



United States Department
of Agriculture



Natural Resources
Conservation Service

Lakewood, Colorado

RWA 10250012

December 2008

South Fork Beaver Watershed

Hydrologic Unit Code 10250012

Rapid Assessment



The United States Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, sex, religion, age, disability, political beliefs, sexual orientation, and marital or family status. (Not all prohibited bases apply to all programs.)

Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326W, Whitten Building, 14th and Independence Avenue, SW, Washington DC 20250-9410, or call (202) 720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

Introduction

Background Information

The Natural Resources Conservation Service (NRCS) is encouraging the development of rapid watershed assessments in order to increase the speed and efficiency generating information to guide conservation implementation, as well as the speed and efficiency of putting it into the hands of local decision makers.

Rapid watershed assessments provide initial estimates of where conservation investments would best address the concerns of landowners, conservation districts, and other community organizations and stakeholders. These assessments help landowners and local leaders set priorities and determine the best actions to achieve their goals.

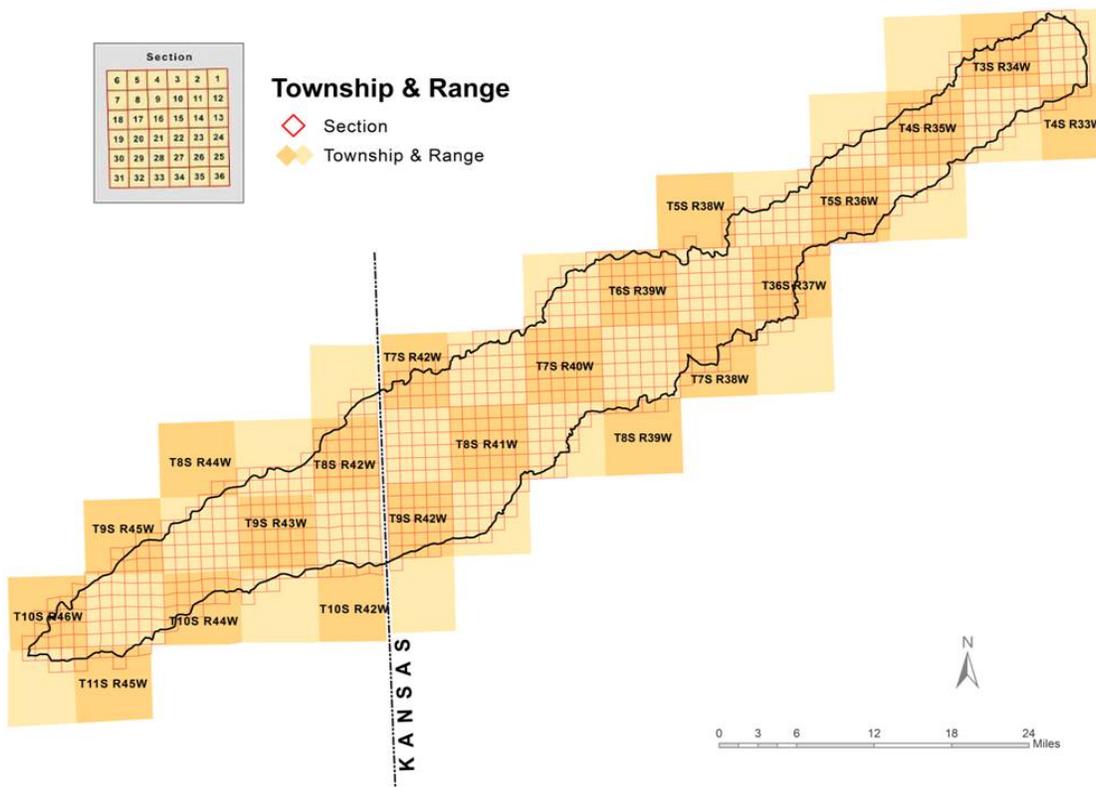
Benefits of these Activities

While rapid assessments provide less detail and analysis than full-blown studies and plans, they do provide the benefits of NRCS locally-led planning in less time and at a reduced cost. The benefits include:

- Quick and inexpensive tools for setting priorities and taking action
- Providing a level of detail that is sufficient for identifying actions that can be taken with no further watershed-level studies or analyses
- Actions to be taken may require further Federal or State permits or ESA or NEPA analysis but these activities are part of standard requirements for use of best management practices (BMPs) and conservation systems
- Identifying where further detailed analyses or watershed studies are needed
- Plans address multiple objectives and concerns of landowners and communities
- Plans are based on established partnerships at the local and state levels
- Plans enable landowners and communities to decide on the best mix of NRCS programs that will meet their goals
- Plans include the full array of conservation program tools (i.e. cost-share practices, easements, technical assistance)

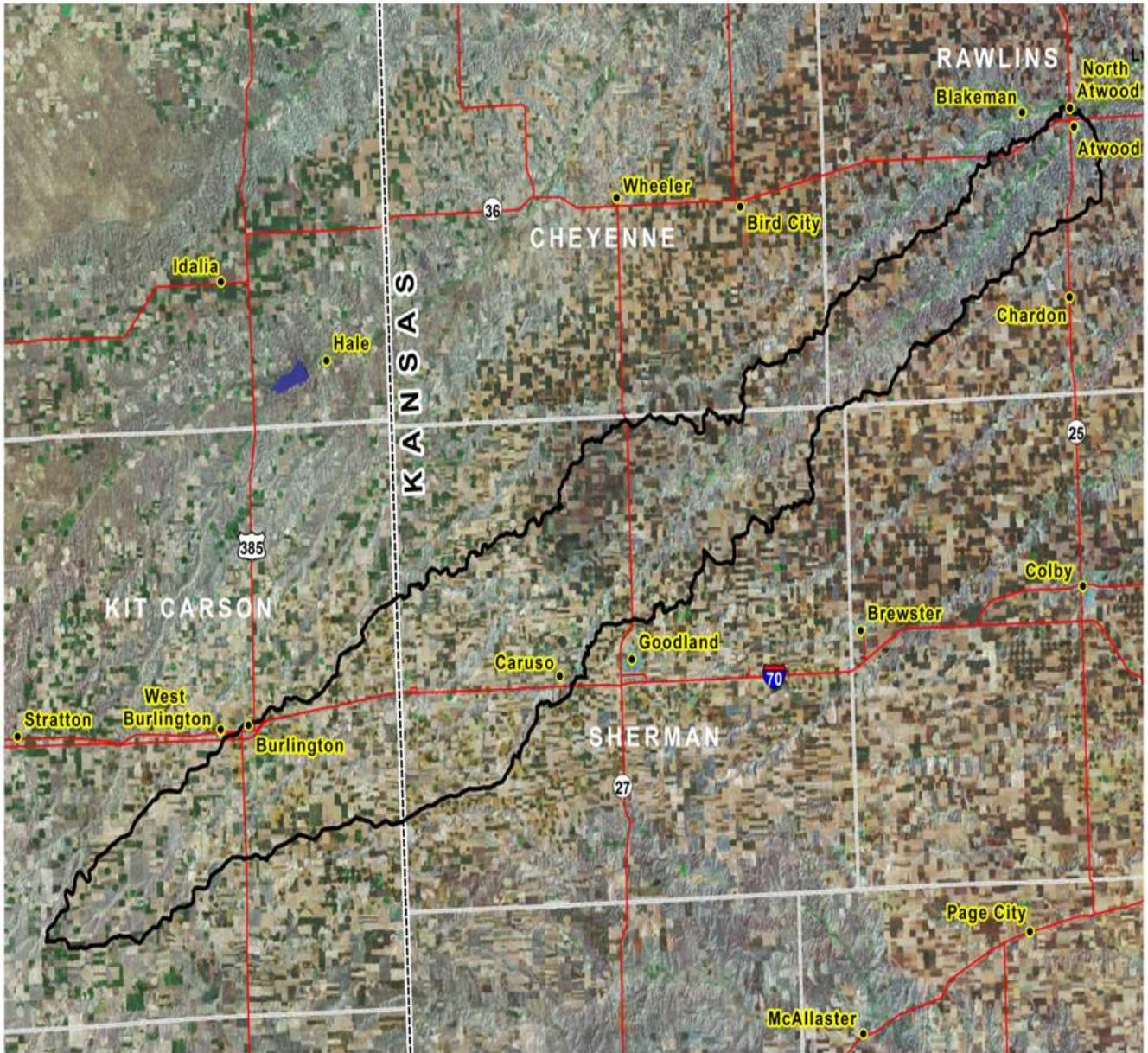
Rapid Watershed Assessments provide information that helps land-owners and local leaders set conservation priorities.

