United States Department of Agriculture

Upper Lodgepole Watershed

Natural Resources Conservation Service

Hydrologic Unit Code 10190015

Lakewood, Colorado

RWA 10190015

Rapid Assessment

July 2010

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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.

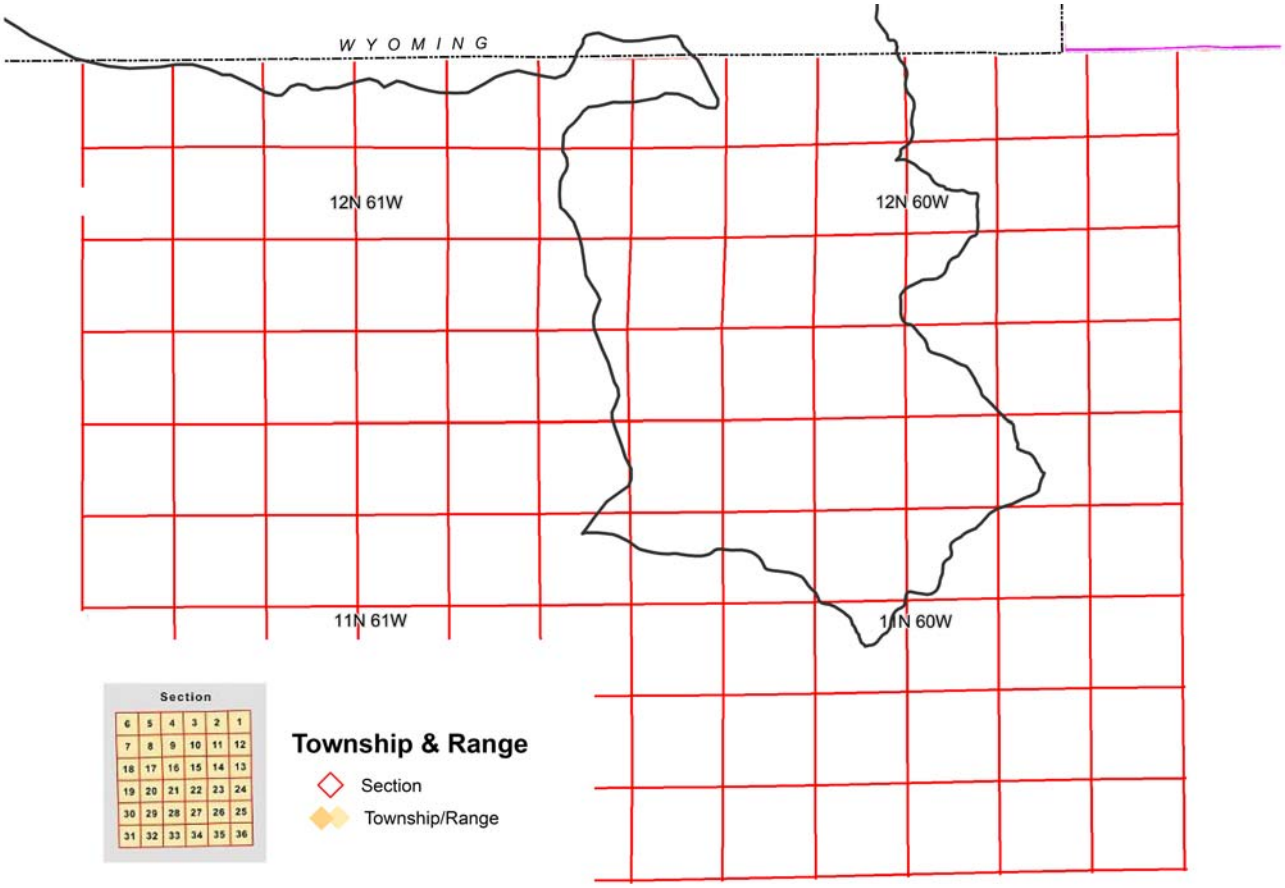
Rapid watershed assessments provide initial estimates of where conservation investments would best address the concerns of landowners, conservation districts, and other community organizations and stakeholders. These assessments help land-owners and local leaders set priorities and determine the best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

Benefits of these Activities

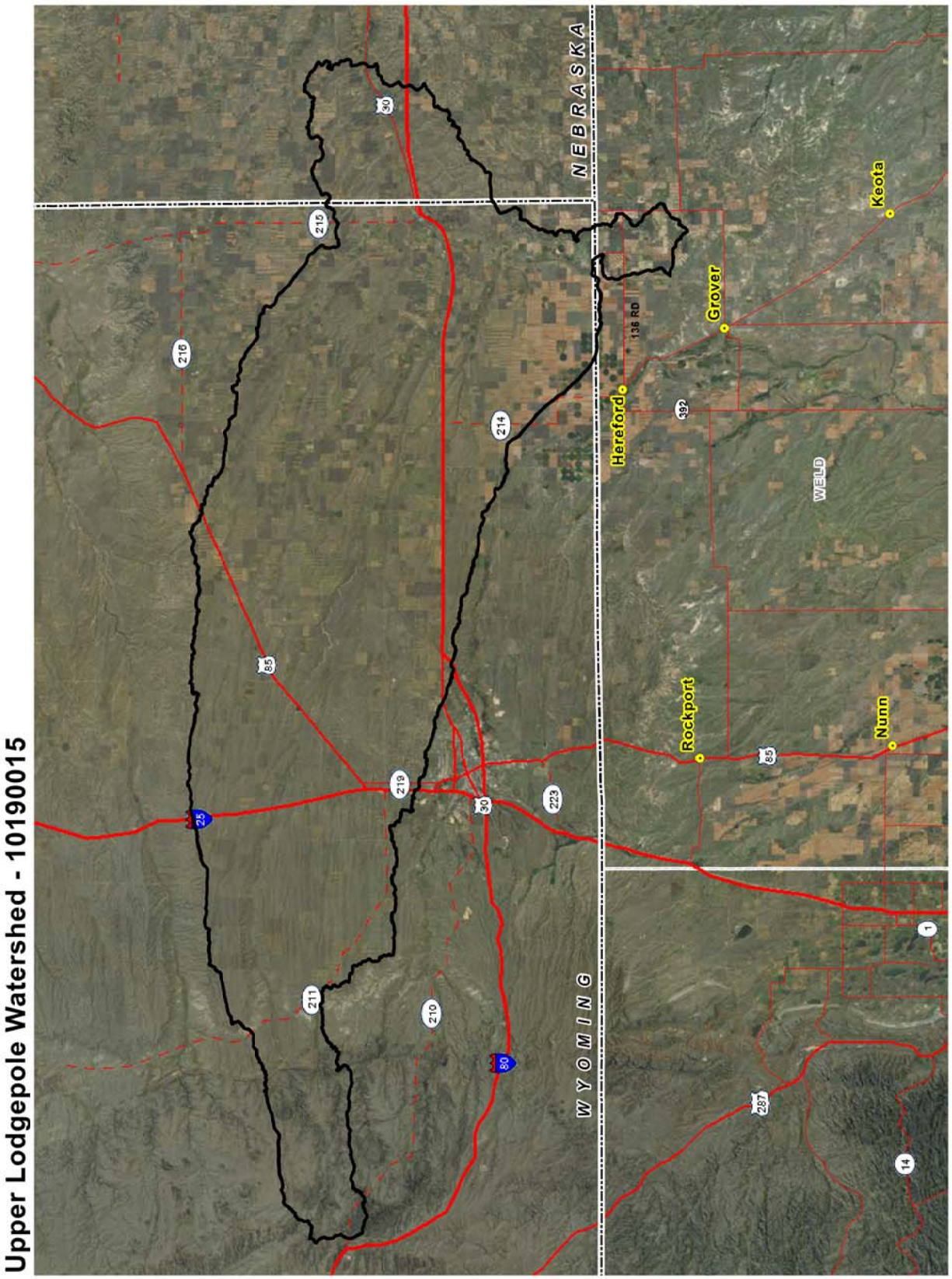
While rapid assessments provide less detail and analysis than full-blown studies and plans, they do provide the benefits of NRCS locally-led planning in less time and at a reduced cost. The benefits include:

