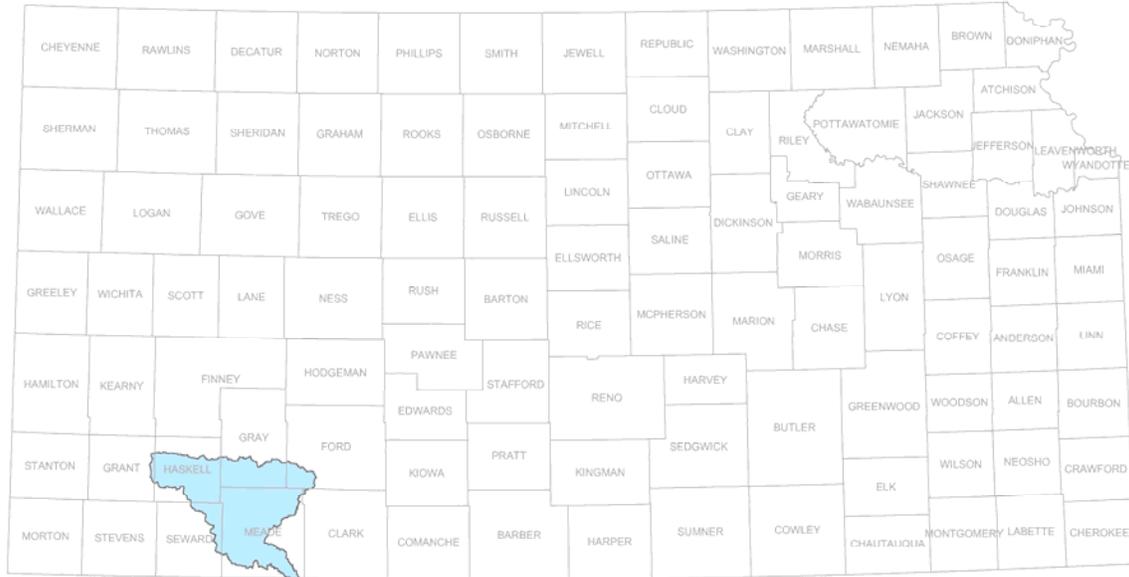


KANSAS

Rapid Watershed Assessment

Crooked Watershed

Hydrologic Unit Code – 11040007



August 2008

Produced by:

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Resource Profile

1.0 Purpose

This rapid watershed assessment (RWA) organizes resource information into one document that local conservationists, units of government, and others can use to identify existing resource conditions and conservation opportunities. This will enable the user to direct technical and financial resources to the local needs in the watershed. This RWA provides a brief description of the Crooked sub-basin's natural resources, resource concerns, conservation needs, and ability to resolve natural resource issues and concerns.

2.0 Introduction

The Crooked 8-Digit Hydrologic Unit Code (HUC) sub-basin is comprised of approximately 917,200 acres in southwest Kansas in portions of Grant, Haskell, Gray, Ford, Seward, and Meade Counties. Discrepancies exist in the size of the watershed due to how the data was developed. Those discrepancies are not adjusted in this assessment. The National Land Cover Data (NLCD) indicates approximately 62 percent of the sub-basin is in grain and row crop; 37 percent is in grassland, pasture, and hay; and less than one percent is in other various land uses.

Relief Map



Resource concerns are numerous in the sub-basin. They include, but are not limited to, soil erosion, aquifer overdraft and inefficient water use on irrigated cropland, hydrologic cycle and plant condition on rangeland, and water for livestock. Economic issues such as the high capital costs of crop production and increased farm management may delay the acceptance and implementation of conservation on agricultural lands in the sub-basin.

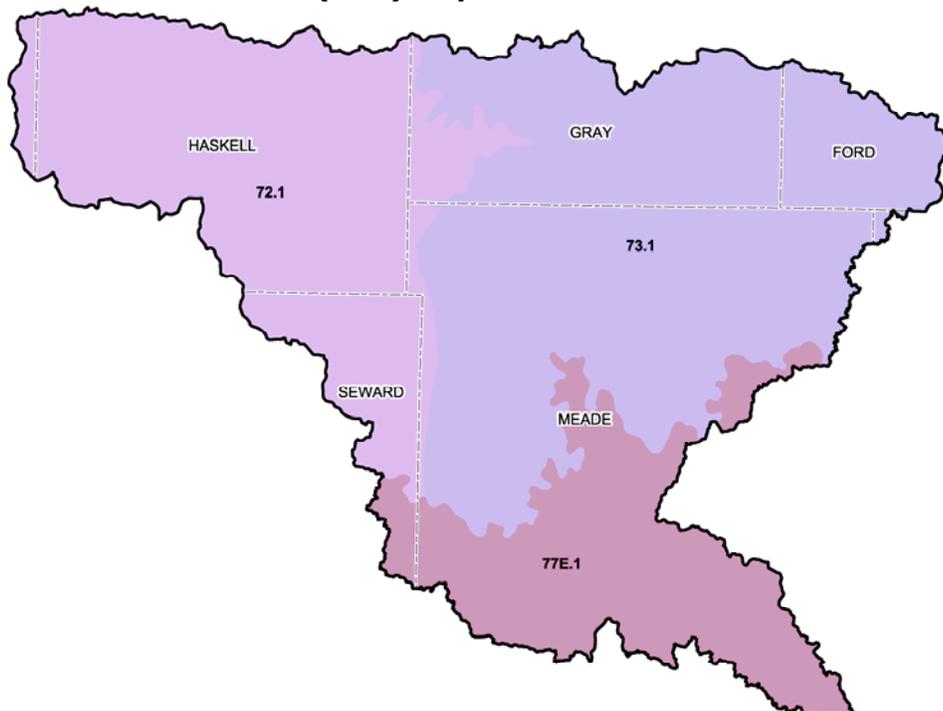
It is estimated that there are 722 farms with an average size of 1,336 acres in the Crooked sub-basin.

Six Natural Resources Conservation Service (NRCS) field offices, 6 county conservation districts, 6 K-State Research and Extension offices, and 2 Resource Conservation and Development (RC&D) areas (Santa Fe Trail and Coronado Crossing) provide conservation assistance in the sub-basin.

3.0 Physical Description

The physical descriptions of the Crooked sub-basin provide detailed information so that the user can better understand the natural resources associated with this geographical land unit.

3.1 Common Resource Area (CRA) Map¹



72.1 – Central High Tableland: The Central High Tableland CRA is broad, level to gently rolling, loess mantled tableland. Local relief is measured in feet on the tableland in tens of feet and major river valleys are bordered by steep slopes. Soils are deep. Presettlement vegetation was short grass prairies. Nearly all of this area is in cropland, both dryland small grain crops and irrigated corn and grain sorghum.

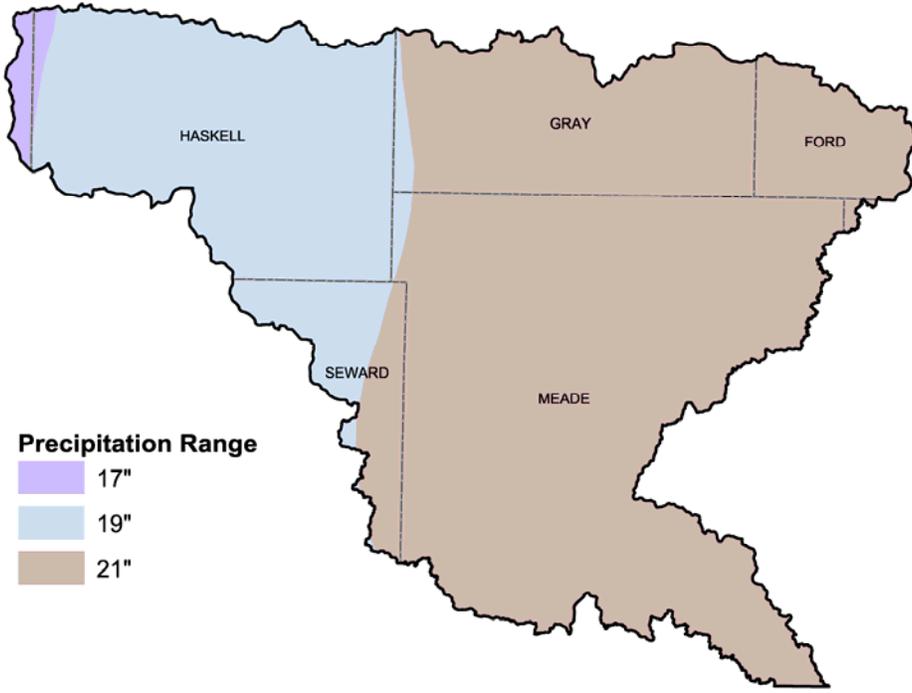
73.1– Rolling Plains and Breaks: The Rolling Plains and Breaks CRA is dissected plains having broad undulating to rolling ridgetops, loess mantled, and hilly to steep sideslopes. Local relief reaches 300 feet and is dissected with narrow drainage ways and river valleys. Soils are deep on the ridgetops and moderately deep to shallow on the sideslopes. Presettlement vegetation was mid-grass prairie. Most of this land is in farms, both small grain crops and native grasses.

77E.1 – High Plains, Northeastern Part: This unit occurs along moderately sloping breaks and steep escarpments associated with dissecting river systems and erosional margins of the Southern High Plains. Soil temperature regime is thermic and soil moisture regime is ustic bordering on aridic. Loamy and sandy soils are generally well drained, range from shallow to deep, and developed in Ogallala Formation sediments. Native vegetation is a short-grass community. Current land use is rangeland and wildlife habitat with minor cropland.

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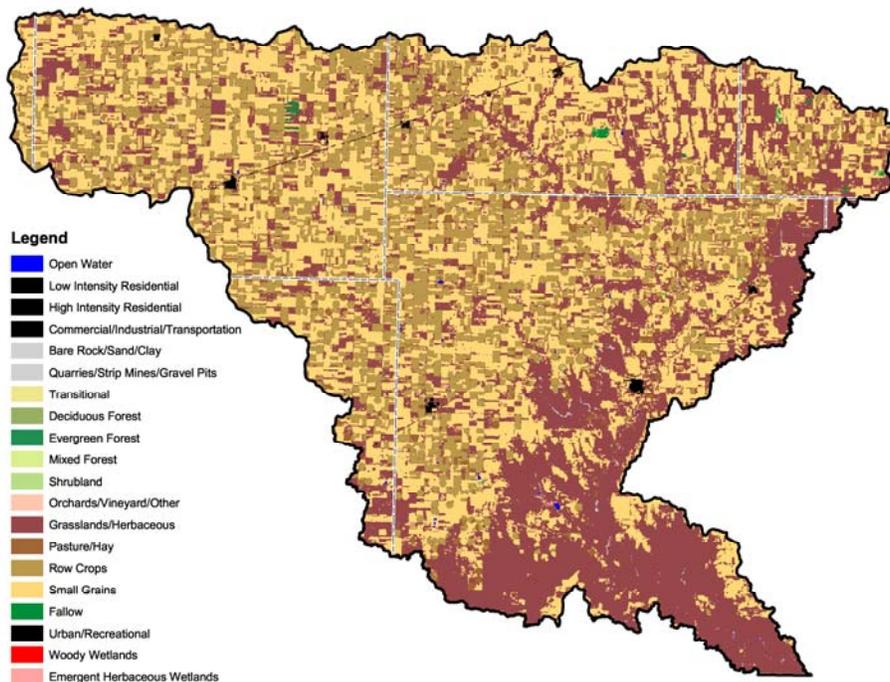
3.2 Precipitation Map²

The map below depicts the average precipitation occurring within the sub-basin.