The South Fork Beaver Watershed is located in the Republican River Basin, on the eastern plains of Colorado. The watershed is 481,704 acres in size, with 138,933 acres in Colorado. The watershed includes approximately 241 farms and ranches, covering 872,093 acres in the entire watershed. As of April 2005, there are 37,261 acres of land in the Conservation Reserve Program.

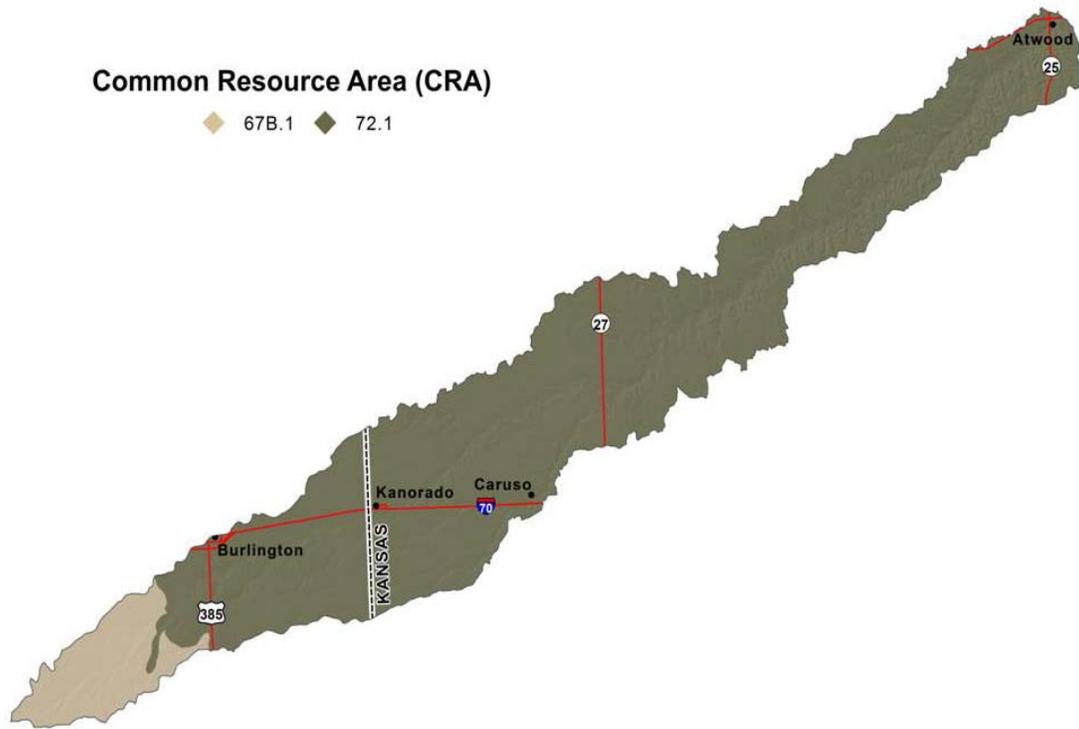


<i>COLORADO</i> County	County Acres	County Acres in South Fork Beaver Watershed	% of County in the Watershed	% of Watershed in the County
Kit Carson	1,383,742	138,933	10.0%	28.8%
<i>KANSAS</i>				
Cheyenne	654,065	14,357	2.2%	3.0%
Rawlins	685,972	93,204	13.6%	19.3%
Sherman	676,627	235,210	34.8%	48.8%
		481,704		

South Fork Beaver - 10250012



Satellite Imagery: ArcIMS Server - Geographic Network Services hosted by ESRI

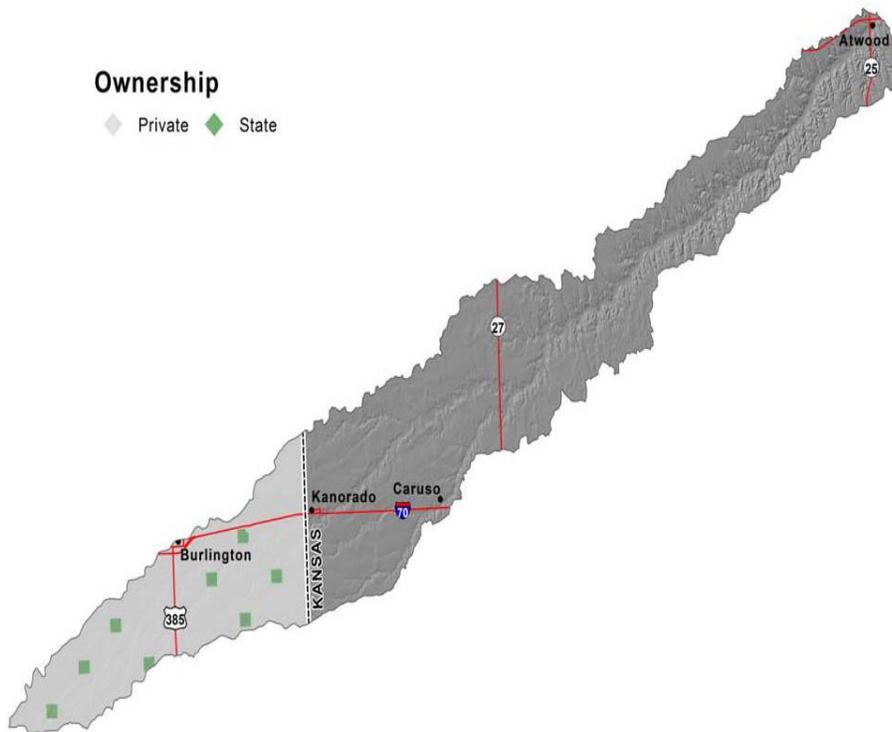
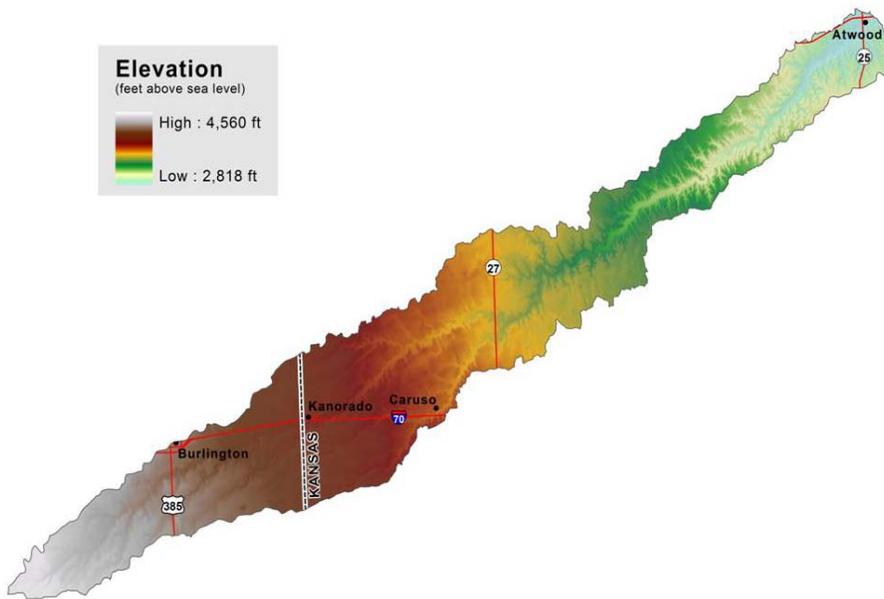


