Beaver-Camas – 17040214

Idaho 8 Digit Hydrologic Unit Profile February 2007

Introduction

The Beaver-Camas 8-Digit Hydrologic Unit Code (HUC) subbasin is 647,255 acres. Clark county contains approximately 83 percent of the subbasin. Eighteen percent of the subbasin is in Fremont County, with the remaining 13 percent in Jefferson County. Thirty eight percent of the basin is privately owned and 62 percent is public land.

Fifty eight percent of the watershed is shrubland or rangeland; nineteen percent is grass, pasture or hayland. Fifteen percent of the basin is forest and six percent is cropland. The remaining one percent is water, wetland, developed or barren. Less than one percent of the watershed is enrolled in the Conservation Reserve Program (CRP).

Elevations range from approximately 4800 feet in the southern portion of the watershed to over 9000 feet in the northern portion.

Conservation assistance is provided by three Soil and Water Conservation Districts (SCDs): Clark SCD (Clark County), Mud Lake SCD (Jefferson County) and Yellowstone SCD (Fremont County). The High Country Resource Conservation and Development office provides additional assistance.

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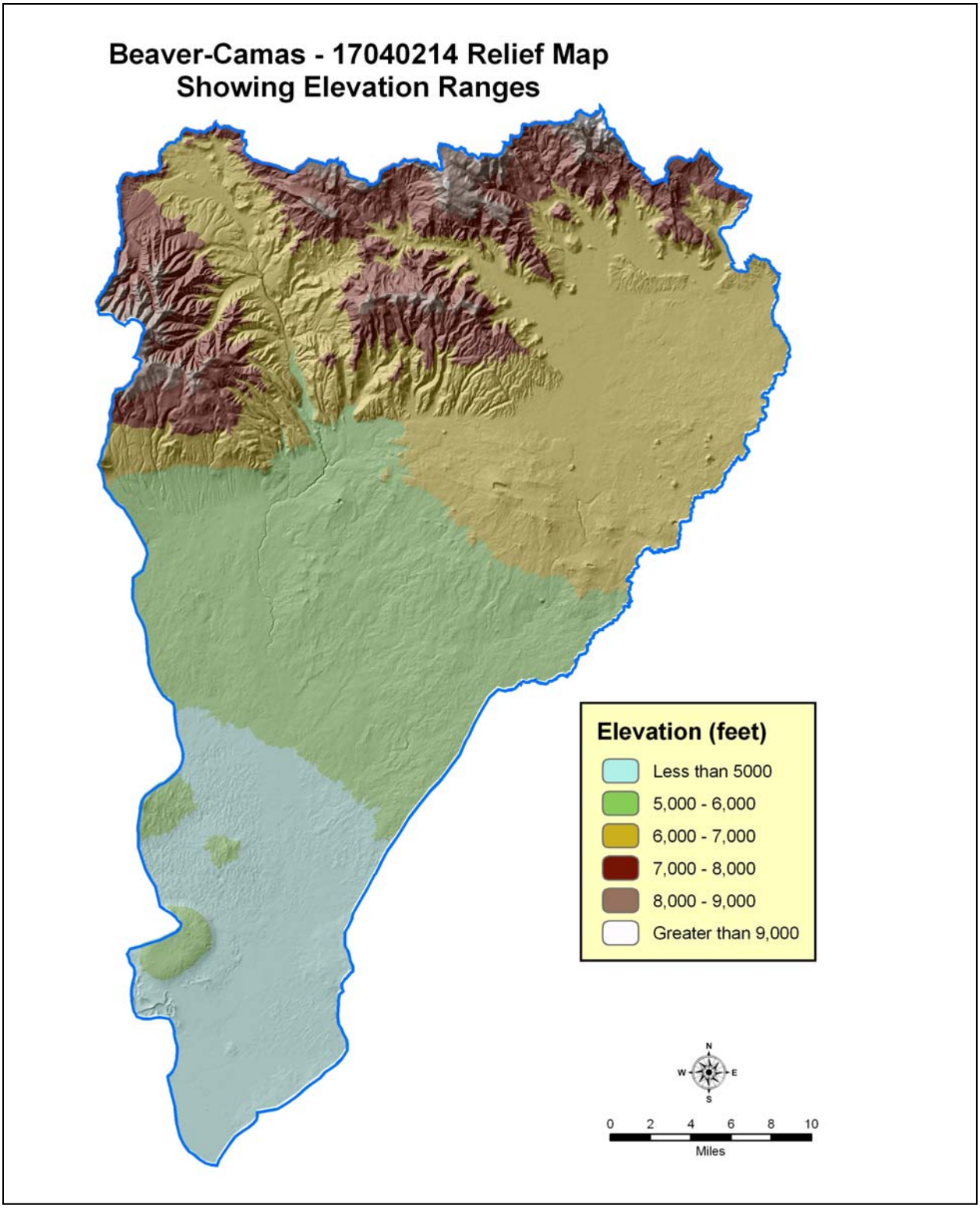
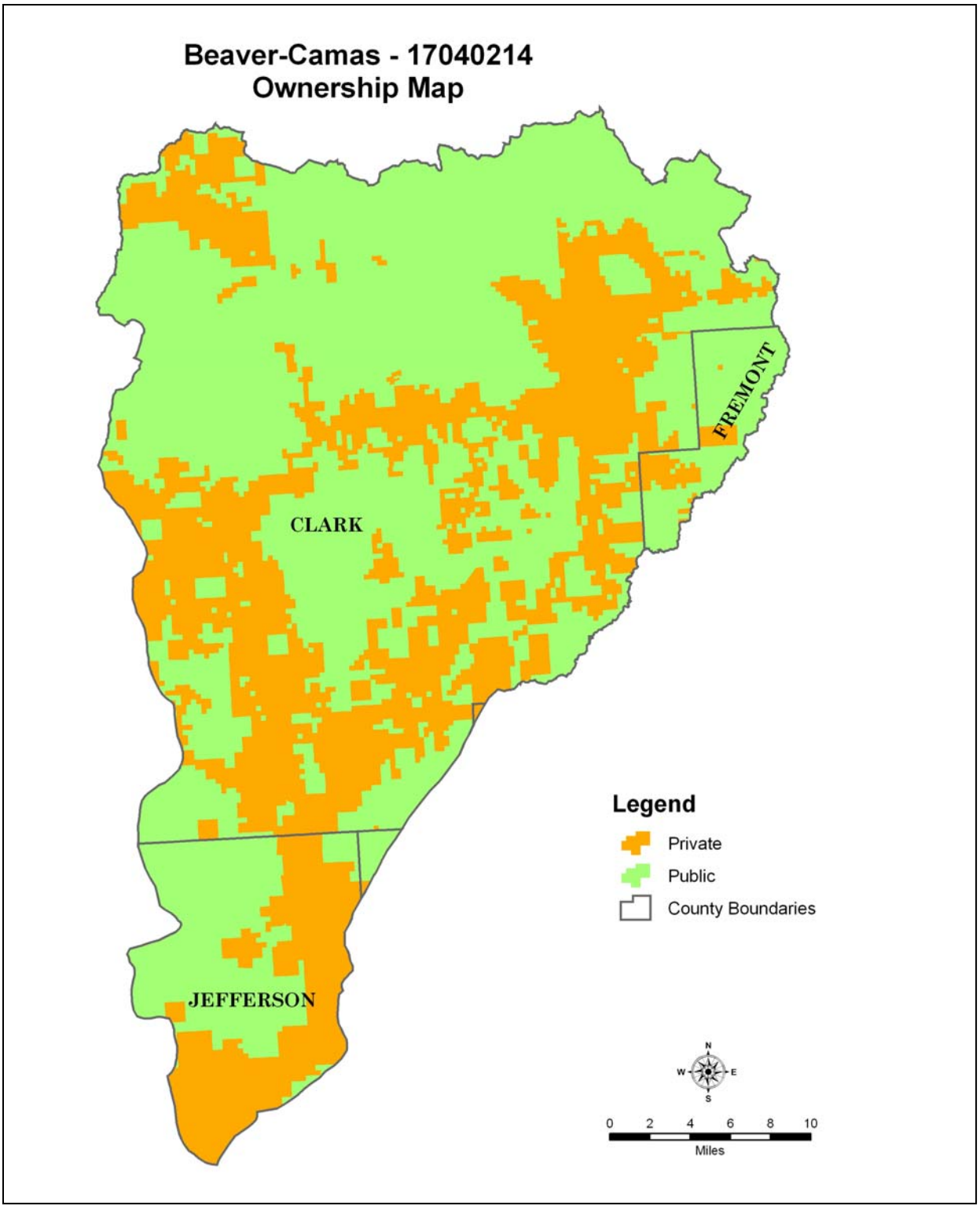
Relief Map