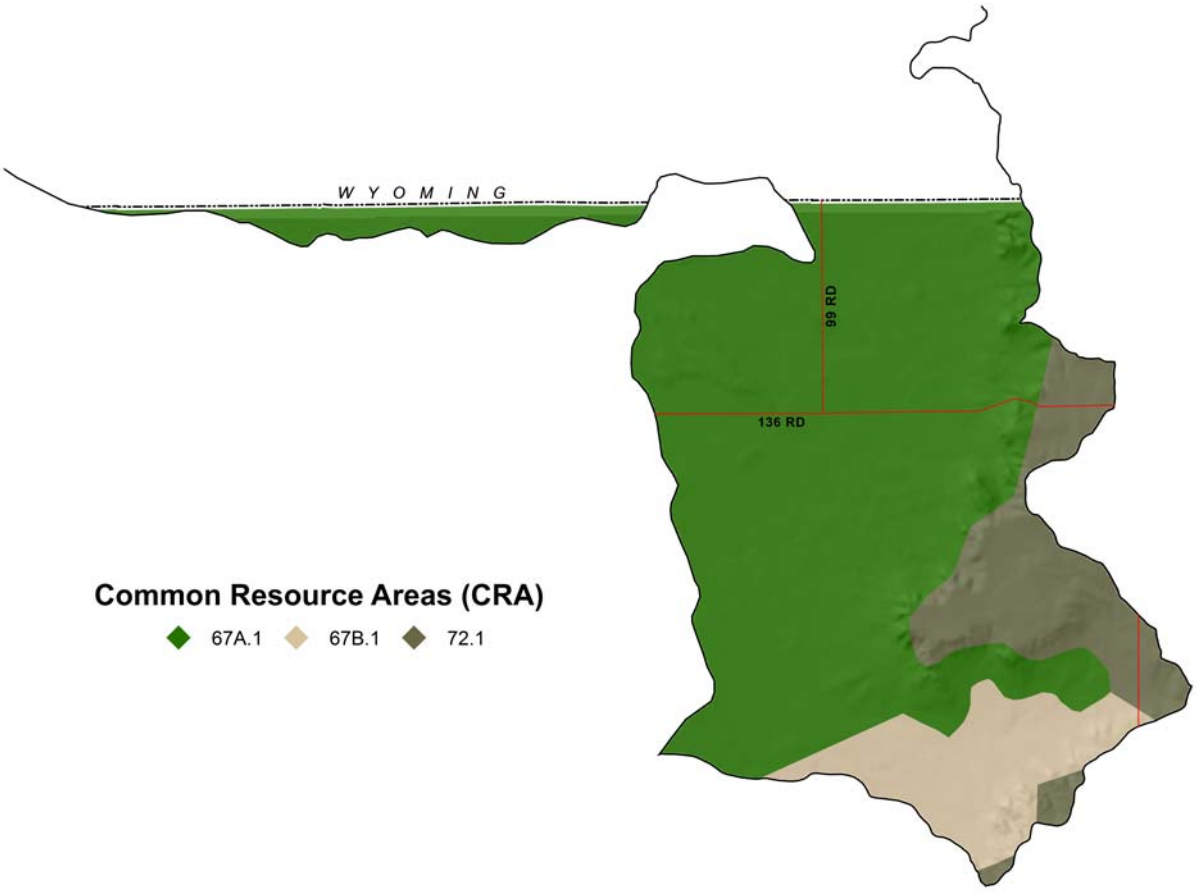
- Quick and inexpensive tools for setting priorities and taking action
- Providing a level of detail that is sufficient for identifying actions that can be taken with no further watershed-level studies or analyses
- Actions to be taken may require further Federal or State permits or ESA or NEPA analysis 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.

