Department of Agriculture, Farm Service Agency
- Sponsoring Agency:** Kansas Water Office
- Cooperating Agencies:** United States Department of Agriculture, Natural Resource Conservation Agency (NRCS), County Conservation Districts
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- Comments:** A copy of the UAR CREP Proposal can be found online at:
http://www.kwo.org/KWA/Rpt_Kansas_CREP_Proposal_080706_ss.pdf

EXECUTIVE SUMMARY

Purpose and Need for the Programmatic Environmental Assessment

The purpose of this Programmatic Environmental Assessment is document the analysis conducted of the environmental impacts of the proposed implementation of the Conservation Reserve Enhancement Program along Upper Arkansas River. This document is being provided to the general public, interested agencies, and nongovernmental organizations. It specifically addresses the consequences of selecting either the Proposed Action or the no action alternative.

The Farm Service Agency has prepared this document in accordance with its National Environmental Policy Act implementation requirements.

Purpose and Need for the Proposed Action

The purpose of the Upper Arkansas River Conservation Reserve Enhancement Program is to address declining water quantity and water quality in the Upper Arkansas River basin. The Proposed Action seeks to reduce aquifer overdraft by retiring the water rights for up to 100,000 acres of irrigated cropland. The Proposed Action also seeks to address the need to reduce the amount of nutrients, sediments, and agricultural chemicals (fertilizers, herbicides, and pesticides) that enter the Upper Arkansas River from adjacent farmland. The Proposed Action is expected to improve wildlife and waterfowl habitat for birds, migrating waterfowl, and aquatic organisms by increasing the quantity and quality of water in the Upper Arkansas River basin.

Description of Alternatives

This document contains an analysis of two alternatives, the Proposed Action and the no action alternative. No other alternatives were carried forward for detailed analysis in this document.

Proposed Action

Under the proposed action, up to 85,000 acres of irrigated cropland and up to 15,000 acres of nonirrigated field corners would be removed from production for a period of 10 to 15 years. Water rights associated with this irrigated agriculture would be permanently retired. A conservation cover crop would be planted. Landowners would be provided with the necessary financial and technical assistance to make this transition to conservation cover. Limited amounts of irrigation could be used as necessary for the first few years to establish the conservation cover crop. The conservation cover is expected to conserve soil and water, filter nutrients and pesticides, and enhance and restore wildlife habitat. At the close of the contract period, the landowners could continue to keep their land in conservation cover or could choose to conduct dryland (nonirrigated) cropping of their land.

No Action Alternative

Under the no action alternative, current agricultural practices would continue as they have been practiced in this area for decades. Land development, irrigation water use rates, and agricultural

chemical application rates would likely remain similar to current levels in the project area. It is possible that irrigation water use may decline under the No Action Alternative as increased energy costs and declining quantities of available water reduce the profitability of irrigated agriculture in the project area. A decline in the availability of affordable irrigation water may result in a decline in irrigated agriculture in the project area. A decline in affordable irrigation water may result in declines in the consumption of agricultural chemicals, agricultural production, agricultural revenue, and cropland property values in the project area.

How This Document Was Prepared

This document was prepared with the assistance and cooperation of State of Kansas personnel. The best available information was used in the development of this document. The majority of the information contained in this document was obtained from Federal and State agency reports. The Kansas Water Office provided a substantial amount of the information contained in this document.

A number of Federal, State, local, and nongovernmental organizations were contacted to solicit their input regarding the proposed action. A listing of those contacted is contained in Chapter 8 of this document.

Public and Agency Comments

Notices of availability have been published in newspapers in the project area.. Written comments regarding the information contained in this document should be submitted to:

Bill R. Fuller,
State Executive Director
USDA Farm Service Agency
3600 Anderson Avenue
Manhattan, Kansas 66503

The deadline for submittal of comments is January 5, 2006.

LIST OF ACRONYMS

ACHP	Advisory Council on Historic Preservation
BFDP	Biofuels Feedstock Development Program
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CP	Conservation Practice
CREP	Conservation Reserve Enhancement Program
CRP	Conservation Reserve Program
CWA	Clean Water Act
DOE	United States Department of Energy
DWR	Division of Water Resources
EO	Executive Order
EQIP	Environmental Quality Incentives Program
EJ	Environmental Justice
ESA	Endangered Species Act
FSA	Farm Service Agency
FWS	United States Fish & Wildlife Agency
GMD	Groundwater Management District
IGUCA	Intensive Groundwater Use Control Area
KDHE	Kansas Department of Health and Environment
kW	kilowatt
KWO	Kansas Water Office
l	Liter
MBTA	Migratory Bird Treaty Act
MCL	Maximum Contaminant Level
MDS	Minimum Desirable Stream Flow
mg	Milligrams
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRCS	Natural Resources Conservation Service
PEA	Programmatic Environmental Assessment
SCC	State Conservation Commission
SHPO	State Historic Preservation Officer
SINC	Species In Need of Conservation
SMCL	Secondary Maximum Contaminant Level
TDS	Total Dissolved Solids
TMDL	Total Maximum Daily Load
UAR	Upper Arkansas River
USC	United States Code
USDA	United States Department of Agriculture
USGS	United States Geological Survey
WRCP	Water Right Conservation Program

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1.0 INTRODUCTION

The State of Kansas proposes to use Kansas state funding and Federal funds from the United States Department of Agriculture (USDA) for the purpose of encouraging farmers in the Upper Arkansas River (UAR) corridor to enroll in a Conservation Reserve Enhancement Program (CREP). This voluntary project would provide annual rental payments, incentives and cost sharing to participants that enroll their irrigated cropland into eligible conservation practices such as native vegetation establishment or wildlife conservation for a period of 14 to 15 years. Participants would be required to permanently surrender water rights for the irrigated land enrolled. The project area is depicted on Figure 1-1.

The UAR CREP proposes to coordinate Federal, state and local efforts to address water quantity shortages, mitigate water quality impairments, and improve wildlife habitat. Retirement of irrigation water rights is a key strategy to achieve sustainability of water resources along the Arkansas River corridor. The UAR CREP boundaries and priorities are to maximize resource benefits to the Arkansas River and corridor through conservation of water used for irrigation that are:

- In areas closed to new appropriations;
- Adjacent to the Arkansas River from the Colorado state line to the confluence with the Rattlesnake Creek in the east;
- Areas documented as negatively impacted by past reduced river flows at the Colorado state line;
- From the Arkansas River, the associated alluvial and hydraulically connected High Plains aquifers;
- In areas recognized as needing additional management and reduced water use;
- Cropped land within the CREP boundary that is unsuitable for dryland cropping as indicated by the wind erosion equation “I” factor.

The UAR CREP proposes to enroll up to 100,000 acres: 85,000 irrigated cropland acres and 15,000 dryland acres as corners to allow for whole field enrollments. Of the 85,000 irrigated acres, an estimate of 3,000 acres would be farmable wetlands, wetland buffers, riparian buffer, or filter strips.

Two tiers of priority are identified in the CREP area. Tier one is based on the well locations that most directly influence the river/ aquifer system and the cropped soils that are unsuitable for returning to dryland agriculture based on the wind erosion equation “I” factor. Tier two areas are those that benefit the UAR region, but are considered a lower priority.

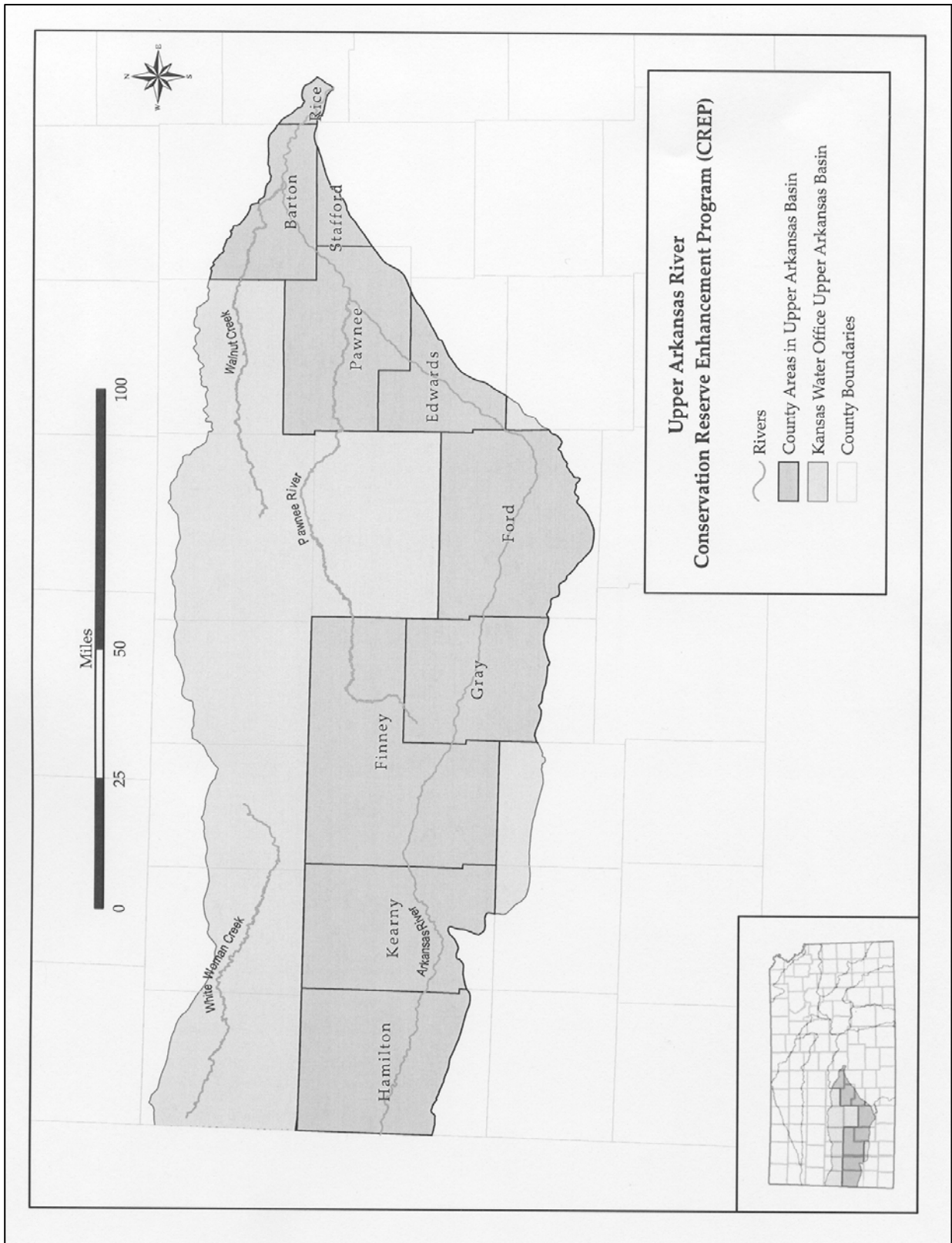


Figure 1-1. Project Area

CREP is a component of Farm Service Agency's (FSA's) Conservation Reserve Program (CRP). CRP, which was established in 1985 under subtitle D of the Food Security Act, targets the specific environmental needs of each state. The purpose of CRP is to cost-effectively assist owners and operators in conserving and improving soil, water, and wildlife resources on their farms and ranches. Highly erodible and other environmentally sensitive acreage that would otherwise be devoted to the production of agricultural commodities is converted to a long-term resource conservation cover. CRP participants enter into contracts for periods of 10 to 15 years in exchange for annual rental payments and cost-sharing assistance for installing certain conservation practices. The Farm Security and Rural Investment Act of 2002 authorized CRP through 2007 and raised the national enrollment cap to 39.2 million acres. As of September 2004, a total of 34,887,689 acres were enrolled in CRP nationwide; Kansas ranked 4th with 2,884,074 acres enrolled. In 2005, there were 3,157,201 acres enrolled in CRP in Kansas.

CREP is part of the CPR and was initiated in 1997 as a joint Federal-State partnership that provides agricultural producers with financial incentives to address specific, recognized conservation issues by installing approved conservation practices (CPs). The voluntary program enrolls farmers and ranchers in contracts of 10 to 15 years duration. Agricultural land is removed from production in return for annual rental payments and cost-sharing assistance to establish CPs on agricultural land. The primary objectives of CREP are:

- Coordinate Federal and non-Federal resources to address specific conservation objectives of a State (or tribal) government and the nation in a cost-effective manner.
- Improve water quality, erosion control, and wildlife habitat related to agricultural use in specific geographic areas.

CRP and CREP are administered by FSA in cooperation with the Natural Resources Conservation Service (NRCS) and other state and local agencies. FSA administers CPR and CREP and is the lead agency in developing this Programmatic Environmental Assessment (PEA).

1.1 BACKGROUND

The Arkansas River is a resource of national and state concern for both water quantity and water quality. The flow into Kansas is extensively controlled through releases from the John Martin Reservoir, managed through the Arkansas River Compact Administration. The river is one of the most saline in the nation where it enters Kansas, a result of the extensive concentration of salts through irrigation use and reuse. The declining flows and deteriorated water quality threaten the viability of this important surface water source in western Kansas. Correlated with the reduced flow and increasing salinity of the river is the degradation of riparian health and wildlife habitat. Native plant communities have declined, and there has been an extensive and aggressive infestation of tamarisk trees and other non-native, water-loving plants (KWO 2006).

The Arkansas River receives water from snow melt and rain run-off resulting in periodic high flows associated with precipitation. Colorado Rocky Mountain snowmelt and runoff

have a major impact on water flowing in the river as well as runoff in Kansas. There are no major tributaries to the Arkansas River in Kansas until Mulberry Creek in Ford County.

Historically, base flow came from the hydraulically connected groundwater in some locations. As reduced stream flows and groundwater withdrawals have lowered the water table, groundwater contributions to stream flow have been reduced and have ceased in some locations. Some or all of the Arkansas River flow entering Kansas from Colorado is lost as infiltration in the river channel from the state line to Dodge City. Discharge from the alluvium to the Arkansas River only occurs after high flow events when subsequent discharge of alluvial bank storage occurs (KWO 2006).

Arkansas River flows in Colorado are contained and then released from John Martin Reservoir, near Lamar, Colorado. An interstate compact between Kansas and Colorado apportions the river flows, with minimum flows at the State line and required usage prior the gage at Garden City. These flows are primarily withdrawn by irrigation districts. These flows are also a source of recharge to the alluvial aquifer and the High Plains aquifer, locally. Variable streamflow conditions of the river and water use in Colorado have resulted in flows at the Stateline that are highly variable from year to year (KWO 2006).

Over 94 percent of all the reported surface and groundwater used in the UAR basin is for irrigation. Irrigation is widespread and extremely important to the area economy. Approximately 1.2 million acre-feet of groundwater is authorized for irrigation in the UAR CREP area, from 5,078 wells or points of diversion covered by 4,003 water rights. An additional 171,624 acre-feet annually are authorized from surface water diversions for irrigation. Approximately 170 wells are authorized to withdraw a total of 30,571 acre-feet of water annually for public water supplies in the project area. An Intensive Groundwater Use Control Area (IGUCA) has been established by the Department of Water Resources (DWR) for the Arkansas River corridor in the western area proposed for CREP to provide increased management of groundwater in those areas (KWO 2006).

Since the late 1950s, there has been extensive development of irrigated agriculture in western Kansas. Irrigation wells tap into the Ogallala Aquifer. Forty years of extensive pumping of groundwater, coupled with few conservation measures and a multi-year period of less than normal rainfall, has resulted in substantial depletion of this aquifer. Many wells have become unproductive because of the declining water table. The declining water table forces new wells to be drilled deeper, which increases well digging and pumping costs. The pumping costs rise because increased energy is consumed when lifting water from the deeper wells. In some instances, the quality of groundwater has changed to the point that this water, while available, is not usable (KWO 2006).

For approximately 20 years, the Arkansas River has been dry year-round from around Syracuse, Kansas to around Kinsley, Kansas, unless water was released from the John Martin reservoir in Colorado. Historically, the Arkansas River, whose base flow is provided by the Ogallala Aquifer, has had water in it during the summer. This dryness of the river demonstrates that the aquifer has become overtaxed in this watershed. The declining water level in the Arkansas River has become more pronounced over the past few years. The people and public entities affected by this declining water level have started to consider

ways to reduce water usage in order to restore summer water flows in the river (KWO 2006).

Kansas's Arkansas River basin overlies the High Plains aquifer. The High Plains aquifer, of which the Ogallala is the dominant portion, has been identified as a national concern regarding water quantity. High capacity well pumping, an increase in irrigated crop production, and drought conditions have all contributed to declining aquifer levels. Severe declines in the aquifer are resulting in loss of baseflow to the river, decline in well yields, and in some locations, degradation of groundwater quality. As the dominant source of water for all uses in the basin, a decline in this aquifer is a serious concern (KWO 2006).

The river and groundwater system have had several decades of well-documented flow depletions entering the state, and groundwater declines. High temperatures and drought conditions in 2000 to 2004 placed additional stress on the system (KWO 2006).

1.2 PURPOSE AND NEED FOR ACTION

The primary impacts of irrigated agriculture on the environment in the CREP area include:

- Reduction of groundwater levels due to pumping of irrigation wells.
- Reduction of water recharging the alluvial aquifer, contributing to reduced base flow,
- Reduction of water available for stream flow and alteration of natural flow patterns due to pumping of water to irrigate land.
- Surface water degradation due to the concentration of salts through use of return flows in Colorado, affecting downstream wildlife habitat.
- Bacterial concentrations exceeding the total maximum daily loads (TMDLs) in Pawnee and Edwards Counties, and potential water quality degradation from chemicals and fertilizers.
- Groundwater degradation as saline river water recharges the groundwater, adversely affecting public and private water supplies.
- The conversion of native grassland, wetland, and riparian plant communities to agricultural production has resulted in:
 - a loss to community diversity and wildlife habitats;
 - a long term decline in wildlife populations;
 - a decline in recreational opportunity and participation.

During the 1970s, the decreasing amount of Arkansas River water available for ditch irrigation resulted in increased pumping from the High Plains aquifer in the river corridor. This resulted in groundwater levels declining in most areas of the High Plains aquifer across the corridor. As water levels dropped, the vertical gradients caused a substantial

increase in the downward movement of water from the alluvial aquifer into the underlying High Plains aquifer. The declines in water levels in the High Plains aquifer changed the direction of water flow in the river corridor. Water began to move from the river into the alluvial aquifer and down into the underlying High Plains aquifer. The groundwater flow direction also shifted to migrating away from the river and alluvial valley. The corridor changed progressively downstream from a system of average net increases in baseflow to net flow decreases even after accounting for the diversions for ditch irrigation. Today, the location where baseflow typically adds to the river flow is east of Dodge City (KWO 2006).

The High Plains aquifer is in decline in most areas, with annual withdrawals far exceeding the average, annual recharge. Some areas of the aquifer are now, or are predicted within the next 25 years to be, too depleted to support widespread, high volume pumping. The annual rate of decline in Kansas is greatest in the southwest. The average, annual decline rates for the past five years range from 0.28 to 2.02 feet/year across the UAR CREP area (Table 1-1). This shows the stress placed on the aquifer during the drought of 2000 – 2004 (KWO 2006).

Table 1-1: Aquifer Decline Rates in Project Area (1996 to 2005)

LOCATION	2001-2005 RATE OF DECLINE (FEET/YEAR)	1996-2005 RATE OF DECLINE (FEET/YEAR)
Stateline to Garden City:	2.02	0.47
Garden City to Ford/Edwards:	1.50	0.37
Ford/Edwards to Great Bend:	0.99	0.26
Great Bend to Rattlesnake Creek	0.28	0.02

Groundwater withdrawal is only one factor in the decline in water resources in the proposed CREP area. Recent changes in land management practices have also decreased runoff to the river by keeping more precipitation on the land in the drainage. The development of watershed projects, construction of farm ponds and terraces, and improved fallow and conservation tillage techniques, have produced positive benefits to the area by reducing soil erosion but have also decreased stormwater runoff to streams. Reduced runoff to the river and the corresponding reduction of flow has reduced the available recharge to the alluvial groundwater. In turn, this affects the underlying High Plains aquifer where it is hydraulically connected to the alluvium. In the past, water levels in the High Plains aquifer were usually only slightly higher than in the adjacent alluvial aquifer. However, the discharge generally increased base flow in the river downstream (KWO 2006).

