



United States Department  
of Agriculture



Natural Resources  
Conservation Service

Lakewood, Colorado

RWA 10190016

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# Lower Lodgepole Watershed

Hydrologic Unit Code 10190016

Rapid Assessment





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## 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

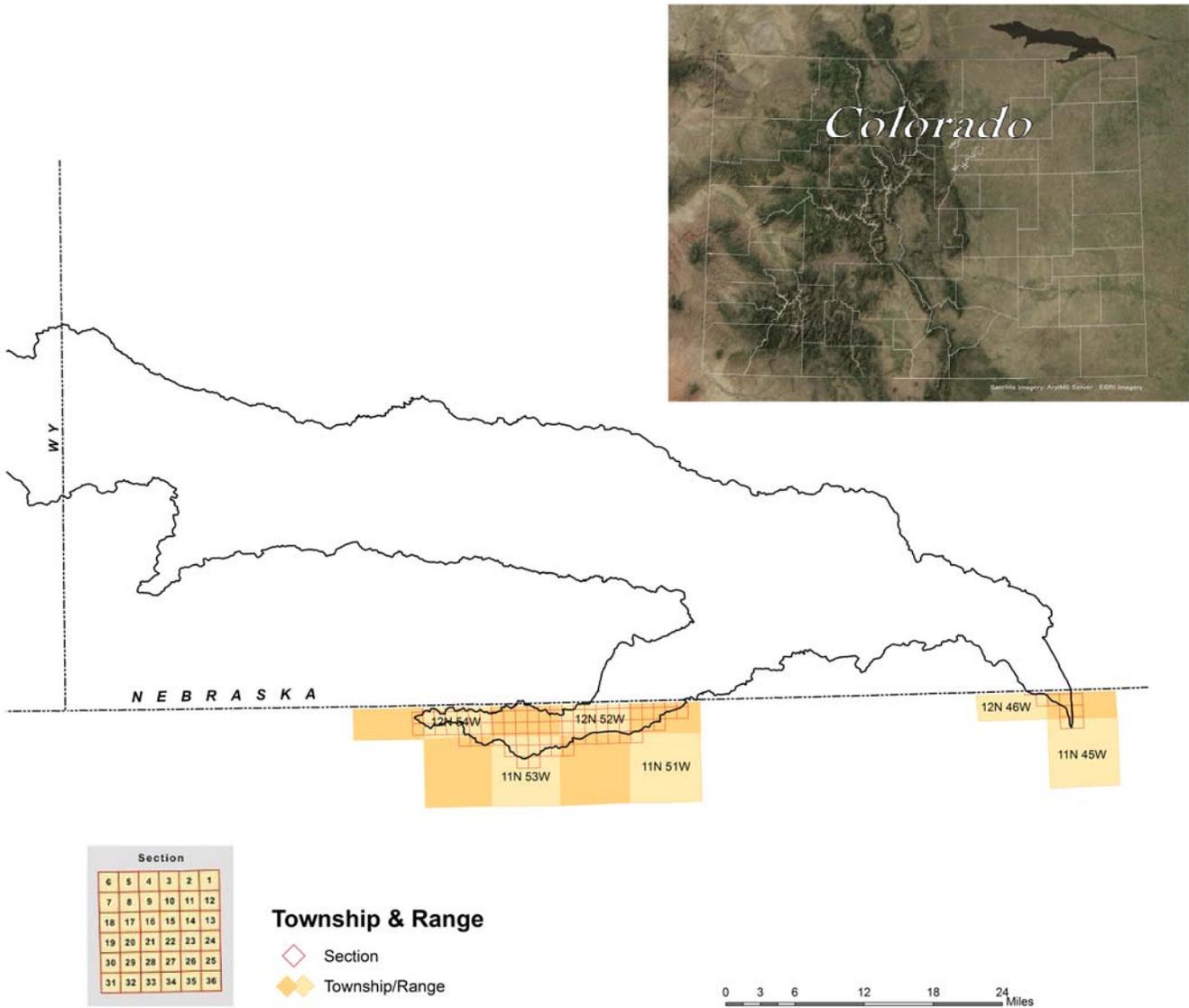
While rapid assessments provide less detail and analysis than full-blown studies and plans, they do provide the benefits of NRCS locally-led planning in less time and at a reduced cost. The benefits include:

- 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)

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

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COLORADO County	County Acres	County Acres in LOWER LODGEPOLE Watershed	% of County in the Watershed	% of Watershed in the County
Logan	1,180,481	36,338	3.1%	4.3%
Sedgwick	351,884	2,209	0.6%	0.3%