Common Resource Areas (CRA): Geographical areas where resource concerns, problems, and treatment needs are similar. Landscape conditions, soil, climate, human considerations, and other natural resource information are used to determine the geographical boundaries of the common resource area.

MLRA	CRA	CRA NAME	CRA DESCRIPTION
67B	67B.1	Central Great Plains, Southern Part	The Central High Plains, Southern Part CRA is broad, undulating to rolling plains dissected by streams and rivers. Local relief is measured in tens of feet on the plains. Soils are deep and formed in eolian and alluvial materials. Presettlement vegetation was short grass prairies. Nearly all of this area in fallow cropland rotations or rangeland. Some cropland areas are irrigated.
72	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 tens of feet and major river valleys bordered by steep slopes. Soils are deep. Presettlement vegetation was short grass prairies. Nearly all of this area in cropland, both dryland small grain crops and irrigated corn and grain sorghum.

Physical Description

The South Fork Beaver watershed consists of broad, inter-valley remnants of smooth plain, with gently rolling slopes, punctuated by steeper slopes along the drainages. The South Fork Beaver divides deep, well-drained soils overlaying the Ogallala formation, and cuts into Cretaceous Pierre shale on the eastern edge of the watershed.



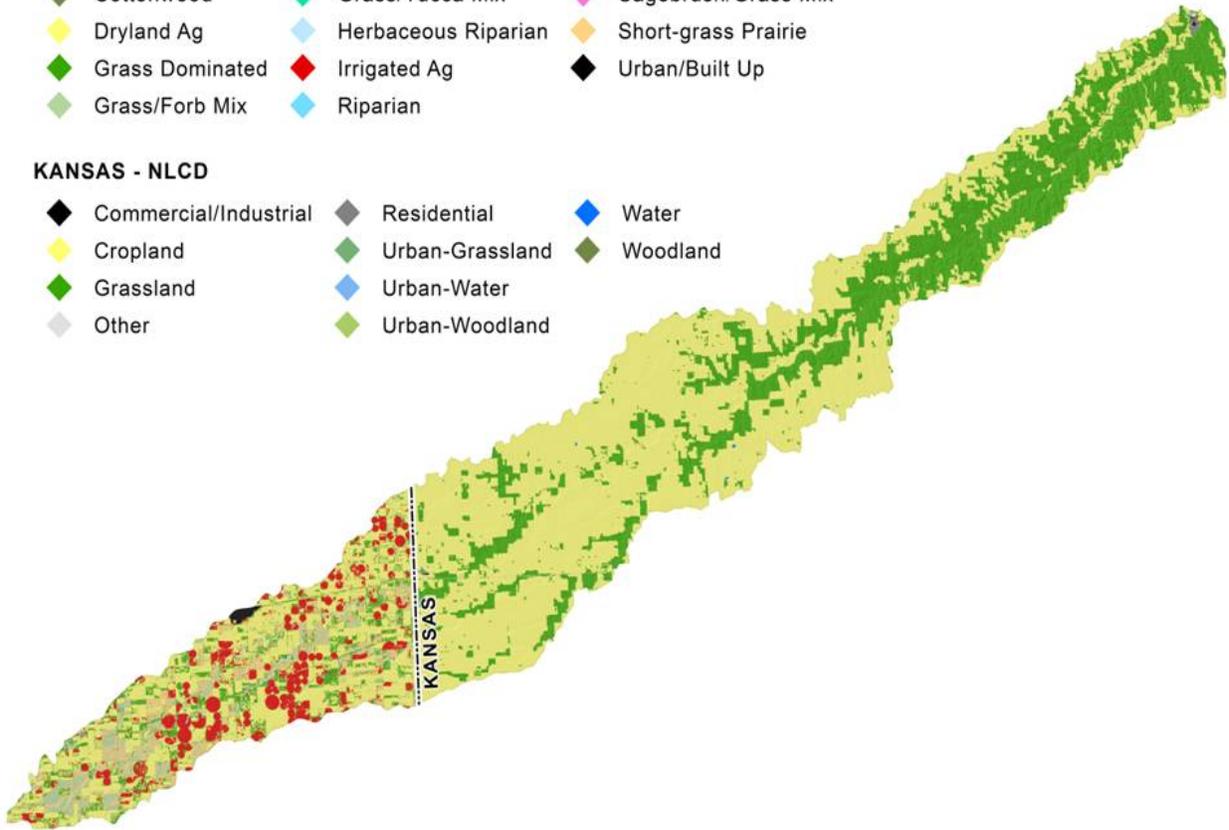
Vegetation

COLORADO - CVCP

- ◆ Cottonwood
- ◆ Dryland Ag
- ◆ Grass Dominated
- ◆ Grass/Forb Mix
- ◆ Grass/Yucca Mix
- ◆ Herbaceous Riparian
- ◆ Irrigated Ag
- ◆ Riparian
- ◆ Sagebrush/Grass Mix
- ◆ Short-grass Prairie
- ◆ Urban/Built Up

KANSAS - NLCD

- ◆ Commercial/Industrial
- ◆ Cropland
- ◆ Grassland
- ◆ Other
- ◆ Residential
- ◆ Urban-Grassland
- ◆ Urban-Water
- ◆ Urban-Woodland
- ◆ Water
- ◆ Woodland