Significant portions of the Arkansas River become dry or reduced in flow due to withdrawals, exacerbated by drought conditions. Lack of water in this area has resulted in numerous negative effects, including crop loss, and increased water salinity. There are currently 5,078 points of diversion (groundwater wells and surface diversions for all uses) in the UAR CREP area. These are authorized to divert over 1.19 million acre feet of water per year. In times of drought, the pumping of these wells increases with a consequential decrease to stream flows in the area. Figure 1-2 shows the trend in reduced streamflow on the Arkansas River as measured at Kinsley in Edwards County from 1945 to 2003.

Reduction of withdrawals is necessary to stabilize the hydrologic system in this basin (KWO 2006).

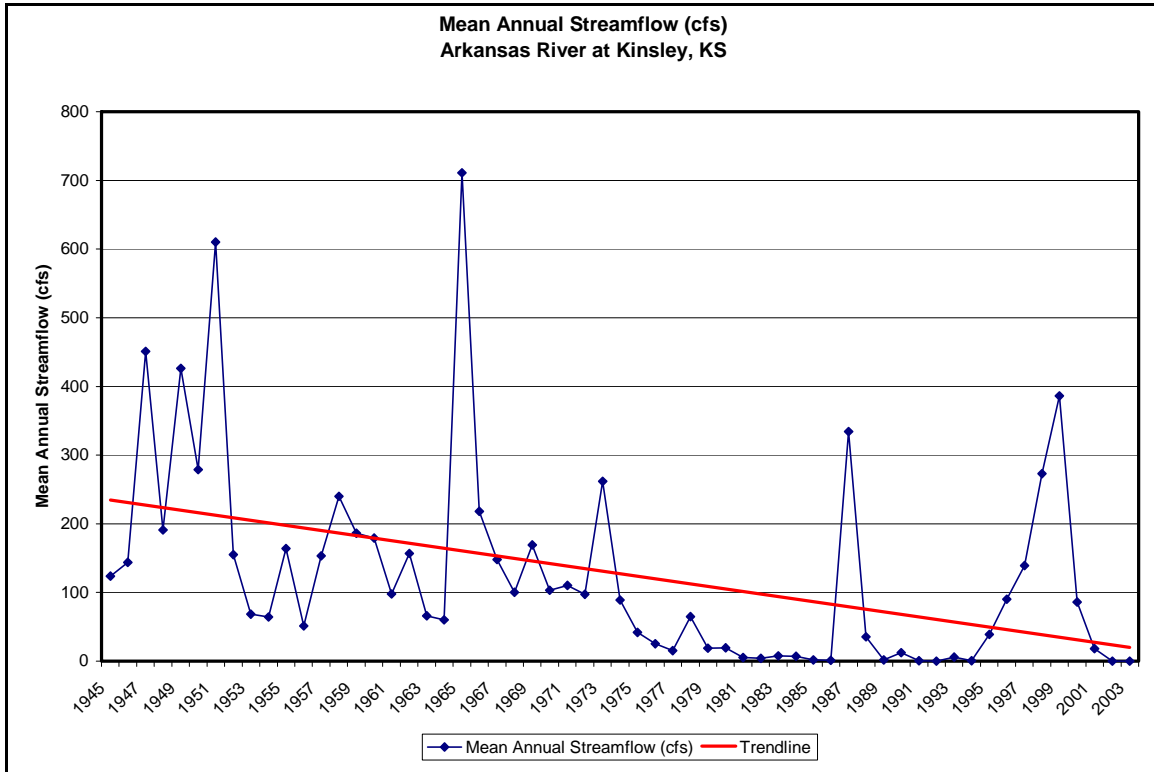


Figure 1-2: Mean Annual Streamflow of the Arkansas River at Kinsley, Kansas

In the UAR CREP area, there are 240,854 cropped acres with one or more soil types that have a wind erosion equation “I” factor of greater than 134. These soils are typically sandy soils more prone to wind erosion, making crop production extremely difficult without irrigation, especially the further west you go in the project area. Special care would need to be given to prepare a conservation plan to establish and maintain a permanent cover on these soils. Soils with high wind “I” erodibility are generally unsuitable for dryland agriculture. Cropped land with these soils within the CREP boundary are designated tier one to provide added state incentive to remove the poorer quality soils from irrigation and establish suitable vegetative grass cover (KWO 2006).

Diminished pumping under CREP is expected to reduce the rate of aquifer storage loss, reduce streamflow decreases, and improve the lateral flow of groundwater compared with the continued pumping scenario. Reducing irrigation demands on the stream-aquifer system is expected to help slow the aquifer declines, mitigate the spread of saline waters into the aquifer, and help restore stream and riparian health (KWO 2006).

The purpose of this Proposed Action is to address the following problems:

- Low to non-existent water levels in the Arkansas River
- Low quality of stormwater runoff from agricultural lands
- Low quality of aquatic habitat due to low water levels & low water quality

1.3 OBJECTIVES

The Proposed Action seeks to meet the following objectives:

1. Establish a maximum of 100,000 acres of grass and legume crops through CREP in the project priority area (85,000 irrigated acres, 15,000 from dryland pivot corners as part of whole field enrollment). Of the 85,000 irrigated acres, an estimate of 3,000 acres would be farmable wetlands, wetland buffers, riparian buffer, or filter strips.
2. Reduce the application of groundwater for irrigation in the targeted area by 149,600 acre-feet, annually, with the enrollment of 85,000 irrigated acres.
3. Increase the frequency of meeting minimum desirable streamflows in the Arkansas River at the United States Geological Survey (USGS) gauging stations at Great Bend and Kinsley by 2020 from 71 percent and 52 percent, respectively, as measured in 1996-2005.
4. Reduce stream flow transient losses due to inefficiencies in the delivery of the water by improving the channel and canal delivery system.
5. Reduce the rate of groundwater declines in the alluvial aquifer and the hydraulically connected High Plains aquifer in the CREP area by 2020 from those measured during the winter months for the past five years (2001 – 2005) and ten years (1996-2005).
6. Reduce the outward migration of river salinity within the High Plains aquifer by 2020 from the currently projected extent based on 1990s groundwater conditions in the Arkansas River valley.
7. Reduce the bacterial levels in the Arkansas River in Edwards and Pawnee Counties by 2020 from the 1990 – 2000 levels.
8. Increase aquifer recharge and wildlife habitat by enrolling 1,000 acres of playa lakes and soils.
9. Provide educational assistance to CREP area irrigators to maximize crop profitability with limited irrigation water with consultations by Kansas State University's Research & Extension personnel.
10. Protect the ecological and recreational viability of the Cheyenne Bottoms with improved Arkansas River stream flow, as measured by an increase in the average,

annual bird count at the Bottoms in 2015-2023 as recorded from 1996-2004, and in post-CREP increased human visitation rates in 2015-2023 as recorded from 1996-2004.

11. Reduce energy consumption from an average of 59,850 kilowatt hours (kW-hr) to less than 5,000 kW-hr per pivot for the first two years on pivots enrolled in CREP. In subsequent years, energy consumption will be reduced to zero, as the pivots will be removed from the enrolled parcel. Total energy savings for the term of CREP contracts will approach 40 million kW-hr.

The first two objectives are measurable as a direct result of FSA action. The remaining objectives can also be measured or otherwise quantified. However, other factors outside of FSA control, such as an end to the drought or a dramatic decrease in use of irrigation pumps due to high energy prices, could also measurably contribute to the improvement of the quantity & quality of water in the Arkansas River.

1.4 ORGANIZATION OF THE PEA

This PEA has been developed in accordance with the National Environmental Policy Act of 1969 (NEPA), as amended (42 USC [United States Code] 4321-4347), the NEPA implementing regulations of the Department of Agriculture (7 CFR [Code of Federal Regulations] Part 1b) and the FSA NEPA implementation procedures found in 7 CFR Part 799.

This PEA provides a framework for the evaluation of UAR CREP related actions pertaining; it does not address individual site specific actions. The Proposed Action analyzed in this PEA is the implementation of the CREP enrollment in Kansas. The NEPA review process is an important part of the overall planning process. It can provide useful information to assist the FSA in determining how the proposed plan would be implemented. Site specific actions will be individually addressed when an offer is received, the conservation plan is prepared, the conservation plan is compared against the environmental issues documented in this PEA, and the appropriate agency officials are notified and consulted, as appropriate.

2.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION

2.1 PROPOSED ACTION

As discussed in Chapter 1, the Proposed Action, which is the agency’s preferred alternative, would remove irrigation wells, as well as some surface water irrigated acres, from production and pay the landowners an irrigated rental rate to convert irrigated cropland to non-irrigated grassland. The removal of water wells from production should help to slow or at least stabilize the depletion of water from the underground aquifer. Additional conservation practices are proposed, such as field borders, filter strips, riparian forest buffers, and wetland restoration. These conservation practices are expected to improve the quality of surface water that runs off of the surrounding agricultural lands before being discharged into the Arkansas River.

The removal of water wells from production is expected to improve ground and surface water supply near the river. This improvement in supply and flow, coupled with the improved water quality associated with the conservation practices, is expected to result in improved aquatic habitat. This improvement would be due to an increased quantity and quality of water being available in the river for aquatic species.

The Proposed Action would remove irrigation wells from production and pay the landowners an irrigated rental rate to convert that cropland to permanent vegetative cover. The removal of water wells from production should slow or stabilize the depletion of the underground water supply. Additional conservation practices are proposed, such as field borders, filter strips, riparian forest buffers, and wetland restoration. Table 2-1 summarizes these additional conservation practices.

Table 2-1: Approved Conservation Practices for the Kansas CREP

ID	Practice	Comments
CP2	Establishment of Permanent Native Grasses	Used to reduce soil erosion and sedimentation, improve water quality, and create or enhance wildlife habitat
CP4D	Permanent Wildlife Habitat	Used to enhance wildlife habitat by: <ul style="list-style-type: none"> • Providing food upland wildlife species • Providing cover types for upland wildlife species • Managing wildlife habitat to achieve a viable wildlife population within the species home range.
CP9	Shallow Water Area for Wildlife	Used to provide water for wildlife for the majority of the year

ID	Practice	Comments
CP10	Vegetative Cover – Grass – Already Established	Uses grass already established to reduce soil erosion and sedimentation, improve water quality, and create or enhance wildlife habitat on land retired from agricultural production.
CP21	Filter Strips	Uses grass buffer strips to reduce erosion and filter sediment, nutrients, and farm chemicals from field runoff.
CP22	Riparian Forest Buffer	Uses vegetation buffers along creeks to remove nutrients, sediment, organic matter, and other pollutants from surface runoff and subsurface flow
CP23	Wetland Restoration	Used to restore wetlands near or adjacent to agricultural lands to provide wildlife habitat and improve water quality
CP23A	Wetland Restoration Non-Floodplain	Used to restore wetlands and playa lakes that are located outside of the 100-year floodplain in order to improve aquifer recharge, water quality, and wildlife habitat
CP33	Habitat Buffers for Wildlife Birds	Used to establish strips of vegetation around the edges of crop fields to provide habitat for upland birds.

There are a variety of practices the State and groundwater management districts (GMDs) are supporting to improve water conservation in the CREP area. The UAR CREP is proposed to include, but not be limited to, the CRP practices summarized in Table 2-1. Kansas personnel have requested some changes in practices limitations and extension of all practices to 14 to 15 years.

Native grass, wildlife habitat, and wetland development practices are emphasized in this CREP to encourage enrollment of large pieces of land. A benefit to this approach is the efficiency of retiring entire irrigated fields. The conversion of 100,000 acres of farmland to native grasses, wildlife habitat, and vegetative cover would remove entire fields from irrigation; provide buffer area around shallow water development, and along the river banks. Acres enrolled in filter strips and riparian buffers would be effective at removing nutrients and water-borne pesticides (KWO 2006).

Kansas supports vegetative covers that include energy crops such as switchgrass on CREP acres. This cover would be managed in a way that is conducive to natural resource

protection, within the confines of current or future statutory requirements. Kansas proposes acres enrolled in practices CP2, CP4D, and CP10 have managed haying and grazing that includes partial field mowing and baling, to allow use of the energy crop. This management practice would be conditional on the soil and climatic conditions that make it a practical and effective management choice within the conservation plan and in accordance with FSA CRP National Directives (KWO 2006).

Removing farmable wetland and the creation of buffer acres from farming increases the areas and benefits of enhanced recharge, water quality, and wildlife habitat. The enrolled acres of shallow water development and wetland restoration would help address the need for functional playas and wetlands that are lacking throughout the project area. Playas and wetlands provide benefits in groundwater recharge and in water quality (sediment and nutrient filtering and cycling), floodwater storage, and wildlife habitat. Along with providing the essential components of wildlife habitat, these areas serve as seasonal staging areas for millions of migrating birds. These wetlands also provide value for wildlife associated recreation (hunting and wildlife viewing) which bring substantial funds into the local and state economies (KWO 2006).

For acres to be eligible for FSA and State payments, application acres must have been irrigated cropland at least 4 out of 6 years from 1996-2001, at the rate of at least 1/2 acre foot per acre and must be physically and legally capable of being irrigated., in accordance to Federal guidelines. The water right must be in good standing with the State of Kansas. In addition, to be eligible for CREP, on average for the years 2001 – 2005, at least 50 percent of the water right appropriation must have been reported used. This average use does not include years of non-use, but must have at least three years of irrigation in that time frame unless specific criteria apply (KWO 2006).

- Conservation Reserve Program (CRP), or
- Water Right Conservation Program (WRCP), or
- Environmental Quality Incentives Program (EQIP) Ground & Surface Water dryland practices, or
- Expiring year of CRP contract

If one of the above apply, then the five year average may include years immediately prior to enrollment to determine if it meets the criteria of a five year average reported water use of 50 percent or greater of the appropriated quantity. The acres would still have to meet the Federal guidelines for use. All of the application acres for a whole field must lie within the CREP project boundary (KWO 2006).

All enrolled CREP irrigated acres will require permanent water right retirement. A request for permanent dismissal of the irrigation water right associated with the application acres is required to accompany each CREP offer. The state water right dismissal request would be contingent on the signing and approval of a CREP agreement. If a water right irrigates more than the application acres, the water right must be legally divided into separate rights, and the portion used on the application acres would be retired. To establish a grass cover, a 1 to 2 year term permit for limited irrigation may be applied for from the Chief Engineer, Kansas Department of Agriculture, Division of Water Resources (KWO 2006).

CREP Implementation is expected to begin in 2007. Enrollment is expected to be completed within one year of project implementation. Conversion of irrigated crop land to conservation cover is expected to take from one to three years to complete.

2.1.1 Energy Crops

The growing importance of biomass in energy production has the potential to somewhat modify the Proposed Action. This growing energy market may result in CREP lands planted in cover crop becoming sources of biomass.

One of the leading candidates for dryland energy production biomass is Switchgrass (*Panicum virgatum*), a summer perennial grass that is native to North America. It is a natural component of the tall-grass prairie that once covered much of the Great Plains. Because it is native, Switchgrass is resistant to many pests and plant diseases, and it is capable of producing high yields with very low applications of fertilizer. The need for agricultural chemicals to grow Switchgrass is relatively low. Switchgrass is also very tolerant of poor soils, flooding and drought.

At maturity, widely spaced Switchgrass plants can measure 20 inches in diameter at ground level. Switchgrass has a huge, permanent root system that penetrates over 10 feet into the soil. Its roots can weigh as much as 6-8 tons/acre and includes many fine, temporary roots. The roots improve soil quality by adding organic matter and by increasing soil water infiltration and nutrient-holding capacity. Switchgrass fields provide habitat and a home for many species of wildlife, including cover for deer and rabbits, and a nesting place for wild turkey and especially quail.

Switchgrass reaches full yield only in the third year after planting; it produces a quarter to a third of full yield in the first year, and about two thirds of full yield in the second year. When managed for energy production it can be cut once or twice a year. Switchgrass can be handled by regular hay or silage farm equipment. Switchgrass is a true conservation crop that can substantially reduce soil erosion and the loss of soil carbon related to annual tillage. It also reduces the need for potentially toxic chemicals. One emerging use is the co-firing of Switchgrass with coal to produce electricity in existing coal-fired plants. The use of Switchgrass as an energy crop can produce farm income (USDA 2005, DOE 1999).

The Department of Energy (DOE) is studying the use of Switchgrass as a bioenergy source. Among the 19 research sites in the Eastern and Central United States raising Switchgrass for the DOE's Biofuels Feedstock Development Program (BFDP) studies, one site holds the one-year Switchgrass production record at 15 dry tons per acre. Converted into ethanol, this yield equals about 1,500 gallons per acre. This same site's 6-year average, 11.5 tons a year, translates into about 11,500 gallons of ethanol per acre. The portions of Switchgrass that won't convert to ethanol can then be co-fired with coal to produce electricity in existing coal-fired power plants (ORNL 2006).

Besides helping slow runoff and anchor soil, Switchgrass can also filter runoff from fields planted with traditional row crops. Buffer strips of Switchgrass, planted along streambanks

and around wetlands, remove soil particles, pesticides, and fertilizer before they reach groundwater or streams (ORNL 2006).

Switchgrass removes carbon dioxide (CO₂) from the air as it grows. Therefore, it has the potential to slow the buildup of this greenhouse gas in the atmosphere. Unlike fossil fuels, which simply release more and more of the CO₂ that's been in geologic storage for millions of years, energy crops of Switchgrass "recycle" CO₂ with each year's cycle of growth and use (ORNL 2006).

The future demand for switchgrass as a feedstock for energy production is currently unknown. However, ongoing research has indicated a strong likelihood that a biofuels industry based on cellulosic ethanol is feasible. Industry experts project biorefineries producing cellulosic ethanol at a cost that is competitive with the wholesale price of gasoline by 2015 (Greer 2005).

The economic analysis of the operation of refineries based on biomass indicates that cost-efficient plants may consume 10,000 tons or more of biomass per day (Greer 2005). At that consumption rate, 100,000 acres of land producing 10 tons of switchgrass per acre would be able to produce less than 1/3 of a year's supply of feedstock for one such refinery of that size. Currently, switchgrass generally yields less than 10 tons per acre; however, research suggests that that switchgrass yield may reach 12 or more tons per acre by 2015.

Under the Energy Crops scenario, three possible outcomes are considered:

1. Harvest the entire cover crop once every 10 years.
2. Harvest the entire cover crop once every three years. This is the maximum harvest rate allowed under current CREP regulations.
3. Harvest the entire cover crop once every year. This would require a change in the CREP regulations.

2.2 No Action Alternative

Under the No Action Alternative, the FSA would not offer incentives to landowners to remove irrigation wells from production. Under this alternative, FSA would not pay the landowners an irrigated rental rate to convert irrigated cropland to grassland. No action would be taken to remove water wells from production and there would be no change in the depletion of the underground water supply. No additional conservation practices, such as field borders, filter strips, riparian forest buffers, and wetland restoration, would be offered. There would be no FSA action to improve the quality of water that runs off the surrounding agricultural lands before being discharged into the Arkansas River.

Energy crops could also be planted under the No Action Alternative. The market for energy crops is increasing and increased demand for these products could induce producers to increase their planting of biomass crops. However, in the short term, it is likely that crop production under the No Action Alternative would continue to occur in roughly the same

manner as is currently practiced. Long term, crop production in the project area is expected to be driven by market forces such as commodity prices, the cost of energy, and the availability of water for irrigation.