**NEBRASKA**

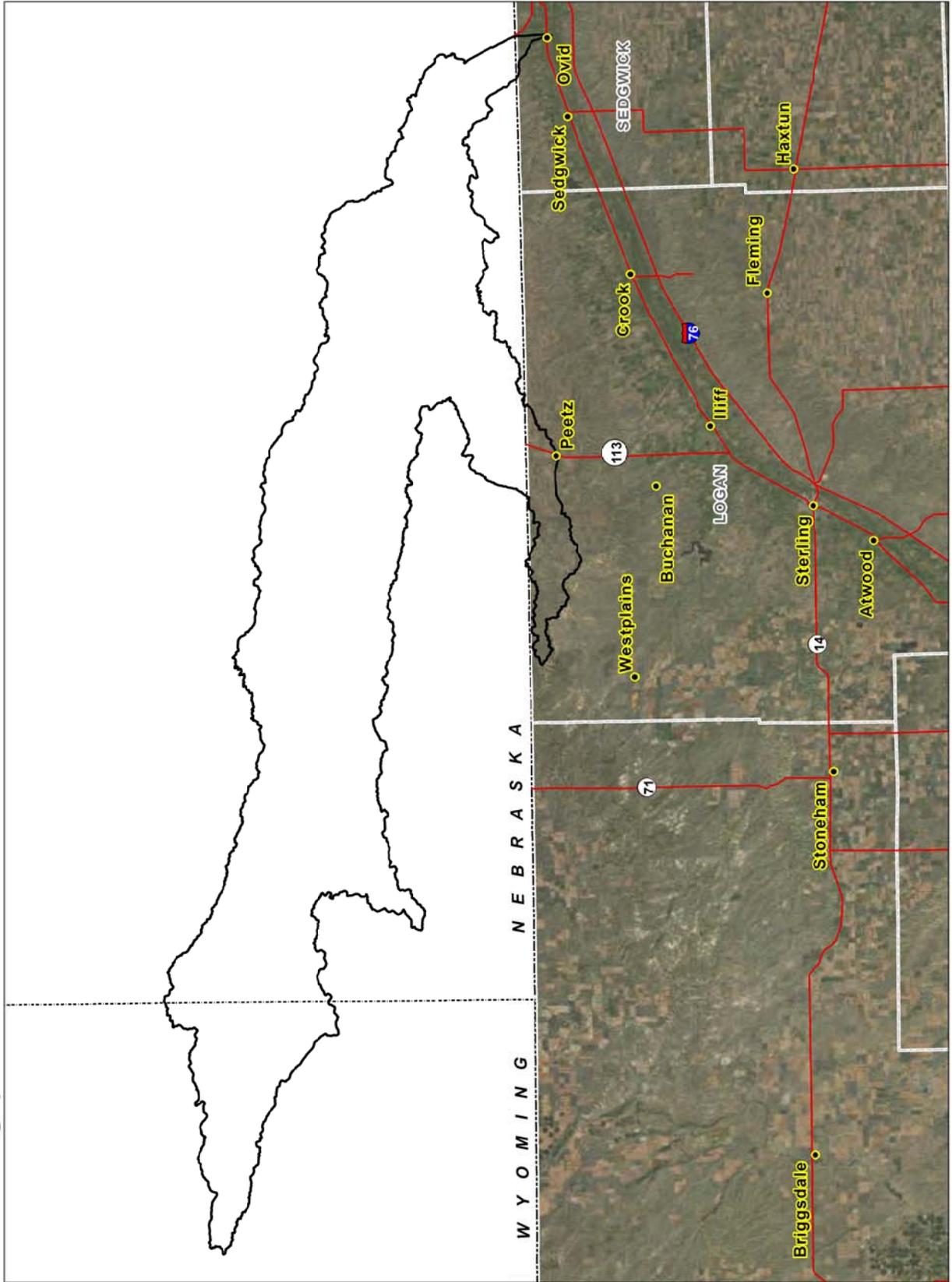
Banner	477,420	28,960	6.1%	3.4%
Cheyenne	765,638	378,469	49.4%	44.3%
Deuel	282,222	49,229	17.4%	5.8%
Kimball	609,150	259,249	42.6%	30.4%