3.3 Land Use and Land Cover Distribution Map³

The map below represents the distribution of land cover and land use as defined by the NLCD.



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3.3.1 Land Use and Land Cover Summary Table^{/3}

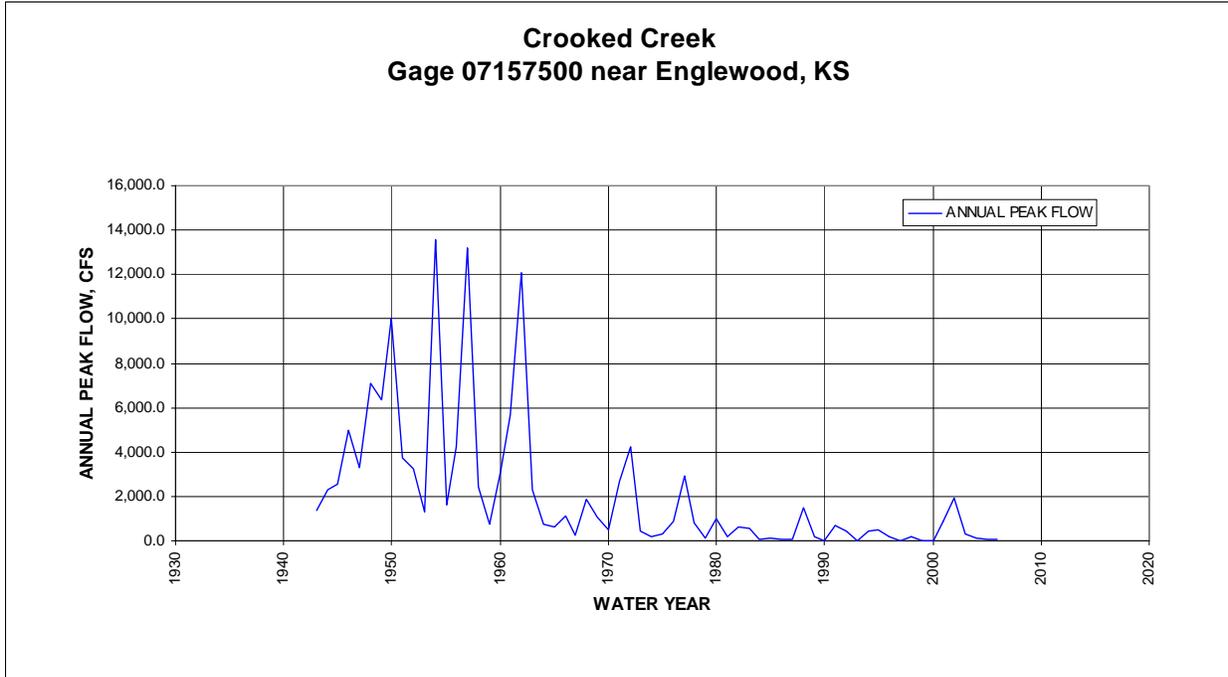
Land Cover/Land Use	Ownership					
	Public		Private		Totals	%
	Acres	%	Acres	%		
Open Water	80	*	504	*	584	*
Low Intensity Residential			700	*	700	*
High Intensity Residential			484	*	484	*
Commercial/Industrial/Transportation			1,218	*	1,218	*
Bare Rock/Sand/Clay			995	*	995	*
Quarries/Strip Mines/Gravel Pits			27	*	27	*
Transitional			2	*	2	*
Deciduous Forest			11	*	11	*
Evergreen Forest			2	*	2	*
Shrubland			640	*	640	*
Grasslands/Herbaceous	360	*	325,043	35	325,403	35
Pasture/Hay			19,308	2	19,308	2
Row Crops			190,146	21	190,146	21
Small Grains			375,341	41	375,341	41
Fallow			1,220	*	1,220	*
Urban/Recreational			79	*	79	*
Woody Wetlands			9	*	9	*
Emergent Herbaceous Wetlands			1,018	*	1,018	*
HUC Totals^a	440	*	916,746	100	917,186	100
*Less than 1 percent of total acres						
^a Totals are approximate due to rounding and small unknown acreages						
<i>Special Considerations for This 8-Digit HUC:</i>						
<ul style="list-style-type: none"> ▪ Small grains and row crops are the predominant commodities grown on 62 percent of the watershed ▪ Grasslands/Herbaceous and Pasture/Hay make up 37 percent of the watershed ▪ Forest makes up less than 1 percent of the watershed ▪ Urban land comprises less than 1 percent of the watershed 						
Irrigated Lands^{/4}		Percent of Cropland			Percent of HUC	
Pressure/Gravity		58			36	

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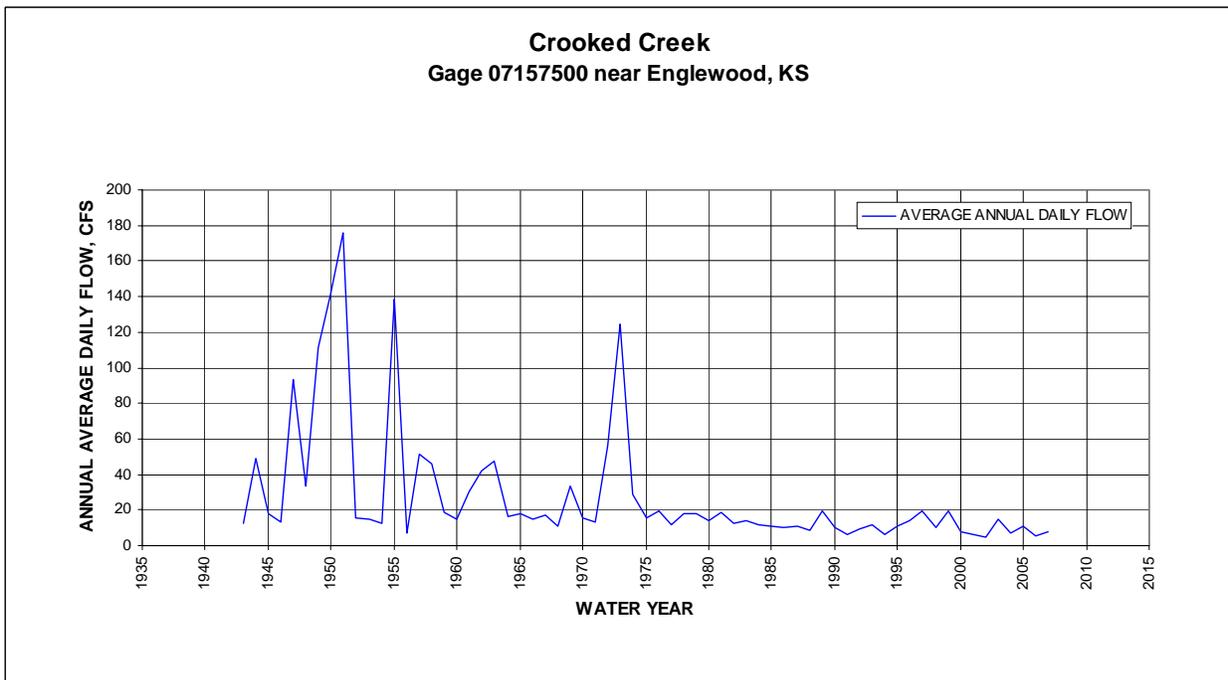
3.4 Stream Flow Data⁴⁵

Stream flow data has been collected since the 1920s. For this assessment, data was collected from two stream gage stations on the Crooked River near Englewood, Kansas.

Annual Peak Flow



Average Annual Discharge



3.5 Other Physical Descriptions

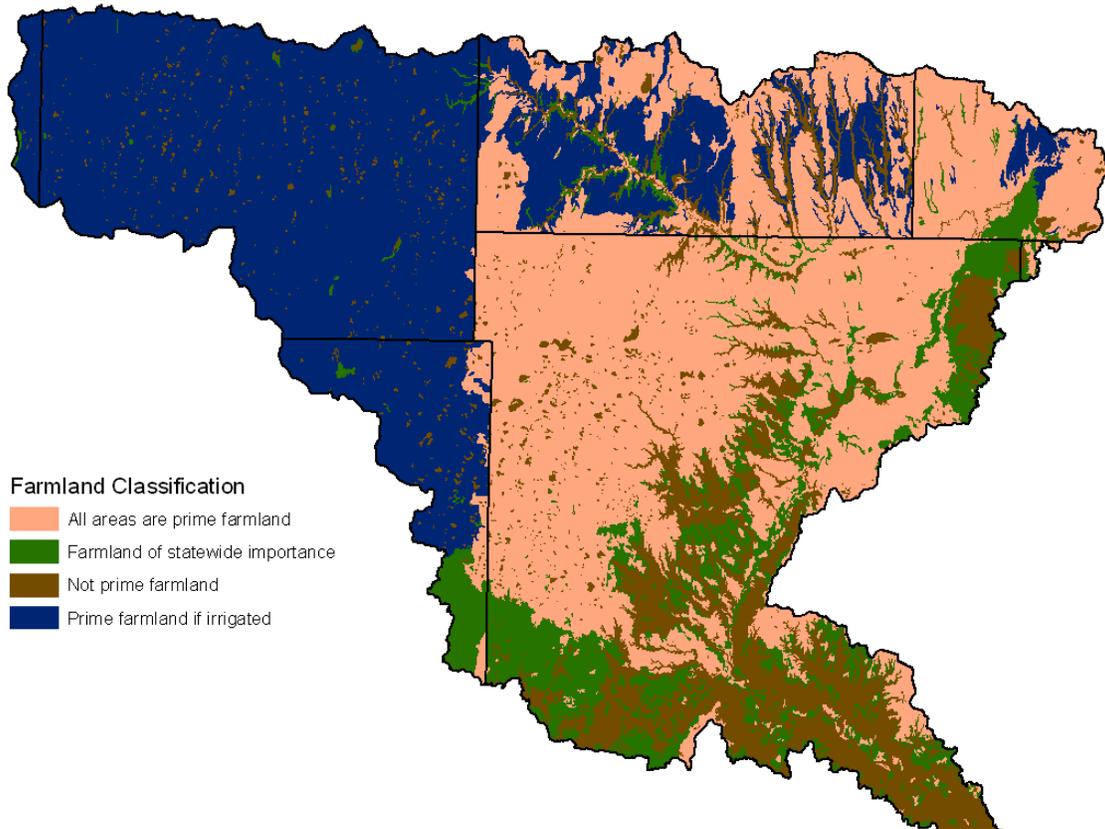
Stream Data ^{/6}	Total Miles of Streams in HUC Major (24K Hydro Geographic Information System [GIS] Layer) including intermittent and perennial streams.	1,509 miles	
		ACRES	PERCENT
Land Cover/Use ^{/3} Based on a 100-foot stretch on both sides of all streams in the 24K Hydro GIS Layer	Open Water	190	1
	Low Intensity Residential	16	*
	High Intensity Residential	5	*
	Commercial/Industrial/Transportation	14	*
	Bare Rock/Sand/Clay	74	*
	Transitional	3	*
	Deciduous Forest	4	*
	Evergreen Forest	0	0
	Shrubland	31	*
	Grasslands/Herbaceous	25,666	68
	Pasture/Hay	832	2
	Row Crops	3,073	8
	Small Grains	7,377	20
	Fallow	18	*
	Urban/Recreational	2	*
Woody Wetlands	2	*	
Emergent Herbaceous Wetlands	197	1	
	Total Acres of 100-foot Stream Buffers	37,504	100
<i>*Less than 1 percent of total acres</i>			