2.3 SCOPING

FSA and contractor personnel reviewed the potential for the Proposed Action to have environmental impacts to the standard FSA environmental resource areas. Resources that could clearly be eliminated from consideration in this PEA were not carried forward for analysis. The following resource areas were evaluated during scoping and eliminated from detailed analysis:

- Sole Source Aquifers – There are no sole source aquifers in Kansas.
- Coastal Zones – There are no coastal zones in Kansas.
- Floodplains –Both actions are expected to have negligible floodplain impacts. The conversion of cropland to conservation cover would have a negligible impact on the ability of the floodplain to store floodwater. The conversion of cropland to conservation cover would have a negligible impact on the ability of the floodplain to convey floodwater. Percolation and infiltration rates are slightly better under conservation cover than under cropland. The Kansas Floodplains Office supports the conversion of crop land to conservation cover in the Arkansas River floodplain.
- Air Quality – The project area is in attainment for all criteria pollutants. The Proposed Action would likely result in reduced air emissions and reduced dust generated by wind erosion due to conversion of crop lands to conservation crop cover. Occasional burning of the conservation crop cover would not significantly degrade regional air quality.
- Noise – Noise sensitive receivers exist within in the CREP project area; however, neither the Proposed Action nor the No Action Alternative has the potential to negatively impact these resources. Neither action would generate substantial amounts of noise.
- Traffic and Transportation – Traffic and transportation resources, primarily road and rail, exist within in the CREP project area; however, neither the Proposed Action nor the No Action Alternative has the potential to negatively impact these resources in a substantial manner.
- Human Health and Safety – The proposed Federal action is to end irrigated agriculture on up to 100,000 acres in the project area. Agricultural commodity production would be replaced by conservation crops, which may or may not be harvested for biomass. The conversion of cropping practices from a commodity crop to conservation cover does not have the potential to increase the inherent risk associated with agricultural activity.
- Wild and Scenic Rivers – There are no Wild and Scenic Rivers in Kansas.

- National Natural Landmarks – There are no National Natural Landmarks within the project area.
- Wilderness Areas – There are no Wilderness Areas in Kansas.

2.4 ALTERNATIVES ELIMINATED FROM ANALYSIS

Aside from the Proposed Action and the No Action Alternative, no other alternatives have been reviewed through the NEPA process.

2.5 ALTERNATIVES SELECTED FOR ANALYSIS

Alternative A, the Proposed Action (and preferred alternative) and Alternative B, the No Action Alternative have been carried forward for analysis in this PEA.

2.6 COMPARISON OF ALTERNATIVES

Selection of the Proposed Action is expected to result in increased water flow in the Arkansas River and improvements to water quality. Wildlife and fish habitat is expected to improve with the improved water quantity and quality. Wildlife habitat is expected to improve due to the conversion of up to 100,000 acres of irrigated crop land to dryland conservation cover. Soil erosion is expected to be significantly reduced, which protects water quality and wetlands.

Selection of the No Action Alternative is not expected to improve surface water supply and river flow. There would be no improved water quality associated with the conservation practices identified in the proposed action. The No Action Alternative would not improve aquatic habitat because there would be change in either the quantity or quality of water being available in the river for aquatic species. Sediment associated with soil erosion would continue to degrade water quality. Soil erosion would continue to contribute sediments to wetlands, thereby filling them over time.

2.6.1 Identification of Geographical Boundaries

The proposed UAR CREP extends west from the state line to the river's confluence with the Rattlesnake Creek at the eastern end. The boundary and priorities of the UAR CREP are based on the interconnected surface-groundwater system, the soils' wind erodibility, and consideration of the documented economic impact from past low flows in the river.

As depicted on Figure 1-1, the proposed CREP area lies within 10 counties along the Arkansas River corridor and covers approximately 1,571, 440 acres. In the CREP area, 718,683 acres are authorized for groundwater irrigation; approximately another 10,680 acres are authorized for irrigation from surface water. The state will seek to enroll up to 100,000 acres into the program over the next five years; 85,000 acres of irrigated land, and 15,000 dryland corners from irrigated circles (KWO 2006).

2.6.2 Identification of Temporal Boundaries

If selected for implementation, enrollment in CREP would begin immediately. Enrollment in each county would continue until each county reaches their acreage limit. Once enrolled, the land would stay in the program for 10 to 15 years. Once the contract period ends, the landowners would be able to resume dryland cropping of their property or offer for re-enrollment in a dryland Federal cropland conservation program, such as CRP.

3.0 AFFECTED ENVIRONMENT

The project area is located in southwester Kansas. This area has generally flat to rolling topography. Surface water drains to the Arkansas River, which flows easterly from the Colorado border to Great Bend before turning northeasterly through the remainder of the project area. The climate is characterized by hot, dry summers and cold, somewhat wet winters. A substantial portion of the soils in this area are classified as highly erodible. Figure 3-1 shows the ecoregions in the project area.

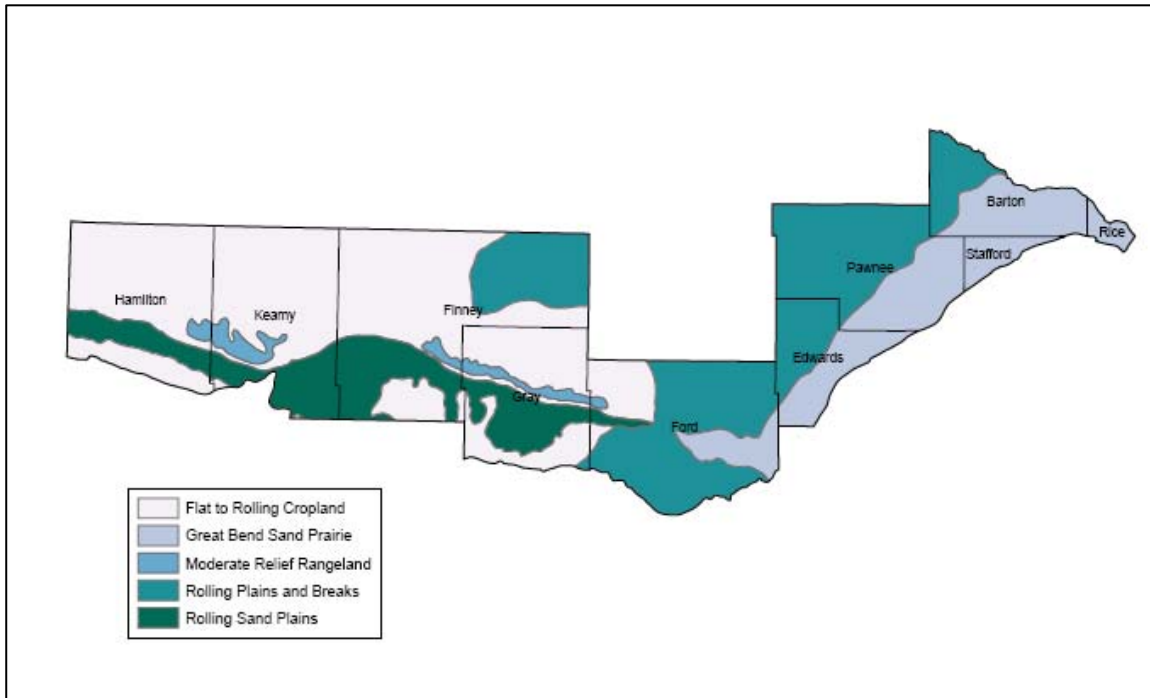


Figure 3-1: Ecoregions in the Project Area.

3.1 BIOLOGICAL RESOURCES

This section contains information regarding wildlife and fisheries, vegetation, and protected species and their habitat. Two of the most relevant Federal environmental laws that require the consideration of biological resources during CREP planning are the Endangered Species Act (ESA) and the Migratory Bird Treat Act (MBTA).

Ecoregions. The western half of Kansas lies in the region known as the Great Plains. The greater part of this region is a high, nearly level plain, broken here and there by streams or erosion valleys. These uplands are often referred to as the “short grass” region. The grass in the sandy regions tends to be sparse and bunchy. Native annual grasses, such as Sandbur, are numerous. Other coarse grasses known as binding grasses are important in holding the soil in place (KWO 2006). Switchgrass is common in eastern Kansas and native to the state. It has regularly been planted in western Kansas as part of conservation cover crops.

Predominant native vegetation consists of mixed grass prairie species. Kansas ranges are simple-to-complex mixtures of perennial grasses and forbs, plus a few native annuals and biennials. Modification of species composition has occurred due to the introduction of Kentucky bluegrass and cool-season annual grasses, particularly Japanese brome. Most of the introductions are sufficiently naturalized to be considered permanent parts of Kansas range vegetation (KWO 2006).

Loss of grasslands, wetlands and riparian communities from conversion to cropland has reduced the community diversity and available wildlife habitat within the priority area. Kansas was once covered by an estimated 841,000 acres of wetlands; of that, about 435,000 acres remain. These remaining wetlands are particularly important to migratory waterfowl and shorebirds, which depend on them for food, water, and cover during seasonal migrations (KWO 2006).

Tamarisk (salt cedar) and other non-native phreatophytes (water-loving plants) are prevalent along the main stem and tributaries to the Arkansas River. Aerial surveys conducted of the river in 2004-2005 indicate greater than 17,000 acres of the riparian corridor is infested with tamarisk. In the Arkansas River basin, tamarisk and other non-native water-loving plants affect the water supply in both quantity and quality. The decrease in alluvial groundwater levels increases the transit loss of water delivered from John Martin Reservoir in the Arkansas River. Thick tamarisk stands promote narrowing of river and stream channels. Since tamarisk replaces native species, there has been a loss of biodiversity in the infested areas. Tamarisk has affected the water quality by reducing in-stream flows and by concentrating naturally occurring salts in tamarisk stands. Tamarisk infestation also results in the loss of land utilization options and value, and loss of habitat (KWO 2006).

Habitat. The Upper Arkansas River Basin encompasses a wide array of habitat types that support rich and extremely diverse wildlife populations. Upland game birds in the proposal area include ring-necked pheasant, bobwhite quail, and greater prairie chicken. Non-game birds include more than 250 species of grassland birds that are known or likely to occur in the project area, including hawks, owls, jays, vultures, and woodpeckers. Migratory bird species include a number of common bird species, such as the American Robin, and several sparrow species, as well as Sandhill crane, dove, rail, snipe, woodcock, teal, coots, mergansers, pintails, canvasbacks, and other geese and ducks. The mammalian community includes more than 50 species. Major sport mammal species include mule deer and white-tailed deer. Forty-eight species of fish are found or likely to occur in the priority areas including shiners, catfish, darters, and chubs. Approximately 54 different species of frogs, turtles, salamanders, snakes, and lizards are present in the project priority areas. Included among these species are the Great Plains toad, bullfrog, prairie kingsnake, and snapping turtle (KWO 2006).

Listed Species. State and federally listed species are protected at the state level by the *Kansas Nongame and Endangered Species Conservation Act* and at the Federal level by the *Endangered Species Act*. Fifteen state or federally listed threatened or endangered species share a probable or historic range or critical habitat with the CREP counties. Eighteen

nongame species deemed to require conservation measures are designated within the proposal area. These Species in Need of Conservation (SINC) do not have the high level of statutory protection as those listed as threatened or endangered. Two species that may particularly benefit from improved water quality and streamflow are the Arkansas darter (*Etheostoma cragini*; state threatened, Federal candidate species) and the Arkansas River Speckled Chub (*Macrhybopsis tetranema*; state endangered species) (KWO 2006).

Migratory Bird Treaty Act. Compliance with the MBTA has been considered during the project planning phase. The MBTA protects all native bird species, active nests, and young birds. During preliminary agency coordination, the FWS commented that “activities occurring in prairies, wetlands, and stream and woodland habitats that might result in the taking of migratory birds, eggs, young, and/or active nests should be avoided.” They also state “most migratory bird nesting activity in Kansas occurs during the period of April 1 to July 15, although some migratory birds are known to nest outside this period.” The FSA maintains limitations on seasonal haying of CREP lands to minimize impacts to nesting native bird species. Generally, CREP acreage may not be hayed or grazed during the Primary Nesting Season, which is established by state FSA committees in consultation with the NRCS State Technical Committee.

3.2 CULTURAL RESOURCES

This section contains information regarding archaeological resources, architectural resources, and traditional cultural properties. The term cultural resource is loosely defined as a resource that is important to a society’s ability to interpret their shared cultural history. A variety of cultural resources exist and Federal laws are in place to ensure that these resources are considered during the planning process. Two primary Federal laws apply to this category of resource.

The first primary law is the National Historic Preservation Act (NHPA) of 1966, as amended. It established the Advisory Council on Historic Preservation (ACHP) to advise the President and the Congress on historic preservation matters, to recommend measures to coordinate Federal historic preservation activities, and to comment on Federal actions affecting properties included in or eligible for inclusion in the National Register of Historic Places (National Register). Historic property is any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register maintained by the Secretary of the Interior (36 CFR 800.16(1)(1)). The term, historic property, includes artifacts, records, and remains that are related to and located within such properties. It includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization. These properties are referred to as “Traditional Cultural Properties” when they meet the National Register criteria.

The second primary law is the Archeological and Historic Preservation Act of 1974. This law provides for the survey, recovery, and preservation of significant scientific, prehistoric, historic, archaeological, or paleontological data when such data may be destroyed or irreparably lost due to a Federal, federally licensed, or federally funded project.

A state law, the Kansas Preservation Act, also exists and was originally enacted in 1977. This state law requires that the Kansas State Historic Preservation Officer (SHPO) be given the opportunity to comment on proposed projects affecting historic properties or districts. The initial legislation required the activities of governmental entities which encroached on national or state register properties to be reviewed by the Kansas SHPO. In 1981 the law was widened to require review of all projects involving national and state register properties and their environs which needed local building permits. Projects undertaken by individuals, firms, associations, organizations, partnerships, businesses, trusts, corporations or companies became subject to review if they require building permits. A 1988 amendment further defined the "environs" of historic properties, requiring that the SHPO receive notice of any proposed project within 500 feet of a listed historic property located within the corporate limits of a city or within 1000 feet of a listed historic property located in the unincorporated portion of a county (KSHS 2006).

Evaluated and unevaluated historic properties exist within the project area. They include archaeological sites associated with Native American and Euro American activity, historic frontier and agricultural buildings, and a variety of other historic property. Two of the most well-known historic resources in the project area are the Santa Fe Trail which closely followed the Arkansas River, and Ft. Larned, which is now a state historic park.

Passage of the NHPA resulted in the development of the Section 106 review process for considering historic property during project planning. The Section 106 process would be followed to the extent required once specific site locations are identified. The Kansas SHPO will be provided an opportunity to review this PEA during the public and agency review and comment period.

The Section 106 process consists of the following requirements:

- FSA will ensure that each specific site location is evaluated for its potential to contain historic property
- FSA personnel would consider the specific details proposed for the candidate site during the development of the site's conservation plan. FSA personnel would then make a determination of effect regarding the effect that the Proposed Action would have on historic property if present, and
- FSA would provide the Kansas SHPO with an opportunity to comment on the FSA evaluation of each of the site specific locations for actions not exempted in 1-EQ, if appropriate.
- In the event that there is disagreement between the FSA and the SHPO on a Section 106 issue, then the ACHP would become involved.

Additionally, FSA would coordinate cultural resources review with the appropriate American Indian tribes in accordance with the Section 106 process.

3.3 WATER RESOURCES

This section contains information regarding groundwater, surface water, water quality, and wetlands. The Clean Water Act provides the authority to establish water quality standards, control discharges into surface and subsurface waters, develop waste treatment management plans and practices, and issue permits for dredged or fill material.

The Kansas Department of Agriculture, Division of Water Resources (DWR) has the responsibility for water management in Kansas. DWR oversight of water resources includes surface and groundwater appropriations for beneficial uses, river flows to meet minimum desirable stream flows (MDS) and interstate issues related to streams flowing through neighboring states. Kansas uses priority in appropriation as the basis of water use, with new appropriations based on availability. The entire UAR CREP area is closed to new appropriations (KWO 2006).

Groundwater. The residents of the upper Arkansas River corridor have been, or are at risk of, impact by saline contamination to both public water supply and domestic wells. This affects a minimum of 63 to 75 percent of the populations of Hamilton, Kearny and Finney Counties. Selenium levels in the groundwater remain well below the Maximum Contaminant Level (MCL) of five µg/L; however, that level is frequently exceeded in the river water. With continued infiltration of river water, the selenium levels in groundwater will likely increase. If groundwater pumping continues for the next few decades in the corridor at about the same rate as during the 1990s, a Kansas Geological Survey study predicts the future spread of sulfate in groundwater. Enrollment of acres south of the river could slow the migration of contaminated water away from the corridor (KWO 2006).

The principal sources of groundwater are the saturated sands, gravels, and silts in the thick deposits of Tertiary and Quaternary age. This includes the alluvial deposits along the river and tributaries and the Ogallala Formation of the High Plains aquifer. The thickness of the Arkansas River alluvium ranges from about 10 feet to over 80 feet. Alluvial groundwater levels are highly variable but a steady decline throughout the basin has occurred, with significant declines east of Garden City (KWO 2006).

Authorized withdrawals for irrigated agriculture use the majority of all water used in the counties, the river basin, and the CREP area. The groundwater levels have declined because withdrawals exceed recharge. Over 94 percent of all the reported surface and groundwater used in the Upper Arkansas River basin is for irrigation. Approximately 1.2 million acre-feet of groundwater is authorized for irrigation annually in the UAR CREP area, from 5,078 wells or points of diversion covered by 4,003 water rights. An additional 171,624 acre-feet are authorized from surface water diversions for irrigation annually (KWO 2006).

Approximately 170 wells are authorized to withdraw a total of 30,571 acre-feet of water annually for public water supplies in the project area. The communities, rural water districts and private well owners in the project area obtain their water supply exclusively from groundwater. Groundwater quality influenced by the Arkansas River within the CREP area

affects at least 20 communities accounting for nearly 67 percent of the population of their counties.

Two GMDs manage the groundwater resources in portions of the area within the authorities established in the Groundwater Management District Act. These locally based units develop management policies tailored to their specific areas within the broader Water Appropriation Act rules and regulations. GMD #3 includes parts of Kearny, Finney, Gray, and Ford Counties within the project area. GMD #5 includes the parts of Edwards, Pawnee, Stafford, Barton and Rice counties in the project area (KWO 2006).

An Intensive Groundwater Use Control Area (IGUCA) has been established by DWR for the Arkansas River corridor in the western area proposed for CREP to provide increased management of groundwater in those areas. In addition, water quantity priority areas have been recognized for the Middle Arkansas subbasin. Voluntary management strategies to reduce total water use by 13,980-acre feet per year by the year 2015 in the Middle Arkansas subbasin were identified by stakeholders and approved by the Chief Engineer. Implementation of a CREP would help achieve additional needed reductions for sustainable yield management, a state water plan objective for the year 2015 (KWO 2006).

Surface Water. The Arkansas River entering Kansas from Colorado is very saline, with sulfate the primary constituent. At the state line, the total dissolved solids (TDS) concentration of the river averages over 3,000 milligrams per liter (mg/L), and during low flow can exceed 4,000 mg/L (fresh water generally contains less than 1,000 mg/L of TDS). The salinity in the river comes from the substantial concentration of dissolved solids derived primarily from the soils and bedrock in southeast Colorado. The TDS concentration increase across eastern Colorado is due to evapotranspiration as the water is used and reused in irrigation, with residual salts left in the remaining water. Flows entering Kansas are saline during both high and low discharge periods, although the salinity generally decreases with greater discharge (KWO 2006).

Sulfate concentrations in the river at Coolidge average 1,900 to 2,000 mg/L, with maximum concentrations of 2,600 mg/L, a concentration level possibly limited by gypsum precipitation. The Secondary Maximum Contaminant Level (SMCL) for sulfate is 250 mg/L. Selenium concentrations usually exceed 5 µg/L, the chronic toxicity level for aquatic life, and occasionally exceed 20 µg/L, the acute toxicity level. During low flow, fluoride and boron concentrations exceed the recommended maximum for irrigation uses (KWO 2006).