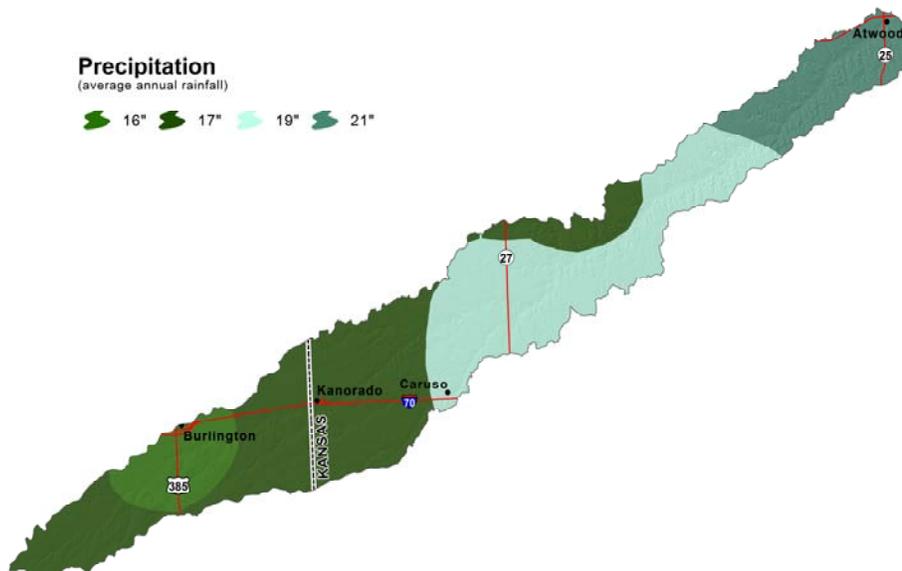
SOUTH FORK BEAVER Colorado Land Use	Total Acreage	Vegetation	Acreage
Cropland	91,362	Dryland Ag	69,456.7
		Irrigated Ag	21,905.3
Rangeland	28,927	Grass Dominated	20,423.0
		Grass/Forb Mix	8,373.5
		Grass/Yucca Mix	0.3
Grassland	17,298	Sagebrush/Grass Mix	129.9
		Short-grass Prairie	17,298.3
Riparian	1,329	Herbaceous Riparian	1,145.6
		Riparian	178.5
Other	754	Cottonwood	5.3
		Urban/Built Up	753.7
Total Colorado Watershed Acres			139,670

Precipitation

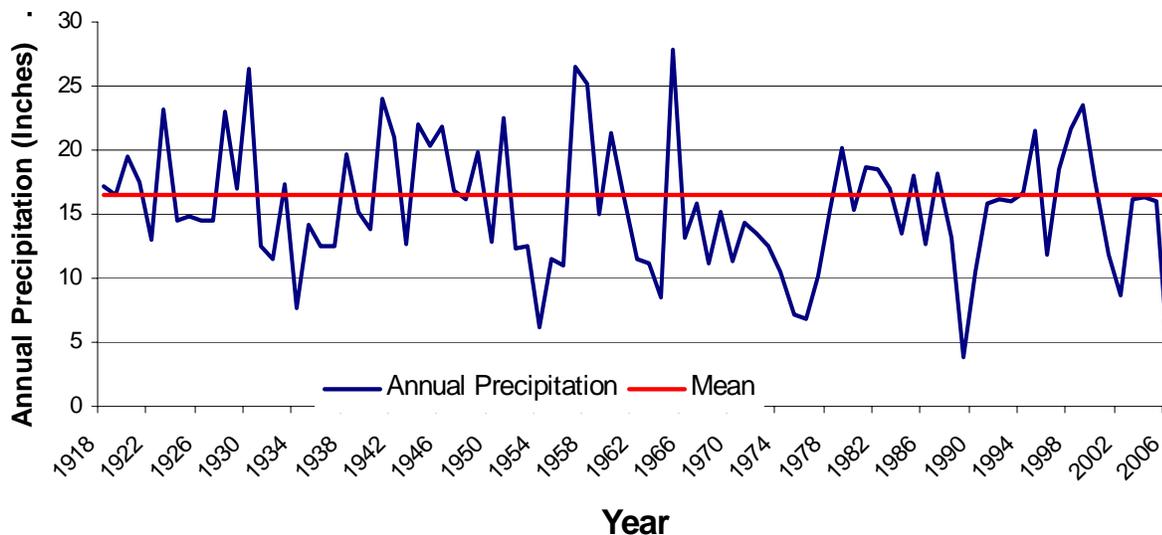
Precipitation in the South Fork Beaver Watershed averages between 15 and 17 inches per year. Droughts are common in the watershed, as with the rest of Colorado. Statewide, in the 1900's alone, four prolonged dry spells occurred. The first took place in the 1910s, and another, in the '30s, caused the dust-bowl period.

The second worst drought on record in the state occurred in the mid-50s, when a series of hot, dry summers following a period of scant mountain snowpack created water shortages. The fourth serious drought hit parts of Colorado in the late 1970s. In this century, the most severe drought since 1723 hit the state in 2002. Prior to the 1700's, researchers looking at tree ring records found evidence of droughts, even more severe than those during the record period, with some lasting many years.

Rainfall in the watershed typically occurs as frontal storms in the spring and early summer, and as high intensity, convective thunderstorms in late summer. Maximum precipitation is from mid spring through late autumn, and precipitation in winter is snow. The average annual temperature is from 37 to 65 degrees F. The frost free period averages 155 days but ranges from 106 to 184 days.



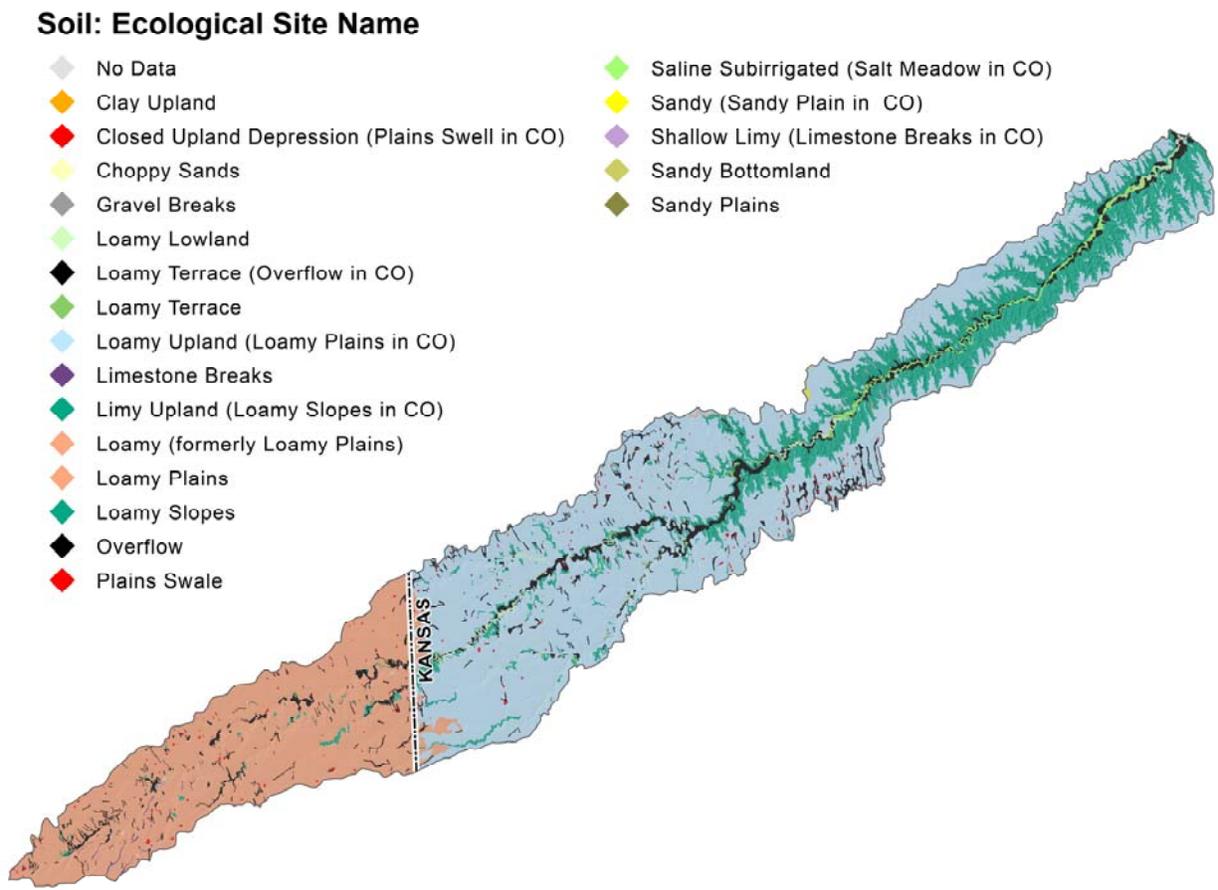
South Fork Beaver Annual Precipitation, 1918-2006