3.6 Farmland Classification^{/12}

Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is also available for these uses. It has the soil quality, growing season, and moisture supply needed to produce economically sustained high yields of crops when treated and managed according to acceptable farming methods, including water management.

Unique farmland is land other than prime farmland that is used for the production of specific high value food and fiber crops. It has the special combination of soil quality, location, growing season, and moisture supply needed to produce economically sustained high quality and/or high yields of a specific crop when treated and managed according to acceptable farming methods.

Farmland of statewide importance, or of local importance, is land other than prime farmland or unique farmland but is also highly productive. Criteria for defining and delineating these lands are determined by the appropriate state or local agencies in cooperation with the USDA.



Farmland Classification

 All areas are prime farmland

 Farmland of statewide importance

 Not prime farmland

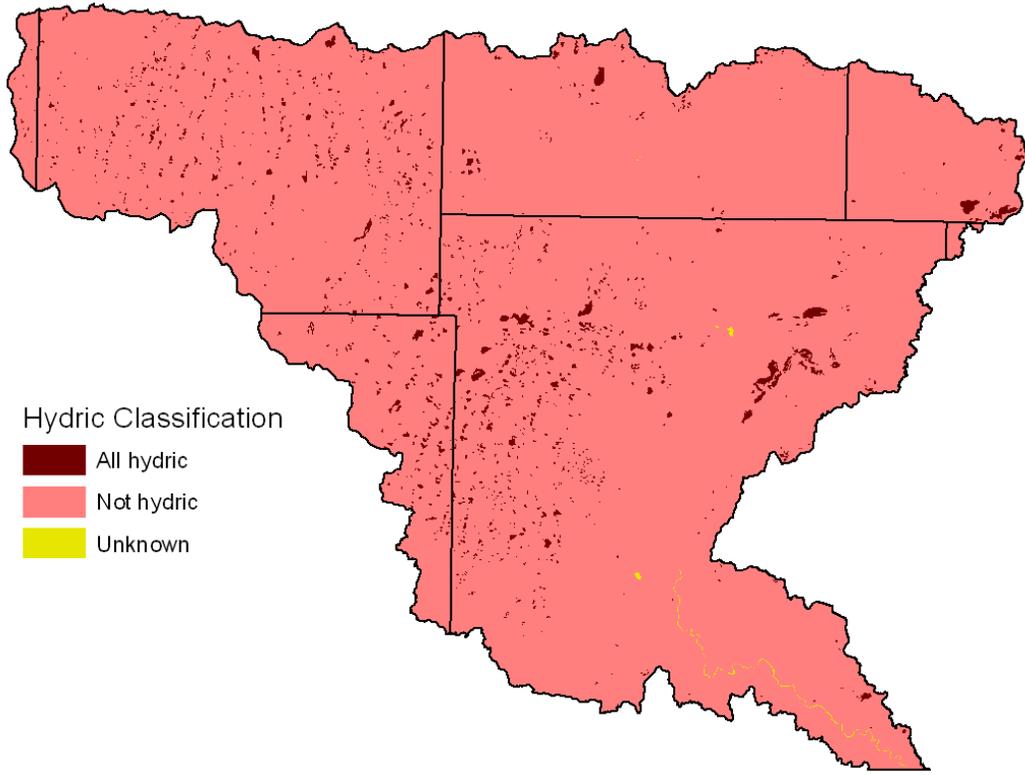
 Prime farmland if irrigated

3.6.1 Farmland Classification Summary

Farmland Classification	Acres	Percent
All areas are prime farmland	363,006	40
Farmland of statewide importance	93,346	10
Not prime farmland	133,746	15
Prime farmland if drained	327,206	36
Total	917,304	100

3.7 Hydric Soils¹²

Hydric soils are soils that are sufficiently wet in the upper part of the soil profile to develop anaerobic conditions during the growing season. These soils can include wetland areas which may provide benefits for aquifer recharge, floodwater holding capacity, habitat for numerous species of terrestrial and aquatic organisms, and a diversity of plants. These areas may be protected at the federal level.



3.7.1 Hydric Soils Summary

Hydric Classification	Acres	Percent
All Hydric	19,835	2
Not Hydric	896,659	98
Unknown	809	0
Total	917,304	100

4.0 Resource Concerns

Resource concerns are issues related to the natural environment. Natural resources include soil, water, air, plants, animals, and humans (SWAPA+H). Local conservationists identified major resource issues by land use that affect the Crooked sub-basin.

4.1 Summary of Resource Concerns

Resource Concerns/Issues by Land Use								
SWAPA+H Concerns	Specific Resource Concern/Issue	Pasture/Hay	Grain Crops	Row Crops	Grazed Range	Forest	Wildlife	Urban
Soil Erosion	Wind		X	X				
Water Quantity	Rangeland Hydrologic Cycle				X			
	Inefficient Water Use on Irrigated Land		X	X				
	Aquifer Overdraft		X	X				
Plant Condition	Productivity, Health and Vigor				X			
Animal: Domestic	Inadequate Stock Water				X			
Human, Economics	High Capital/Financial Costs		X	X				
	High Management Level Required		X	X				

Grain and Row Crops

- Residue, nutrient, and pest management; vegetative practices; and structural practices are necessary to control erosion, protect water quality, and improve soil conditions.
- Overutilization of available groundwater depletes resource which may be unrecoverable.
- Erosion concerns exist due to lack of residue and erosion control measures on cropland.

Grazing Land

- Overutilization of the grass resource affects productivity, health, and vigor.
- Inadequate livestock water supply affects grazing distribution and animal health and condition.

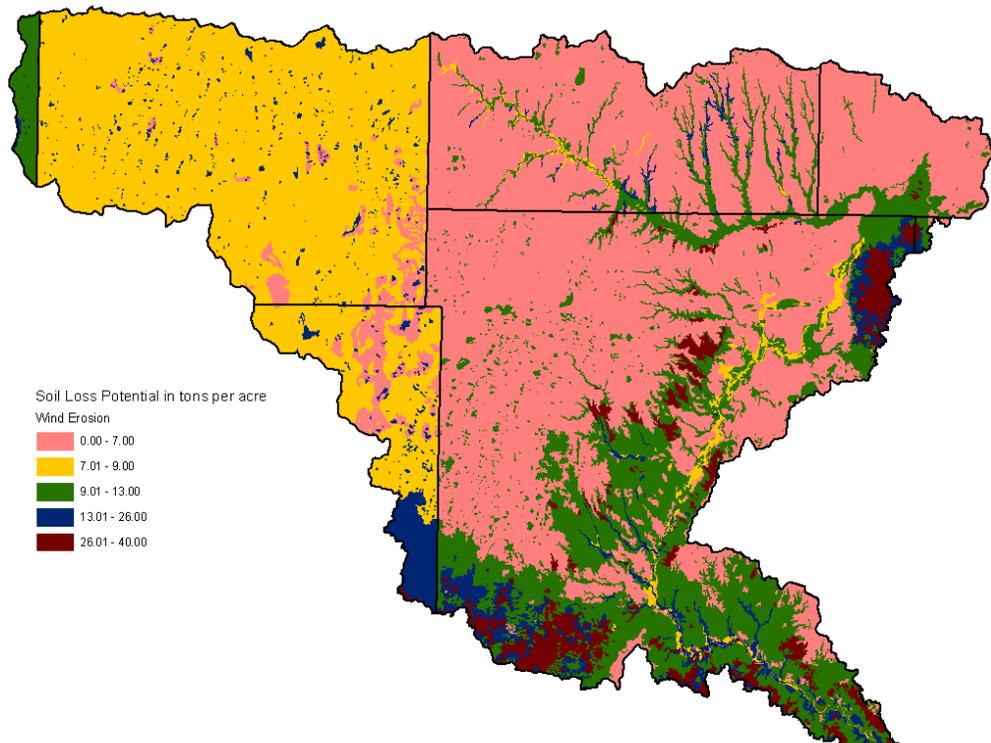
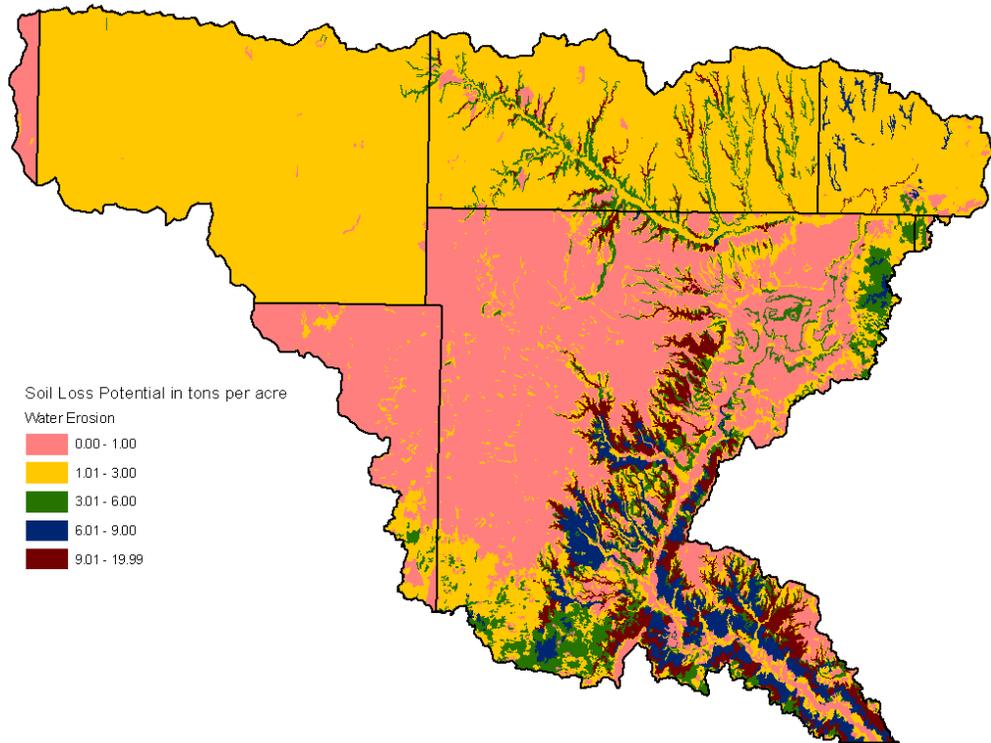
General