The average annual precipitation varies from approximately 16 inches at the western end to 26 inches at the eastern end of the river basin. The annual quantities are subject to wide fluctuation, with thunderstorms accounting for most of the annual rainfall. Most of the precipitation occurs between April and September (KWO 2006).

Six active irrigation ditches (Frontier, Amazon, Great Eastern, Garden City, Southside, and Farmers) in southwest Kansas are supplied from streamflow in the Arkansas River. These ditches have been in existence since the late 1800's. The canals in Kansas historically served approximately 70,000 acres; more recently they have provided surface water supply

to approximately 44,000 acres in Hamilton, Kearny and Finney Counties. The Frontier Ditch is one of the few ditches within the upper Arkansas corridor that regularly returns flows back to the river. Lake McKinney is a storage reservoir for ditch water for the Great Eastern ditch company (KWO 2006).

Water Quality. Water quality concerns are addressed through a combination of regulatory and voluntary incentive based programs. The Kansas Department of Health and Environment (KDHE) is responsible for water quality standards for water bodies, public water supplies and those related to discharges to the rivers and streams. The State Conservation Commission (SCC) and KDHE administer the incentive-based programs. Most incentive-based programs aim at reducing water quality threats and improving water quality. SCC manages programs for soil and water conservation, administered through county conservation districts (KWO 2006).

The Arkansas River water quality in Kansas is closely linked to water quantity. Before irrigation diversions and extensive pumping of the groundwater, the Arkansas River was a gaining stream for most of its length in southwest Kansas. The baseflow diluted TDS concentrations progressively downstream. Today there is no significant baseflow to the river for most of the upper Arkansas River until Great Bend. The loss of baseflow has reduced dilution of the saline water, and these days, the salinity of the river passing the Colorado-Kansas border usually does not appreciably change as it flows downstream until east of Dodge City (KWO 2006).

The Arkansas River is very fresh as it enters the Great Plains from the Rocky Mountains. As the river flows across the plains, the concentration of dissolved solids increases. Irrigation water in Colorado is applied with a portion returning to the stream or aquifer carrying a large percentage of the original mineral concentration with it (less water), thus increasing the concentration. This repeated process results in much higher TDS concentrations, particularly in sulfate, making the water highly saline and often unusable without treatment (KWO 2006).

The salinity of the water at the Colorado-Kansas border generally decreases with river flows greater than 200 cfs, as precipitation and surface run off helps dilute the concentration. However, the salinity has increased with greater than average river discharges during the last two decades, possibly reflecting a flushing of salt accumulated in the soils and shallow groundwater (KWO 2006).

In addition to concentrations increasing, the extent of the surface flows being impacted has increased downstream and groundwater has been impacted farther from the river and deeper, into not only the alluvial water but into the High Plains aquifer. As water levels decline, the pumping wells away from the river periodically change the gradient to move the mineralized water away from the river. The concentration of salt compounds and selenium are highest in the river west of Garden City (Hamilton, Kearny and Finney counties). Selenium, sulfate and TDS have also affected groundwater, as recharge water high in these minerals make their way into the aquifers after irrigation. Seepage from below ditch diversions and fields irrigated with river water in southwest Kansas also spread saline water farther from the river (KWO 2006).

The nitrate concentrations in low flows of the Arkansas River in eastern Colorado and southwest Kansas typically range from one to 3 mg/L as nitrate-nitrogen. High flows contain smaller concentrations; nitrate-N contents are usually <2 mg/L and commonly <1 mg/L. Nitrate contents are highly correlated (at greater than the 99 percent level) with the salinity of the river water. One source of nitrate is runoff from cropped fields. High priority TMDLs for fecal coliform bacteria levels in the Arkansas River have been set in Edwards and Pawnee Counties. Sources include livestock, human, and wildlife waste (KWO 2006).

Wetlands. The disappearance of nearly one-half of the state’s wetlands has increased the importance of those that remain. Migratory birds formerly had access to many wetlands, as well as to shallow, braided river channels throughout central Kansas for foraging and resting. Draining of these wetlands and depletion of streamflow in major streams such as the Arkansas River have left only Cheyenne Bottoms and Quivira National Wildlife Refuge as major stopover places in Kansas (KWO 2006). Table 3-1 contains national wetland inventory acreages in the project area.

Table 3-1: National Wetland Inventory Wetland Acreage in the Project Area

County	Emergent Wetland	Forested Shrub Wetland	Pond	Shore	Lake	Riverine	County Totals
Hamilton	149.46	250.78	57.10	31.67	21.91	560.54	1,071.46
Kearney	758.51	147.63	137.55	24.71	295.24	1,145.06	2,508.7
Finney	165.00	3.89	166.78	42.82	86.78	4.84	470.11
Gray	27.35	7.66	102.38	38.18	15.59	93.44	284.6
Ford	147.81	95.51	161.09	49.02	75.09	4.84	533.36
Kiowa	0.79	No data	No data	No data	No data	No data	N/A
Edwards	47.68	36.50	78.32	4.27	10.28	No data	N/A
Pawnee	101.89	183.17	69.06	24.08	80.44	23.90	482.54
Stafford	6.80	No data	0.10	0.20	No data	No data	N/A
Barton	312.61	182.43	72.53	4.64	154.27	370.68	1,09716

Note 1: National Wetland Inventory data not available for a portion of the project area

Note 2: Riverine data not available for all counties

Note 3: N/A indicates total not available due to missing data

Shallow, seasonal wetlands known as playas are found in abundance throughout the Southern High Plains. About 10,000 playa lakes are located in western Kansas and serve as a primary source of recharge for the Ogallala aquifer. Many studies indicate that recharge into the Ogallala under playas exceeds three inches per year, a rate much higher than the USGS recharge values of less than 0.5 up to 1.0 or 2.0 inches, along the CREP proposed area. Playas are also one of the most important wetland habitats for migrating birds in the Central Flyway. The majority of playas in Kansas are located in or adjacent to farms, grazing land and feedlots, which can create a number of impacts in the watershed including pesticide and fertilizer runoff, contaminants from feedlot runoff, overgrazing, and sedimentation. The CREP project area contains approximately 887 areas of playa soils covering about 9,394 acres (KWO 2006).

Cheyenne Bottoms is a wetland of international importance located north of Great Bend in Barton County. Cheyenne Bottoms is not located within the CREP boundary, but receives diversion water from the Arkansas River. The wetland encompasses approximately 41,000 acres that includes 19,857 acres as a wildlife area. This wildlife area is recognized as an important migration point for shorebirds in North America. Past studies reflect almost half of the North America shorebirds migrate through the Bottoms. It is designated critical habitat for endangered species such as the Whooping Crane, Least Tern, Peregrine Falcon and numerous others. The Cheyenne Bottoms is owned by the State of Kansas and is managed by the Department of Wildlife and Parks. Formed thousands of years ago, the wetland's natural depression has a drainage area of approximately 254 square miles including drainage from Blood and Deception Creeks. Availability of water plays a major role in productivity at the wetland. The wildlife refuge also receives surface water from the Arkansas River through a canal system. Through the years, the availability of surface water in the Arkansas River has been reduced due to human activities in the upper reaches of the river above the wetland's diversion point (KWO 2006).

Cheyenne Bottoms Wildlife Area receives, on average, more than 50,000 visitors each year. Estimated total number of visitors and hunters on opening day of the regular duck season increased steadily from 1996 to 2001. Exceptionally dry years in 2002 and 2003 resulted in a temporary drop in visitation and opening day hunters, however, the 2004 opener saw a rebound in opening day hunters. Crane and duck presence at the Bottoms has been constant to slightly increasing since 1986. Geese populations have substantially increased since the 1980s, with the largest peak occurring in 2002 (KWO 2006).

3.4 SOIL RESOURCES

USDA has characterized 2,773,175 acres, or 72 percent, of land in the project area as being highly erodible. This is a substantial portion of the total project area. These soils have a high risk for wind and water erosion. Agricultural activity contributes substantially to soil erosion in the project area. As shown by Figure 3-2, much of the project area is considered highly erodible. Highly erodible land is considered unsuitable for dryland farming because of the wind erosion of these soils.

Modern agricultural practices, such as low-till or no-till methods, can substantially reduce soil erosion caused by agricultural activity. Traditional agricultural practices cause substantially more soil erosion than modern, no-till methods. Native prairie vegetation and conservation crops cause significantly less soil erosion when compared to either traditional or modern agricultural activity.

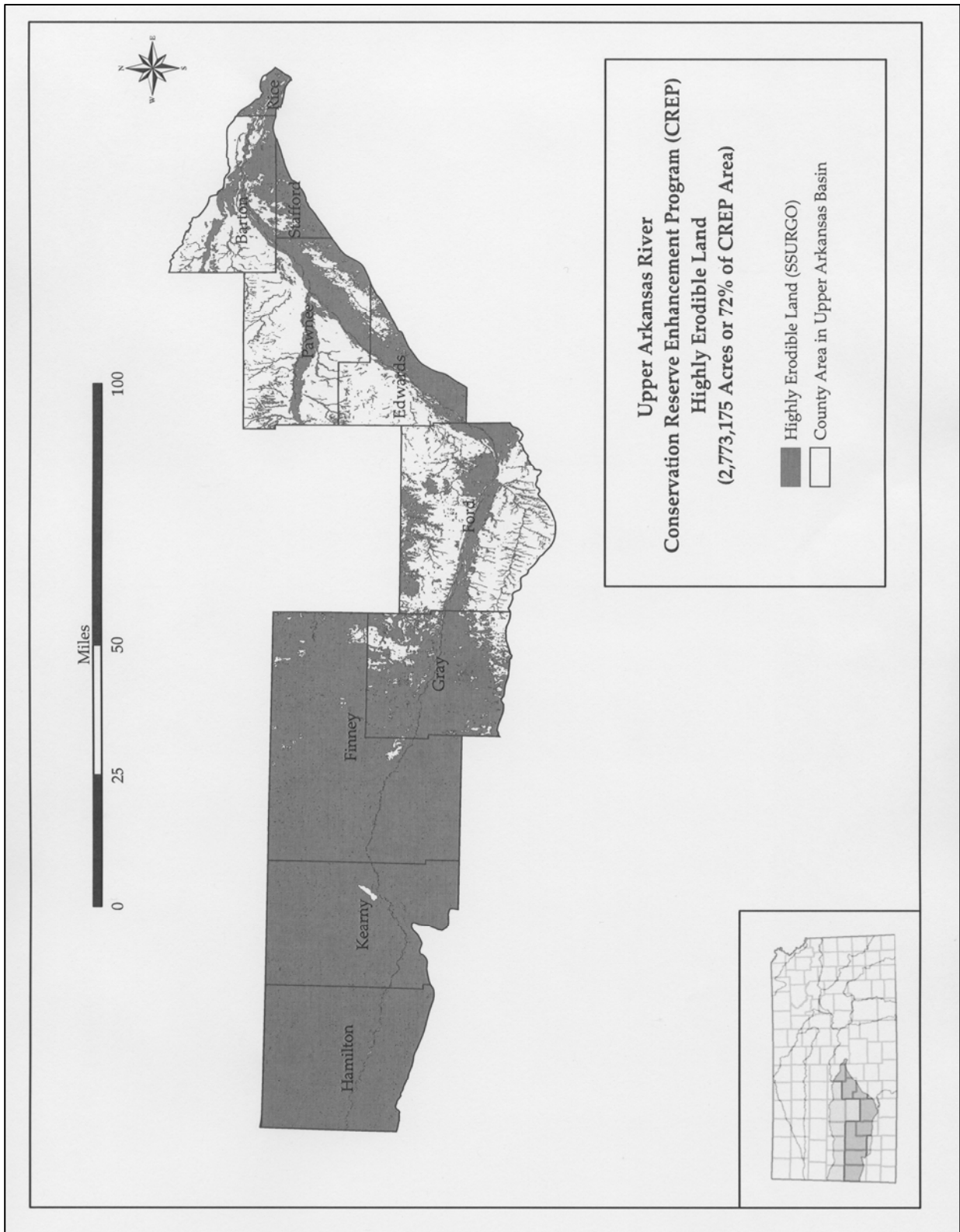


Figure 3-2: Highly erodible land in the project area.

3.5 RECREATION

The areas of the UAR basin are important to hunting participation in this state. The total number of hunter use days for the state of Kansas exceeds 3.6 million according to the U.S. Fish and Wildlife Service (FWS) 2001 National Survey and the expenditures linked to this participation was more than \$370 million. Considering the hunter use within the priority area, a major economic impact will be felt if wildlife populations decline (KWO 2006).

The presence of diverse and abundant wildlife populations is important to more than the hunting community. Wildlife watching has become a popular activity, and the flocks of waterfowl and cranes migrating through Kansas have brought many residential and non-residential visitors to the project priority area. The 2001 national survey estimated 2.4 million days of wildlife watching activity annually in Kansas. These wildlife watchers spent over \$128 million dollars on their trips, much of which went to rural Kansas businesses (KWO 2006).

The loss and degradation of the native prairie grasslands, wetlands, and riparian communities in the project priority area have reduced available wildlife habitat. The result has been decreased abundance of many resident wildlife species. Additionally, migrating birds using the project priority area encounter greater stress due to reduced food and overcrowding on the remaining habitat. The resulting decrease in wildlife populations will lead to less hunter use days and wildlife watching days for this area. The regional communities and businesses depend heavily upon their share of the over \$498 million spent annually in Kansas by these recreationists. Converting additional land within this area from agricultural use to native habitat would improve wildlife populations, assist migrating species and provide more acreage for hunting and wildlife watching activities (KWO 2006).

The conversion of native grasslands, wetlands, and riparian plant communities to agricultural production in the past has reduced wildlife habitat in the project area. This has resulted in a reduction of wildlife populations and a decline in recreational opportunities and participation in the basin (KWO 2006).

3.6 SOCIOECONOMICS

The total value of regional economic activity was about \$10.3 billion in 2003, which is the most recent year for which data are available (Leatherman et. al., 2006). Regional agricultural production had an output of \$1.67 billion in 2003. Agricultural production ranked second in the regional economy to the manufacturing sector's output of \$4.26 billion. The regional manufacturing economy is dominated by industries in the agricultural processing sector, such as meat packing (Leatherman et. al., 2006).

The majority of land in the project area is privately owned and in agricultural production. Kansas Statistical Abstract for 2004 indicates the CREP counties had nearly 5,000 farms, with 5.3 million acres included in those farms. In 2003, these counties harvested over 2.8 million acres, worth over \$278 million. Winter wheat, corn and grain sorghum are the major crops. Alfalfa, small grains, and hay are also common (Leatherman et. al., 2006).

Total county acres planted to crops averaged 1,137,801 per year for the crop years 1999 through 2003 in the eight primary CREP counties (Barton, Edwards, Finney, Ford, Gray Hamilton, Kearny, and Pawnee). Irrigated corn, sorghum, wheat and soybeans were the primary crops, and averaged 661,116 acres per year for this same period. Total cropland in the 10 CREP counties decreased from 1987 – 2002, although irrigated acres increased with a high in 1997. There was a steady rise in pastureland during this same time period (Leatherman et. al., 2006).

A 213 industry-sector model was built for the Upper Arkansas Basin economy and calibrated to 2003, the most recent year for the necessary data. The total value of the regional economic activity was about \$10.3 billion in 2003, with employment at more than 83,000 jobs. The largest economic sector is manufacturing, which includes meatpacking, with an industry output of over \$4.2 billion. The agriculture economic sector, which includes forestry, fishing and hunting, is the second largest at \$1.67 billion. The retail sector comes in a distant third at \$407 million (Leatherman et. al., 2006).

A study on the value of water rights in Western Kansas (Golden, 2004) looked at fair market value by comparing sale differentials between irrigated and non-irrigated cropland. Contrary to expectations, in areas where the aquifer has declined, the value of the water actually increased, both in nominal and real terms. The author speculates that the rate of technological advancement in water use efficiency and crop production is increasing the value of water faster than the aquifer is being depleted (Leatherman et. al., 2006).

Recent energy price increases have put another pressure on irrigators. Research review indicated that producers are forced by economic conditions to generally continue with current irrigation practices and accept the higher energy costs and lower profits. Those with marginal land or credit constraints may be forced to change water usage patterns. Implementation of the proposed CREP may offer a positive alternative to lowered profit expectations (Leatherman et. al., 2006).

3.7 ENVIRONMENTAL JUSTICE

The guidance contained in *Environmental Justice: Guidance Under the National Environmental Policy Act*, was reviewed to determine if a discussion of Environmental Justice (EJ) is appropriate for the PEA being prepared for the implementation of CREP in Kansas. This guidance was released by the Council on Environmental Quality (CEQ) in December 1997. It can be found online at <http://www.whitehouse.gov/CEQ/>.

Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, provides that “each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.” This EO applies fully to programs involving Native Americans.

Six of the 10 counties in the project area (Edwards, Gray, Hamilton, Kearny, Kiowa, and Stafford) have populations that are categorized by the US Census Department as exclusively rural in nature. These six counties do not have any census tracts that are described as urban by the US Census Department.

Four counties within the project area have census tracts that are defined as urban by the US Census Department. The rural populations, expressed as a percentage of the total population of each county, are: Barton (29.4 per cent rural), Finney (15.5 per cent rural), Ford (14.6 per cent rural) and Pawnee (29.8 per cent rural). None of these four counties have a majority of their population being described as rural by the US Census Department.

None of the 10 counties have an unemployment rate in excess of 4%. The county unemployment rates range from a low of 2.8 percent in Gray and Edwards counties to a high of 3.8 percent in Kearney County. Detailed demographic information can be found in Appendix A of this PEA.

Housing unit vacancy rates range from 6 percent to 18%. Four counties have housing unit vacancy rates below 10 percent (Kearny, 7%; Gray, 6%; Finney, 6%; and Ford, 7%). There does not appear to be a strong correlation between the vacancy rate and the unemployment rate within the region.

Owner occupied housing units are the majority in every county. Renter occupied housing units range from a low of 18 percent in Edwards and Stafford counties to a high of 33 percent in Finney and Ford counties. This strongly suggests that the majority of the residents in the project area are established and not migratory in nature.

The average farm size ranges from a low of 826 acres in Barton County to a high of 1,976 acres in Hamilton County.

The majority of the population in the project area describes themselves as white. The percentage of white residents in each county ranges from a low of 69 percent in Finney County to a high of 97 percent in Kiowa County. Six of 10 counties have a white population in excess of 90 percent of the total population.

The Hispanic population in the project area ranges from a low of 2.0 percent in Kiowa County to a high of 43.3 percent in Finney County. Four counties have Hispanic populations in excess of 10 percent of the total populations. These are Finney County, Ford County (37.7 percent Hispanic), Hamilton County (20.6 percent Hispanic), and Kearney County (26.6 percent Hispanic). Because it is defined by a shared cultural affiliation, the Hispanic population can be comprised of members of any racial category.

There is no information available that suggests that converting irrigated agricultural crop land to dryland conservation crop cover would have any negative impact on public health.

The conversion of irrigated crop lands to dryland conservation crops is anticipated to lead to a loss of an estimated 119 jobs in the 10 county project area. This is equivalent to the number of jobs that would be lost by a 6 percent decline in irrigated agriculture that could

occur under the No Action Alternative due to rising energy prices and/or declining water availability.

This area has been in agricultural production since it was settled. Some irrigated agricultural crop lands existed in the project area in the early 20th Century; however, the current dominance of center-pivot irrigation did not begin until the mid-20th Century. Irrigated agriculture plays an important economic factor in the regional economy due to the fact that it is much more productive than dryland farming.