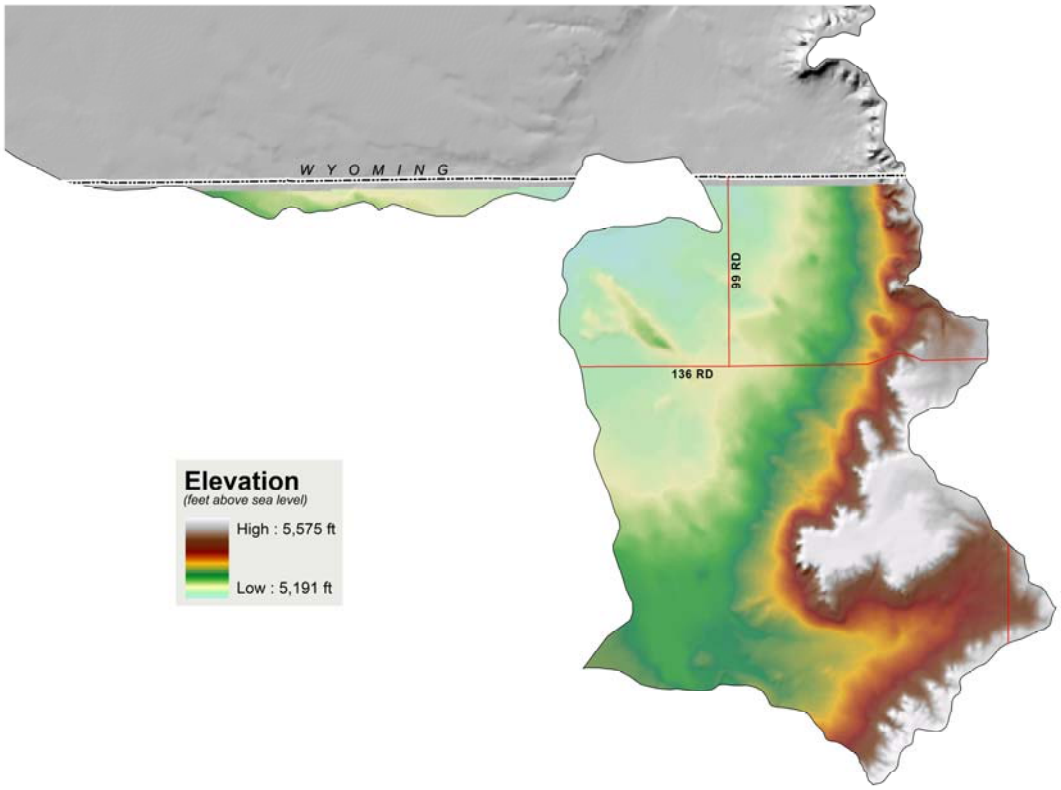


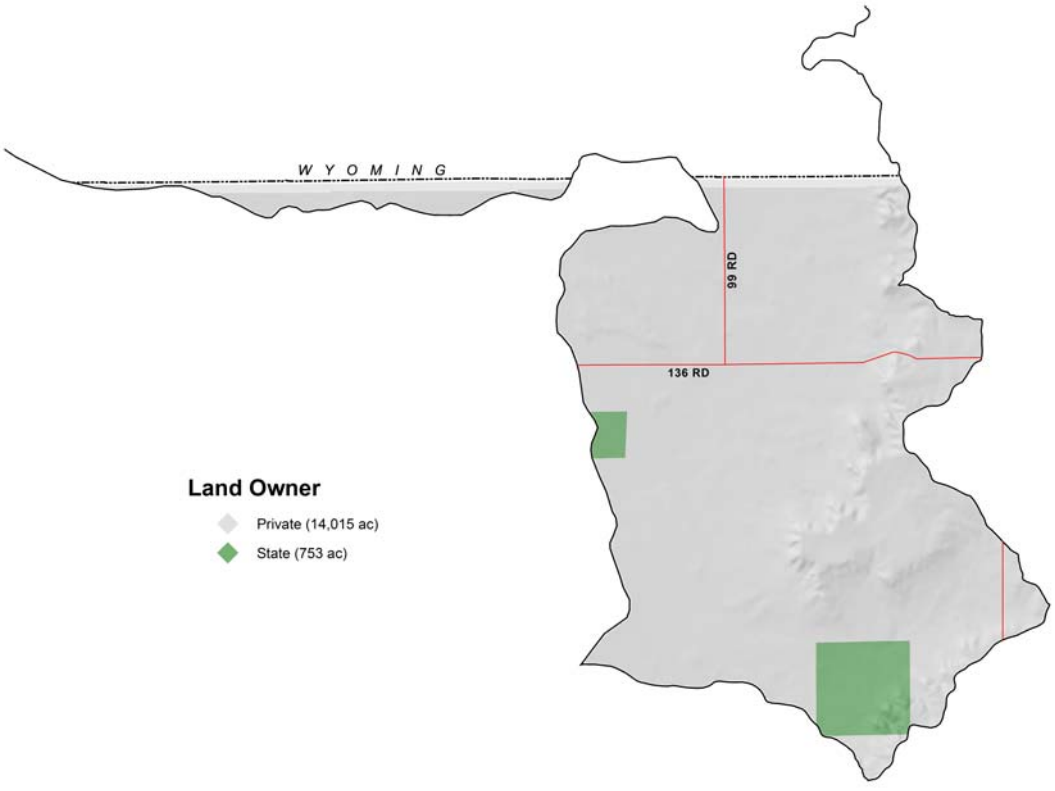
County	County Acres	County Acres in UPPER LODGE-POLE Watershed	% of County in the Watershed	% of Watershed in the County
Weld	2,568,823	14,776	0.6%	1.5%
		1,012,052		