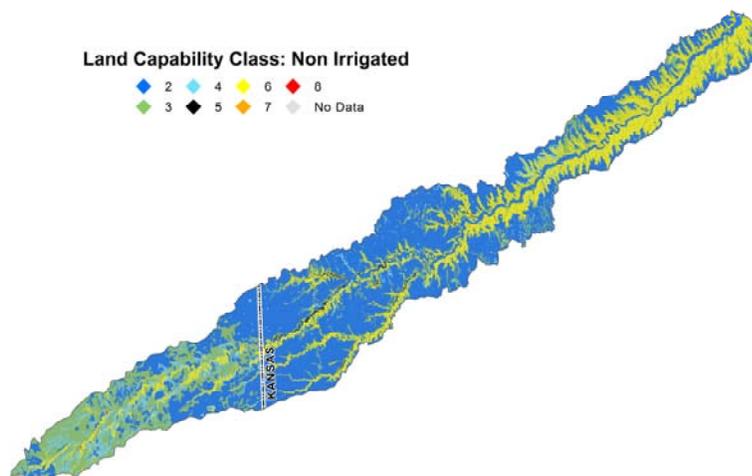
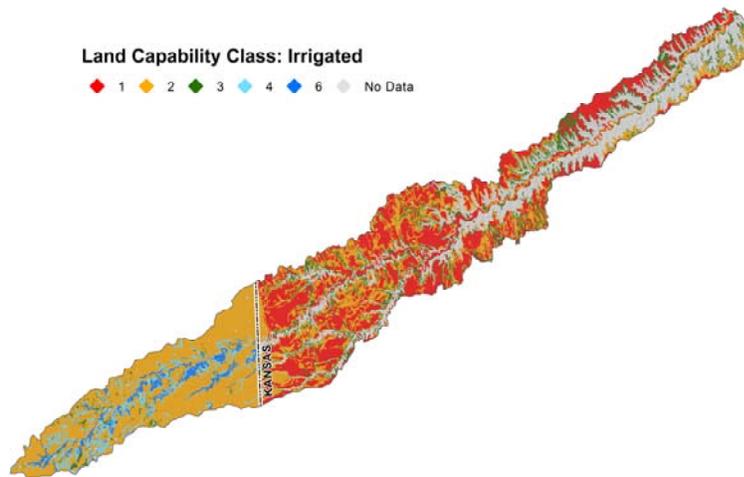
Ecological Sites

The plant community on an ecological site is typified by an association of species that differs from that of other ecological sites in the kind and/or proportion of species or in total production.

Ecological Site maps give an overall indication of the soils plant relationship in the area. More detailed descriptions of ecological sites are provided in the Field Office Technical Guide (FOTG). The FOTG is available in local offices of the Natural Resources Conservation Service (NRCS) and online at <http://www.nrcs.usda.gov/technical/efotg/>.



Land Capability Classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations that show suitability and limitations of groups of soils for rangeland, for woodland, and for engineering purposes.



Land Capability Classes

Class 1 - soils have few limitations that restrict their use.

Class 2 - soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.

Class 3 - soils have severe limitations that reduce the choice of plants or that require special conservation practices, or both.

Class 4 - soils have very severe limitations that reduce the choice of plants or that require very careful management, or both.

Class 5 - soils are subject to little or no erosion but have other limitations, impractical to remove, that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

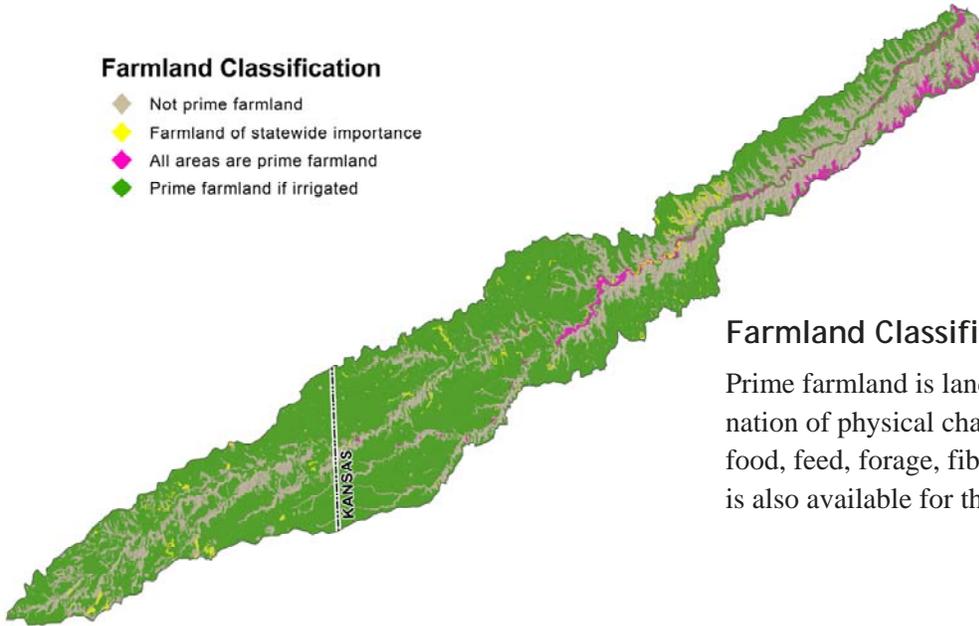
Class 6 - soils have severe limitations that make them generally unsuitable for cultivation and that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 7 - soils have very severe limitations that make them unsuitable for cultivation and that restrict their use mainly to grazing, forestland, or wildlife habitat.

Class 8 - soils and miscellaneous areas have limitations that preclude commercial plant production and that restrict their use to recreational purposes, wildlife habitat, watershed, or aesthetic purposes.