- Inputs needed to manage large agricultural operations, costs of production, and fluctuating commodity values require large capital outlay and place financial burdens on landowners and producers.

4.2 Potential Soil Loss¹²

Soil loss through wind and water erosion is critical to consider for dealing with air and water quality issues. As airborne particulate, soil particles can be a major contributor to air quality concerns. Soil loss through water erosion causes water quality impairments as pollutants are attached to soil colloids and are transported into the stream systems. Wind and water erosion have been identified as concerns in the watershed. The following maps developed with the Soil Survey Geographic Database (SSURGO) display soil loss potential within the Crooked sub-basin.

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4.3 Water Quality Conditions

The Kansas Department of Health and Environment (KDHE) is responsible for monitoring water quality conditions in the state of Kansas. This section has been provided by KDHE. For up-to-date water quality condition information, visit the KDHE at www.kdheks.gov/nps/watershed_condition.htm.

4.3.1 Confined Animal Feeding Operations (CAFO)

In Kansas, confined animal feeding operations (CAFOs) with an animal unit capacity of 300 or more must register with the KDHE. Waste disposal practices and the wastewater effluent quality of these registered CAFOs are closely monitored by the KDHE to determine the need for runoff control practices or structure in order to protect the waters of the state of Kansas. Because of this monitoring, registered CAFOs are not considered a significant threat to water resources within the watershed. A portion of the state's livestock population exists on small, unregistered farms. These small, unregistered livestock operations may contribute a significant source of fecal coliform bacteria and nutrients, depending on the presence and condition of waste management systems and proximity to water resources.

Animal Type	Dairy	Feedlot	Poultry	Swine	Truck-wash	Other
No. of Permitted Farms	2	13	0	12	1	0
No. of Permitted Animal Units	9,459	340,078	0	33,503	0	0

Note: All animal units based upon federal animal units as of 10/01/07.

4.3.2 Public Water Supply Systems

In the state of Kansas, a public water supply system is defined by Kansas Statutes Annotated (K.S.A.) 65-162a and Kansas Administrative Regulations (K.A.R.) 28-15a-2 as a "system for delivery to the public of piped water for human consumption that has at least 10 service connections or regularly serves at least 25 individuals daily at least 60 days out of the year." These systems are regulated by the state to assure the citizenry safe and pathogen-free drinking water. The KDHE oversees more than 1,086 statewide public water supply systems including municipalities, rural water districts, and privately owned systems. These systems may serve a small community of several families to a city of more than 300,000 persons.

There are 26 active public water supply (PWS) sites located within the Crooked Watershed (HUC 11040007). The entire watershed is underlain by the High Plains Aquifer and the northern half of the watershed is underlain by the Dakota Aquifer as well. These aquifers provide the groundwater source for a majority of the PWSs within the watershed although a few of the wells draw from the alluvial aquifer below Crooked Creek. The High Plains and Dakota Aquifers are primarily used for irrigation and provide water of good quality although chloride and sodium content increase with depth. Water quality in alluvial aquifers is generally good; however, nitrates, minerals, pesticides, and bacteria can be pollutant concerns.

The 1996 amendments to the Safe Drinking Water Act required each state to develop a Source Water Assessment Program (SWAP). Additionally, each state was required to develop a Source Water Assessment (SWA) for each public water supply that treats and distributes raw source water. In Kansas, there are approximately 763 public water supplies that required SWAs. A SWA includes the following: delineation of the source water assessment area, inventory of potential contaminant sources, and susceptibility analysis. The SWA must also be made available to the public. KDHE's Watershed Management Section has implemented the Kansas SWAP plan, and all SWAs are completed.

The Safe Drinking Water Act did not require protection planning to be part of the SWAP process. On a voluntary basis, KDHE encourages public water supplies and their surrounding communities to use the SWAs as the foundation for future protection planning efforts. Source water protection information will be posted on this site as it is compiled.

To obtain a copy of SWAs in this watershed, please visit www.kdheks.gov/nps/swap/SWreports.html.

4.3.3 Designated Uses

According to the Kansas Surface Water Register, the most *common* designated uses for streams and rivers in this watershed include expected aquatic life use, primary and secondary contact recreation, domestic water supply, food procurement, industrial water supply, groundwater recharge, irrigation water supply, and livestock water supply.

Designated Uses									
Lake Name	AL	CR	DS	FP	GR	IW	IR	LW	
Lake Meade State Park	S	A		X	X				
Stream Name									
Crooked Cr	E	b	X	X	X	X	X	X	X
Crooked Cr	S	b	X	X	X	X	X	X	X
Spring Cr	S	C	X	X	X	X	X	X	X
Stumpie Arroyo	S	b							
Unnamed Stream	S	b							
Unnamed Stream	S	b							
Unnamed Stream	E	b		X	X		X	X	
AL = Aquatic Life Support FP = Food Procurement IW = Industrial Water Supply CR = Contact Recreation GR = Groundwater Recharge LW = Livestock Water Supply DS = Domestic Water Supply IR = Irrigation Water Supply									
E = Expected Aquatic Life Use Water S = Special Aquatic Life Use Water A = Primary contact recreation stream segment is a designated public swimming area B = Primary contact recreation stream segment is by law or written permission of the landowner open to and accessible by the public C = Primary contact recreation stream segment is not open to and accessible by the public under Kansas law a = Secondary contact recreation stream segment is by law or written permission of the landowner open and accessible by the public b = Secondary contact recreation stream segment is not open to and accessible by the public under Kansas law X = Referenced stream segment is assigned the indicated designated use O = Referenced stream segment does not support the indicated designated use									

4.3.4 Total Maximum Daily Loads

Total Maximum Daily Loads (TMDLs) set limits on the amount of pollutants that can enter a stream or lake and still allow the water body to meet water quality standards. The water quality standards identify the designated uses of streams, lakes, and wetlands and the level of water quality necessary to fully support these uses. The process of developing TMDLs in Kansas determines:

1. The pollutants causing water quality impairments
2. The magnitude of the impairment relative to applicable water quality standards
3. The overall level of pollution reduction needed to meet water quality standards
4. The allocation of pollutant loads to be distributed among point and nonpoint sources within the watershed and impacted water bodies
5. Suggested corrective actions and management practices to be implemented in order to achieve the load allocations, TMDLs, and water quality standards.
6. The monitoring and evaluation strategies needed to assess the impact of corrective actions in achieving TMDLs and water quality standards
7. Provisions for future revision of TMDLs based on those evaluations

[Section 303\(d\) of the Clean Water Act](#) requires that states identify and list all water bodies where state water quality standards are not being met. Thereafter, TMDLs comprising quantitative objectives and strategies have been developed for these impaired waters within the watershed in

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order to achieve their water quality standards. The following table shows the percentage of stream miles within HUC 8 11040007 that are listed on the 303d list.

Stream Data <i>Percent of Total Miles of Streams in HUC</i>	303d/TMDL Listed Streams (DEQ)	49	70%
---	--------------------------------	----	-----

2008 Impaired Waters with TMDLs		
Stream/Watershed/Lake with TMDL	Priority for TMDL Implementation	Impairment
Crooked Creek, including Spring Creek and Stumpie Arroyo	Low	Chloride
Lake Meade State Park	High	Aquatic Plants
	High	Dissolved Oxygen
	High	Eutrophication
	High	pH

2008 Impaired Waters needing TMDLs	
Impaired Stream/Lake	Impairment
Lake Meade State Park	Fluoride

For additional TMDL information or to download the TMDL report, please visit <http://www.kdheks.gov/tmdl/index.htm>.

Impairment definitions:

Aquatic Plants: Excessive macrophytes (aquatic plants) impairing recreational uses of lakes.

Chloride: A naturally occurring mineral which, in high concentrations, can cause deterioration of domestic plumbing, adverse water taste, and hypertension in humans. The primary source of chloride impacted groundwater is intrusion of salt water from deeper formations.

Dissolved Oxygen: Refers to the amount of oxygen available to aquatic life within the water column. State water quality standards require a stream or lake to have at least 5mg/L of dissolved oxygen.