Beaver-Camas - 17040214 Relief Map
Showing Elevation Ranges
Elevation (feet)
Less than 5000
5,000 - 6,000
6,000 - 7,000
7,000 - 8,000
8,000 - 9,000
Greater than 9,000
N
W
E
S
0 2 4 6 8 10
Miles

General Ownership



Physical Description

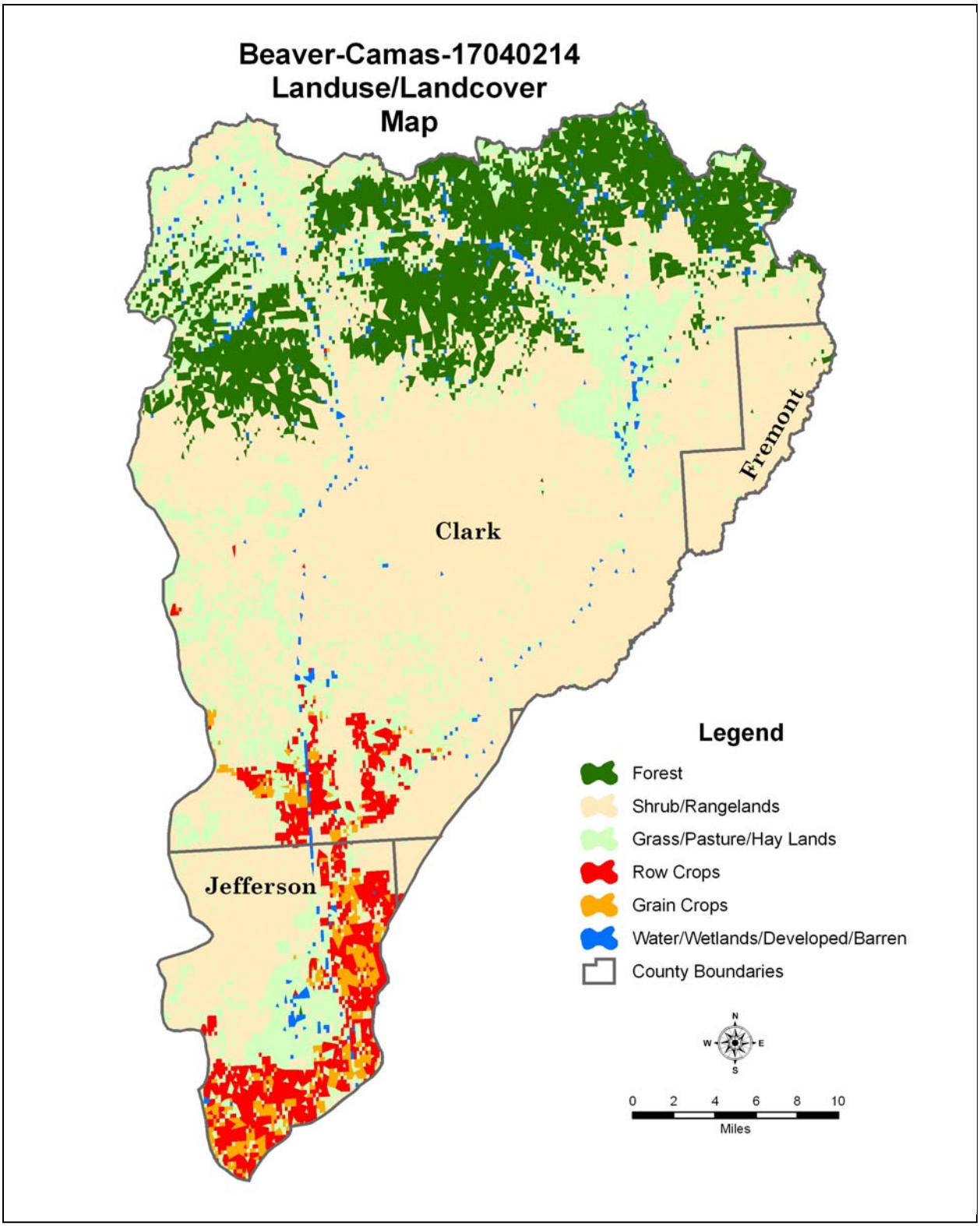
Land Cover/ Land Use (NLCD[2])	Ownership - (2003 Draft BLM Surface Map Set[1])						Totals	% of HUC
	Public		Private		Tribal			
	Acres	%	Acres	%	Acres	%		
Forest	97,200	15%	2,882	<1%			**100,082**	**15%**
Grain Crops	69	<1%	11,016	2%			**11,085**	**2%**
Conservation Reserve[3] Program (CRP) Land			3147	<1%			**3147**	**<1%**
Wetlands Reserve Program (WRP) Land			436	<1%			**436**	**<1%**
Grass/Pasture/Hay Lands	58,011	9%	64,541	10%			**122,552**	**19%**
Orchards/Vineyards/Berries								
Row Crops	841	<1%	27,710	4%			**28,551**	**4%**
Shrub/Rangelands	239,250	37%	133,454	21%			**372,704**	**58%**
Water/Wetlands/ Developed/Barren	5,353	<1%	3,493	<1%			**8,846**	**1%**
Idaho HUC Totals*	**400,724**	**62%**	**246,679**	**38%**			**647,403**	**100%**