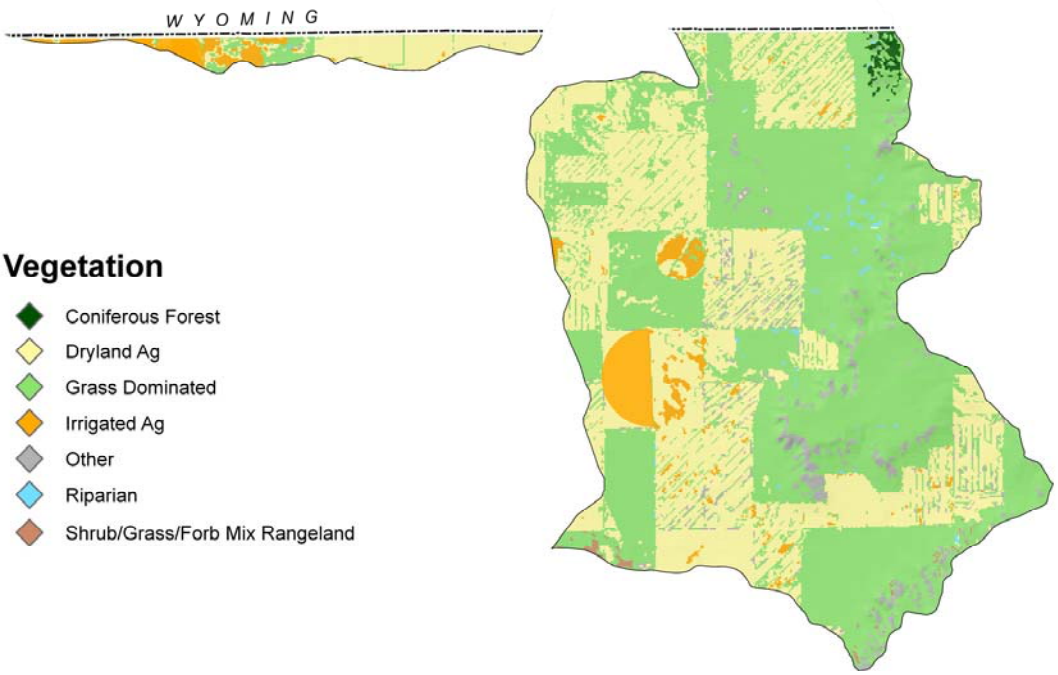

Upper Lodgepole Watershed - 10190015
NEBRASKA
WYOMING
WELD
Hereford
Grover
Keota
Rockport
Nunn
138 RD
Satellite Imagery: Arc IMS Server - ESRI Imagery



MLRA	CRA	CRA NAME	CRA DESCRIPTION
67A	**67A.1**	Central High Plains, Northern Part	The Central High Plains, Northern 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. About one-fourth is dry-farmed to wheat and other grains or is irrigated to corn, alfalfa, beans or sugar beets. Mean annual precipitation is 325 to 425 mm. Mean annual air temperature is 7 to 10˚C. Average frost-free period is 100 to 120 days.
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.


WYOMING
99 RD
136 RD
Elevation
(feet above sea level)
High : 5,575 ft
Low : 5,191 ft


WYOMING
99 RD
136 RD
Land Owner
Private (14,015 ac)
State (753 ac)

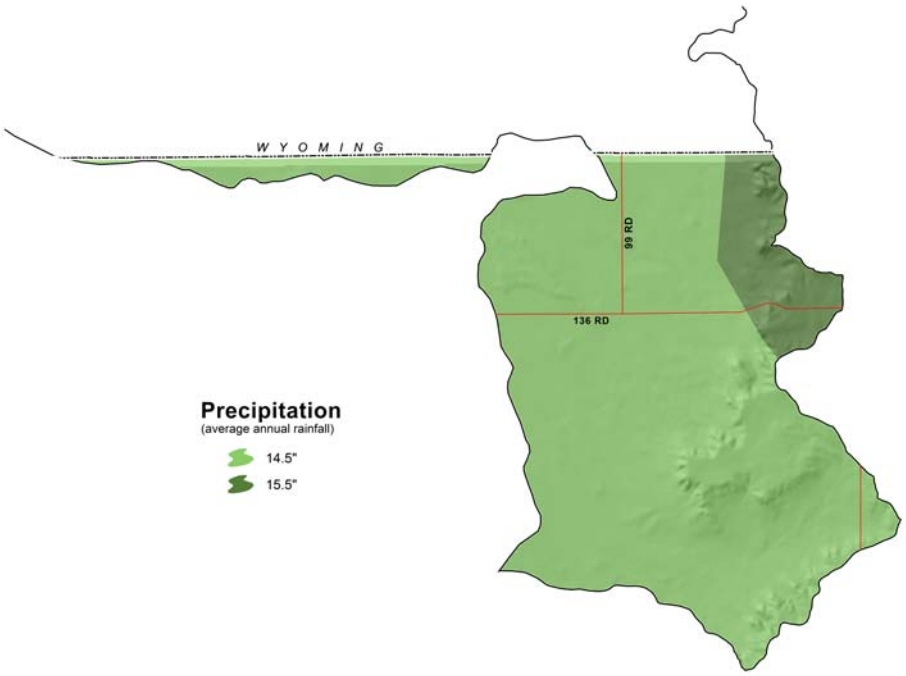


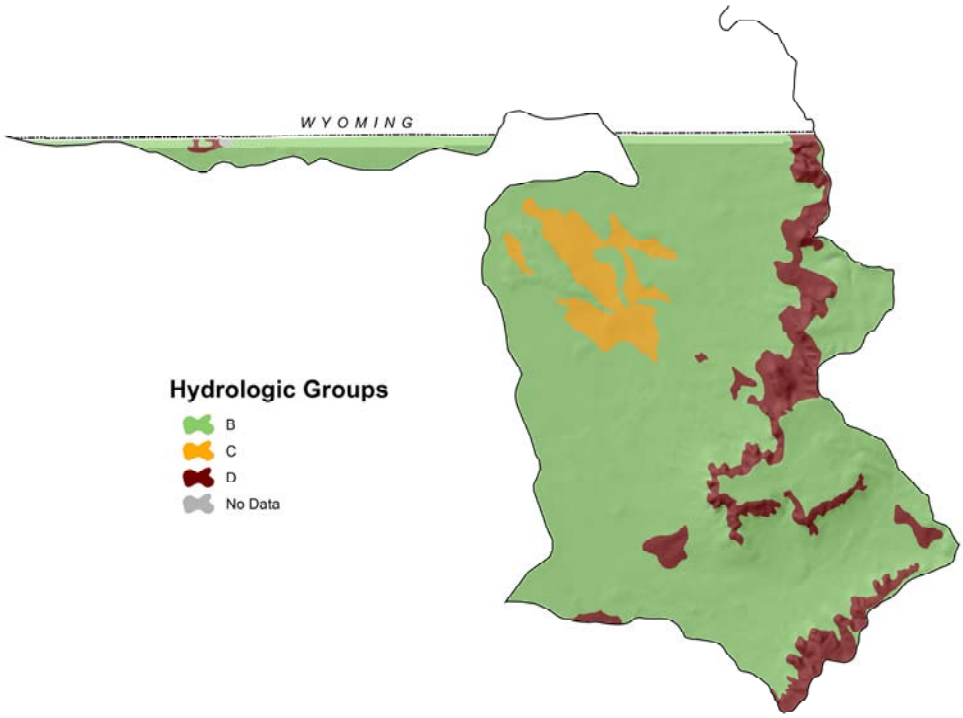
UPPER LODGEPOLE	Total Acreage	Vegetation	Acreage
Cropland	6,539	Dryland Ag	6,139.5
		Irrigated Ag*	400.0
Rangeland/Grassland	8,005	Grass Dominated	7,976.6
		Grass/Misc. Cactus Mix	9.0
		Shrub/Grass/Forb Mix	19.6
Forest	75	Ponderosa Pine	74.6
Riparian	53	Herbaceous Riparian	53.0
Other	433	Rock	18.1
	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