Farmland Classification

- ◆ Not prime farmland
- ◆ Farmland of statewide importance
- ◆ All areas are prime farmland
- ◆ Prime farmland if irrigated



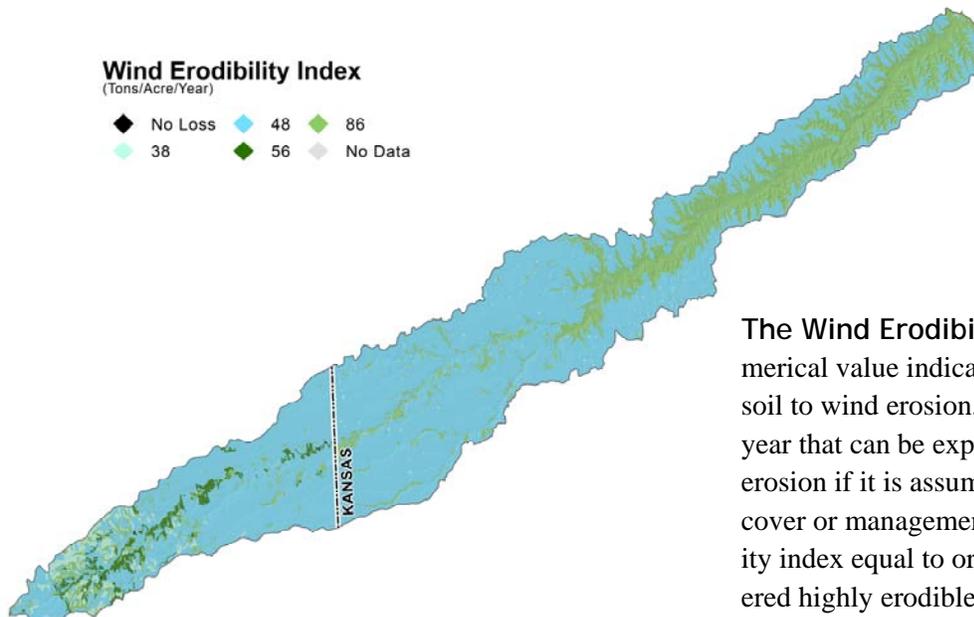
Farmland Classification

Prime farmland is land that has the best combination of physical characteristics for producing food, feed, forage, fiber and oil seed crops and is also available for these.

Wind Erodibility Index

(Tons/Acre/Year)

- ◆ No Loss
- ◆ 38
- ◆ 48
- ◆ 56
- ◆ 86
- ◆ No Data

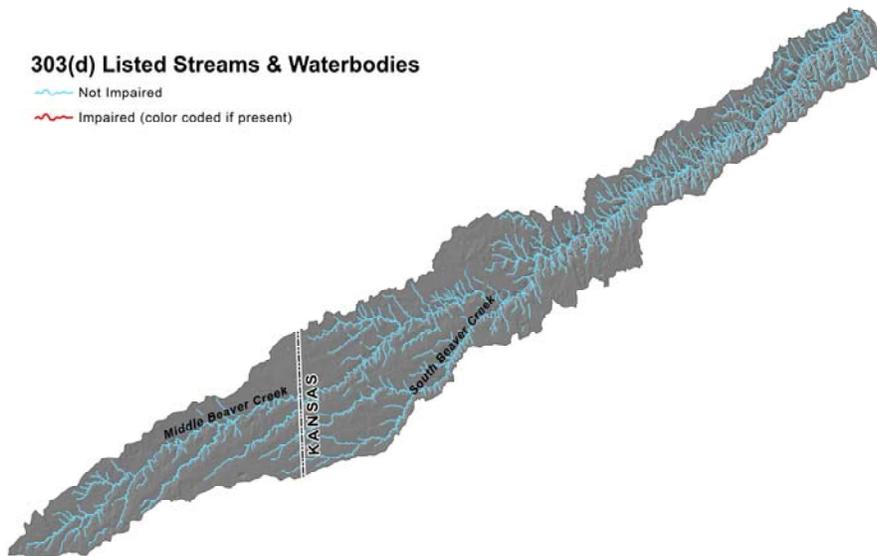


The Wind Erodibility Index (WEI): numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion if it is assumed there is no vegetative cover or management. Soils with an erodibility index equal to or greater than 8 are considered highly erodible.

Surface Water Quality

Surface water quality in the South Fork Beaver Watershed is generally good. Section 303(d) of the Clean Water Act requires states to identify and list all water bodies where state water quality standards are not being met for designated uses. As indicated in the map, there are no 303(d) listed streams in the watershed. The river is

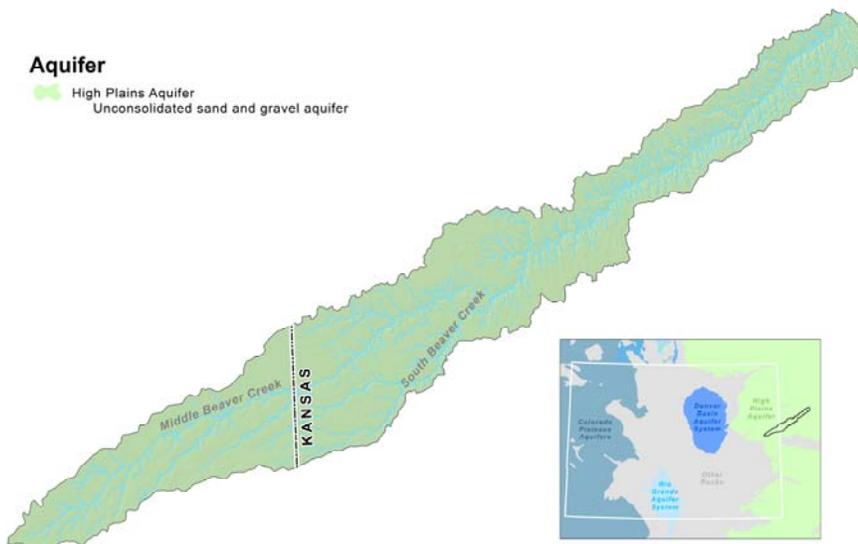
designated as Primary Contact Recreation, Aquatic Life Warm I, and Agriculture. Updates to the 303d/TMDL list can be found at: [http://www.cdphe.state.co.us/op/wqcc/SpecialTopics/303\(d\)/303dtmdlpro.html](http://www.cdphe.state.co.us/op/wqcc/SpecialTopics/303(d)/303dtmdlpro.html)



Ground Water

The High Plains Aquifer underlies the South Fork Beaver watershed, and is the primary source of irrigation and domestic water for the area. The High Plains aquifer is an extensive regional aquifer that underlies the Great Plains states extending from South Dakota on the north to Texas and New Mexico on the south.

Ground water quality is generally good, although moderately to very hard. Total dissolved solids in the aquifer have risen significantly since the early 1900s, and in some areas, the water may exceed drinking water standards for sulfate, chloride, fluoride, iron and arsenic. These concentrations may be naturally derived from geologic sources.