**Totals are approximate due to calculation methods used*

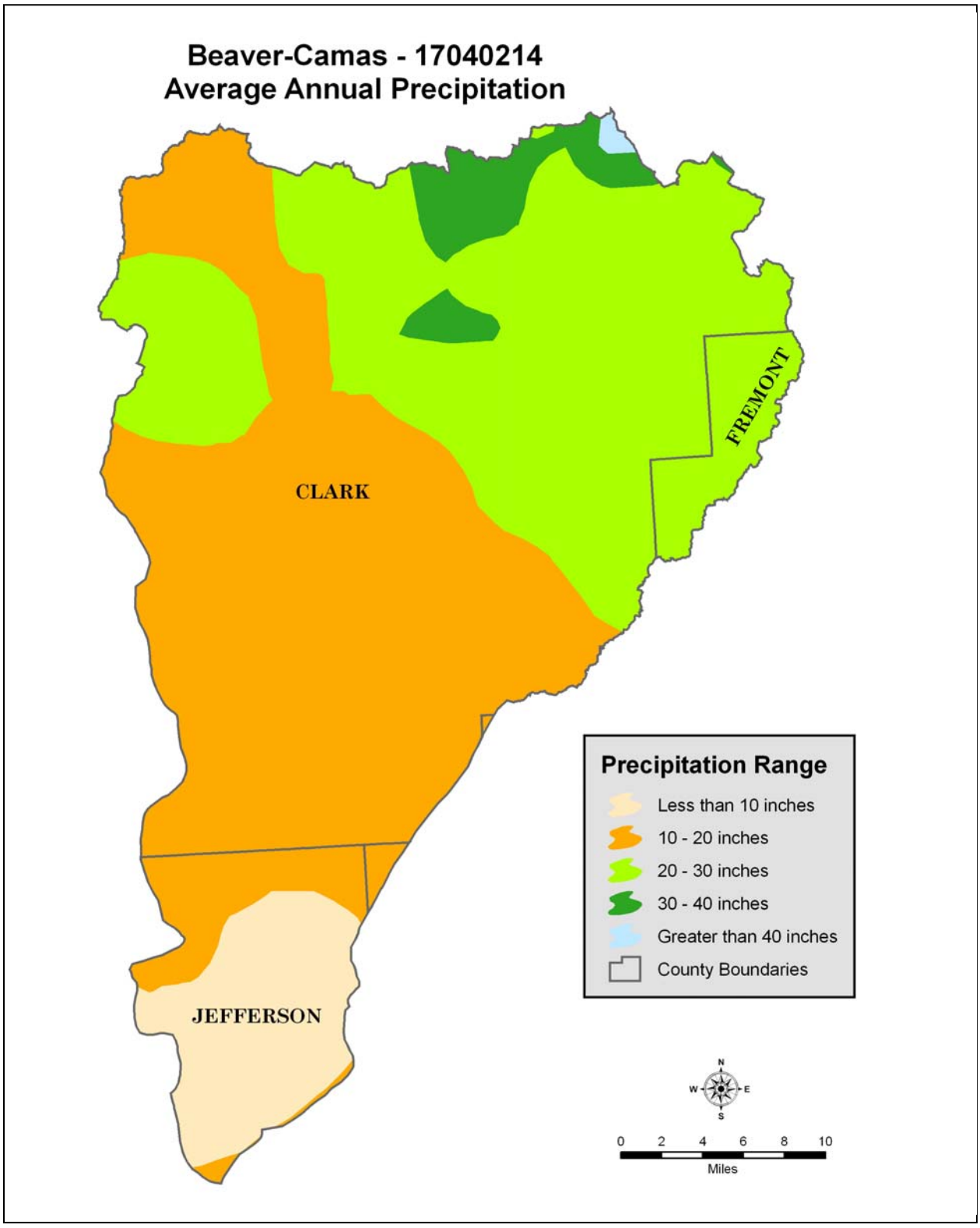
Irrigated Lands[4]	Type of Land	ACRES	% of Irrigated Lands	% of HUC
	Cultivated Cropland	30,000	47%	5%
	Non-Cultivated Cropland**	4,800	8%	<1%
	Pastureland	28,700	45	4%
	Total Irrigated Lands	**63,500**	**100%**	**10%**

******Includes permanent hayland and horticultural cropland**.**

Land Use / Land Cover



Average Annual Precipitation



Common Resource Area Map

CRA Map - areas with a majority are listed below - for descriptions of every class within the HUC, go to: http://ice.id.nrcs.usda.gov/website/cra/viewer.htm
A Common Resource Area (CRA) is defined as a geographical area where resource concerns, problems, or treatment needs are similar. It is considered a subdivision of an existing Major Land Resource Area (MLRA) map delineation or polygon. Landscape conditions, soil, climate, human considerations, and other natural resource information are used to determine the geographic boundaries of a Common Resource Area.
(General Manual Title 450 Subpart C 401.21)

Common Resource Area Descriptions

The National Coordinated CRA Geographic Database provides:

- A consistent CRA geographic database;
- CRA geographic data compatible with other GIS data digitized from 1:250,000 scale maps, such as landuse/landcover, political boundaries, Digital General Soil Map of the U.S. (updated STATSGO), and ecoregion boundaries;
- A consistent (correlated) geographic index for Conservation System Guides information and the eFOTG
- A geographic linkage with the national MRLA framework

11.3 **Snake River Plains - Upper Snake River Plain** The nearly level unit is characterized by cropland, pastureland, cities, suburbs, and industries. Extensive surface irrigated small grain, sugar beet, potato, and alfalfa farming occurs. Frost-free season is shorter and crop variety is less than downstream CRA units. Aquatic resources have been degraded by irrigation diversions, channelization, dams, sewage treatment, nonpoint pollution, food processing, and phosphate processing.

11.4 **Snake River Plains - Eastern Snake River Basalt Plains** This unit is characterized by shallow, stony soils that are unsuitable for cultivation. Only small areas have soils deep enough to be farmed under sprinkler irrigation. Rangeland is widespread. Potential natural vegetation is mostly sagebrush and bunchgrass. It is cool enough to have some regeneration capacity and still contains native plants.

12.2 **Lost River Valleys and Mountains - Dry Gneissic–Schistose–Volcanic Hills** This unit is shrub- and grass-covered and is underlain by Quaternary and Tertiary volcanics. It is less rugged and drier than the higher Barren Mountains CRA, but is more rugged and receives more precipitation than the Dry Intermontane Sagebrush Valleys CRA. Its sagebrush-grassland vegetation contrasts with the open-canopied forest-shrubland-grassland mosaic along the Continental Divide. Grazing is the most common land use.

13.2 **Eastern Idaho Plateaus - Eastern Snake River Basalt Plains** This unit is characterized by shallow, stony soils that are unsuitable for cultivation. Only small areas have soils deep enough to be farmed under sprinkler irrigation. Rangeland is widespread. Potential natural vegetation is mostly sagebrush and bunchgrass. It is cool enough to have some regeneration capacity and still contains native plants. Soil moisture regime is xeric and soil temperature regime is frigid.

43B.1 **Central Rocky Mountains--High Mountains** This area is in western and southwestern Montana, eastern and northeastern Idaho, and northwestern Wyoming. Rugged mountains are the dominant feature of this area. Nearly all of this area is federally owned and administered. High mountains with steep slopes and sharp crests are cut by narrow valleys, most of which have steep gradients. Average annual precipation is mainly 400 to 1525 mm, increasing with elevation. The average annual temperature ranges from 2 to 7 degrees C. Average frost free period is 30 to 60 days. Frost occurs every month of the year on high mountains. Most soils are skeletal and are medium to moderately coarse textured. This area supports coniferous forests. It also includes areas above treeline that

have tundra and alpine grasslands. There are also lower mountain passes that are drier and have shrubs and grasses used for grazing.

43B.9 **Central Rocky Mountains--Yellowstone Basin** Nearly all this area is used for wildlife habitat, for recreation, and for timber production. Most of this area is high mountains. Mean annual precipitation is 625 to 1,525 mm. Mean annual air temperature is 2 to 7°C. Average frost-free period is 30 to 60 days. Frost occurs every month of the year on high mountains. It has a coniferous forest-shrubland mosaic. Forests dominated by Douglas-fir, lodgepole pine, and aspen are most common on north-facing slopes and flatter uplands. Recreation is a very important land use but mining, grazing, and logging also occur.

Streamflow Summary [7, 28]

The Beaver-Camas subbasin has very unique hydrologic characteristics. Two of the most distinct are: 1) the massive natural infiltration of stream surface water and 2) the introduction of groundwater via wells into Camas Creek and ultimately Mud Lake.