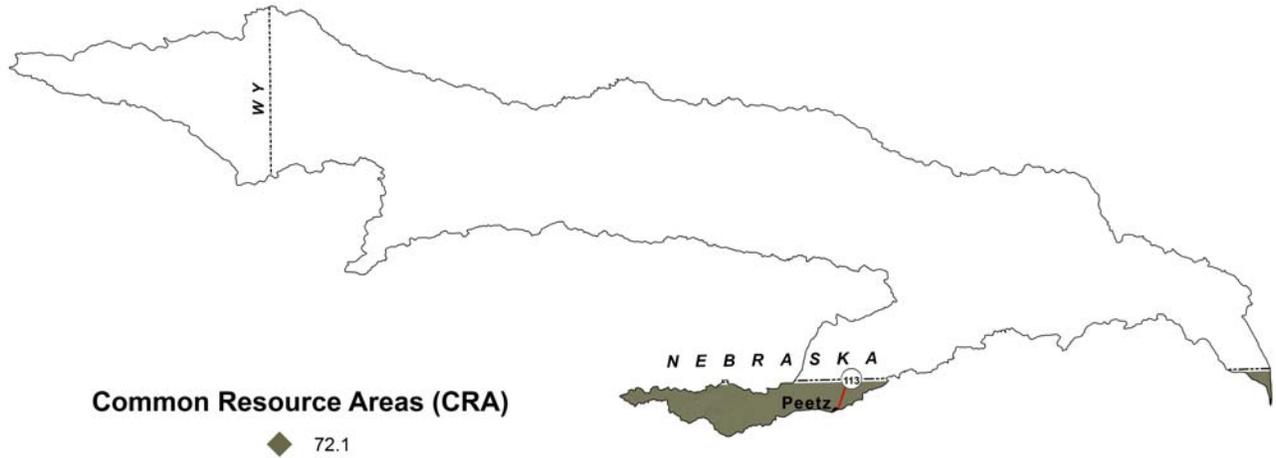
**WYOMING**

Laramie	1,718,726	99,125	5.8%	11.6%
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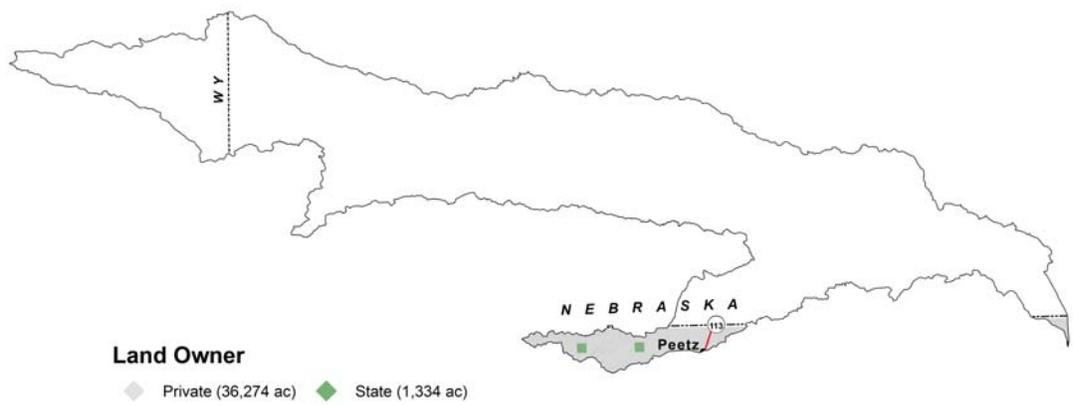
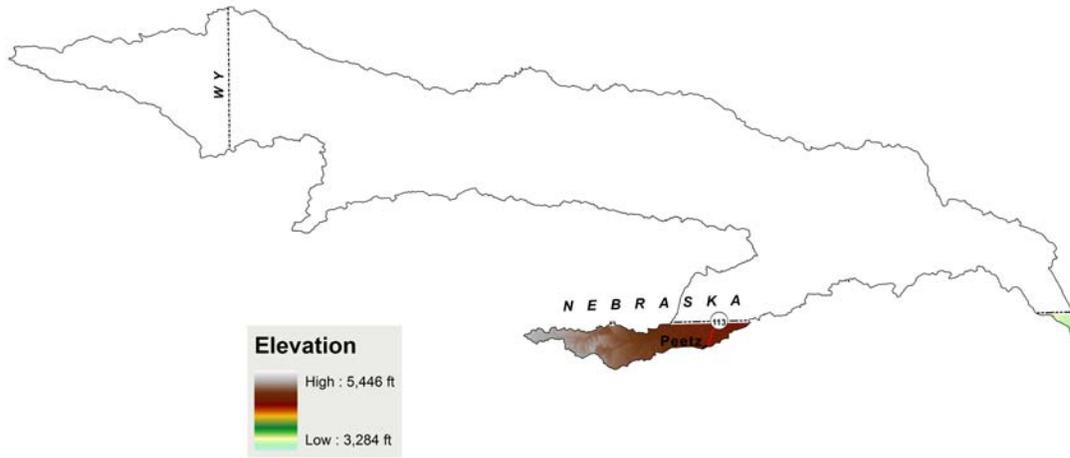
853,580

Lower Lodgepole - 10190016

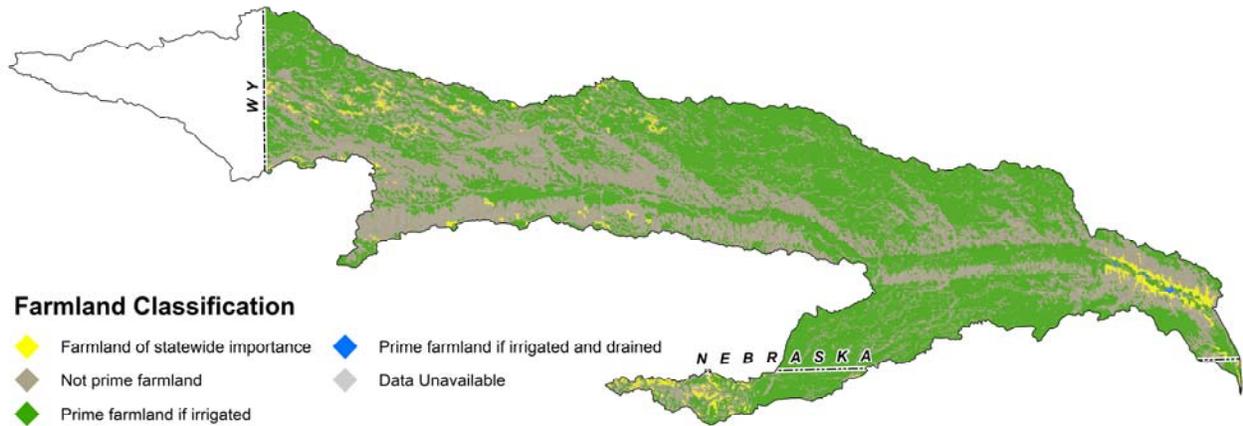




MLRA	CRA	CRA NAME	CRA DESCRIPTION
72	72.1	Central High Tableland	The Central High Tableland CRA is broad, level to gently rolling, loess mantled tableland. Local relief is measured in feet on the tableland tens of feet and major river valleys bordered by steep slopes. Soils are deep . Presettlement vegetation was short grass prairies. Nearly all of this area in cropland, both dryland small grain crops and irrigated corn and grain sorghum.