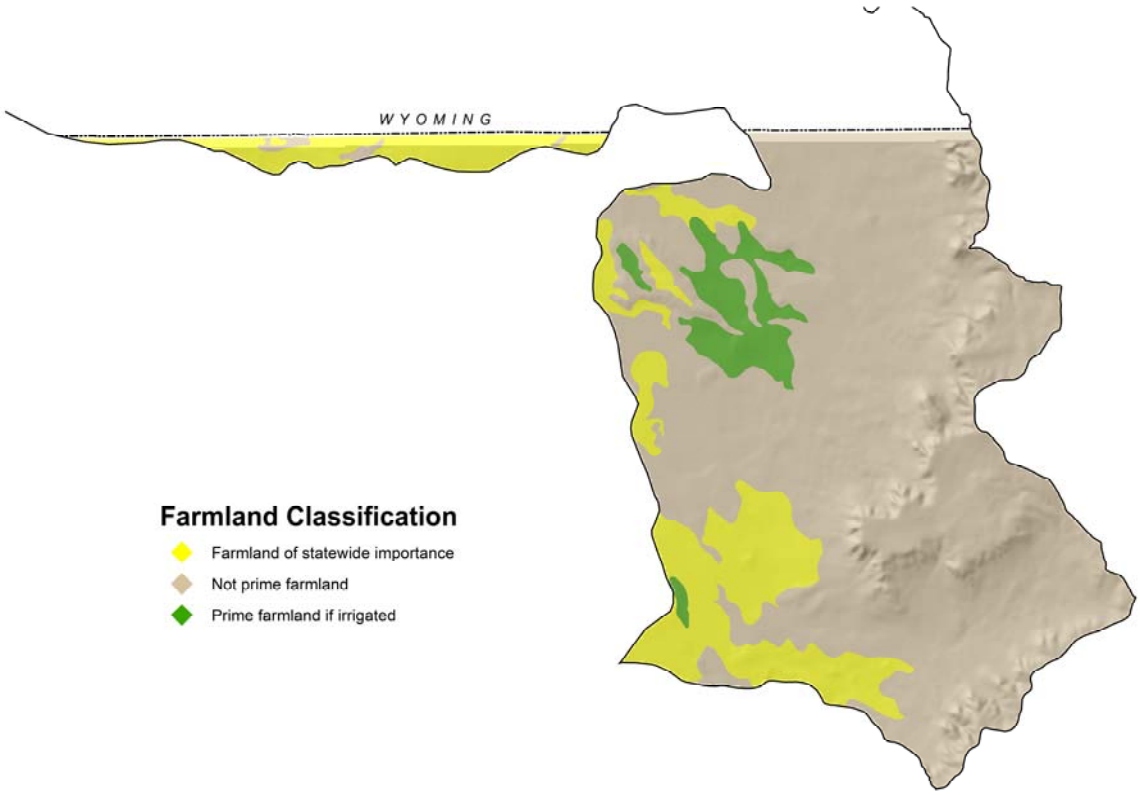
*Colorado Decision Support Systems Data

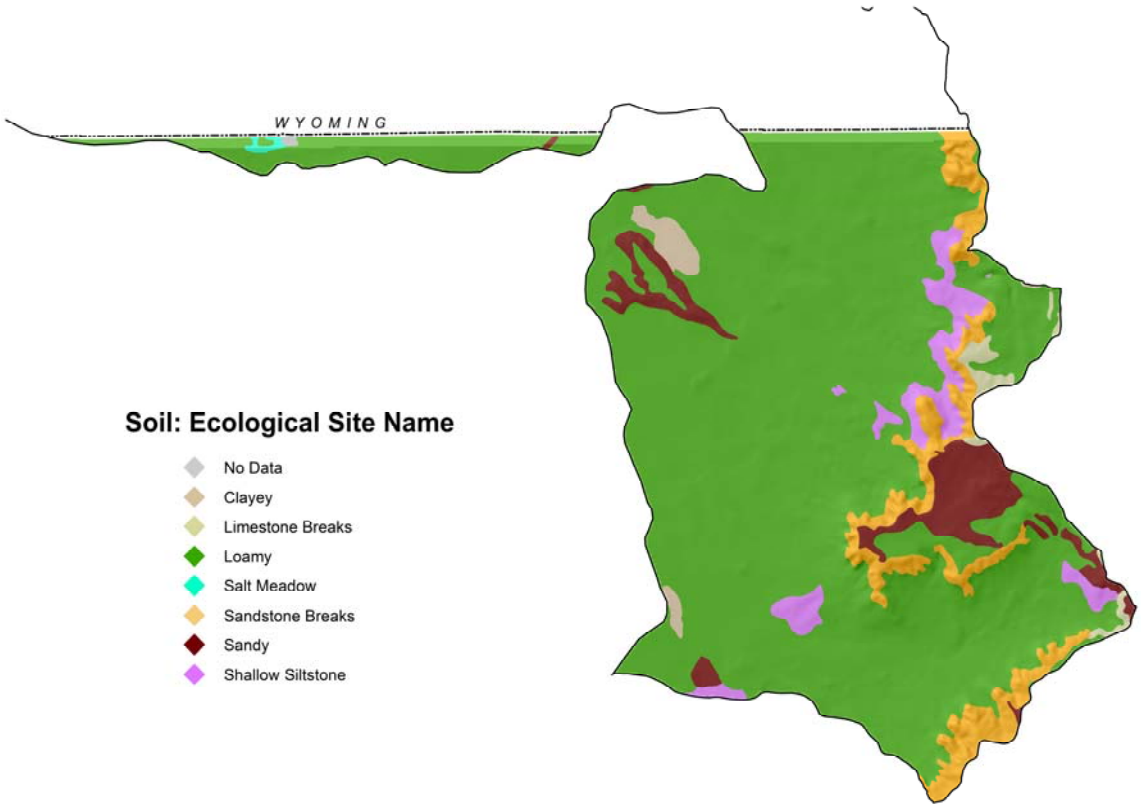
Precipitation

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.