The Beaver-Camas Subbasin Assessment and TMDL (IDEQ, 2005) provides the best description:

> "Precipitation in the watershed varies from nine inches per year in the lower more arid regions to 43 inches per year in the high elevation, mountainous regions along the continental divide. The precipitation is relatively evenly distributed throughout the year with slight increases during the winter and again in May and June. Abramovich et al. (1998) indicates that southeastern Idaho is somewhat unique with these two precipitation peaks as compared to the rest of the state, which typically has one winter peak in precipitation.
>
> Hydrologically, the Beaver-Camas Subbasin is a closed drainage, commonly referred to as a "sinks drainage." The Beaver-Camas watershed is the easternmost drainage in a system that shows no connectivity to the Snake River. Surface water naturally infiltrates to the Snake River Plane Aquifer and a significant quantity of surface water is diverted for agricultural use.
>
> Specifically, in the Beaver-Camas watershed, there are two main drainages that combine to form the subbasin: the Beaver Creek drainage and the Camas Creek drainage. Both of the drainages receive their flow in the northern mountainous regions in the upper watershed. Natural infiltration and irrigation limit the presence of water in the lower two-thirds of the subbasin.
>
> The hydrology of the Beaver Creek drainage is principally spring runoff driven. There are several major tributaries that provide flow to Beaver Creek: Modoc Creek, Idaho Creek, Pleasant Valley Creek, Miners Creek, Stoddard Creek, and Dairy Creek. All of these waters drain into Beaver Creek above Spencer and they all are perennial streams. Few water diversions are above this point since the region is mountainous and unsuitable for crop production. Below Spencer, there are two main drainages, which are often intermittent, that flow to Beaver Creek. Those drainages are Rattlesnake Creek and Dry Creek. Water diversion structures are located in these

two drainages, which contribute to reducing and/or eliminating perennial flow to Beaver Creek.

Flow data from various USGS gauge stations provide a picture of the hydrologic characteristics in the Beaver Creek watershed. Water is sustained in Beaver Creek throughout the year above Spencer. However, below Spencer, water naturally infiltrates into the porous basalt streambed and annual sustained flows do not occur in Beaver Creek several miles downstream of Spencer. (Note: Drought years and diversions contribute to dewatering below Spencer, however, there has been water through July below Dubois during the last two years.)

The hydrologic characteristics of Camas Creek are even more complex and diverse that those of Beaver Creek. The upper eastern edge of the watershed is the source of flow to Camas Creek, like Beaver Creek, flows are principally spring runoff and precipitation driven. From west to east, Crooked/Crab Creek, West Camas Creek, East Camas Creek, Warm Creek, Cottonwood Creek, Ching Creek, and Spring Creek all drain from the mountains, along the continental divide, to a complex of wetlands extending from Kilgore to Eighteenmile. There are several water diversion structures and canal systems utilized in this upper portion of the drainage with flows diverted for irrigated pastures in the valleys. Near Eighteenmile, below the wetlands, all of the streams converge to one point, this is considered the headwaters of Camas Creek. As shown by flow data in section 2.3, Camas Creek receives a very large volume of water from the upstream tributaries and flow is sustained in the creek year round to about T9N, R36E, Section 16 (N44.19270°, W-111.98284°), where land use changes from rangeland to irrigated agriculture and several major water diversion structures remove the surface water. The entire length of Camas Creek is a losing reach through the porous basalt streambed.

Camas Creek, below Camas, will receive an annual spring flush, however continuous flows are not sustained above this point. Further downstream, just above the Camas Creek National Wildlife Headquarters, groundwater is pumped into a dry Camas Creek to return flows for irrigation. There is a complex system of groundwater wells that return flow to Camas Creek for irrigation. This system of wells, known as the "Owsley Wells," and the water pumped by them are responsible for providing the water that sustains Mud Lake. Mud Lake is located in the southern tip of the Beaver-Camas Subbasin and it is the hydrologic endpoint. There are no natural surface flows from Mud Lake to any other body of water.

The Cottonwood Creek Complex is located on the very central western edge of the subbasin. This is a system of ephemeral streams that have no surface connectivity to other waters."