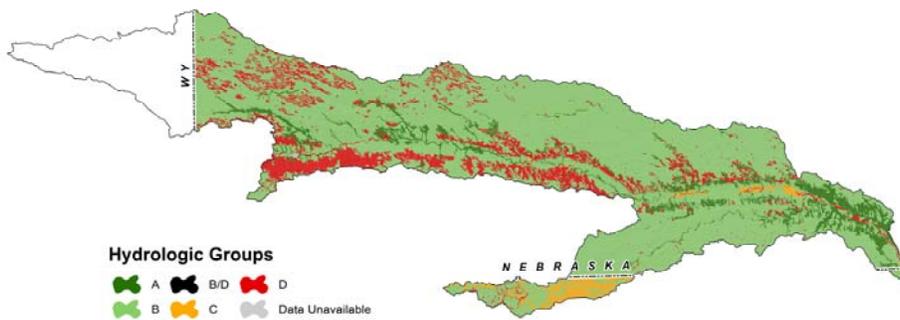
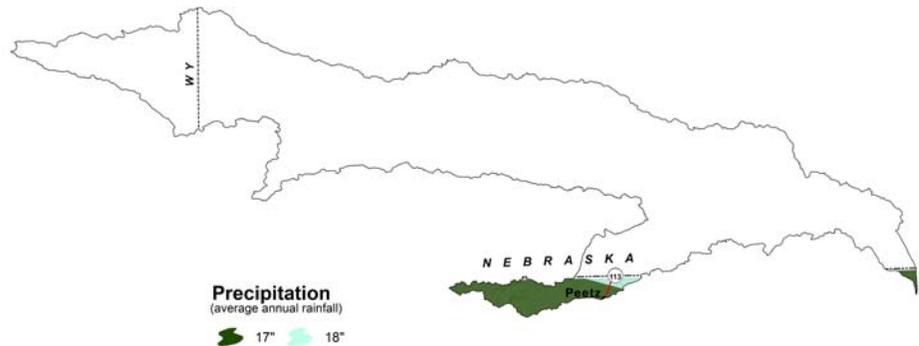


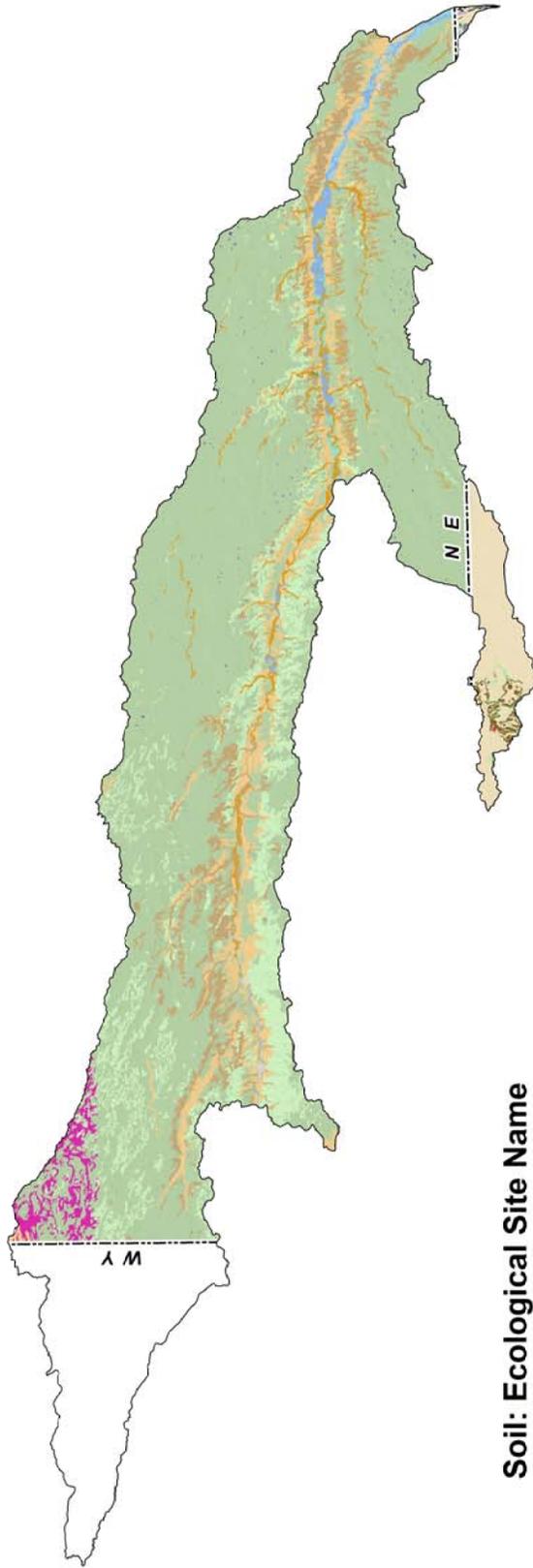
<u>UPPER LODGEPOLE</u>	Total Acreage	Vegetation	Acreage
Cropland	6,539	Dryland Ag	6,139.5
		Irrigated Ag*	400.0
Rangeland/Grassland	8,005	Grass Dominated	7,976.6
		Grass/Misc. Cactus Mix	9.0
		Shrub/Grass/Forb Mix	19.6
Forest	75	Ponderosa Pine	74.6
Riparian	53	Herbaceous Riparian	53.0
Other	433	Rock	18.1
		Soil	414.7
<b>~Total Colorado Watershed Acres</b>			<b>15,105.2</b>