Important cultural and social practices in the project area are seasonal hunting and fishing. For some participants, this practice is an important mechanism for obtaining food for their families. For many, it is an important social mechanism that promotes family and social bonds through regularly shared practices of hunting and fishing. The implementation of the Proposed Action is expected to significantly improve the quality of wildlife habitat, water quantity, and water quality along the Upper Arkansas River. This improvement is expected to result in improved wildlife populations and improved seasonal hunting and fishing opportunities.

A public involvement process utilizing the county conservation boards and relevant nongovernmental agencies has been followed. The public has been involved in the planning process through the county conservation boards. Nongovernmental agencies, such as the Nature Conservancy, have also been involved in the planning process. A programmatic environmental assessment is underway to evaluate the potential for the Proposed Action and additional public and agency involvement is anticipated during the NEPA process.

4.0 ENVIRONMENTAL CONSEQUENCES

The following subsections provide a discussion of the likely environmental impacts associated with the selection of either the Proposed Action or the No Action Alternative.

4.1 BIOLOGICAL RESOURCES

4.1.1 Alternative A – Preferred Action

Ecoregions. The Proposed Action involves the conversion of cropland to a conservation cover crop. This cover crop would consist of any of the nine conservation practices discussed in Chapter 2 of this document. The appropriate conservation practices would be selected during the development of a conservation plan for the contracted parcel. The species used in each conservation practice would consist of native or naturalized plants that are suitable for the ecoregion. The conservation plan would consist of species that are selected based on their suitability for the soils, rainfall, temperature, and other environmental factors. Following a period of limited irrigation to establish the conservation cover, the planted species would not be irrigated and would receive limited applications of fertilizers and herbicides.

The Proposed Action is expected to have a beneficial effect on the ecoregion by improving the quantity and quality of native habitat in the project area. The following mitigation measure is recommended:

1. Seeds of native, noninvasive species of plants that are suitable for the specific location should be selected for planting. Species that are considered invasive should not be selected for the planting mix.

Habitat. The Proposed Action is expected to result in improved water quality and an increased quantity of water in the UAR. The Proposed Action is expected to improve the quality of wildlife, waterfowl, and fisheries habitat in the region. The conservation cover would accomplish this by reducing soil erosion, improving water quality, and providing additional cover and forage over what is available today. It is generally expected that smaller species of mammals and all species of birds, reptiles and amphibians would benefit from additional conservation crop coverage. Larger mammal species, such as deer, would also benefit but perhaps not to the same degree as the smaller animals. The species selected for planting for each contracted parcel would provide substantially improved wildlife habitat when compared to the agricultural crops currently grown in the area.

The Proposed Action is expected to improve habitat, especially for native wildlife, in the project area. This is expected because conservation crops provide better food and cover than agricultural crops. The following mitigation measure is recommended:

1. Landowners should be encouraged to leave as much conservation crop standing as possible. If hayed, at least 6 inches, and preferably 1 foot, of the conservation cover should be retained to provide wildlife forage and cover.

Listed Species. Conservation cover crops, such as switchgrass, provide more suitable quantities of food and cover than traditional agricultural crops. The FWS commented during the preliminary agency coordination phase that “it appears likely that retiring cropland, especially irrigated cropland, should have a net beneficial effect on wetlands and stream areas.” The FWS expects that this would indirectly benefit the wildlife species found in the project area, including listed species.

The Proposed Action is expected to result in increases in the number and diversity of all wildlife species in the project area, including listed species. This is expected because the Proposed Action would increase the amount of suitable available habitat in the project area. The following mitigation measure is recommended:

1. If the FSA determines that it appears likely that a listed species is impacted by the Proposed Action, then the FSA should coordinate with the FWS to determine what additional information or action may be required.

Migratory Bird Treaty Act. Unlike traditional agricultural crops, conservation cover provides excellent habitat for native birds. An increase in conservation cover is expected to result in increased native bird populations. The presence of native birds can complicate management of CREP-enrolled parcels because compliance with the MBTA would be required. The FWS has recommended that activity that may impact birds protected by the MBTA be avoided either spatially by avoiding these resources or temporally by avoiding the time when these resources are active. Their recommendation was to avoid activity during the nesting season, which they define as the period from April 1 to July 15.

The Proposed Action is expected to result in increases in the number and diversity of migratory birds in the project area. This is expected because the Proposed Action would increase the amount of suitable available habitat in the project area. The following mitigation measure is recommended:

1. If the FSA determines that the CREP activity may result in the taking of nesting migratory birds, then a field survey of the affected habitats and structures during the nesting season will be required to determine the presence of active nests. The FSA should contact the FWS immediately for further guidance if a field survey identifies the existence of one or more active bird nests that cannot be avoided temporally or spatially by planned activity.

Energy Crops. Energy crops such as switchgrass can provide excellent cover and forage for a wide variety of native species. However, the harvest of energy crops can impact wildlife populations, especially native birds, if conducted at inappropriate times of year. The optimum harvest time for switchgrass is actually in the very late fall or very early spring, when native birds are not actively nesting and when juvenile native birds are at little risk. Switchgrass harvesting would not likely result in any changes to this resource area under any of the three harvest scenarios. The following mitigation measure is recommended:

1. The FSA should work with the FWS to determine the appropriate time of year and appropriate harvesting methods for energy crops in order to avoid impacts to listed species and/or migratory birds.

4.1.2 Alternative B – No Action

Ecoregions. The No Action Alternative would result in no conversion of cropland to a conservation cover crop. Agricultural crops would continue to be grown as currently practiced, regardless of the suitability of the ecoregion for any particular crop. Thus, water-intensive crops such as corn would continue to be grown despite reduced water availability and declining water quality.

The No Action Alternative is expected to have no beneficial effect on the ecoregion because it would not improve either the quantity or the quality of native habitat in the project area. No mitigation measures are recommended.

Habitat. The No Action Alternative would not be expected to result in either improved water quality or an increased quantity of water in the UAR. The No Action Alternative is not expected to improve the quality of wildlife, waterfowl, and fisheries habitat in the region. There would be no appreciable reduction in soil erosion, no improvement in water quality, and no additional cover and forage over what is available today.

The No Action Alternative is expected to result in no changes to habitat, including native wildlife habitat, in the project area. No mitigation measures are recommended.

Listed Species. Agricultural crops do not provide suitable quantities of food and cover for listed species. The No Action Alternative is expected to result in no changes to the number and diversity of all wildlife species in the project area, including listed species. This is because the No Action Alternative would not increase the amount of suitable available habitat in the project area. No mitigation measures are recommended.

Migratory Bird Treaty Act. Traditional agricultural crops do not provide good habitat for native birds. There is no effective mechanism for minimizing agricultural impacts to nesting migratory birds. It can be very difficult to manage agricultural activity so that migratory bird impacts are either avoided spatially by avoiding these resources or temporally by avoiding the time when these resources are most sensitive to impacts. The FWS recommendation to avoid activity during the nesting season, which they define as the period from April 1 to July 15, can be difficult or even impossible to meet on lands actively engaged in agricultural production.

The No Action Alternative is not expected to result in increases in the number and diversity of migratory birds in the project area. This is because the No Action Alternative would not increase the amount of suitable available habitat in the project area. No mitigation measures are recommended.

4.2 CULTURAL RESOURCES

4.2.1 Alternative A – Preferred

The Kansas SHPO has commented during the initial round of agency coordination for this project, that “The project should have no effect on properties listed on the National Register of Historic Places or otherwise identified in our files. This office has no objection to implementation of the project.” This letter is found in Appendix B of this document.

The Kansas SHPO does recommend that their office be provided with an opportunity to review changes to the project area that include additional ground disturbing areas. Additionally, if buried archaeological materials are uncovered by construction work, then work should cease in the area of the discovery and their office should be notified immediately. The following mitigation measures are recommended:

1. FSA should provide the Kansas SHPO an opportunity to review changes to the project if additional ground disturbing areas are anticipated.
2. If buried archaeological materials are uncovered by construction work, then work should cease in the area of discovery and the Kansas SHPO should be notified.

Energy Crops. The planting and harvest of energy crops would not be likely to result in increased impacts to cultural resources under any of the three harvest scenarios. No additional mitigation measures are recommended.

4.2.2 Alternative B – No Action

Under the No Action Alternative, there would no change from the present practice with respect to historic property evaluation. No mitigation measures are recommended.

4.3 WATER RESOURCES

4.3.1 Alternative A – Preferred

Groundwater. The Proposed Action is expected to result in reduced pumping of groundwater for agricultural uses. This reduction comes through the retirement of water rights for up to 100,000 acres of agricultural land, most of which is currently irrigated. Reduced pumping of groundwater is expected to reduce aquifer overdraft and the potential for saline contamination of public water wells and domestic water supplies. Reduced groundwater withdrawal is expected to stabilize or reduce the levels of selenium in the groundwater and could slow the migration of contaminated water away from the river corridor. Reduced pumping of groundwater for agricultural uses is expected to help ensure the continued usability of the approximately 170 water wells that associated with public water supplies in the project area. No mitigation measures are required.

Surface Water. The Proposed Action is expected to improve the quantity of surface water in the project area. Improvements in surface water quantity should also improve surface water quality by diluting the waters of the Arkansas River, which enters Kansas from Colorado in a saline state; because salinity generally decreases as water volumes increase. Increased flows of the Arkansas River would also help to reduce excessive concentrations of sulfate and selenium.

Improved surface water quality would be accomplished through the use of vegetated buffer strips adjacent to agricultural fields. Vegetation buffers have been proven to reduce water-borne sediments, thereby improving water quality and reducing sedimentation of water bodies such as wetlands. These buffers also expose surface water to decomposers, which break down the excess nutrients, pesticides, and herbicides that are often found in surface water in agricultural areas. The following mitigation measure is recommended.

1. When developing the conservation plan for participating acreage, every effort should be made to use vegetated buffers to improve the quality of surface water as it leaves agricultural fields and before it is discharged into the Arkansas River or its tributaries.

Water Quality. The Proposed Action is expected to improve water quality in the project area in part by providing a greater quantity of water to the Arkansas River. The quality of the water in the river is closely linked to the quantity of water in the river. Higher volumes of water dilute the TDS concentrations in river water, resulting in lower salinity, lower selenium levels, and lower sulfate levels. The return of native grassland habitat along the Arkansas River and other designated areas would also improve water quality in the project area by reducing agricultural contaminants in the water before it reaches the river. No additional mitigation measures are recommended.

Wetlands. The Proposed Action is expected to improve wetlands within the project area and enhance the quantity of water available to meet the needs of the Cheyenne Bottoms wetland. Improvements in water quality would also directly benefit the Cheyenne Bottoms and other wetlands in the project area. The majority of playa wetlands in the project area are located near existing farms, grazing lands, or feedlots. The Proposed Action includes establishing buffer strips between these land uses and playa wetlands. The buffer strips would reduce pesticide and fertilizer levels in runoff, contaminants from feedlots, and reduce sedimentation of these wetlands. No additional mitigation measures are recommended.

Energy Crops. The harvest of energy crops under any of the three harvest scenarios would not result in any changes to this resource area. Energy crops, such as switchgrass, are expected to have the same potential to improve water quantity and quality as other conservation crops. Their lower requirements for water, herbicides, pesticides, and fertilizers means that energy crops are expected to have lower environmental impacts than the agricultural crops that are currently planted.

4.3.2 Alternative B – No Action

Groundwater. The No Action Alternative would result in no direct reduction in the pumping of groundwater for agricultural uses. There would be no reduction through the retirement of water rights for up to 100,000 acres of agricultural land, most of which is currently irrigated. There would be no reduction in ongoing aquifer overdraft and the potential for saline contamination of public water wells and domestic water supplies. The residents of the upper Arkansas River corridor would continue to be at risk for impacts caused by saline contamination of public water supply and domestic wells, which affects a minimum of 63 to 75 percent of the populations of Hamilton, Kearny and Finney Counties. Selenium levels in the groundwater remain well below the Maximum Contaminant Level (MCL) of five µg/L; however, that level is frequently exceeded in the river water. With continued infiltration of river water, the selenium levels in groundwater would likely increase. No change in groundwater withdrawal rates could result in an increase in the levels of selenium in the groundwater and could accelerate the migration of contaminated water away from the river corridor and into the aquifer. No reduction in the pumping of groundwater for agricultural uses would result in continued risk of losing usability of at least some of the approximately 170 water wells that are associated with public water supplies in the project area. No mitigation measures are recommended.

Surface Water. The No Action Alternative would not be expected to improve either the quality or the quantity of surface water in the project area. There would be no appreciable improvement in surface water when compared to the current state of this resource. Surface water is expected to continue to contain excess nutrients, pesticides, and herbicides when it drains from agricultural lands. No mitigation measures are recommended.

Water Quality. The No Action Alternative would not improve water quality in the project area. No mitigation measures are recommended.

Wetlands. The No Action Alternative would not improve wetlands within the project area. This alternative would not enhance either the quantity or quality of water available to meet the needs of the Cheyenne Bottoms wetland or other wetlands in the project area. This alternative would not directly benefit wetlands in the project area because it would not increase surface or groundwater quality, aquifer recharge rates, or protect wildlife habitat. No mitigation measures are recommended.

4.4 SOIL RESOURCES

4.4.1 Alternative A – Preferred

The majority of soil within the project area (72 per cent) is characterized as being highly erodible. The highly erodible nature of these soils makes them at risk for both wind and water erosion. Much of the project area consists of soils that are unsuited to dryland (nonirrigated) farming due to their highly erodible nature. The implementation of the Proposed Action is expected to substantially reduce soil erosion within the project area. This reduction would take place due to the conversion of cropland to a conservation

cover crop. Conservation cover crops are much more resistant to both wind and water erosion than cropped lands. Reduced erosion would directly improve water quality by reducing sediments in stormwater and by reducing sedimentation impacts to wetlands in the project area. The following mitigation measures are recommended:

1. The conversion of cropland to conservation cover crops in areas containing highly erodible soils would require careful planning to ensure that the seed mixes selected for conservation cover are appropriate for the dry, highly erodible conditions found in the majority of the project area.
2. Supplemental irrigation may be required for the first one or two growing seasons in order to establish the conservation cover on converted croplands.

Energy Crops. The planting and harvest of energy crops such as switchgrass would not be likely to result in any changes to this resource area under any of the three harvest scenarios. Energy crops, such as switchgrass, are typically harvested in a manner that retains the root mass and soil-holding properties of these crops. A cover of 6 inches to 12 inches of stubble is typically left when switchgrass is harvested, which substantially reduces wind and water erosion. The level of soil erosion in lands covered by energy crops is expected to be very low, which is similar to that seen for conservation crops.

4.4.2 Alternative B – No Action

Selection of the No Action Alternative would not reduce soil erosion in the project area. Soil erosion has negative impacts to water quality due to increased sedimentation. This sedimentation also has negative impacts to wetlands in the project area, which can be filled by sediments over time. Soil erosion can also reduce agricultural productivity of farmland over time. No mitigation measures are recommended.

4.5 RECREATION

4.5.1 Alternative A – Preferred

The enrollment of acreage into CREP and the potential resulting return of native grasslands and improved streamflow are expected to result in increased recreational opportunities, especially hunting and fishing opportunities, within the project area. Increased water quantity and quality is expected to improve the quality of the game harvested in the project area. These increases may also improve boating and swimming opportunities in the project area.

The Proposed Action is expected to result in increased visitation by hunters and fishers, increased numbers of people engaged in both hunting and fishing, and increased hunter and fisher success due to the increased presence of waterfowl, game animals, and fish. This increase in recreational hunting and fishing can provide a substantial economic boost to the recreational economy in the project area.

Increased hunting and fishing opportunities also benefit those residents of the project area who rely upon these activities to provide supplemental protein to their diet. No mitigation measures are recommended.

Energy Crops. The planting and harvest of energy crops would not result in any changes to this resource area under any of the three harvest scenarios when compared to the Proposed Action. Energy crops, such as switchgrass, provide excellent cover and food for native species. As with the Proposed Action, energy crop acreage is expected to increase populations of game animals, especially game and nongame birds. Like the Proposed Action, planting and harvest of energy crops is expected to have the same beneficial effects on a variety of recreational activities, such as wildlife viewing, bird watching, hunting, fishing, boating, and swimming, in the Project Area.

4.5.2 Alternative B – No Action

Selection of the No Action Alternative would result in no changes to or improvement of recreational opportunities in the project area. Recreational opportunities would decline under this alternative if water quantity and quality continue to decline. This is likely to happen if the current level of irrigated agricultural production continues. This decline in water quality and quantity could be made worse if the current drought situation continues, or gets worse. No mitigation measures are recommended.

4.6 SOCIOECONOMICS

Conversion of irrigated agriculture to dryland conservation crops would have an economic impact in the project area. Once established, conservation crops would require almost no energy consumption, would require little supplemental applications of fertilizers or pesticides, and very little use of mechanical equipment or farm labor. The tax base for the project area would decline as irrigated croplands are converted to dryland croplands. The tax base for contracted land could increase in the future as the market for energy crops evolves.

4.6.1 Alternative A – Preferred

According to a recent study (Leatherman, et. al.), the combined direct and indirect impact to regional economic output was estimated to be a decline of about \$14.8 million annually (all dollar values have been adjusted to 2003 dollars). That value of activity is closely tied to about 119 jobs. Household economic welfare was projected to decline by about \$7.7 million annually. Under the post-CREP scenario of permanent conversion of irrigated cropland to dryland/pasture, regional economic output would decline by about \$17.4 million annually, which is tied to about 165 jobs. Regional household income was projected to decline by about \$9.3 million annually. This is approximately 0.1 to 0.2 percent of the total regional economic activity. The change in county property tax revenue associated with the adjustments to assessed valuation under dryland conditions suggests that the total regional county property tax revenue would decline by about \$400,000. A more general tax

impact analysis indicates that combined federal, state, and local revenue collections would decline by about \$900,000 annually. No mitigation measures are recommended.

Energy Crops. The harvest of biomass for energy production could generate sufficient income to offset at least part of the economic cost of CREP implementation. Annual harvest of biomass crops would provide the most compensation to the local economy, followed in descending order of importance by biomass harvest once every three years or once every ten years.

The harvest of energy crops would require additional energy consumption and require more mechanical equipment that would be required if energy cropping were not practiced. Fuel consumption associated with biomass would likely be lower than that for the land as currently farmed. Fuel consumption for field preparation and planting would largely be avoided while harvest could consume similar amounts of fuel as today. Consumption of other agricultural products, such as seed, fertilizer, and herbicides, would likely be negligible when compared to current consumption of these products.

Overall, the socioeconomic impacts associated with energy crop harvest on CREP lands are expected to be lower than those associated with traditional CREP practices. Energy crop revenue may not reach that achieved by irrigated agriculture. However, the cost to grow and harvest energy crops, which would require no irrigation and little to no chemical application, would be substantially less than current costs for irrigated agriculture.

A market for using switchgrass as a fuel at coal-fired power plants is emerging and the Federal government has identified switchgrass as a candidate feedstock for ethanol production based on woody plant matter (cellulosic ethanol). The energy crop market is evolving at the present time and may not be available to producers in the project area in the near future. The available literature suggests that a technology of manufacturing biofuel based on biomass will be commercially viable sometime between 2012 and 2015. Long-term projections in the demand for energy indicate a growing market for biomass used for biofuel production.

One major possible obstacle that must be overcome before the biomass to energy market is viable is the problem of the conversion of cropland to biomass fuel crops, such as switchgrass. Farmers are generally reluctant to convert cash-producing cropland to a biomass crop such as switchgrass because it can take several years to establish such a crop before it can be regularly harvested. The current market for switchgrass is weak and conversion is considered to be risky by many farmers. Energy producers who might construct biorefineries and consume large amounts of biomass are concerned that they will not have sufficient feedstock because few farmers are currently converting to production of biomass. This has resulted in a situation where farmers are willing to wait for the biomass market to mature before they convert their cropland to biomass production. Meanwhile, energy producers are willing to wait for biomass production to mature before they commit the large amounts of capital that are required to construct and operate a commercial-scale biorefinery.