WYOMING
Farmland Classification
Farmland of statewide importance
Not prime farmland
Prime farmland if irrigated


WYOMING
Soil: Ecological Site Name
No Data
Clayey
Limestone Breaks
Loamy
Salt Meadow
Sandstone Breaks
Sandy
Shallow Siltstone

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.

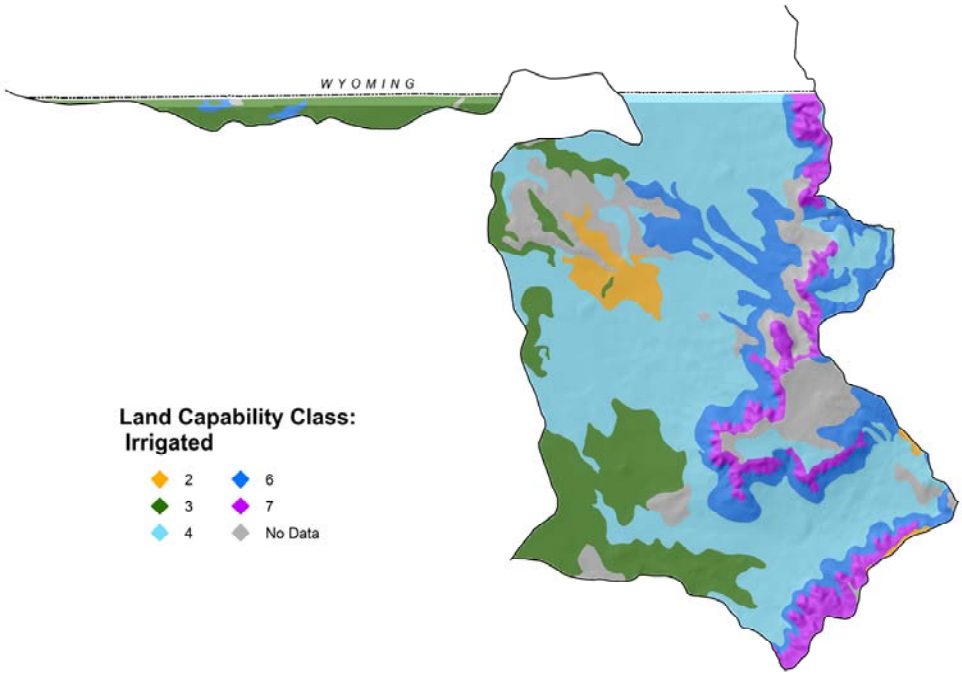
Class 4 - soils have very severe limitations that reduce the choice of plants or that require very careful management, or both.

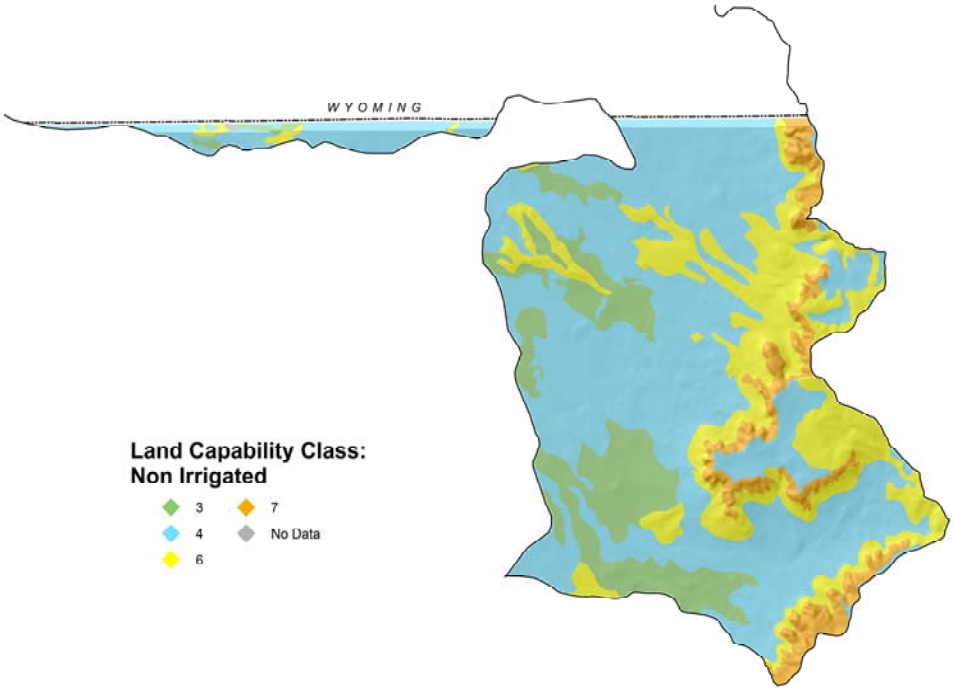
Class 5 - soils are subject to little or no erosion but have other limitations, impractical to remove, that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

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.