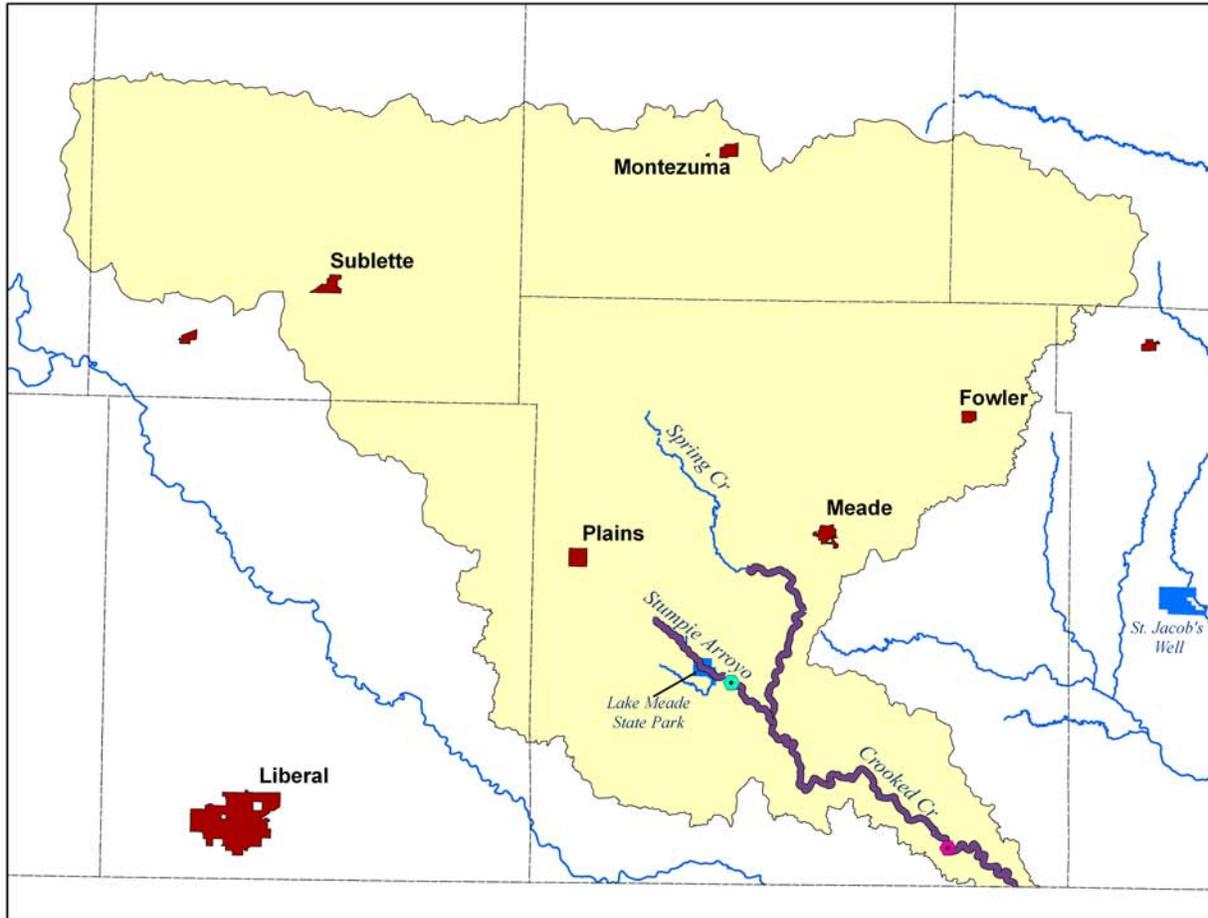
Eutrophication: Excessive nutrients entering lake causing an increase in algae to nuisance conditions, impairing aquatic life, recreation, and water supply uses.

Fluoride: A natural mineral often used to prevent dental cavities and osteoporosis. However, it may be hazardous to irrigated crops at levels exceeding 1 part per million and to humans and livestock at levels exceeding 2 parts per million.

pH: Measure of the alkalinity of acidity of water. The scale ranges from 0 to 14 with 7.0 being neutral, 0 to 7 being acidic, and 7 to 14 being basic or alkaline. State water quality standards expect pH to fall between 6.5 and 8.5 in natural waters.

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Crooked Watershed HUC 11040007 2008 TMDLs



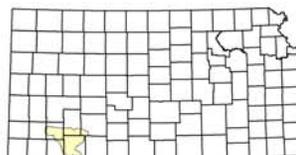
TMDL Classifications and Map Key

-  KDHE Stream Monitoring Station
-  KDHE Lake Monitoring Station
-  River or Stream
-  Low Priority Chloride
-  Lake
-  HUC 11040007 Boundary
-  County Boundary
-  City

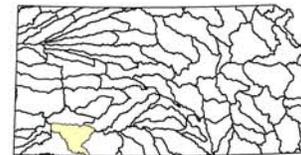


0 3.75 7.5 15 Miles

Map area shown in yellow.



Kansas County Boundaries



8-Digit Hydrologic Unit Codes in Kansas

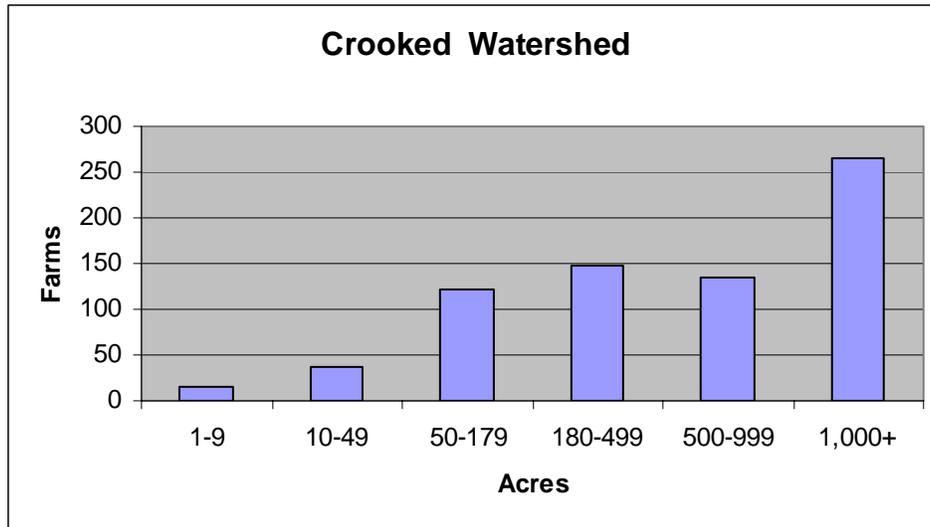
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4.4 Threatened and Endangered Species Status¹⁷

The Endangered Species Act (ESA) and Kansas Environmental Coordination Act provide protection to animals and their habitat that are experiencing a decline in population, or nearing extinction. The table below lists species of concern and their federal and state designation(s).

LISTED THREATENED AND ENDANGERED SPECIES			
Species Common Name (Scientific name)	Threatened (T), Endangered (E), Proposed (P), Candidate (C), Species in Need of Conservation (SINC)	Designated Critical Habitat (Y)es/(N)o	Listing: Federal (F), State (S)
Animals, Vertebrates – Fishes			
Arkansas River Shiner (<i>Notropis girardi</i>)	T/E	Y	F/S
Arkansas Darter (<i>Etheostoma cragini</i>)	T/E	Y	F/S
Flathead Chub (<i>Platygobio gracilis</i>)	T	N	S
Plains Minnow (<i>Hybognathus placitus</i>)	SINC	N	S
Animals, Vertebrate – Birds			
Bald Eagle (<i>Haliaeetus leucocephalus</i>)*	T	Y	S
Black Rail (<i>Laterallus jamaicensis</i>)	SINC	N	S
Least Tern (<i>Sterna antillarum</i>)	E/E	Y	F/S
Peregrine Falcon (<i>Falco peregrinus</i>)	E	N	S
Piping Plover (<i>Charadrius melodus</i>)	T/T	N	F/S
Snowy Plover (<i>Charadrius alexandrinus</i>)	T	Y	S
Whooping Crane (<i>Grus americana</i>)	E/E	N	F/S
Black Tern (<i>Chlidonias niger</i>)	SINC	N	S
Bobolink (<i>Dolichonyx oryzivorus</i>)	SINC	N	S
Chihuahuan Raven (<i>Corvus cryptoleucus</i>)	SINC	N	S
Curve-billed Thrasher (<i>Toxostoma curvirostre</i>)	SINC	N	S
Ferruginous Hawk (<i>Buteo regalis</i>)	SINC	N	S
Golden Eagle (<i>Aquila chrysaetos</i>)	SINC	N	S
Long-billed Curlew (<i>Numenius americanus</i>)	SINC	N	S
Short-eared Owl (<i>Asio flammeus</i>)	SINC	N	S
Mountain Plover (<i>Charadrius niger</i>)	SINC	N	S
Whip-poor-will (<i>Camprimulgus vociferous</i>)	SINC	N	S
Animals, Vertebrate – Amphibians/Reptiles			
Western Hognose Snake (<i>Heterodon nasicus</i>)	SINC	N	S
Checkered Garter Snake (<i>Thamnophis marcianus</i>)	T	N	S
Eastern Hognose Snake (<i>Heterodon platirhinos</i>)	SINC	N	S
Glossy Snake (<i>Arizona elegans</i>)	SINC	N	S
Longnose Snake (<i>Rhinocheilus lecontei</i>)	E	N	S
Texas Blind Snake (<i>Leptotyphlops dulcis</i>)	T	N	S
Animals, Vertebrate – Mammals			
Eastern Spotted Skunk (<i>Spilogale putorius</i>)	T	Y	S
Southern Bog Lemming (<i>Synaptomys cooperi</i>)	SINC	N	S
*The bald eagle has been de-listed nationally (2007) but remains a state listed species. The bald eagle remains protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act.			

5.0 Census and Social Data (2000)^{/8}



Estimated Number of Farms: 722

Average Farm Size: 1,336 acres

Estimated Number of Total Farm Operators: 722

Principal Operators – Full-Time: 536

Principal Operators – Part-Time: 187

5.1 Estimated Level of Willingness and Ability to Participate in Conservation^{/9}

The Crooked sub-basin exhibits a likelihood of full participation in the first five years of the project with moderate adjustments in technical and financial assistance and conservation marketing. This sub-basin exhibits high management skills. There is adequate and effective technical assistance available in the sub-basin. The existing information and education delivery system needs minor modifications to improve effectiveness. Existing financial incentives need to be expanded or increased to improve the participation rate and accelerate participation.