### Precipitation

Droughts are regular visitors to the watershed as with the rest of Colorado. Statewide, in the 1900's alone, four prolonged dry spells occurred. There was one in the 1910s. Another, in the '30s, caused the dust-bowl period. The second worst drought on record in the state occurred in the mid-50s. A series of hot, dry summers following a period of scant mountain snowpack created water shortages. The fourth 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 have found evidence of even more severe droughts, some lasting many years.





**Soil: Ecological Site Name**

- |   |  |                                    |
|---|--|------------------------------------|
| ◆ Data Unavailable                        | ◆ Loamy (Ly) 12-17Å Precipitation Zone | ◆ Sandy Lowland (North) (PE 16-20) |
| ◆ Clayey Overflow - Veg. zone 1           | ◆ Loamy Lowland                        | ◆ Sandy Meadow                     |
| ◆ Clayey Plains                           | ◆ Loamy Plains                         | ◆ Sandy Plains                     |
| ◆ Closed Upland Depression                | ◆ Loamy Slopes                         | ◆ Shallow Limy - Veg. zone 1       |
| ◆ Gravel Breaks                           | ◆ Loamy Upland                         | ◆ Shallow Siltstone                |
| ◆ Gravelly (Gr) 12-17Å Precipitation Zone | ◆ Overflow                             | ◆ Siltstone Plains                 |
| ◆ Gravelly Hills                          | ◆ Salt Meadow                          | ◆ Silty Lowland - Veg. zone 1      |
| ◆ Limestone Breaks                        | ◆ Sands                                | ◆ Subirrigated                     |
| ◆ Limy Upland - Veg. zone 1               |  |                                    |

**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.

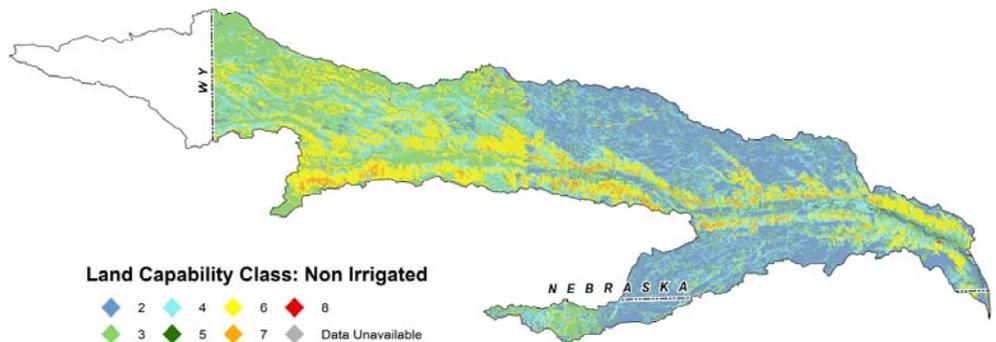
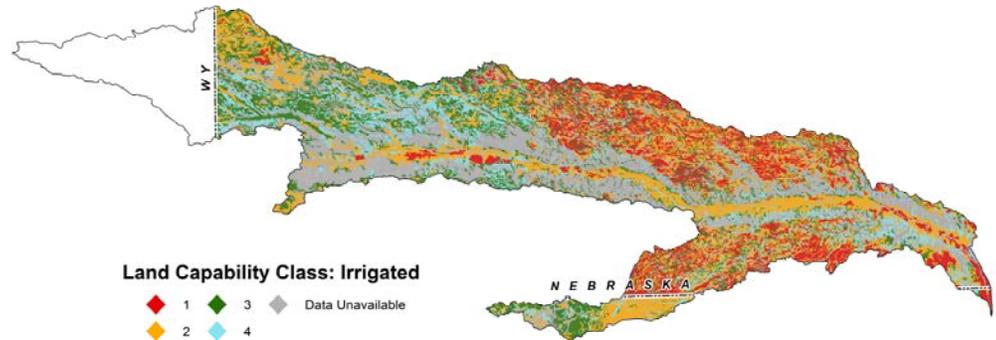
**Class 4** - soils have very severe limitations that reduce the choice of plants or that require very careful management, or both.