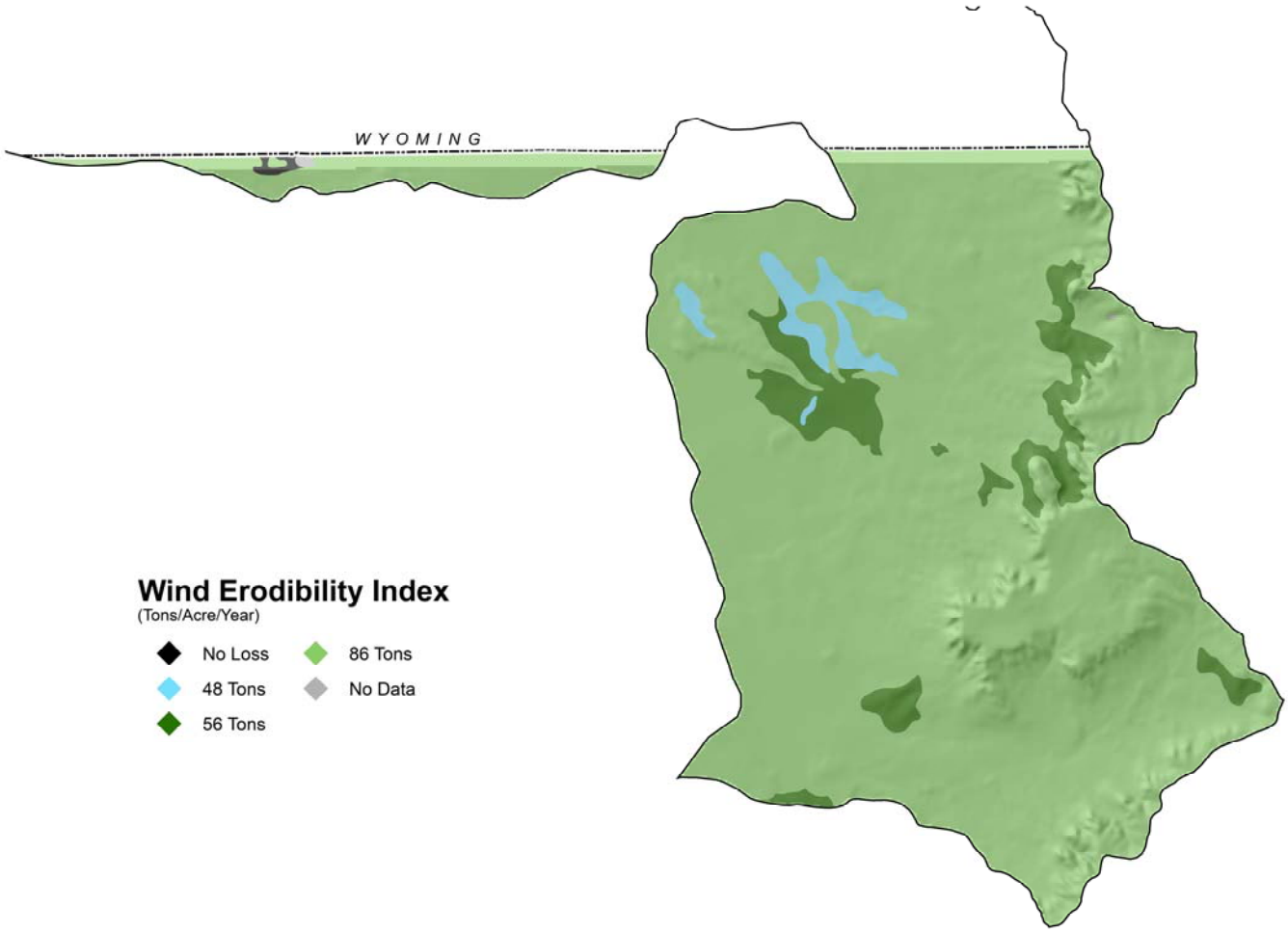
Class 8 - soils and miscellaneous areas have limitations that preclude commercial plant production and that restrict their use to recreational purposes, wildlife habitat, watershed, or aesthetic purposes.



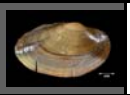
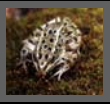
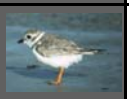
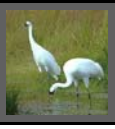


The Wind Erodibility Index (WEI): numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion if it is assumed there is no vegetative cover or management.