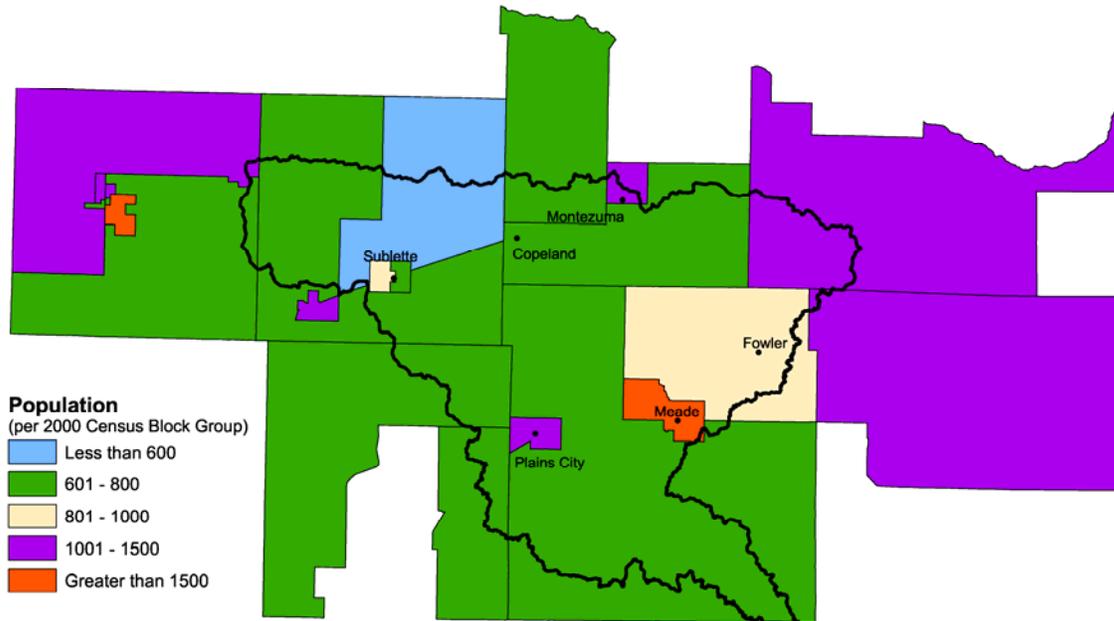
5.2 Evaluation of Social Capital^{/10}

Social capital is defined as bonds of trust that arise between people interacting in everyday life. Local conservationists developed a summary of social capital for this sub-basin and concluded the following.

Collectively, communities in the Crooked sub-basin are reported to be effective at solving problems. In times of need, rural communities are willing to assist their neighbors by pooling their resources to overcome adversity.

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5.3 Population Distribution Map (2000)



6.0 Conservation Progress

Conservation on the land is defined by the progress made by local landowners and operators addressing resource issues. Progress is typically accomplished through private, local, state, and federal funds. This data is current through the date the RWA was published. For up-to-date NRCS Performance Results System (PRS) information, visit <http://ias.sc.egov.usda.gov/PRSHOME/>.

6.1 Reported Conservation Progress (Fiscal Years [FYs] 2004–2008)

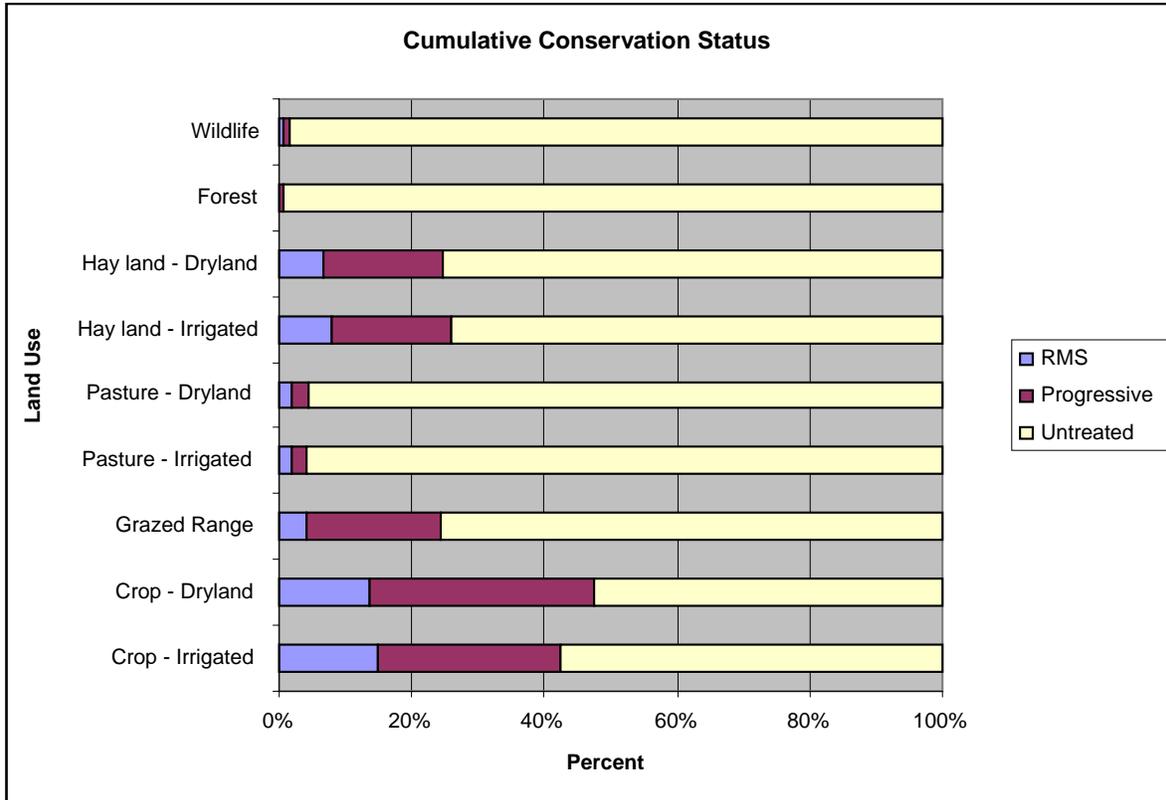
Total Conservation Systems Applied						514
Summary Conservation Practices Applied	FY 08*	FY 07	FY 06	FY 05	FY 04	Total
Brush Management (ac)	0	90	0	0	0	90
Closure of Waste Impoundment (no)	0	4	0	0	0	4
Comprehensive Nutrient Management Plan (no)	0	1	0	1	0	2
Conservation Crop Rotation (ac)	532	15,677	25,738	18,841	10,430	71,218
Contour Farming (ac)	0	68	0	0	146	214
Cover Crop (ac)	1,773	4,109	3,598	3,508	3,355	16,343
Critical Area Planting (ac)	15	9	16	29	3	72
Diversion (ft)	0	1,500	0	0	0	1,500
Fence (ft)	0	13,429	4,136	0	0	17,565
Filter Strip (ac)	0	0	0	6	0	6
Forage Harvest Management (ac)	0	67	104	0	0	171
Grassed Waterway (ac)	14	0	0	6	8	28
Irrigation System, Micro-irrigation (ac)	19	4	91	44	0	158
Irrigation System, Sprinkler (ac)	480	343	247	791	0	1,861
Irrigation Water Conveyance, Pipeline, High-Pressure, Underground, Plastic (ft)	296	2,925	0	528	1,160	4,909

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Summary Conservation Practices Applied (Continued)	FY 08*	FY 07	FY 06	FY 05	FY 04	Total
Irrigation Water Conveyance, Pipeline, Low-Pressure, Underground, Plastic (ft)	8,393	5,355	4,589	17,120	11,160	46,617
Irrigation Water Management (ac)	264	1,966	6,283	2,780	3,019	14,312
Manure Transfer (no)	0	2	1	0	0	3
Mulching (ac)	4	2	3	0	14	23
Nutrient Management (ac)	2,214	8,836	3,539	0	0	14,589
Pest Management (ac)	2,359	9,422	8,611	2,051	993	23,436
Pipeline (ft)	0	69,736	9,067	0	0	78,803
Pond Sealing or Lining, Soil Dispersant (no)	0	2	1	0	0	3
Prescribed Burning (ac)	836	149	154	58	0	1,197
Prescribed Grazing (ac)	498	1,928	909	29	965	4,329
Prescribed Grazing (ac)	0	13	0	13	675	701
Pumping Plant (no)	0	2	0	0	0	2
Range Planting (ac)	0	56	233	42	0	331
Residue and Tillage Management, Mulch Till (ac)	450	440	0	0	0	890
Residue and Tillage Management, No-Till/Strip Till/Direct Seed (ac)	0	1,580	0	0	0	1,580
Residue Management, Mulch Till (ac)	131	5,580	12,505	9,731	8,131	36,078
Residue Management, No-Till/Strip Till (ac)	0	9,600	13,833	8,311	2,883	34,627
Residue Management, Ridge Till (ac)	0	284	0	0	157	441
Residue Management, Seasonal (ac)	0	0	265	1,188	112	1,565
Restoration and Management of Rare and Declining Habitats (ac)	1,430	2,574	2,828	0	0	6,832
Sediment Basin (no)	0	2	1	0	0	3
TA Application (no)	0	4	1	0	0	5
TA Check-Out (no)	0	3	1	0	0	4
TA Design(no)	0	4	1	0	0	5
TA Planning (no)	0	1	0	0	0	1
Terrace (ft)	24,424	11,048	28,099	18,871	21,446	103,888
Tree/Shrub Establishment (ac)	0	0	0	0	1	1
Underground Outlet (ft)	0	300	120	0	0	420
Upland Wildlife Habitat Management (ac)	2,292	3,326	3,902	4,475	1,942	15,937
Use Exclusion (ac)	2,406	3,429	8,695	1,879	1,038	17,447
Waste Storage Facility (no)	0	2	2	0	0	4
Waste Treatment Lagoon (no)	0	2	0	0	0	2
Waste Utilization (ac)	2,196	2,196	2,715	0	0	7,107
Water and Sediment Control Basin (no)	0	2	0	0	0	2
Water Well (no)	4	3	4	1	2	14
Watering Facility (no)	0	22	3	0	1	26
Wetland Enhancement (ac)	0	155	0	0	0	155
Wetland Wildlife Habitat Management (ac)	0	0	70	0	20	90
Wildlife Watering Facility (no)	5	11	34	5	0	55
Windbreak/Shelterbelt Establishment (ft)	4,487	2,789	2,699	16,097	10,756	36,828

6.2 Cumulative Conservation Status

Estimated conservation plans developed and applied from 1995 to 2008 are projected in the following chart.



- Resource management system (RMS) is a conservation system developed to address all identified resource concerns on a land unit or farm
- Progress over the last 10+ years has been focused on:
 - Nutrient and pest management on cropland
 - Erosion control on cropland

Note: Estimates are based on information received from local conservationists in the watershed.

6.3 Other Watershed Projects

Watershed Projects, Plans, Studies, and Assessments/11,/13
NONE

6.4 Lands Removed from Production through Farm Bill Programs^{/14}

Conservation Reserve Program (CRP)^a: **88,139 acres**
 Wetlands Reserve Program (WRP): **40 acres**

^aData from 2006 Farm Service Agency, CRP information

7.0 Footnotes/Bibliography

All data is provided "as is." There are no warranties, express or implied, including the warranty of fitness for a particular purpose, accompanying this document. Use for general planning purposes only.