**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.

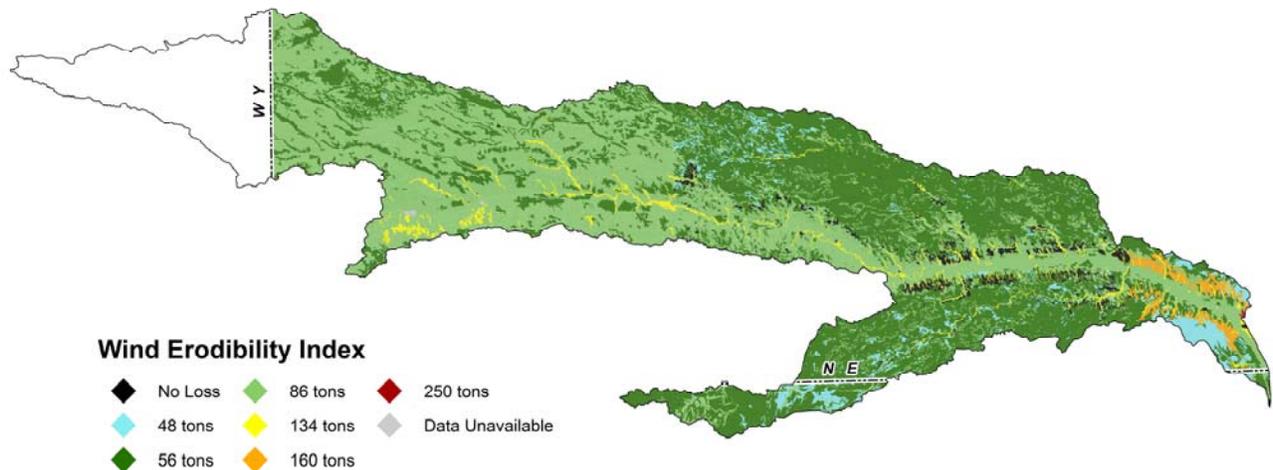
**Class 8** - soils and miscellaneous areas have limitations that preclude commercial plant production and that restrict their use to recreational purposes, wildlife habitat, watershed, or aesthetic purposes.



**The Wind Erodibility Index (WEI):**

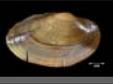
numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion if it is assumed there is no vegetative cover or management.

Soils with an erodibility index equal to or greater than 8 are considered highly erodible.



# Threatened & Endangered Species

State & Federally Threatened, Endangered & Candidate Species as well as Species of Special Concern in Upper Lodgepole