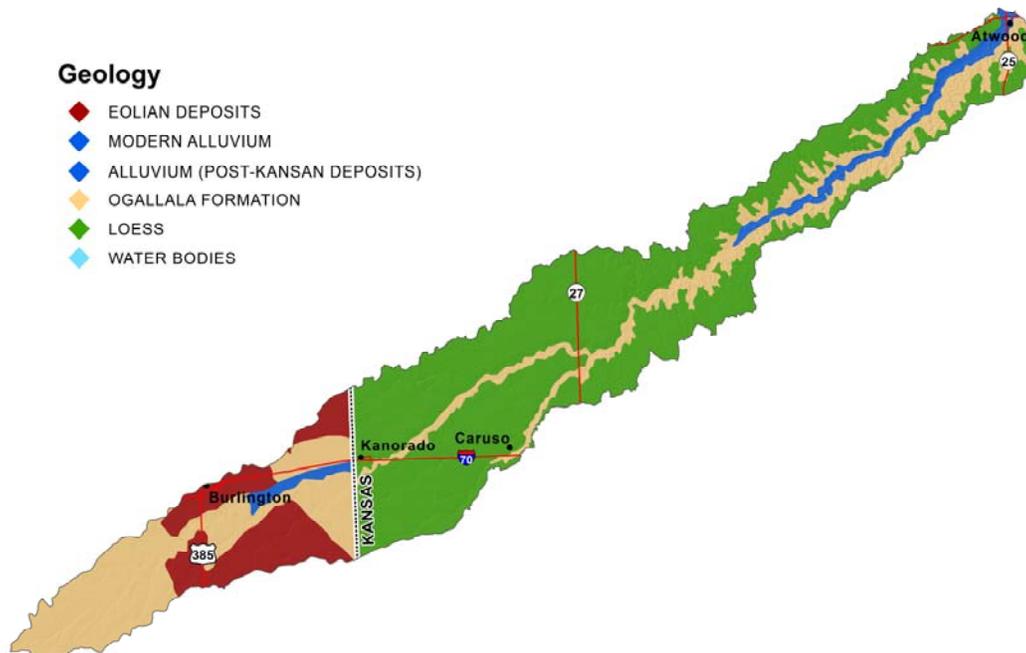


Era	System	Series	Strati-graphic Unit	Unit Thickness (feet)	Physical Characteristics	Hydro-geologic Unit	Hydrologic Characteristics	
Cenozoic	Quaternary	Holocene and Pleistocene	Valley-fill deposits	0 to 60	Stream deposits of gravel, sand, silt, clay associated with the most recent cycle of erosion and deposition along present streams	High Plains aquifer	Shallow water-table aquifer(s). Well yields range from 500 to more than 1,000 gpm in several river valleys	
			Dune sand	0 to 300	Fine to medium sand with small amounts of clay, silt, and coarse sand formed into hills and ridges by the wind		Typically lies above the water table; has a high infiltration rate and is important for ground-water recharge	
			Loess	0 to 250	Silt with lesser amounts of very fine sand and clay deposited as windblown dust		Lies above the water table and does not yield water; serves for minor recharge	
		Pleistocene	Unconsolidated alluvial deposits	0 to 550	Stream deposits of gravel, sand, silt, and clay locally cemented by calcium carbonate into caliche or mortar beds		Primary portion of the High Plains aquifer; mostly unconfined; yields range from 100 to 3,100 gpm; typically less than 300 gpm in Colorado; Ogallala is the most significant High Plains aquifer resource	
	Tertiary	Miocene	Ogallala Formation	0 to 700	Poorly sorted clay, silt, sand, and gravel generally unconsolidated; forms caliche layers or mortar beds when cemented by calcium carbonate; Ogallala makes up large part of High Plains aquifer		High Plains aquifer	Can be confined; moderately permeable. May yield up to 200 gpm in localized areas
			Arikaree Group	0 to 1,000	Predominantly massive, very-fine to fine-grained sandstone with localized beds of volcanic ash, silty sand, siltstone, claystone, sandy clay, limestone, marl, and mortar beds; part of the High Plains aquifer			
		Oligocene	White River Group	0 to 700	Upper unit, Brule Formation, is considered part of the High Plains aquifer in Colorado, predominantly massive sandstone containing sandstone beds and channel deposits Lower unit, Chadron Formation, mainly consists of varicolored, bentonitic, loosely to moderately cemented clay and silt			

From Gutentag and others, 1984

Geology

The South Fork Beaver lies within the Ogallala formation, and dips into Cretaceous Pierre shale on the eastern edge of the watershed. Eolian sands and silt cover much of the uplands surrounding the river.



Threatened & Endangered Species State & Federally Threatened, Endangered & Candidate Species as well as Species of Special Concern in South Fork Beaver Watershed.

	Common Name	Scientific Name	Class	State Status	Federal Status	Comments
	Bald Eagle	<i>Haliaeetus leucocephalus</i>	Birds	Threatened	None	May migrate through watershed
	Black-tailed Prairie Dog	<i>Cynomys ludovicianus</i>	Mammals	Concern	None	Occurs in the watershed
	Brassy Minnow	<i>Hybognathus hankinsoni</i>	Fish	Threatened	None	May occur in the watershed
	Burrowing Owl	<i>Athene cunicularia</i>	Birds	Threatened	None	Occurs in the watershed
	Ferruginous Hawk	<i>Buteo regalis</i>	Birds	Concern	None	Occurs in the watershed
	Long-Billed Curlew	<i>Numenius americanus</i>	Birds	Concern	None	May occur in the watershed
	Massasauga	<i>Sistrurus catenatus</i>	Reptiles	Concern	None	May occur in the watershed
	Mountain Plover	<i>Charadrius montanus</i>	Birds	Concern	None	Occurs in the watershed
	Northern Cricket Frog	<i>Acris crepitans</i>	Amphibians	Concern	None	May occur in the watershed
	Plains Leopard Frog	<i>Rana blairi</i>	Amphibians	Concern	None	May occur in the watershed
	Plains Orangethroat Darter	<i>Etheostoma spectabile</i>	Fish	Concern	None	May occur in the watershed
	Swift fox	<i>Vulpes velox</i>	Mammals	Concern	None	Occurs in the watershed
	Yellow mud turtle	<i>Kinosternon flavescens</i>	Reptiles	Concern	None	May occur in the watershed

Shortgrass prairie is the dominant, non-cropland, terrestrial habitat type in this watershed. The Conservation Reserve Program also provides a significant acreage of grassland habitat in this watershed. Both dry and irrigated cropland provide additional terrestrial food and cover habitats. Burrowing owl, mountain plover, black-tailed prairie dog, and swift fox are representative species for the shortgrass habitat. Water is scarce and the native species in this watershed are those that can survive without abundant water supplies. Riparian areas, playa lakes, and stock ponds provide seasonal to intermittent aquatic habitats. Economically important wildlife species that occur in the watershed include pronghorn (antelope), mule and/or white-tailed deer, mourning dove, and pheasant.

Social Data

County	Cheyenne	Elbert	EIPaso	Kiowa	Kit Carson	Lincoln	Prowers
Demographics (US Census, American Factfinder)							
Total population	2,231	19,872	550,130	1,622	8,011	20,504	14,483
Male	1,119	9,966	272,922	811	4,236	10,834	7,278
Female	1,112	9,906	277,208	811	3,775	9,670	7,205
Median age (years)	37.9	37.2	33.5	39.7	37.4	36.5	32.4
White	2,072	18,923	444,799	1,559	6,992	18,792	11,379
Black or African American	11	128	33484	8	139	420	43
American Indian and Alaska Native	17	125	4855	18	41	131	177
Asian	3	74	15516	0	26	82	54
Native Hawaiian and Other Pacific Islander	0	18	1241	1	3	14	4
Some other race	114	255	29575	23	737	772	2487
Hispanic or Latino (of any race)	181	766	70312	51	1095	2439	4766
Economic Characteristics (US Census, American Factfinder)							
In labor force (population 16 years and over)	1,066	11,056	288,867	776	3,746	9,771	6,976
Median household income (dollars)	37,054	62,480	50,714	30,494	33,152	32,724	29,935
Median family income (dollars)	44,394	66,740	61,719	35,536	41,867	42,241	34,202
Per capita income (dollars)	17,850	24,960	25,261	16,382	16,964	16,721	14,150
Families below poverty level	53	145	x	43	198	454	546
Individuals below poverty level	244	791	x	195	908	2253	2755
X: value is not applicale or not availiable							
County Agricultural Characteristics (Colorado Agricultural Census, county data tables)							
Farms (number)	283	1153	1175	357	678	455	531
Land in farms/ranches (acres)	740,486	1,068,359	811,931	896,772	1,247,181	1,428,404	861,778
Average size farm/ranch (acres)	2,617	927	691	2,512	1,840	3,139	1,623
Median size farm (acres)	1,528	160	160	1,280	11,112	1,497	640
Average age of farmer or rancher	57.2	52.8	54.1	55.2	54.3	55.6	53.3
Net cash return from ag sales (\$1,000)	1,829	108	2,485	944	3,392	4,829	8,467
Cattle and calves (number)	20,000	36,000	26,000	15,000	148,000	40,000	110,000