1. Common Resource Area Map – Information available online at <http://efotg.nrcs.usda.gov/treemenuFS.aspx>; select Section I, E. Maps, 2. Common Resource Area Maps (CRA).
2. Precipitation Map – U.S. Department of Agriculture, National Weather and Climate Service. Online reference information available at <http://datagateway.nrcs.usda.gov/>.
3. National Land Cover Data (NLCD) - Originator: U.S. Geological Survey (USGS); Information available online at <http://landcover.usgs.gov/natl/landcover.php>.
4. ESTIMATES FROM THE 1997 NRI DATABASE (REVISED DECEMBER 2000) REPLACE ALL PREVIOUS REPORTS AND ESTIMATES. Comparisons made using data published for the 1982, 1987, or 1992 NRI may produce erroneous results. This is because of changes in statistical estimation protocols and because all data collected prior to 1997 were simultaneously reviewed (edited) as 1997 NRI data were collected. All definitions are available in the glossary. In addition, this December 2000 revision of the 1997 NRI data updates information released in December 1999 and corrects a computer error discovered in March 2000. For more information: <http://www.nrcs.usda.gov/technical/NRI/>.
5. Kansas stream flow data available from the U.S. Department of the Interior, U.S. Geological Survey online at <http://waterdata.usgs.gov/ks/nwis/rt>.
6. Kansas Department of Health and Environment, Total Maximum Daily Loads (TMDL) Strategies, <http://www.kdheks.gov/tmdl/>.
7. U.S. Fish and Wildlife Service, Mountain-Prairie Endangered Species List, Kansas (January 2005) http://ecos.fws.gov/tess_public/SpeciesReport.do?lead=6&listingType=L. The Kansas Department of Wildlife and Parks, Threatened and Endangered Species, http://www.kdwp.state.ks.us/news/other_services/threatened_and_endangered_species.
8. Data were taken from the 2002 Agricultural Census and adjusted by percent of HUC in the county or by percent of zip code area in the HUC, depending on the level of data available.
9. Conservation participation was estimated using NRCS Social Sciences Technical Note 1801, [Guide for Estimating Participation in Conservation](#), 2004. Four categories of indicators were evaluated: Personal characteristics, farm structural characteristics, perceptions of conservation, and community context. Estimates are based on information received from local conservationists in the watershed.
10. Social capital is an indicator of the community's ability and willingness to work together to solve problems. A high amount of social capital helps a community to be physically healthy, socially progressive, and economically vigorous. A low amount of social capital typically results in community conflict, lack of trust and respect, and unsuccessful attempts to solve problems. The evaluation is based on NRCS Technical Report Release 4.1, March, 2002: [Adding up Social Capital: an Investment in Communities](#). Local conservationists provided information to measure social capital.
11. Natural Resources Conservation Service, Kansas online information at <http://www.ks.nrcs.usda.gov/programs/pl566/>.

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Footnotes/Bibliography (continued)

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12. Natural Resources Conservation Service, Web Soil Survey can be located on-line at <http://websoilsurvey.nrcs.usda.gov/app/>.
13. Kansas Department of Health and Environment, Bureau of Water, Watershed Management Section, <http://www.kdheks.gov/nps/wraps/index.htm>.
14. Natural Resources Conservation Service, Kansas, Program Information is located at <http://www.ks.nrcs.usda.gov/programs/>.

8.0 Additional On-line Resources

1. U.S. Environmental Protection Agency, EnviroMapper for Water, http://map8.epa.gov/scripts/esrimap.dll?name=NHDMapper&Cmd=ZoomInByCat&qc=3&th=6&lc=00010200000110_0000&fipsCode=11040007.
2. U.S. Environmental Protection Agency, Surf Your Watershed at http://cfpub.epa.gov/surf/huc.cfm?huc_code=11040007.

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9.0 Assessment Matrix

Introduction

This assessment matrix has been developed to provide an estimate of conservation systems, which may be needed to address resource concerns identified in the RWA Resource Profile. This can also be described as likely future conditions within the watershed.

Conservation systems have been described in this assessment as systems of conservation practices developed to address resource concerns on various land uses. Systems include baseline and resource management. Baseline systems are best described as land units that have had no recorded treatment or one or more resource concerns treated with conservation practices. A RMS is described as land units that have all known resource concerns treated with conservation practices. The level of treatment to an individual resource concern is credited when the practice(s) used meet or exceed a predetermined level of treatment, known as quality criteria.

Only priority resource concerns have been described in this RWA. Local resource professionals identified these concerns. Other resource concerns likely exist within the watershed but only make up a small percentage of what may need to be treated. Further investigation and analysis will need to be completed in order to better define all resource concerns.

Resource professionals provided an estimate by percent of conservation systems that will likely be applied to baseline systems and untreated land units to address resource concerns identified in the resource profile. These prescribed systems are not meant to be comprehensive or address all resource concerns for each land unit in the watershed; rather, only the typical system of conservation practices that could be applied. Numerous alternatives and combinations of practices exist that should be made available to landowners and producers in order to meet their desired level of treatment.

Federal programs identified to implement conservation systems include, but are not limited to Environmental Quality Incentives Program (EQIP), Wildlife Habitat Incentives Program (WHIP), and WRP. Other funding available for implementation includes various private, local, and state program funds.

This assessment provides estimates only that have been developed using local conservationists and work groups to identify resource concerns, participation rates, and conservation systems likely to be applied. Only RMS plans were prescribed in this assessment. This information was merged with state average cost lists and estimated operation and maintenance costs to generate a cost estimate by individual practice for each conservation system projected to be applied.

Further investigation and analysis within the watershed is required to identify all resource concerns and locations of conservation practices and systems needed to address resource concerns.

9.1 CROPLAND - DRYLAND

WATERSHED NAME & CODE		CROOKED - 11040007				LANDUSE ACRES		238,017	
LANDUSE TYPE		CROPLAND - DRYLAND				TYPICAL UNIT SIZE ACRES		160	
ASSESSMENT INFORMATION						ESTIMATED PARTICIPATION		66%	
CONSERVATION SYSTEMS BY TREATMENT LEVELS	CURRENT CONDITIONS	FUTURE CONDITIONS			RESOURCE CONCERNS				
	Total Units	Existing Unchanged Units	New Treatment Units	Total Units	Soil Erosion - Sheet and Rill	Soil Erosion - Wind			
Baseline System						System Rating ->		3	
Total Acreage at Baseline Level		126,149	42,891	0	42,891				
Conservation Crop Rotation (ac.) 328		63,075	21,445	0	21,445	3	3		
Residue and Tillage Management, Mulch Till (ac.) 345		63,075	21,445	0	21,445	4	4		
Progressive System						System Rating ->		5	
Total Acreage at Progressive Level		80,926	27,515	0	27,515				
Conservation Crop Rotation (ac.) 328		40,463	13,757	0	13,757	3	3		
Cover Crop (ac.) 340		40,463	13,757	0	13,757	4	4		
Critical Area Planting (ac.) 342		1,619	550	0	550	5	5		
Nutrient Management (ac.) 590		40,463	13,757	0	13,757	1	1		
Pest Management (ac.) 595		40,463	13,757	0	13,757	1	1		
Residue and Tillage Management, Mulch Till (ac.) 345		40,463	13,757	0	13,757	4	4		
Residue Management, No-Till/Strip Till/Direct Seed (ac.) 329		40,463	13,757	0	13,757	5	5		
Resource Management System (RMS)						System Rating ->		5	
Total Acreage at RMS Level		30,942	30,942	136,669	167,612				
Conservation Crop Rotation (ac.) 328		30,942	99,277	68,335	167,612	3	3		
Cover Crop (ac.) 340		30,942	57,648	109,964	167,612	4	4		
Critical Area Planting (ac.) 342		1,547	2,615	5,765	8,381	5	5		
Cross Wind Trap Strips/Ridges (ac.) 589		30,942	30,942	136,669	167,612	1	4		
Nutrient Management (ac.) 590		30,942	57,648	109,964	167,612	1	1		
Pasture & Hayland Planting (ac.) 512		30,942	30,942	136,669	167,612	4	4		
Pest Management (ac.) 595		30,942	57,648	109,964	167,612	1	1		
Range Planting (ac.) 550		30,942	30,942	136,669	167,612	4	4		
Residue Management, No-Till/Strip Till/Direct Seed (ac.) 329		30,942	57,648	109,964	167,612	5	5		
CONSERVATION INVESTMENT INFORMATION									
CONSERVATION SYSTEMS BY TREATMENT LEVELS	FUTURE	USDA INVESTMENT				PRIVATE INVESTMENT			
	New Treatment Units	Installation Cost 75%	Management Cost - 3 yrs 100%	Technical Assistance 20%	Total Present Value Cost	Installation Cost 25%	Annual O & M + Mgt Costs 100%	Total Present Value Cost	
Progressive System Acres Treated									
0									
Conservation Crop Rotation (ac.) 328		0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Cover Crop (ac.) 340		0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Critical Area Planting (ac.) 342		0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Nutrient Management (ac.) 590		0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Pest Management (ac.) 595		0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Residue and Tillage Management, Mulch Till (ac.) 345		0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Residue Management, No-Till/Strip Till/Direct Seed (ac.) 329		0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Subtotal			\$0	\$0	\$0	\$0	\$0	\$0	\$0
Resource Management System (RMS) Acres Treated									
136,669									
Conservation Crop Rotation (ac.) 328		68,335	\$0	\$3,075,061	\$615,012	\$3,354,903	\$0	\$1,025,020	\$1,577,867
Cover Crop (ac.) 340		109,964	\$0	\$24,741,867	\$4,948,373	\$26,993,476	\$0	\$8,247,289	\$12,695,480
Critical Area Planting (ac.) 342		5,765	\$864,787	\$0	\$172,957	\$1,037,745	\$288,262	\$57,652	\$531,116
Cross Wind Trap Strips/Ridges (ac.) 589		136,669	\$1,230,024	\$0	\$246,005	\$1,476,029	\$410,008	\$16,400	\$479,092
Nutrient Management (ac.) 590		109,964	\$0	\$4,948,373	\$989,675	\$5,398,695	\$0	\$1,649,458	\$2,539,096
Pasture & Hayland Planting (ac.) 512		136,669	\$9,225,182	\$0	\$1,845,036	\$11,070,218	\$3,075,061	\$123,002	\$3,593,192
Pest Management (ac.) 595		109,964	\$0	\$6,597,831	\$1,319,566	\$7,198,260	\$0	\$2,199,277	\$3,385,461
Range Planting (ac.) 550		136,669	\$9,225,182	\$0	\$1,845,036	\$11,070,218	\$3,075,061	\$123,002	\$3,593,192
Residue Management, No-Till/Strip Till/Direct Seed (ac.) 329		109,964	\$0	\$9,896,747	\$1,979,349	\$10,797,390	\$0	\$3,298,916	\$5,078,192
Subtotal			\$20,545,175	\$49,259,879	\$13,961,011	\$78,396,935	\$6,848,392	\$16,740,017	\$33,472,686
TOTAL ACRES TREATED / ESTIMATED TREATMENT COSTS		136669.3614	\$20,545,175	\$49,259,879	\$13,961,011	\$78,396,935	\$6,848,392	\$16,740,017	\$33,472,686

Note: Estimates for matrices are for general planning purposes only and not based on actual funding.