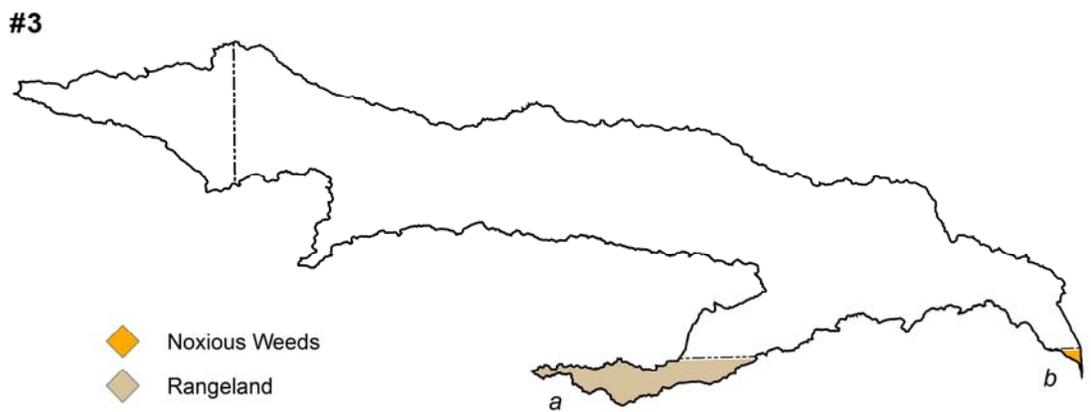
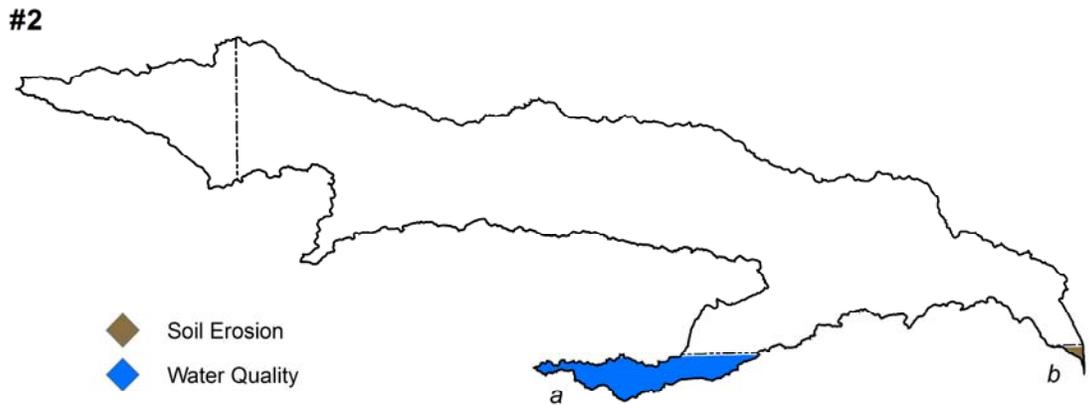
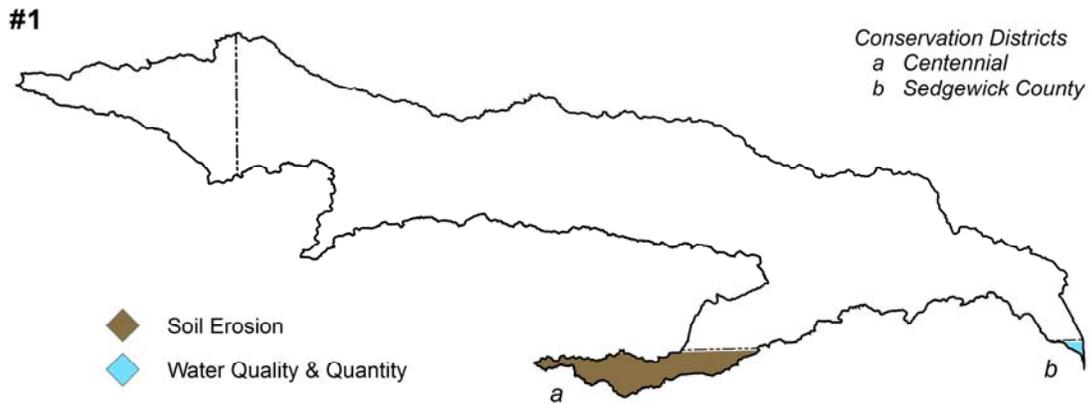
	Common Name	Scientific Name	Class	Federal Status	State Status	Comments
	Bald Eagle	<i>Haliaeetus leucocephalus</i>	Birds	Threatened	None	May occur in the watershed
	Black-tailed Prairie Dog	<i>Cynomys ludovicianus</i>	Mammals	Concern	None	Occurs in the watershed
	Burrowing Owl	<i>Athene cunicularia</i>	Birds	Threatened	None	May occur in the watershed
	Colorado Butterfly Plant	<i>Guara neomexicana</i> spp. <i>Coloradoensis</i>	Plants	None	Threatened	May occur in the watershed
	Cylindrical Paper-shell	<i>Anodontoides ferussacianus</i>	Gastropods	Concern	None	May occur in the watershed
	Ferruginous Hawk	<i>Buteo regalis</i>	Birds	Concern	None	May occur in the watershed
	Iowa Darter	<i>Etheostoma exile</i>	Fish	Concern	None	May occur in the watershed
	Least Tern	<i>Sterna antillarum</i>	Birds	Endangered	Endangered	Occurs downstream of watershed; Depletions are a concern here.
	Long-Billed Curlew	<i>Numenius americanus</i>	Birds	Concern	None	May occur in the watershed
	Pallid Sturgeon	<i>Scaphirhynchus albus</i>	Fish	None	Endangered	Occurs downstream of watershed; Depletions are a concern here.
	Piping Plover	<i>Charadrius melodus</i>	Birds	Threatened	Threatened	Occurs downstream of watershed; Depletions are a concern here.
	Plains Sharp-Tailed Grouse	<i>Tympanuchus phasianellus jamesii</i>	Birds	Endangered	None	Occurs in the watershed
	Swift Fox	<i>Vulpes velox</i>	Mammals	Concern	None	Occurs in the watershed
	Whooping Crane	<i>Grus Americana</i>	Birds	Endangered	Endangered	Occurs downstream of watershed; Depletions are a concern here.

The Colorado portion of Upper Lodgepole consists of both irrigated and dry cropland and some short to mid grass grasslands. Water and aquatic habitats are scarce and the native species in this watershed are those that can survive without abundant water supplies. Economically important wildlife species that occur in the watershed include mule deer, pronghorn, and mourning dove.

Social Data	Logan County	Sedgwick
Total population	20,504	2,747
Male	10,834	1,374
Female	9,670	1,373
Median age (years)	36.5	43.2
White	18,792	2,486
Black or African American	420	14
American Indian and Alaska Native	131	4
Asian	82	21
Native Hawaiian and Other Pacific Islander	14	2
Some other race	772	164
Hispanic or Latino (of any race)	2,439	314
In labor force (population 16 years and over)	9,771	1,340
Median household income (dollars)	32,724	28,278
Median family income (dollars)	42,241	33,953
Per capita income (dollars)	16,721	16,125
Families below poverty level	454	62
Individuals below poverty level	2,253	270
Farms (number)	930	188
Land in farms/ranches (acres)	1,111,135	274,243
Average size farm/ranch (acres)	1,195	1,459
Median size farm (acres)	608	830
Average age of farmer or rancher	52.8	56.4
Net cash return from ag sales (\$1,000)	5,092	7,716
Cattle and calves (number)	185,000	15,000