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



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

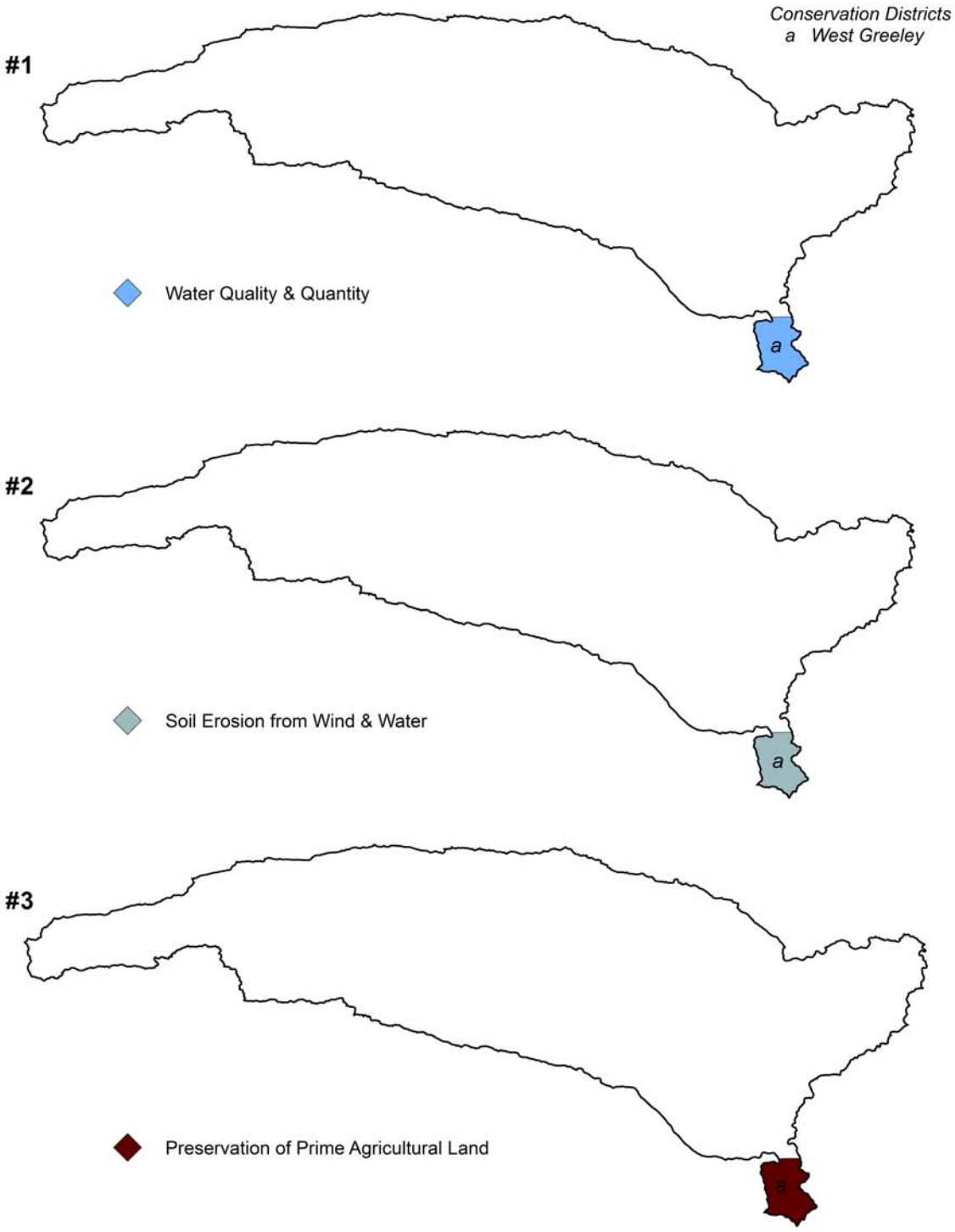
	Common Name	Scientific Name	Class	Federal Status	State Status	Comments
	**Black-tailed Prairie Dog**	*Cynomys ludovi-cianus*	Mammals	**Concern**	None	Occurs in the water-shed
	**Burrowing Owl**	*Athene cunicu-laria*	Birds	**Threatened**	None	May occur in the water-shed
	**Cylindrical Paper-shell**	*Anodontoides ferussacianus*	Gastropods	**Concern**	None	May occur in the water-shed
	**Ferruginous Hawk**	*Buteo regalis*	Birds	**Concern**	None	May occur in the water-shed
	**Iowa Darter**	*Etheostoma exile*	Fish	**Concern**	None	May occur in the water-shed
	**Least Tern**	*Sterna antillarum*	Birds	**Endan-gered**	**Endan-gered**	Occurs downstream of watershed; Depletions are a concern here.
	**Mountain Plover**	*Charadrius mon-tanus*	Birds	**Concern**	None	May occur in the water-shed
	**Northern Cricket Frog**	*Acris crepitans*	Amphibians	**Concern**	None	May occur in the water-shed
	**Northern leopard frog**	*Rana pipiens*	Amphibians	**Concern**	None	Occurs in the water-shed
	**Pallid Sturgeon**	*Scaphirhynchus albus*	Fish	None	**Endan-gered**	Occurs downstream of watershed; Depletions are a concern here.
	**Piping Plover**	*Charadrius melodus*	Birds	**Threatened**	**Threatened**	Occurs downstream of watershed; Depletions are a concern here.
	**Plains Sharp-Tailed Grouse**	*Tympanuchus phasianellus jamesii*	Birds	**Endan-gered**	None	Occurs in the water-shed
	**Swift Fox**	*Vulpes velox*	Mammals	**Concern**	None	Occurs in the water-shed
	**Whooping Crane**	*Grus Americana*	Birds	**Endan-gered**	**Endan-gered**	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	Weld County
Total population	223,966
Male	112,848
Female	111,118
Median age (years)	31.3
White	200,942
Black or African American	754
American Indian and Alaska Native	1465
Asian	2427
Native Hawaiian and Other Pacific Islander	117
Some other race	14814
Hispanic or Latino (of any race)	62792
In labor force (population 16 years and over)	120,817
Median household income (dollars)	48,763
Median family income (dollars)	57,009
Per capita income (dollars)	21,981
Families below poverty level	x
Individuals below poverty level	x
X means that value is not applicable or not available	
Farms (number)	3121
Land in farms/ranches (acres)	1,812,167
Average size farm/ranch (acres)	581
Median size farm (acres)	158
Average age of farmer or rancher	53.5
Net cash return from ag sales ($1,000)	67,959
Cattle and calves (number)	505,000

Identified Long Range Resource Concerns

Top Three Concerns within Conservation Districts



Conservation Practices Applied, FY 2005 through FY 2009

Pr. Code	Practice Name	Unit	Program	Applied Year	Land Use	Land Unit Acres	Applied Amount	Applied Count
327	Conservation Cover	ac	CRP	2007	Crop	307.9	307.9	1
327	Conservation Cover	ac	CRP	2009	Crop	489.7	489.7	8
327	Conservation Cover	ac	CTA-GENRL	2008	Crop	221	220.7	3
327	Conservation Cover	ac	CTA-GENRL	2009	Crop	1139.1	1139.7	4
328	Conservation Crop Rotation	ac	CTA-GENRL	2008	Crop	179.2	179.2	3
344	Residue Management, Seasonal	ac	CTA-GENRL	2008	Crop	179.2	179.2	3
472	Access Control	ac	CRP	2007	Crop	307.9	307.9	1
472	Access Control	ac	CRP	2009	Crop	489.7	489.7	8
472	Access Control	ac	CTA-GENRL	2008	Crop	221	220.7	3
472	Access Control	ac	CTA-GENRL	2009	Crop	1139.1	1139.7	4
595	Integrated Pest Management	ac	CRP	2004	Crop	310.8	86.4	1
595	Integrated Pest Management	ac	CRP	2007	Crop	307.9	307.9	1
595	Integrated Pest Management	ac	CTA-GENRL	2008	Crop	221	220.7	3
645	Upland Wildlife Habitat Management	ac	CRP	2005	Crop	310.8	310.8	1
645	Upland Wildlife Habitat Management	ac	CRP	2009	Crop	489.7	489.7	8
645	Upland Wildlife Habitat Management	ac	CTA-GENRL	2008	Crop	528.9	528.6	4
645	Upland Wildlife Habitat Management	ac	CTA-GENRL	2009	Crop	1139.1	1139.7	4

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:

Weld County N (CO617) Published 12/14/2005

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

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

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.