9.2 CROPLAND - IRRIGATED

WATERSHED NAME & CODE		CROOKED - 11040007				LANDUSE ACRES		328,690		
LANDUSE TYPE		CROPLAND - IRRIGATED				TYPICAL UNIT SIZE ACRES		120		
ASSESSMENT INFORMATION						ESTIMATED PARTICIPATION		66%		
CONSERVATION SYSTEMS BY TREATMENT LEVELS	CURRENT CONDITIONS	FUTURE CONDITIONS			RESOURCE CONCERNS					
	Total Units	Existing Unchanged Units	New Treatment Units	Total Units	Soil Erosion - Wind	Water Quantity - Inefficient Water Use on Irrigated Land	Water Quantity - Aquifer Overdraft			
Baseline System						System Rating ->		3	1	0
Total Acreage at Baseline Level		190,640	64,818	0	64,818					
Conservation Crop Rotation (ac.) 328		95,320	32,409	0	32,409	3	3	0		
Residue and Tillage Management, Mulch Till (ac.) 345		95,320	32,409	0	32,409	4	1	0		
Progressive System						System Rating ->		5	4	2
Total Acreage at Progressive Level		92,033	31,291	0	31,291					
Conservation Crop Rotation (ac.) 328		46,017	15,646	0	15,646	3	3	0		
Critical Area Planting (ac.) 342		1,841	626	0	626	5	0	0		
Irrigation Water Management (ac.) 449		46,017	15,646	0	15,646	2	5	4		
Nutrient Management (ac.) 590		46,017	15,646	0	15,646	1	1	0		
Pest Management (ac.) 595		46,017	15,646	0	15,646	1	1	0		
Residue and Tillage Management, Mulch Till (ac.) 345		46,017	15,646	0	15,646	4	1	0		
Residue Management, No-Till/Strip Till/Direct Seed (ac.) 329		46,017	15,646	0	15,646	5	2	0		
Resource Management System (RMS)						System Rating ->		5	4	2
Total Acreage at RMS Level		46,017	46,017	186,564	232,581					
Conservation Crop Rotation (ac.) 328		46,017	139,299	93,282	232,581	3	3	0		
Cover Crop (ac.) 340		46,017	46,017	186,564	232,581	4	0	0		
Critical Area Planting (ac.) 342		2,301	3,516	8,113	11,629	5	0	0		
Cross Wind Trap Strips/Ridges (ac.) 589		46,017	46,017	186,564	232,581	4	0	0		
Irrigation Water Management (ac.) 449		46,017	76,388	156,193	232,581	2	5	4		
Nutrient Management (ac.) 590		46,017	76,388	156,193	232,581	1	1	0		
Pasture & Hayland Planting (ac.) 512		46,017	46,017	186,564	232,581	4	2	0		
Pest Management (ac.) 595		46,017	76,388	156,193	232,581	1	1	0		
Range Planting (ac.) 550		46,017	46,017	186,564	232,581	4	0	0		
Residue Management, No-Till/Strip Till/Direct Seed (ac.) 329		46,017	76,388	156,193	232,581	5	2	0		
CONSERVATION INVESTMENT INFORMATION										
CONSERVATION SYSTEMS BY TREATMENT LEVELS	FUTURE	USDA INVESTMENT				PRIVATE INVESTMENT				
	New Treatment Units	Installation Cost 75%	Management Cost - 3 yrs 100%	Technical Assistance 20%	Total Present Value Cost	Installation Cost 25%	Annual O & M + Mgt Costs 100%	Total Present Value Cost		
Progressive System Acres Treated										
0										
Conservation Crop Rotation (ac.) 328		0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Critical Area Planting (ac.) 342		0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Irrigation Water Management (ac.) 449		0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Nutrient Management (ac.) 590		0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Pest Management (ac.) 595		0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Residue and Tillage Management, Mulch Till (ac.) 345		0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Residue Management, No-Till/Strip Till/Direct Seed (ac.) 329		0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Subtotal			\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Resource Management System (RMS) Acres Treated										
186,564										
Conservation Crop Rotation (ac.) 328		93,282	\$0	\$4,197,700	\$839,540	\$4,579,707	\$0	\$1,399,233	\$2,153,912	
Cover Crop (ac.) 340		186,564	\$0	\$41,977,000	\$8,395,400	\$45,797,074	\$0	\$13,992,333	\$21,539,124	
Critical Area Planting (ac.) 342		8,113	\$1,217,008	\$0	\$243,402	\$1,460,409	\$405,669	\$81,134	\$747,434	
Cross Wind Trap Strips/Ridges (ac.) 589		186,564	\$1,679,080	\$0	\$335,816	\$2,014,896	\$559,693	\$22,388	\$653,999	
Irrigation Water Management (ac.) 449		156,193	\$0	\$9,371,609	\$1,874,322	\$10,224,463	\$0	\$3,123,870	\$4,808,735	
Nutrient Management (ac.) 590		156,193	\$0	\$7,028,707	\$1,405,741	\$7,668,347	\$0	\$2,342,902	\$3,606,551	
Pasture & Hayland Planting (ac.) 512		186,564	\$12,593,100	\$0	\$2,518,620	\$15,111,720	\$4,197,700	\$167,908	\$4,904,990	
Pest Management (ac.) 595		156,193	\$0	\$9,371,609	\$1,874,322	\$10,224,463	\$0	\$3,123,870	\$4,808,735	
Range Planting (ac.) 550		186,564	\$12,593,100	\$0	\$2,518,620	\$15,111,720	\$4,197,700	\$167,908	\$4,904,990	
Residue Management, No-Till/Strip Till/Direct Seed (ac.) 329		156,193	\$0	\$14,057,414	\$2,811,483	\$15,336,695	\$0	\$4,685,805	\$7,213,102	
Subtotal			\$28,082,288	\$86,004,039	\$22,817,265	\$127,529,495	\$9,360,763	\$29,107,351	\$55,341,571	
TOTAL ACRES TREATED / ESTIMATED TREATMENT COSTS		186564.444	\$28,082,288	\$86,004,039	\$22,817,265	\$127,529,495	\$9,360,763	\$29,107,351	\$55,341,571	

Note: Estimates for matrices are for general planning purposes only and not based on actual funding.

9.3 GRAZED RANGE

WATERSHED NAME & CODE		CROOKED - 11040007				LANDUSE ACRES		325,403				
LANDUSE TYPE		GRAZED RANGE				TYPICAL UNIT SIZE ACRES		160				
ASSESSMENT INFORMATION												
CONSERVATION SYSTEMS BY TREATMENT LEVELS												
	CURRENT CONDITIONS	FUTURE CONDITIONS			RESOURCE CONCERNS							
	Total Units	Existing Unchanged Units	New Treatment Units	Total Units	Water Quantity – Rangeland Hydrologic Cycle	Plant Condition – Productivity, Health and Vigor	Domestic Animals – Inadequate Stock Water					
Baseline System					System Rating ->					0	0	2
Total Acreage at Baseline Level		247,306	84,084	0	84,084							
Watering Facility (no.) 614	1,546	526	0	526	0	1	4					
Progressive System					System Rating ->					3	4	2
Total Acreage at Progressive Level		65,081	22,127	0	22,127							
Brush Management (ac.) 314	16,270	5,532	0	5,532	3	5	0					
Pest Management (ac.) 595	32,540	11,064	0	11,064	0	3	0					
Prescribed Grazing (ac.) 528	32,540	11,064	0	11,064	4	5	0					
Watering Facility (no.) 614	407	138	0	138	0	1	4					
Resource Management System (RMS)					System Rating ->					3	5	2
Total Acreage at RMS Level		13,016	13,016	206,175	219,191							
Brush Management (ac.) 314	3,254	13,992	40,806	54,798	3	5	0					
Fence (ft.) 382	107,383	107,383	1,700,947	1,808,330	0	1	0					
Pest Management (ac.) 595	13,016	34,493	184,699	219,191	0	3	0					
Prescribed Burning (ac.) 338	13,016	13,016	206,175	219,191	3	4	0					
Prescribed Grazing (ac.) 528	13,016	34,493	184,699	219,191	4	5	0					
Watering Facility (no.) 614	81	1,370	0	1,370	0	1	4					
CONSERVATION INVESTMENT INFORMATION												
CONSERVATION SYSTEMS BY TREATMENT LEVELS	FUTURE	USDA INVESTMENT				PRIVATE INVESTMENT						
	New Treatment Units	Installation Cost 75%	Management Cost - 3 yrs 100%	Technical Assistance 20%	Total Present Value Cost	Installation Cost 25%	Annual O & M + Mgt Costs 100%	Total Present Value Cost				
Progressive System Acres Treated												
Brush Management (ac.) 314	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0			
Pest Management (ac.) 595	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0			
Prescribed Grazing (ac.) 528	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0			
Watering Facility (no.) 614	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0			
Subtotal		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0			
Resource Management System (RMS) Acres Treated												
Brush Management (ac.) 314	40,806	\$2,295,311	\$0	\$459,062	\$2,754,374	\$765,104	\$30,604	\$894,020				
Fence (ft.) 382	1,700,947	\$3,189,275	\$0	\$637,855	\$3,827,130	\$1,063,092	\$85,047	\$1,421,342				
Pest Management (ac.) 595	184,699	\$0	\$11,081,925	\$2,216,385	\$12,090,424	\$0	\$3,693,975	\$5,686,327				
Prescribed Burning (ac.) 338	206,175	\$5,412,103	\$0	\$1,082,421	\$6,494,523	\$1,804,034	\$72,161	\$2,108,004				
Prescribed Grazing (ac.) 528	184,699	\$969,668	\$0	\$193,934	\$1,163,602	\$323,223	\$0	\$323,223				
Watering Facility (no.) 614	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0				
Subtotal		\$11,866,357	\$11,081,925	\$4,589,656	\$26,330,053	\$3,955,452	\$3,881,788	\$10,432,915				
TOTAL ACRES TREATED / ESTIMATED TREATMENT COSTS		206,175	\$11,866,357	\$11,081,925	\$4,589,656	\$26,330,053	\$3,955,452	\$3,881,788	\$10,432,915			

Note: Estimates for matrices are for general planning purposes only and not based on actual funding.