# Identified Long Range Resource Concerns

## Top Three Concerns within Conservation Districts



## Selected Conservation Practices Applied FY 2004-2009

Practice Name	Unit	Program	Applied Year	Land Use	Applied Amount	Applied Count
Conservation Cover	ac	CRP	2005	Crop	1500.4	7
Conservation Cover	ac	CRP	2006	Crop	175	2
Conservation Cover	ac	CRP	2007	Crop	397.3	2
Conservation Cover	ac	CRP	2008	Crop	336.1	6
Conservation Cover	ac	CRP	2009	Crop	1510.1	7
Conservation Crop Rotation	ac	CTA-GENRL	2005	Crop	361.4	2
Conservation Crop Rotation	ac	CTA-GENRL	2007	Crop	590.5	2
Conservation Crop Rotation	ac	EQIP	2006	Crop	100	1
Residue Management, Mulch Till	ac	CTA-GENRL	2005	Crop	361.4	2
Cover Crop	ac	CRP	2004	Crop	511.3	2
Cover Crop	ac	CRP	2005	Crop	185.5	2
Cover Crop	ac	CRP	2006	Crop	175	2
Cover Crop	ac	CTA-GENRL	2008	Crop	297.3	2
Residue Management, Seasonal	ac	CTA-GENRL	2007	Crop	590.5	2
Residue and Tillage Management, Mulch Till	ac	EQIP	2006	Crop	100	1
Windbreak/Shelterbelt Establishment	ft	CRP	2004	Crop	22630	2
Windbreak/Shelterbelt Establishment	ft	EQIP	2005	Crop	2675	1
Irrigation System, Sprinkler	ac	EQIP	2004	Crop	1	1
Irrigation System, Sprinkler	ac	EQIP-GSWC	2008	Crop	121	1
Irrigation Water Management	ac	EQIP	2006	Crop	100	1
Prescribed Grazing	ac	EQIP	2008	Range	170	1
Pumping Plant	no	EQIP-GSWC	2008	Crop	2	2
Range Planting	ac	CRP	2005	Crop	1293.9	6
Range Planting	ac	CRP	2006	Crop	350	4
Range Planting	ac	CTA-GENRL	2008	Crop	276.3	1
Nutrient Management	ac	CTA-GENRL	2005	Crop	361.4	2
Integrated Pest Management	ac	CRP	2004	Crop	24.8	1
Integrated Pest Management	ac	CTA-GENRL	2005	Crop	361.4	2
Integrated Pest Management	ac	EQIP	2007	Range	170	1
Terrace	ft	CTA-GENRL	2008	Crop	8410	1
Terrace	ft	EQIP	2008	Crop	3840	2

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## FOOTNOTES/ BIBLIOGRAPHY

**Threatened and Endangered Species** information was gathered using data from the Colorado Division of Wildlife (CDOW) Natural Diversity Information Source (NDIS). NDIS GIS data may be downloaded at <http://ndis.nrel.colostate.edu>. For more information on Colorado's Endangered & Threatened Species, as well as Species of Concern, visit <http://wildlife.state.co.us/WildlifeSpecies/SpeciesOfConcern/ThreatenedEndangeredList/ListOfThreatenedAndEndangeredSpecies.htm> or <http://mountainprairie.fws.gov/endspp/CountyLists/COLORADO.htm>

**Resource Concerns** were identified using the Colorado Association of Conservation Districts' (CACD) long range (10 year) plans from the period of 1996-2000. Only the top three environmental resource concerns for each district were used. 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:

- Logan County (CO075) Published 1/30/2008
- Sedgwick County CO115) Published 1/30/2008
- Banner County (NE007) Published 10/28/2008
- Cheyenne County (NE033) Published 12/11/2007
- Deuel County (NE049) Published 12/11/2007
- Kimball County (NE105) Published 5/15/2008

**Vegetation** data was generated using the Colorado Division of Wildlife's "Colorado Vegetation Classification Project" (CVCP) data. Completed in 2003, the CVCP is a landscape level vegetation dataset created using Landsat TM imagery and then formatted for GIS use. The species identified are an overview of the most common species associated in each cover type, in order of greatest occurrence. For more information on the Colorado Vegetation Classification Project, visit <http://ndis.nrel.colostate.edu/coveg>.

All border state (if applicable) vegetation data courtesy of the National Land Cover Dataset (NLCD). For more information visit [http://www.mrlc.gov/mrlc2k\\_nlcd.asp](http://www.mrlc.gov/mrlc2k_nlcd.asp)

**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. Geographic boundaries of a CRA are determined by landscape conditions, soil, climate, human considerations and other natural resource information. 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 on PRISM data visit <http://www.ncgc.nrcs.usda.gov/products/datasets/climate/docs/fact-sheet.html> or for more information about technical aspects of PRISM, visit the PRISM website at <http://www.ocs.orst.edu/prism>.

**Land Ownership** (status,07/22/2006 dataset) data was obtained from the Bureau of Land Management, Colorado State Office. For more information, visit [http://www.blm.gov/co/st/en/BLM\\_Programs/geographical\\_sciences/gis.html](http://www.blm.gov/co/st/en/BLM_Programs/geographical_sciences/gis.html)

**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). A hillshade grid was created from the 30m DEM to create a 3D effect. For more information about the NED visit <http://ned.usgs.gov>. The data was downloaded from the NRCS Geospatial Data Gateway at <http://datagateway.nrcs.usda.gov>.