4.6.2 Alternative B – No Action

Under the No Action Alternative, future the socioeconomic climate in the project area is expected to be similar to the climate found there today. However, it is important to note that there would be no economic compensation for reductions in irrigated agricultural acreage. As energy prices continue to increase and groundwater levels continue to decline, irrigated production may decline. Such a decline in irrigated agricultural production may be made worse if the current drought continues. No mitigation measures are recommended.

It is impossible to predict to what degree the market forces that drive irrigated agricultural production in the project area will change in the future. Rising energy prices and declining water tables can lead to costs that force irrigated agriculture in the project area to decline from current levels. If energy costs remain high, producers may be forced to make management decisions to lower this cost by reducing or ceasing irrigation of their fields (Leatherman 2006).

A sensitivity analysis was performed to estimate the impact of a decline in irrigated agriculture (Leatherman 2006). For each one percent decline in irrigated agriculture, whether due to water availability, energy costs, land retirement, or other reason, regional output would decline by about \$2 million and total income would decline by about \$1 million. This level of activity is closely linked to about 20 jobs. No mitigation measures are required.

4.7 ENVIRONMENTAL JUSTICE

4.7.1 Alternative A – Preferred

The potential for significant negative environmental impacts to Environmental Justice communities under the Proposed Action does not appear to exist. It appears that sufficient public outreach is being conducted during the project planning phase that no environmental justice issues exist. There is a lack of substantial negative environmental impacts associated with the Proposed Action. The substantial positive improvements to water quality and quantity indicate the potential for major improvements to wildlife and fish habitat. This improved habitat is expected to improve hunting and fishing opportunities in the project area, which are common shared practices within Environmental Justice communities. Those members of the Environmental Justice community who practice hunting and fishing for sustenance would likely benefit from the increased availability of harvestable numbers of wildlife. Consumers of wildlife (such as fish, game birds, or deer) would likely benefit from an expected reduction in the contamination of wildlife in the project area by agricultural chemicals. No mitigation measures are recommended.

Energy crops. The energy crop market, once it matures, would likely result in no adverse impacts to Environmental Justice resources. The maturation of this market is likely to provide additional economic benefits associated with biomass harvesting and handling. The biomass market could provide a long-term market for biomass grown as conservation

cover. The growth of the biomass market would likely generate additional jobs, income, and tax revenue when compared to the Proposed Action.

4.7.2 Alternative B – No Action

The potential for significant negative environmental impacts to Environmental Justice communities in the project area under the No Action Alternative does appear to exist. There are substantial negative environmental impacts associated with the No Action Alternative, primarily associated with continued degradation of water quality and quantity. Additionally, if energy prices continue to rise and water availability continues to decline, then reductions in irrigated agriculture acreages are likely.

No improvements to water quality & quantity would occur under the No Action Alternative and the populations in the project area would continue to be at risk due to high levels of salinity and sulfate in their drinking water. The population least likely to be able to respond to a decline in the quality of drinking water would be an Environmental Justice population. An Environmental Justice population would also be more susceptible to impacts associated with no improvements to wildlife and fish habitat and, consequently, to hunting and fishing opportunities in the project area.

Under the No Action Alternative, hunting and fishing opportunities, which are common shared practices within Environmental Justice communities, would continue below their potential or even be substantially reduced. Those members of the Environmental Justice community who practice hunting and fishing for sustenance would be at the greatest risk of impact under the No Action Alternative. No mitigation measures are recommended.

5.0 CUMULATIVE EFFECTS

This section addresses a discussion of the cumulative effects of the proposed project when considered with other past, present, and reasonably foreseeable future projects in the project area. Cumulative impact is defined by the Council on Environmental Quality (CEQ) at 40 CFR 1508.7 as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.”

The discussion of cumulative impacts includes consideration of:

- Possible conflicts between the Proposed Action and the objectives of Federal, regional, State, and local land use plans, policies and controls for the area concerned (CEQ 1502.16(c)).
- Any inconsistency of a Proposed Action with any approved State or local plan and laws whether or not the action is federally sanctioned (CEQ 1506.2(d)).
- The degree of controversy on environmental grounds.

No conflicts have been identified between the Proposed Action and the objectives of Federal, regional, State, and local land use plans, policies and controls for the area concerned. The Proposed Action would not be inconsistent with any approved State or local plan and laws whether or not the action is federally sanctioned. The proposal is consistent with Federal, state, and local laws and administrative determinations relating to the environment. The Proposed Action would compliment the ongoing CRP in the project area. Other ongoing Federal conservation programs include the Conservation Security Program, various Federal wetland programs, the Wildlife Habitat Incentive Program, and the Environmental Quality Incentives Program.

Cumulatively, the benefits of CREP, when added to other programs in the project area, are expected to be substantial and positive. Primarily, these benefits would be associated with reduced soil erosion, improved water quality, increased water quantity, improvements to wildlife diversity, and increased wildlife populations.

The No Action Alternative is inconsistent with the goals of reducing groundwater consumption by irrigated agriculture and with the goal of improving water quality and quantity in the UAR. The No Action Alternative would be inconsistent with the goals of the KWO and other parties that are actively seeking to increase water quantity and improve water quality along the UAR.

The Proposed Action is not known or suspected to be highly controversial on environmental grounds with regard to any impacts. Conversion of cropland to conservation cover is not anticipated to generate any substantial cumulative negative environmental impacts because the conservation cover crops are predominantly native plants that are well-suited to the specific soils & rainfall of the project area. Cumulative improvements to the

environment are expected when the Proposed Action is considered along with other past, present, and reasonably foreseeable future government conservation programs in the project area.

The Proposed Action is known to be controversial on economic grounds. A number of letters have been received objecting to the removal of up to 100,000 acres of irrigated agricultural land from production. These letters are contained in Appendix B of this document. The objections are based on the projected reduction in tax revenue, support service purchases (for example, seed, fuel, grain handling, etc.), and jobs that would be lost due to the reduction in agricultural production in the project area. Several of the letters suggest that dryland farming be allowed of lands contracted into the CREP as a way to offset some of the lost agricultural production and consequent consumption of support services. Currently, dryland farming is not permitted on land contracted into the CREP. As documented in Section 3.4 of this document, the majority of the agricultural land (72 per cent) in the project area is rated as highly erodible and is considered unsuitable for dryland farming due to excessive erosion. Therefore, it is unlikely that dryland farming could be allowed on the majority of the contracted acres even if the CREP rules were changed to allow dryland farming of CREP acreage in general.

6.0 MITIGATION MEASURES

The following mitigation measures have been identified:

Biological Resources:

1. Seeds of native, noninvasive species of plants that are suitable for the specific location should be selected for planting. Species that are considered invasive should not be selected for the planting mix.
2. Landowners should be encouraged to leave as much conservation crop standing as possible. If hayed, at least 6 inches, and preferably 1 foot, of the conservation cover should be retained to provide wildlife forage and cover.
3. If the FSA determines that it appears likely that a listed species is impacted by the Proposed Action, then the FSA should coordinate with the FWS to determine what additional information or action may be required.
4. If the FSA determines that the CREP activity may result in the taking of nesting migratory birds, then a field survey of the affected habitats and structures during the nesting season will be required to determine the presence of active nests. The FSA should contact the FWS immediately for further guidance if a field survey identifies the existence of one or more active bird nests that cannot be avoided temporally or spatially by planned activity.

Cultural Resources:

1. FSA should provide the Kansas SHPO an opportunity to review changes to the project if additional ground disturbing areas are anticipated.
2. If buried archaeological materials are uncovered by construction work, then work should cease in the area of discovery and the Kansas SHPO should be notified.

Water Resources:

1. When developing the conservation plan for participating acreage, every effort should be made to use vegetated buffers to improve the quality of surface water as it leaves agricultural fields and before it is discharged into the Arkansas River or its tributaries.

Soil Resources:

1. The conversion of cropland to conservation cover crops in areas containing highly erodible soils would require careful planning to ensure that the seed mixes selected for conservation cover are appropriate for the dry, highly erodible conditions found in the majority of the project area.

2. Supplemental irrigation may be required for the first one or two growing seasons in order to establish the conservation cover on converted croplands.

7.0 LIST OF PREPARERS

The following personnel were responsible for the preparation of this Programmatic Environmental Assessment:

Mike Fisher, REM; Vice President, Howard R. Green Company

Kyle Kroner, AICP; Project Planner, Howard R. Green Company

Joe Trnka, AICP, CEP; Certified Environmental Professional, Howard R. Green Company

Ted McCaslin; Staff Scientist, Howard R. Green Company

Jennifer Walters; GIS Specialist, Howard R. Green Company

This document could not have been completed without the generous support and assistance provided by the Kansas Water Office, the Kansas Office of the Farm Service Agency, and the Washington DC office of the Farm Service Agency.

8.0 PERSONS AND AGENCIES CONTACTED

The following organizations were solicited for written input during the scoping phase of the preparation of this PEA. Responses received from these agencies can be found in Appendix B:

- Kansas Association of Conservation Districts
- The Nature Conservancy
- Pheasants Forever – Quail Forever
- Southwest Kansas Groundwater Management District Number Three
- Arkansas River Litigation Funds Committee
- Kansas Forest Service
- Kansas Department of Health and Environment
- Kansas Department of Agriculture
- Kansas Department of Wildlife and Parks
- Kansas Water Authority
- Big Bend Groundwater Management District Number Five
- Kansas Historical Society
- Finney County Board of Commissioners
- United States Department of the Interior, Fish and Wildlife Service
- Pawnee County Conservation District
- U.S. Department of Agriculture, Farm Service Agency, Washington, DC
- Department of Homeland Security, Kansas City, MO
- U.S. Army Corps of Engineers, Tulsa District, Tulsa, OK
- U.S. Department of Natural Resources, Natural Resources Conservation Service, Washington, DC

- U.S. Department of Natural Resources, Natural Resources Conservation Service, Salina, KS
- U.S. Department of the Interior, Denver, CO
- U.S. Department of the Interior, National Park Service, Larned, KS
- U.S. Environmental Protection Agency, Kansas City, KS
- Kansas Division of Emergency Management, Topeka, KS
- Hamilton County Board of Supervisors, Syracuse, KS
- Hamilton County Conservation District, Syracuse, KS
- Syracuse Chamber of Commerce, Syracuse, KS
- Kearny County Board of Supervisors, Lakin, KS
- Kearney County Conservation District, Lakin, KS
- Finney County Conservation District, Garden City, KS
- Gray County Board of Commissioners, Cimarron, KS
- Gray County Conservation District, Cimarron, KS
- Cimarron Chamber of Commerce, Cimarron, KS
- Ford County Board of Commissioners, Dodge City, KS
- Ford County Conservation District, Dodge City, KS
- Ford County/Dodge City Economic Development Corporation, Dodge City, KS
- Kiowa County Board of Commissioners, Greensburg, KS
- Kiowa County Conservation District, Greensburg, KS
- Greensburg Chamber of Commerce, Greensburg, KS
- Edwards County Board of Commissioners, Kinsley, KS
- Edwards County Conservation District, Kinsley, KS
- Edwards County Economic Development Corporation, Kinsley, KS

- Pawnee County Board of Commissioners, Larned, KS
- Larned Chamber of Commerce, Larned, KS
- Stafford County Board of Commissioners, Saint John, KS
- Stafford County Conservation District, Saint John, KS
- Stafford Chamber of Commerce, Stafford, KS
- Barton County Board of Commissioners, Great Bend, KS
- Barton County Conservation District, Great Bend, KS
- Great Bend Area Chamber of Commerce, Great Bend, KS
- Arkansas River Coalition, Wichita, KS
- Kansas Alliance for Wetlands and Streams, McPherson, KS
- Kansas Alliance for Wetlands and Streams, Colby, KS
- Kansas Alliance for Wetlands and Streams, Dodge City, KS

9.0 GLOSSARY

Aquifer: A water-bearing geologic formation. A geological formation or structure that stores and/or transmits water, such as to wells and springs. Use of the term is generally restricted to those water-bearing formations capable of yielding water in sufficient quantity and of sufficient quality to constitute a usable supply for human use.

Biofuel: A fuel, such as ethanol or biodiesel, which is produced from agricultural crops such as corn, soybeans, or switchgrass. Biofuel is not refined from crude oil.

Biorefinery: A refinery that uses plant biomass as the feedstock to produce a diverse set of products such as animal feed, fuels, chemicals, polymers, lubricants, adhesives, fertilizers and power.

Categorical Exclusion: An agency-defined category of actions that do not individually or cumulatively have a significant effect on the human environment and have been found to have no such effect in procedures adopted by the agency pursuant to NEPA. Projects qualifying for a “categorical exclusion” are not required to undergo detailed NEPA analysis or documentation.

Cellulosic ethanol: Ethanol that is produced from a wide variety of cellulosic biomass feedstocks including agricultural plant wastes (corn stover, cereal straws, sugarcane bagasse), plant wastes from industrial processes (sawdust, paper pulp) and energy crops grown specifically for fuel production, such as switchgrass.

Conservation Practices: A series of NRCS approved agricultural practices and management techniques designed to control nonpoint pollution.

Conservation Security Program: The Conservation Security Program is a voluntary program that provides financial and technical assistance to promote the conservation and improvement of soil, water, air, energy, plant and animal life, and other conservation purposes on Tribal and private working lands. Working lands include cropland, grassland, prairie land, improved pasture, and range land, as well as forested land that is an incidental part of an agriculture operation. The program is available in all 50 States, the Caribbean Area and the Pacific Basin area. The program provides equitable access to benefits to all producers, regardless of size of operation, crops produced, or geographic location.

Decomposers: Organisms (e.g., bacteria, fungi) that break down dead plants and animals and release substances useable by consumers. Certain decomposers are important for their ability to break down and metabolize (consume) certain kinds of water-borne chemicals (i.e., fertilizers, pesticides, herbicides, etc.).

Denitrification: The process whereby bacteria reduce nitrate or nitrite to gaseous products such as nitrogen.

Environmental Assessment: A concise public document, prepared in accordance with NEPA, which documents the purpose and need for a proposed action, alternatives to such action if

available, and the likely impacts of each alternative. The EA is intended to provide sufficient information and impact analysis to determine whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI). A programmatic EA covers matters in broader terms than a site-specific EA by analyzing conceptual or planning alternatives rather than location-specific impacts. In the case of a programmatic NEPA document, there is often a requirement to conduct site-specific NEPA analysis once a program has been evaluated and specific implementation sites are known.

Environmental Impact Statement: A detailed written statement required by section 102(2)(C) of NEPA. The EIS documents the analysis of the environmental impacts of a Proposed Action and its alternatives; measures that can minimize or mitigate for adverse impacts; adverse impacts that can not be avoided, a comparison of short-term use versus long-term productivity, and a discussion of any irreversible or irretrievable commitments of resources. The EIS also documents the coordination completed between the lead Federal agency and other Federal, state, or local agencies and/or nongovernmental organizations. A programmatic EIS covers matters in broader terms than a site-specific EIS by analyzing conceptual or planning alternatives rather than location-specific impacts. In the case of a programmatic NEPA document, there is often a requirement to conduct site-specific NEPA analysis once a program has been evaluated and specific implementation sites are known.

Environmental Quality Incentives Program: The Environmental Quality Incentives Program (EQIP) was reauthorized in the Farm Security and Rural Investment Act of 2002 (Farm Bill) to provide a voluntary conservation program for farmers and ranchers that promotes agricultural production and environmental quality as compatible national goals. EQIP offers financial and technical help to assist eligible participants install or implement structural and management practices on eligible agricultural land.

Erosion: The geomorphic process that describes the wearing away of the land surface by wind, water, ice, or other geologic agents. Erosion occurs naturally from weather or runoff but is intensified by human land use practices.

Eutrophication: The process which results from the addition of nitrogen and phosphorus nutrients to bodies of water. These additional nutrients increase the growth of algae; simple one-celled aquatic plants. When the algae die, they are decomposed by microorganisms that consume dissolved oxygen in the water during the decomposition process. The decomposition process can lead to reduced levels of dissolved oxygen in the water. The reduced oxygen levels can result in the death of fish and other aquatic organisms. Severe eutrophication can result in a dead lake or pond where no larger aquatic organisms can survive.

Groundwater: The supply of fresh water found beneath the Earth's surface, usually in aquifers, which supply wells and springs. Because groundwater is a major source of drinking water, there is concern over groundwater contamination from agricultural or industrial pollutants or leaking underground storage tanks.

Hydric soil: Soil that, in its undrained state, is flooded long enough during the growing season to develop anaerobic (lacking air – saturated) conditions that support the growth and regeneration of hydrophytic (water loving) vegetation.

Hydrophytic vegetation: Water loving plants that are specialized to grown in water or in soil that is too waterlogged (hydric) for most plants to survive.

Listed species: Those species officially designated as threatened or endangered under the Endangered Species Act or a similar state statute. A species may either be listed in a significant portion of or throughout its entire range.

Nonpoint source (pollution): Cause of water pollution that is not associated with point (fixed) sources. Nonpoint sources include runoff from agricultural, urban, construction, and mining sites as well as septic systems and landfills.

Nutrients: Chemical compounds in a usable form and have nutritive value for plants and/or animals.

Recharging groundwater: Refers to water entering and replenishing an underground aquifer through faults, fractures, or direct absorption.

Riparian: Refers to the vegetation found on the banks of a stream, river, or other perennial body of water.

Sediment loading: describes the excessive inputs of sediment into a water body.

Stormwater runoff: Water from precipitation that runs straight off the ground without first soaking into it. It does not infiltrate into the ground due to impervious surfaces but instead flows onto or into adjacent land or water. Stormwater runoff can carry a variety of chemicals, including pollutants, into nearby water bodies.

Threatened and endangered species: Under the Endangered Species Act, those species officially designated by the National Marine Fisheries Service or the U.S. Fish and Wildlife Service as being in danger of extinction (i.e., endangered) or likely to become endangered (i.e., threatened) within the foreseeable future through all or a significant portion of its range. Threatened and endangered species are protected by law. See also: Listed species.

Watershed: A cohesive, hydrologically-linked landscape that is drained by a waterway leading to a river, lake, or other water body. A geographic area delineated by peaks and ridgelines that divide surface water flow into two or more directions.

Wildlife Habitat Incentive Program: The Wildlife Habitat Incentives Program (WHIP) is a voluntary program for people who want to develop and improve wildlife habitat primarily on private land. Through WHIP USDA's Natural Resources Conservation Service provides both technical assistance and up to 75 percent cost-share assistance to establish and improve fish and wildlife habitat. WHIP agreements between NRCS and the participant generally last from 5 to 10 years from the date the agreement is signed.

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APPENDIX A: DETAILED DEMOGRAPHIC INFORMATION

Insert PDF file of detailed county demographic data here

APPENDIX B: RESOLUTION AND CORRESPONDENCE

RESOLUTION

By Kansas Association of Conservation Districts

A RESOLUTION to support the development, funding and implementation of a Conservation Reserve Enhancement Program (CREP); and urging support from the Kansas Congressional Delegation, the Kansas Legislature and the Governor for the State of Kansas

WHEREAS, the Arkansas River in Kansas has experienced several decades of flow depletions entering the State; and

WHEREAS, the alluvial and High Plains aquifers have had significant declines along the upper Arkansas River corridor; and

WHEREAS, the tamarisk and/or salt cedar is highly concentrated in the Arkansas River Corridor; and

WHEREAS, the upper Arkansas River water quality is high in salinity due in part to concentration by irrigation practices in Colorado; and

WHEREAS, the poor quality Arkansas River water is contaminating the alluvial and Ogallala aquifers; and

WHEREAS, there are public water supply wells along the Arkansas River corridor that need sufficient quantities of suitable quality water to meet future demands: Now, therefore,

Be it resolved by the Kansas Association of Conservation Districts that we express our support for the Kansas Upper Arkansas River Conservation Reserve Enhancement Program that would provide incentive payments to landowners to voluntarily enroll acres along the river corridor, implement conservation practices and reduce consumptive use; and

Be it further resolved: That we urge the support of the Kansas Congressional Delegation; and

Be it further resolved: That we urge the support of the Governor for the State of Kansas and the State Legislature; and Be it further resolved: That a copy of this Resolution be sent to the Kansas Congressional Delegation, the Kansas Legislature and the Governor for the State of Kansas.