South Fork Beaver Watershed Natural Resource Concerns



Resource Concerns Identified by Burlington Conservation District By Priority

Water Quality/Quantity	6
Soil Erosion	5
Tree Planting	4
Rangeland/Grazing Health and Productivity	3
Conservation Education	2
Conservation Policy	1

Notes:

The Conservation Districts identified and prioritized these resource concerns during facilitated public meetings held between 1998 and 2000 and are part of the Conservation District's Long Range Plans. Higher scores indicate higher priority

Selected Conservation Application Data				
	FY 2005	FY 2006	FY 2007	Total
Total Conservation Systems Planned (Acres)	4,854	1,885	1,873	8,612
Total Conservation Systems Applied (Acres)	4,212	2,619	2,132	8,963
Practices				
Prescribed Grazing	1,879	na	na	1,879
Conservation Cropping System	1,611	83	1,215	2,909
Residue Management	1,071	1,275	37	2,383
Irrigation Water Management	735	847	1,119	2,701

Conservation Systems to Address Major Resource Concerns

Primary Resource Concern: Rangeland Health				
Conservation System Description:		Based on Conservation System Guide Code:		
Prescribed Grazing—Planned management that provides adequate recovery opportunity between grazing events and proper stocking of animals. Estimate 24,500 acres need to be treated on median sized ranches of 3,500 acres.		CO 67B.1-GR-01-R-Grazing		
Practices	Unit	Quantity	Cost/Unit (\$)	Estimated Cost per Median Sized Ranch (\$)
Prescribed Grazing				
Fencing (382)	Ft.	5,000	.60	3,000
Pipeline (516)	Ft.	3,000	2.40	7,200
Pest Management (595)	Ac.	300	15	4,500
Upland Wildlife Habitat Management (645)	Ac.	300	na	0
Watering Facility (614)	No.	4	410	1,640
Costs to apply prescribed grazing per median sized ranch of 3,500 acres	No.	7	16,340	
Subtotal Rangeland costs:				\$114,380

Conservation Systems to Address Major Resource Concerns (continued)

Primary Resource Concern: Water Quality				
Conservation System Description: Upgrading Sprinkler irrigation system with IWM, Crop rotation, Nutrient and Pest Management			Reference Conservation System Guide Code: CO 72.1-CR-Sprinkler-R-2	
Practices	Unit	Quantity	Cost/Unit (\$)	Estimated Cost (\$)
Irrigation Water Management (449)* * includes re-bowl, renozzle, and IWM	Ac	18,000	10.20	183,600
Nutrient Management (590)	Ac	20,000	5	100,000
Pest Management (595)	Ac	20,000	15	300,000
Subtotal Irrigation Costs: \$583,600				
Primary Resource Concern: Soil Erosion By Wind on dryland crops				
Conservation System Description: Seasonal residue management with Conservation crop rotation, Nutrient and Pest Mgt			Reference Conservation System Guide Code: CO 67B.1-CR-Dryland-R-2	
Practices	Unit	Quantity	Cost/Unit (\$)	Estimated Cost (\$)
Conservation Crop Rotation (328)	Ac	15,000	5	75,000
Residue Mgmt, Seasonal (344)	Ac	50,000	5	250,000
Nutrient Management (590)	Ac	20,000	5	100,000
Pest Management (595)	Ac	20,000	15	300,000
Subtotal Costs Dryland Crops: \$625,000				

General Effects, Impacts, and Estimated Costs of Application of Conservation Systems

Landuse	Resource Concern	Measurable Effects	Non-measurable Effects	Estimated Cost (\$)
Rangeland	Plants		Improved plant condition, productivity, health and vigor. Grazing animals have adequate feed, forage, and shelter. Wildlife habitat is sustained or improved.	114,380
Irrigated Crops	Water		Nutrients and organics are stored, handled, disposed of, and managed so that surface water uses are not adversely affected.	583,600
Dryland Crop	Soil	225,000 Total Tons/Year saved	Cropland sustainability	625,000
Estimated Total Costs to Address Major Resource Concerns:				1,322,380

References Not Cited in Document

303(d) listed streams within Big Sandy Watershed were created using data from Colorado Department of Public Health & Environment's Water Quality & Control Commission. Impaired streams are current as of April 30, 2006. For a list of all Colorado impaired streams, locations and priority ratings, visit <http://www.cdph.state.co.us/regulations/wqccregs/100293wqlimitedsegmdls.pdf>.

Threatened and Endangered Species information was gathered using data from the Colorado Division of Wildlife (CDOW) Natural Diversity Information Source (NDIS).

Resource Concerns were identified using the Colorado Association of Conservation Districts' (CACD) long range (10 year) plans from the period of 1996-2000. For more information on Colorado's Conservation Districts, visit <http://www.cacd.us>.

Maps were generated using Soil Survey Geographic Database (SSURGO) tabular and spatial data. SSURGO data was downloaded for the following Colorado surveys:

Cheyenne County (CO017) Published 12/19/2005

Kiowa County (CO061) Published 12/19/2005

Lincoln County (CO073) Published 12/19/2005

Prowers County (CO099) Published 12/20/2005

Elbert County E (CO624) Published 12/16/2005

El Paso County Area (CO625) Published 12/19/2005

Vegetation data was generated using the Colorado Division of Wildlife's "Colorado Vegetation Classification Project" (CVCP) data. visit <http://ndis.nrel.colostate.edu/coveg>.

Common Resource Area (CRA), a subdivision of the Major Land Resource Area (MLRA), is a geographical area where resource concerns, problems, or treatment needs are similar. For more information on Common Resource Areas visit <http://soils.usda.gov/survey/geography/cra.html>.

Average Annual Precipitation data was developed through a partnership between the Natural Resources Conservation Service's (NRCS) National Water and Climate Center (NWCC), the National Cartography and Geospatial Center (NCGC), and the PRISM (the Parameter-elevation Regressions on Independent Slopes Model) group at Oregon State University (OSU), developers of PRISM. Mean annual precipitation maps were developed calculating averages of rainfall for the period of 1961-1990. For more information visit <http://www.ncgc.nrcs.usda.gov/products/datasets/climate/docs/fact-sheet.html> or <http://www.ocs.orst.edu/prism>.

Land Ownership (status, 2004 dataset) data was obtained from the Colorado Department of Transportation (CDOT). For more information, visit <http://www.dot.state.co.us>.

Relief & Elevation maps were created using the National Elevation Dataset (NED), 30m Digital Elevation Model (DEM) raster product assembled by the U.S. Geological Survey (USGS). The data was downloaded from the NRCS Geospatial Data Gateway at <http://datagateway.nrcs.usda.gov>.

Conservation Systems to address major resource concerns were extracted from the Conservation Systems Guides (CSG) compiled from local conservationists by the NRCS Ecological Sciences Section at the Lakewood State Office.

Effects and Impacts of application of conservation systems were extracted from Colorado eFOTG, Section III, Resource Quality Criteria, NRCS, Colorado, March 2005.