July 13, 2006

The Honorable Mike Johanns
Secretary of Agriculture
United State Department of Agriculture
1400 Independence Ave, S.W.
Washington D.C. 20250

Dear Secretary Johanns:

This letter is to confirm that The Nature Conservancy of Kansas supports the proposed Conservation Reserve Enhancement Program (CREP) Upper Arkansas River project, as forwarded by the Kansas Conservation Commission, Kansas Water Office, and several other government and private entities. This CREP proposal will address many long-recognized economic and ecological threats to southwest Kansas. It will assist farmers in economic crisis stemming from drastic groundwater declines, and it will improve the quantity and quality of available ground and surface water and wildlife habitat in the area.

We believe the Upper Arkansas River CREP project is conceptually sound and capable of delivering tangible and lasting benefits. As such, we strongly encourage you to support its implementation.

Thanks for considering these comments.

Sincerely,

Rob Manes
Director of Conservation

C: Alan Pollom, Director, The Nature Conservancy of Kansas
Susan Stover, Kansas Water Office



July 17, 2006

The Honorable Mike Johanns
Secretary of Agriculture
United State Department of Agriculture
1400 Independence Ave, S.W.
Washington D.C. 20250

Dear Secretary Johanns:

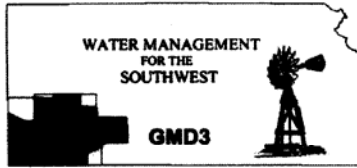
This letter is to confirm that Kansas State Pheasants Forever and Quail Forever support the proposed Conservation Reserve Enhancement Program (CREP) Upper Arkansas River project, as forwarded by the Kansas Conservation Commission, Kansas Water Office, and several other government and private entities. This CREP proposal will address some of the continuing problems with water quantity and quality in southwest Kansas. It will assist farmers in coping with economic crisis stemming from drastic groundwater declines, and it will improve the quantity and quality of available ground and surface water and wildlife habitat in the area.

We believe the Upper Arkansas River CREP project is well conceived and will result in lasting benefits. As such, we strongly encourage you to support its implementation.

Sincerely,

Barth Crouch
Regional Wildlife Biologist for PF/QF
205 S Santa Fe
Salina, KS 67401
785-823-0240

C: David Nomsen, V. P. of Governmental Affairs, PF/QF
Susan Stover, Kansas Water Office



Southwest Kansas
Groundwater Management District No. 3
409 Campus Drive, Suite 108
Garden City, Kansas 67846-6158
(620) 275-7147 phone (620) 275-1431 fax
www.gmd3.org

July 18, 2006

The Honorable Mike Johanns
Secretary of Agriculture
United State Department of Agriculture
1400 Independence Ave, S.W.
Washington D.C. 20250

Dear Secretary Johanns:

This letter is to express the support of the Southwest Kansas Groundwater Management District No. 3 (GMD3) for the proposed Kansas Conservation Reserve Enhancement Program (CREP) in the Upper Arkansas River basin. The GMD3 has been a strong supporter and actively involved in the development of this first Kansas proposal for the program. We recognize the program can significantly reduce the depletion of the water resources in our management area through the voluntary retirement of irrigation water rights. This CREP provides a necessary incentive to agricultural producers who may otherwise be unable to implement a transition from irrigation projects to more sustainable agriculture.

We believe the Kansas Upper Arkansas River CREP project is well conceived and appropriately located. As such, we strongly encourage you to support its implementation.

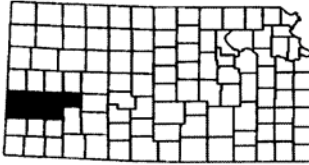
We appreciate your consideration of these comments.

Sincerely,

A handwritten signature in black ink that reads "Mike McNiece".

Mike McNiece
President of the Board
Southwest Kansas Groundwater Management District

Serving Southwest Kansas Since 1976



Arkansas River Litigation Funds Committee
409 Campus Drive, Suite 108
Garden City, KS 67846
(620) 275-7147

July 18, 2006

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KS WATER OFFICE

Randy Hayzlett
Chairman & ARCA
Compact Commissioner

Ronald Conway
Vice Chairman

Frontier Ditch Company

Kearny County Farmers
Irrigation Association
(Amazon Ditch)

Great Eastern Ditch
Association

Southside Ditch
Association

Finney County
Water Users Association
(Farmers Ditch)

Garden City Ditch
Company

Southwest Kansas
Groundwater
Management District
No. 3

KDA, Division of Water
Resources

Kansas Water Office
Kansas Water Congress

The Honorable Mike Johanns
Secretary of Agriculture
United State Department of Agriculture
1400 Independence Ave, S.W.
Washington D.C. 20250

RE: Proposed Kansas CREP

Dear Secretary Johanns:

This letter is to express the support of the Arkansas River Litigation Funds Committee (ARLFC) for the proposed Conservation Reserve Enhancement Program (CREP) in the Upper Arkansas River basin in Kansas. The ARLFC is a local committee of stakeholders and cooperators who seek to encourage the proper management of the Kansas Upper Arkansas River water supplies.

This group is particularly interested in the best use of state wide funds derived from the economic impact of water shortages under an Arkansas River compact with the state of Colorado. As such, we believe the proposed location and funding of the Kansas CREP will provide much needed assistance to individual water users and the local, state and federal agencies working to address the significant water supply problems in the Upper Arkansas River Basin.

I ask that you support the implementation of the proposed Kansas CREP. Thank you in advance for your consideration of these comments.

Sincerely,

Randy Hayzlett
Chairman
Arkansas River Litigation Funds Committee

For best management and protection of Arkansas River water



Kansas Forest Service
2610 Claflin Rd.
Manhattan, KS 66502-2798
785-532-3300
Fax: 785-532-3305
E-mail: ksf@lists.oznet.ksu.edu
<http://www.kansasforests.org>

July 27, 2006

The Honorable Mike Johanns
Secretary of Agriculture
United States Department of Agriculture
1400 Independence Ave., SW
Washington, DC, 20250

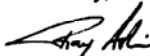
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JUL 28 2006
KS WATER OFFICE

Dear Secretary Johanns:

This letter is to confirm that the Kansas Forest Service supports the proposed Conservation Reserve Enhancement Program (CREP) Upper Arkansas River project as submitted by the Kansas State Conservation Commission, Kansas Water Office and several other government and private entities. The CREP proposal is a major effort designed to address significant on-going problems with water quantity, quality and ecological threats to southwest Kansas. It will help landowners deal with an economic crisis resulting from critical groundwater declines and will improve the quantity and quality of available ground and surface water and help restore vital riparian vegetation needed to support wildlife habitat in the area.

We believe the Upper Arkansas River CREP project is well conceived and is capable of providing lasting benefits. We encourage your consideration and support for its implementation.

Sincerely,


Ray Aslin
State Forester

pc: Fred Cholick, Dean, College of Agriculture
Tom Warner, Department Head, Horticulture, Forestry & Recreation Resources



95



K A N S A S

RODERICK L. BREMBY, SECRETARY

DEPARTMENT OF HEALTH AND ENVIRONMENT

KATHLEEN SEBELIUS, GOVERNOR

July 31, 2006

The Honorable Mike Johanns
Secretary of Agriculture
United States Department of Agriculture
1400 Independence Ave, S.W.
Washington D.C. 20250

Dear Secretary Johanns:

The Kansas Department of Health and Environment supports the proposed Conservation Reserve Enhancement Program (CREP) Upper Arkansas River project, as forwarded by the Kansas Conservation Commission, Kansas Water Office, and several other government and private entities. This CREP proposal will address many economic issues in southwest Kansas and coincidentally, improve the water quality of the region's surface and ground water.

The Department believes the Upper Arkansas River CREP project is conceptually sound, and represents an equitable and effective manner of delivering measurable, long-term benefits to Southwest Kansas. As such, I recommend its implementation by the agencies of the USDA.

Thank you for your thoughtful consideration of the proposal.

Sincerely,

Ronald F. Hammerschmidt, Ph.D.
Director of Environment

RFH:cah

cc: Susan Stover, Kansas Water Office
Greg Foley, State Conservation Commission

DIVISION OF ENVIRONMENT
CURTIS STATE OFFICE BUILDING, 1000 SW JACKSON ST., STE 400, TOPEKA, KS 66612-1367
Voice 785-296-1535 Fax 785-296-9464 <http://www.kdheks.gov>
Printed on Recycled Paper



DEPARTMENT OF AGRICULTURE
ADRIAN J. POLANSKY, SECRETARY

KATHLEEN SEBELIUS, GOVERNOR

July 31, 2006

RECEIVED
AUG 04 2006
KS WATER OFFICE

The Honorable Mike Johanns
Secretary of Agriculture
United States Department of Agriculture
1400 Independence Ave., S.W.
Washington, D.C. 20250

RE: Support for Kansas CREP Proposal

Dear Secretary Johanns:

The Kansas Department of Agriculture strongly supports the July 2006 Upper Arkansas River Conservation Reserve Enhancement Program proposal submitted by the Kansas Water Office and State Conservation Commission.

The proposal will help reduce soil erosion, improve water quality and increase wildlife habitat. It also includes a state requirement for the permanent retirement of irrigation water rights on CREP-enrolled land along critical reaches of the Arkansas River and areas that hydrologically connected to the stream.

The Upper Arkansas River is heavily developed for cropland irrigation, and often there is little or no surface flow. Groundwater levels have declined significantly in recent years. This condition has been exacerbated by ongoing drought, and water shortages are threatening the economic well-being of this agricultural region.

The CREP project would provide economic incentives for some producers to convert irrigated land to non-irrigated grass cover. That would help stabilize groundwater levels and water supplies and contribute to our overall strategy for long-term management of available water. In addition, we could see ecological benefits from conservation practices and improved stream flow.

Given the significant benefits that would come from this project, and the important contribution Kansas agriculture makes to the nation's economy, I request that you carefully consider Kansas' CREP proposal.

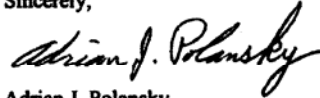
109 SW 9th St., Topeka, KS 66612-1280

Voice (785) 296-3556 Fax (785) 296-8389 <http://www.accesskansas.org/kdo>

Honorable Mike Johanns
July 31, 2006
Page 2

Thank you for this federal-state partnership opportunity to achieve ecological enhancements with positive results for agriculture.

Sincerely,



Adrian J. Polansky
Kansas Secretary of Agriculture

c: Kansas Water Office



DEPARTMENT OF WILDLIFE & PARKS

RECEIVED

AUG 07 2006

KS WATER OFFICE

KATHLEEN SEBELIUS, GOVERNOR

August 7, 2006


The Honorable Mike Johanns
Secretary of Agriculture
United State Department of Agriculture
1400 Independence Ave, S.W.
Washington D.C. 20250

Dear Secretary Johanns:

This letter is to confirm that The Kansas Department of Wildlife and Parks supports the proposed Conservation Reserve Enhancement Program (CREP) Upper Arkansas River project, as forwarded by the Kansas Conservation Commission, Kansas Water Office, and several other government and private entities. This CREP proposal will address many long-recognized economic and ecological threats to southwest Kansas. It will assist farmers in economic crisis stemming from drastic groundwater declines, and it will improve the quantity and quality of available ground and surface water and wildlife habitat in the area.

We believe the Upper Arkansas River CREP project is soundly crafted to deliver tangible and lasting benefits. As such, we strongly encourage you to support its implementation.

Thanks for considering these comments.

Sincerely,

Michael Hayden
Secretary, Kansas Department of Wildlife and Parks

C: Alan Pollom, Director, The Nature Conservancy of Kansas
Susan Stover, Kansas Water Office

Office of the Secretary
1020 S Kansas Ave., Suite 200, Topeka, KS 66612-1327
Phone 785-296-2281 Fax 785-296-6953 www.kdwp.state.ks.us



DEPARTMENT OF WILDLIFE & PARKS

RECEIVED

AUG 07 2006

KS WATER OFFICE

KATHLEEN SEBELIUS, GOVERNOR

August 7, 2006


The Honorable Mike Johanns
Secretary of Agriculture
United State Department of Agriculture
1400 Independence Ave, S.W.
Washington D.C. 20250

Dear Secretary Johanns:

This letter is to confirm that The Kansas Department of Wildlife and Parks supports the proposed Conservation Reserve Enhancement Program (CREP) Upper Arkansas River project, as forwarded by the Kansas Conservation Commission, Kansas Water Office, and several other government and private entities. This CREP proposal will address many long-recognized economic and ecological threats to southwest Kansas. It will assist farmers in economic crisis stemming from drastic groundwater declines, and it will improve the quantity and quality of available ground and surface water and wildlife habitat in the area.

We believe the Upper Arkansas River CREP project is soundly crafted to deliver tangible and lasting benefits. As such, we strongly encourage you to support its implementation.

Thanks for considering these comments.

Sincerely,

Michael Hayden
Secretary, Kansas Department of Wildlife and Parks

C: Alan Pollom, Director, The Nature Conservancy of Kansas
Susan Stover, Kansas Water Office

Office of the Secretary
1020 S Kansas Ave., Suite 200, Topeka, KS 66612-1327
Phone 785-296-2281 Fax 785-296-6953 www.kdwp.state.ks.us

KANSAS WATER AUTHORITY

901 South Kansas Avenue, Topeka, KS 66612-1249 (785) 296-3185

Steve Irsik, Chairman
5405 Six Road, Ingalls, KS 67853 (620) 335-5363



August 7, 2006

The Honorable Mike Johanns
Secretary of Agriculture
United State Department of Agriculture
1400 Independence Ave, S.W.
Washington D.C. 20250

Dear Secretary Johanns:

The Kansas Water Authority fully supports the Upper Arkansas River Conservation Reserve Enhancement Program (CREP), as forwarded by the Kansas Water Office and the State Conservation Commission. The CREP proposal was prepared at the Kansas Water Authorities' request to address the severe and extensive water shortages along the Arkansas River corridor. The Kansas Water Authority is an appointed body that advises the Governor and State Legislature on water policy issues.

Decades of low flows in the Arkansas River corridor, from river flow shortages at the Colorado-Kansas state line, extensive ground water development, and current drought conditions, have caused this area to be in extreme need of assistance to conserve the water resources. Water use retirement through the CREP would also enhance wildlife habitat and ground water recharge, and mitigate water quality problems. In addition to low flow, the Arkansas River is one of the nation's most saline rivers where it enters Kansas. CREP provides Kansas a unique opportunity to significantly reduce water use in the Upper Arkansas River corridor through a voluntary program with economic support during the transition period.

On behalf of the Kansas Water Authority, thank you for your consideration of the Upper Arkansas River CREP proposal.

Sincerely,

A handwritten signature in black ink that reads "Steve Irsik".

Steve Irsik, Chairman
Kansas Water Authority

65

**BIG BEND GROUNDWATER MANAGEMENT DISTRICT
NUMBER FIVE
125 SOUTH MAIN – P O BOX 7
STAFFORD KANSAS
TELE: 620-234-5352 FAX: 620-234-5718**

August 8, 2006

The Honorable Mike Johanns
Secretary of Agriculture
United State Department of Agriculture
1400 Independence Ave, S.W.
Washington D.C. 20250

Dear Secretary Johanns:

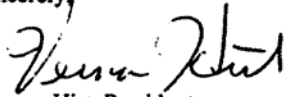
The Big Bend Groundwater Management District Number Five supports the proposed Conservation Reserve Enhancement Program (CREP) for Kansas. The program, as proposed for the Upper Arkansas River Basin will address numerous economic and natural resource concerns. With this in mind, we urge you to support this program.

The District supports programs offering economic incentives promoting the conservation and preservation of the natural resources of the State. CREP will offer economic relief to agriculture producers in this area while addressing future groundwater quality and quantity concerns. If the program is approved to move forward, the District will offer both indirect and direct support.

GMD #5 further recommends allowing production of dry land cropping on lands enrolled in CREP. This recommendation, if allowed would further reduce the economic impact of removing irrigated land from production in the area.

Thank you for considering these comments and recommendations.

Sincerely,



Vernon Hirt, President
Groundwater Management District #5



cc: Tim Ka
KSR&C No. 06-08-143

COPY

Kansas State Historical Society
Cultural Resources Division

KATHLEEN SEBELIUS, GOVERNOR

August 22, 2006

Bill Fuller
State Executive Director
USDA Farm Service Agency
Kansas State Office
3600 Anderson Avenue
Manhattan KS 66503

RE: Conservation Reserve Enhancement Program
Upper Arkansas River Basin
Hamilton Co, Kearny Co, Finney Co, Gray Co, Ford Co, Kiowa Co, Edwards Co, Stafford Co, Pawnee Co,
and Barton Co.

Dear Mr. Fuller:

The Kansas State Historic Preservation Office has reviewed its cultural resources files for the area of the above referenced project in accordance with 36 CFR 800. The project as proposed should have no effect on properties listed on the National Register of Historic Places or otherwise identified in our files. This office has no objection to implementation of the project.

Any changes to the project area that include additional ground disturbing activities will need to be reviewed by this office prior to beginning construction. If construction work uncovers buried archeological materials, work should cease in the area of the discovery and this office should be notified immediately.

This information is provided at your request to assist you in identifying historic properties, as specified in 36 CFR 800 for Section 106 consultation procedures. If you have questions or need additional information regarding these comments, please contact Tim Weston 785-272-8681 (ex. 214). Please refer to the Kansas Review & Compliance number (KSR&C#) above on all future correspondence relating to this project.

Sincerely,

Jennie Chinn
State Historic Preservation Officer


Patrick Zollner
Deputy State Historic Preservation Officer

6425 SW Sixth Avenue • Topeka, KS 66615-1099
Phone 785-272-8681 Ext. 240 • Fax 785-272-8682 • TTY 785-272-8683
www.kshs.org

FINNEY *KS*
COUNTY *KS*

CEPD
Administrative Center
P.O. Box M
311 North Ninth Street
Garden City, Kansas 67846
www.finneycounty.org

August 22, 2006

Bill R. Fuller
State Executive Director
Farm Service Agency, USDA
3600 Anderson Avenue
Manhattan, Kansas 66503

COEP

Re: PEA/CREP

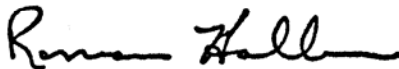
Dear Mr. Fuller:

The Finney County Board of Commissioners reviewed your letter of August 9 during their meeting on August 21, 2006. We are very concerned about the economic implications of removing some 85,000 acres from production, particularly as it appears that a large portion of that acreage is located in Finney County. Removal of this much acreage may drastically affect the smaller towns and counties in Southwest Kansas as the tax revenue generated from agricultural production is a large part of local budgets. The loss of revenue from these acres will shift the property tax burden to other property classes and affect future budget capabilities.

Southwest Kansas has an agriculturally based regional economy with numerous communities and their businesses relying on the commerce generated by farmers as they acquire seed, machinery, fuel and supplies. The dollars generated by local agriculture generate the income that fuels the region's economy. Removal of a significant amount of land from production will have a negative impact on our economy and we urge you to reconsider the PEA/CREP proposal.

It is our understanding that an environmental impact analysis is underway. We would request that you include in your analysis of this proposal the potential economic impact as well. We look forward to reviewing additional documentation on this matter and hope that it will identify any adverse economic impacts that may occur.

Sincerely,



Roman Halbur, Chairman
Finney County Board of Commissioners

OFFICE OF THE COUNTY ADMINISTRATOR
Peter H. Olson, County Administrator
admin@finneycounty.org
Office Phone 620-272-3542
Office Fax 620-272-3599



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Kansas Ecological Services Field Office
2609 Anderson Avenue
Manhattan, Kansas 66502-2801



RECEIVED *cc - mka*

SEP 06 2006

KS FSA STC

September 5, 2006

COPY

Bill R. Fuller
State Executive Director
USDA Farm Service Agency
3600 Anderson Avenue
Manhattan, Kansas 66502

RE: PEA for CREP in the Upper Arkansas basin

64411-2006-P-0531

Dear Mr. Fuller:

This is in response to your August 9, 2006 letter requesting Fish and Wildlife Service review and input to your preparation of a Programmatic Environmental Assessment (PEA) for implementation of the Conservation Reserve Enhancement Program (CREP) in the upper Arkansas River basin of southwestern Kansas. This response reflects the views of the U.S. Fish and Wildlife Service and not necessarily those of the Department of the Interior. The proposed activities would include the removal from agricultural production approximately 85,000 acres of irrigated cropland and 15,000 acres of dryland cropland, in Hamilton, Kearny, Finney, Gray, Ford, Kiowa, Edwards, Pawnee, Stafford and Barton counties. The following information is provided for your consideration.

In accordance with section 7(c) of the Endangered Species Act, we have determined that the federally listed whooping crane, least tern, piping plover and bald eagle may occur within the program area. Each of these species is associated in some way with wetland or riparian areas. It appears likely that retiring cropland, especially irrigated cropland, should have a net beneficial effect on wetlands and stream areas, indirectly benefitting these species. However, if it is determined any phase of program activity may adversely affect listed species or their habitats, formal consultation pursuant to section 7 of the Act should be initiated with this office. If it can be determined there will be no adverse effect, further consultation will not be necessary.

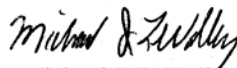
The candidate species Arkansas darter also occurs in the program service area, typically occupying spring-fed pools of wetlands and streams, particularly those which contain aquatic vegetation. Candidate species are those for which the Fish and Wildlife Service has substantial information to indicate they warrant protection under the Endangered Species Act. Proposed rules to begin the process of implementing this legal protection may be initiated at any time for

these species. Again, while it appears this program should benefit habitat for this species, specific implementation activities should be evaluated for the potential for adverse impacts.

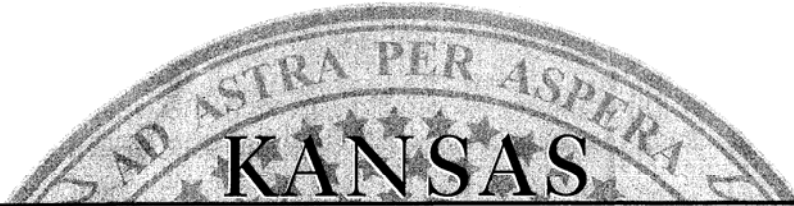
Under the Migratory Bird Treaty Act, activities occurring in prairies, wetlands, and stream and woodland habitats that might result in the taking of migratory birds, eggs, young, and/or active nests should be avoided. Although the provisions of MBTA are applicable year-round, most migratory bird nesting activity in Kansas occurs during the period of April 1 to July 15, although some migratory birds are known to nest outside this period. If it is determined that any program activity may result in the take of nesting migratory birds, the Service recommends a field survey during the nesting season of the affected habitats and structures to determine the presence of active nests. Our office should be contacted immediately for further guidance if a field survey identifies the existence of one or more active bird nests that cannot be avoided temporally or spatially by the planned construction activities.

Thank you for this opportunity to provide input on your proposal. With adequate precautions it appears that, on balance, this program should result in net benefits to fish and wildlife resources of Kansas. Please contact this office again if you have additional comments or questions.

Sincerely,


Michael J. LeValley
Field Supervisor

cc: KDWP, Pratt, KS (Environmental Services)
Department of the Interior, OEPC (Robert Stewart)
USFWS, Region 6, Fisheries & Ecological Services (Connie Young-Dubovsky)



COPY

DEPARTMENT OF AGRICULTURE
ADRIAN J. POLANSKY, SECRETARY

KATHLEEN SEBELIUS, GOVERNOR

September 7, 2006

Bill R. Fuller
State Executive Director
Farm Service Agency
36000 Anderson Avenue
Manhattan, KS 66503

**Re: Programmatic Environmental Assessment of Implementation of the CREP in the Upper
Arkansas River Basin, Kansas**

Dear Mr. Fuller:

The Kansas Department of Agriculture strongly supports the proposed Conservation Reserve Enhancement Program (CREP) in the Upper Arkansas River Basin.

The proposed CREP will help reduce soil erosion, improve water quality, and increase wildlife habitat. It also includes a state requirement to retire irrigation water rights along critical reaches of the Arkansas River and areas that are hydrologically connected to the stream.

The Arkansas River Basin is heavily developed for cropland irrigation and often there is little to no surface flow. Ground water levels have declined significantly over the last 10 to 20 years and have only been exacerbated by ongoing drought. These water shortages are threatening the economic well-being of the agricultural community in the Upper Arkansas River Valley.

The CREP project would provide economic incentives for some producers to convert irrigated land to non-irrigated grass cover. The reduction in water use related to irrigation would be beneficial in stabilizing groundwater levels and water supplies as well as contributing to the agency's overall strategy for long-term management of the water resources in this area. In addition, there would be ecological benefits from conservation practices and improved streamflow along the Arkansas River.

Given the significant benefits the CREP proposal offers to the Upper Arkansas River Valley and the areas hydrologically connected, the Kansas Department of Agriculture has no concerns with the implementation of the CREP project.

Thank you for the opportunity to comment on the proposed CREP.

Sincerely,

David L. Pope, P.E.
Chief Engineer

DLP/ta/dlh

Division of Water Resources David L. Pope, Chief Engineer
109 SW 9th St., 2nd Floor Topeka, KS 66612-1283
Voice (785) 296-3717 Fax (785) 296-1176 <http://www.ksda.gov>

PAWNEE COUNTY CONSERVATION DISTRICT
324 MAIN STREET - LARNED, KS 67550
PHONE: 620-285-2167
FAX: 620-285-6015

September 8, 2006

Dear Mr. Fuller:

The Pawnee County Conservation District Board reviewed the CREP proposal during the September board meeting. The proposed area for CREP in Pawnee County is highly susceptible to wind erosion which would be a resource concern for the proposed area.

A concern for our area is if there is significant participation in CREP, Pawnee County will sustain a detrimental economic impact due to tax revenue loss. Loss of revenue from sales of farm inputs for our local businesses is also a concern. Our businesses rely heavily on the ag sector and this could very well mean the end to some of the local businesses.

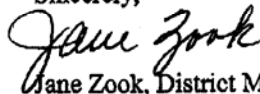
Listed are suggestions we feel would help lessen the economic impact on our county and help have a greater acceptance locally of CREP if CREP is approved for Kansas.

1. Have rental rates tied to the local irrigated rental rates.
2. Give producers a choice of planting crops or grass. Producers who choose to continue to plant crops would receive a lower rental rate.
3. If grass is selected, allow producer to irrigate the 1st year and possibly the second year to help establish a stand if drought conditions exist.
4. Allow haying and grazing management.
5. Offer a one time incentive payment.

If producers are allowed to plant crops, buffers could be implemented along the Arkansas, Coon Creek, etc. to achieve water quality where grass is not already established.

Thank you for the opportunity to address the concerns of our county.

Sincerely,



Jane Zook, District Manager
Pawnee County Conservation District

Sep. 16. 2006 8:27AM

OCT 02 2006

No. 0063 P. 2



**Kansas Grain and Feed Association
Kansas Agribusiness Retailers Association
816 SW Tyler, Topeka, KS 66611
785-234-0461**



September 14, 2006

The Honorable Mike Johanns
Secretary
United States Department of Agriculture
1400 Independence Avenue, SW
Washington, DC 20250

RE: State of Kansas' proposal to Establish a Conservation Reserve
Enhancement Program along the Upper Arkansas River

Dear Secretary Johanns:

On behalf of the Kansas Grain and Feed Association (KGFA) and the Kansas Agribusiness Retailers Association (KARA), we are submitting this letter in opposition to the designation of a conservation reserve enhancement program (CREP) along the Arkansas River in southwest Kansas.

So that you understand why we are taking an interest in this issue, please let me explain about the members of these associations and how closely we are tied to production agriculture and the rural communities. KARA represents the ag retailers that provide chemicals, fertilizer, seed and other ag services and products to farmers. The Kansas Grain and Feed Association represents 98 percent of the licensed grain storage facilities in Kansas. In the proposed CREP area our members manage 45 million bushels of grain storage. Since those facilities usually turn the grain a couple times a year, the amount of storage capacity that will be potentially affected by the CREP is over 100 million bushels a year. This should highlight the significant agricultural production that occurs in this area and why the area is so dependent on production agriculture. We have 115 members that have their businesses located in this proposed area. Our members, like the vast majority of the other people that live in that area, are not only dependent on the agriculture sector for their business, they and their families live in this communities. Therefore, our members' ties to this area is significant.

The grain storage and agriculture input industry is just an example of the significant reliance in this area on production agriculture. The economy of this region is directly tied to agricultural activities. The result of removing 100,000

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acres from production in this area would be devastating to the local economy. This statement is supported by the economic analysis done by Kansas State University in April, 2006. (I have not attached a copy of the study since I am aware that you already have a copy of the study). KSU's analysis revealed that a CREP program would result in a reduction of nearly \$9 million even when the economists estimated that all but 10 percent of the CREP payments would stay in that area. We think the impact will be even more devastating since we believe more than 10 percent of the payments will leave the area since approximately 40 percent of all farm land in Kansas is rented to a tenant. Furthermore, the report states that when the CREP program is over, the negative impact to the area will be \$13.4 million and that it will take approximately 40 years for the region to adjust and get back to a pre-CREP status.

Even the industries not directly tied to the agricultural industry will be affected by the CREP through a lowering of the tax base in these communities. The KSU study states that the county average tax reduction will be between approximately 10-22%. These communities are struggling to survive and a reduction of this magnitude will make it harder to turn the tide and encourage other industries to move or stay there or for people to remain in that community.

While there is no denial that water is a serious issue in western Kansas, we do not believe the CREP will significantly improve the situation. By the state's own admissions, this program will not fix the situation or stop the water decline. However, we have information that it will have a significant devastating economic effect. Therefore, the benefit does not outweigh the cost to the rural area. We urge USDA to take a close and serious look at the cost benefit impact if this program is implemented in southwest Kansas.

Furthermore, there are current programs that are being used and can be further used to address water shortage issues that will not immediately remove 100,000 acres out of production. Thus, the issue of water shortages and declines can be addressed in another fashion and will probably not cost the state as much as this program is going to cost the state or negatively impact the region.

We urge USDA to refocus the CRP program so that the priority is protecting highly erodible soils. The CRP was never intended to be a water right buyout program and we think this expansion of the program is inappropriate and has caused problems because the program was not originally drafted to deal with water rights. One of these problems is that currently, USDA has a first-come-first-serve approach to enrolling land in CRP as long as the land meets the appropriate criteria. While this can work when dealing with land, it does not assist in ensuring that the state and federal government are buying water rights that are productive and through their retirement could actually make an impact on the water table. On a first-come-first-serve-basis, there is no restriction on a lot of money being spent and very little actual water being purchased and retired. While we are aware the state has requested some flexibility on this matter, it

Sep. 16. 2006 8:27AM

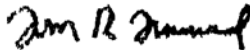
No. 0063 P. 4

highlights how the rules for one program do not always fit to achieve the goals of another program.

However if USDA believes it appropriate to implement a CREP in Kansas, then we would strongly encourage you to allow dry land farming on soils that are suitable (i.e. not highly erodible). Since the purpose of a CREP is to reduce water usage, allowing dry land farming would not interfere with achieving this purpose. If a CREP is approved for Kansas we would like to request that the proposal contain language to conditionally allow dry land farming if the federal law or regulations governing this program are changed to allow dry land farming on CREP areas.

Thank you for the opportunity to share these comments with you. We strongly urge you to consider the devastating economic impact this program will have on the local area if you approve this program. If you have any further questions regarding KGFA's and KARA's position please feel free to contact me at 785-234-0461.

Sincerely,



Tom R. Tunnell
President

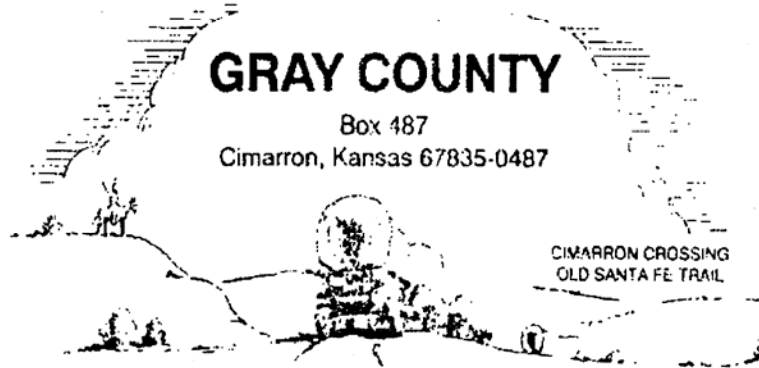
Cc: U.S. Senator Pat Roberts
U.S. Rep. Jerry Moran
Tracy Streeter, Kansas Water Office
Greg Foley, State Conservation Commission

P. 04

FAX NO. 816 826 8191

SEP-15-2006 FRI 10:44 AM KCMO-PCOAD

County Clerk
Bonnie Swartz
620-855-3618



County Commissioners
1st Dist: Mark E. Busch
2nd Dist: W. Wiley McFarland
3rd Dist: Ronnie Jantz

September 20, 2006

Steve Irsik, Chairman
Kansas Water Authority
901 S Kansas Ave Suite 100
Topeka Kansas 66606-3719

RECEIVED

SEP 22 2006

KS WATER OFFICE

Re: Conservation Reserve Enhancement Program

Dear Steve:

The Gray County Board of Commissioners have voted to support the Conservation Reserve Enhancement Program (CREP). It is very important that a long time water supply be preserved. If we can preserve our water, it will promote continuing economic activity on the long term.

We encourage irrigators along the upper Arkansas River corridor to enroll in CREP.

Yours truly,

Ronnie D Jantz
Ronnie Jantz, Chairman
Gray County Board of Commissioners

RDJ/bs



Kansas Cooperative Council
816 S.W. Tyler St., Suite 300
Topeka, Kansas 66612

Phone: 785-233-4085
Fax: 785-233-1038
Toll Free: 888-603-COOP (2667)
Email: council@kansascu-op.coop

www.kansascu-op.coop

The Mission of the Kansas Cooperative Council is to promote, support and advance the interests and understanding of agricultural, utility, credit and consumer cooperatives and their members through legislation and regulatory efforts, education and public relations.

August 30, 2006

Hon. Mike Johanns, Secretary
United State Dept. of Agriculture
1400 Independence Ave., SW
Washington, DC 20250

RE: Opposition to Kansas' request for implementing a CREP Along the Upper Arkansas River in southwest Kansas.

Dear Secretary Johanns,

Recently, the state of Kansas submitted a proposal for designation of a Conservation Reserve Enhancement Program (CREP) area along the Arkansas River in southwest Kansas. As we understand the program, one consideration is evidence of producer and community support. Although several organizations have submitted letters of support for the CREP, there are other stakeholders with significant concerns about and opposition to the program. **Our association, the Kansas Cooperative Council, does not support designating a CREP along the Ark River corridor under current CRP restraints. We have participated in the stakeholder working group brought together by the Kansas Water Office, and have raised many questions and concerns throughout the process.**

It is also our understanding that for such a CREP to be approved there must be a demonstration that significant environmental benefits can be achieved in a cost effective manner. We believe that if the impacts on the local economy and tax base are figured into the equation, the water savings under the Ark River CREP proposal comes at an inordinately high economic cost to the region.

The Kansas Co-op Council is a statewide trade association representing all forms of cooperatively structured businesses. Approximately half of our members are agricultural/farm supply co-ops. These ag co-ops are owned and controlled by their producer members. Many of our members' trade areas encompass portions of the proposed CREP territory. These cooperatives have suffered negative impacts as a result of CRP implementation.

The Council's members have strong concerns with the expansion of CRP beyond its original goal of addressing highly erodible land. We do recognize that addressing water quantity issues is a significant concern for Kansas, particularly in the western portion of

the state. But we have registered strong opposition against irrigation transition programs which do not allow continued agriculture production through dryland farming. Our policy positions do support irrigation buy-out programs where continued agriculture production is allowed.

The Council supported the implementation of a state-level Water Right Transition Assistance Program and the implementing legislation passed during the 2006 Kansas legislative session. We do not believe a blanket ban on dryland farming is necessary or appropriate where the major program goal for an irrigation transition program is reducing water usage. As long as the water is being conserved, the government should not prohibit continued ag production on land that will support dryland crops or even haying and grazing. Such a ban ignores advances in plant technology, the development of drought resistant crops, introduction of new crop mixes and is an unnecessary intrusion by the government into land management decisions.

As a specialized CRP program, the CREP will require all enrolled program acres to be planted to vegetative cover. As we near the end of the current farm bill, we hope consideration can be given to modifying these prohibitions in future farm program legislation. **We support changes that allow dryland farming on CREP acres where a major goal for that particular CREP is water conservation/irrigation transition.** Until such a modification is made to the CRP/CREP program, we can not support the proposal to designate a CREP anywhere in Kansas.

Kansas State University Department of Agricultural Economics researchers have compiled an economic analysis of the potential impacts a 100,000 acre, 10-county CREP would have on the region if implemented as proposed. The overall effects are significant, far-reaching and negative. We believe the ability to continue agriculture production on CREP acreage that will support dryland farming can help mitigate those negative impacts.

The economic projections for the proposed CREP region forecasted in the KSU study predict an overall annual reduction of nearly \$15 million to that region's economy. That figure takes into account both direct and indirect cost and would be even higher if anticipated increases in household income from the CRP/CREP payments (\$6.5 million) and anticipated recreational income (\$285,000) did not off set some of the losses.

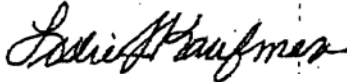
Kansas employs a property-tax valuation system based on the inherent capacity of the land to produce (use-value appraisal). Converting as many as 100,000 acres from irrigated land, our highest valued category, down to dryland will have a significant impact on local property tax revenues in many of the counties in the proposed CREP region. The 10-county average reduction in property tax valuations is 9.93%. The highest county reduction is estimated at 22.34%. That is a big hit on our southwestern Kansas counties that rely heavily on agriculture's contributions to their local economies.

We are providing a copy of the KSU study along with this letter and encourage your staff to consider the report when evaluating the merits of establishing a CREP in

southwest Kansas. The Kansas Cooperative Council appreciates the need and desire to address water concerns in that area of our state. We believe there are options that facilitate and encourage water use reduction in the region which do not pull the economic rug out from under their local economy. We think the more economically viable options include the ability to continue dryland crop production in the region and that is not a CREP program

The Kansas Cooperative Council appreciates the opportunity to share some of our concerns regarding Kansas' request for implementing a CREP along a portion of the Ark River. If you have questions regarding our concerns or would like additional information from us, you may contact me by cell phone at 785-220-4068 or email at leslie@kansasco-op.coop.

Sincerely,



Leslie Kaufman, Executive Director
Kansas Cooperative Council

CC: Tracy Streeter, Director, Kansas Water Office

Enc: KSU economic study

1. Leatherman, John, Bill Golden, Allen Featherstone, Terry Kastens, and Kevin Dhuyvetter. "Regional Economic Impacts of the Implementation of the Conservation Reserve Enhancement Program in the Kansas Upper Arkansas River Basin - Final Interim Report." April 2006. 1, 28

APPENDIX C: PUBLIC COMMENTS AND AGENCY RESPONSES

[Reserved For Final PEA]