Only one USGS gauge station is currently operational within the subbasin; it does not adequately represent the diversity of flow conditions for the the watershed as a whole. Once again, the Beaver-Camas Subbasin Assessment and TMDL (IDEQ, 2005) provides the discharge summary description:

"USGS gauge station data is available for Beaver and Camas Creeks (Figure 32). As shown in Table 15, active and inactive station data available. It is useful to evaluate

data from inactive stations because it allows for the opportunity to look at historic trends and gain an impression of long term hydrologic cycles in the watershed.

Stations #13109000 (1921-1930), #13108500 (1937-1973), and #13108900 (1985-1991) are all located near the headwaters of Camas Creek, near Eighteenmile. The three datasets combined, roughly cover streamflow from 1921 through 1991 showing that flows are maintained in Camas Creek all year long and that there is a significant peak in the spring with an all time high streamflow recorded in 1969 in excess of 2500 cubic feet per second (cfs). On an annual basis the flows are very divergent with peaks roughly averaging around 800 cfs and base flows nearing 10 cfs.

The two remaining stations on Camas Creek are located downstream near Camas. The older station (#13111500) recorded flow data from 1921-1926 and the active station (#13112000) has been recording data since 1925. The highest peak recorded occurred in 1997 around 1500 cfs. The station data illustrates that since the mid 1980's streamflows in Camas Creek, at Camas have consistently reached zero cfs on a seasonal basis."

Stream Flow Summary. Modified from Table 15 (IDEQ, 2005).

Station Name and Number	Period of Record	Drainage Area (mi2)	Highest Annual Mean (cfs)	Lowest Annual Mean (cfs)	Highest Monthly Mean (cfs)	Lowest Monthly Mean (cfs)
Camas Creek near Kilgore 13109000	1921-1930	215	ND	ND	691 (May 1921)	11.9 (June 1924)
Camas Creek at Red Road near Kilgore 13108900	1985-1991		125 (1986)	31 (1991)	519 (May 1986)	1.63 (August 1991)
Camas Creek at Eighteen Mile near Kilgore 13108500	1937-1973	210	158 (1971)	55 (1949)	1141 (May 1969)	2 (Feb 1949)
Camas Creek near Camas 13111500	1921-1926	285	14.4 (1925)	35.7 (1925)	229 (May 1921)	6.65 (Dec 1924)
Camas Creek at Camas 13112000	1925-2003	400	91.8 (1995)	0.8 (1934)	536 (June 1952)	0
Beaver Creek at Spencer 13113000	1940-1993	220	79.9 (1971)	10.8 (1992)	387 (1969)	0 (1988)
Beaver Creek at Dubois 13113500	1921-1987	220	197.8 (1968)	0 (1934)	473 (June 1969)	0
Beaver Creek near Camas 13114000	1921-1991	510	45.8 (1969)	0	213 (1969)	0

			Acre-Feet
Stream Flow Data*	USGS 13114000, USGS Beaver Creek Near Camas, ID, 1962-1969, 1988	Average Annual	9,709
		Mar-July Average	9,168
		Percent of Average Annual	94%

* Discharge data was incomplete for this Beaver Creek station. Only nine full yearly data sets were available for the time period 1961 to 1991 (the last 30 years of record) and are listed in this table. From 1986 on, records indicate little to no flow was recorded. Statistical data for the Camas Creek at Camas station (13112000) was not available for analysis at the time of this assessment.

		CFS	Number
Irrigated Adjudicated Water Rights[6])	Surface Water	528	770
	Groundwater	930	1852
	Total Irrigated Adjudicated Water Rights	1458	2622

		MILES	PERCENT
Stream Data **Percent of Total Miles of streams in HUC*	Total Miles[8]	1553	--
	Water quality impaired streams [9]	494	32%*
	Anadramous Fish Presence (Streamnet)[11]	--	--
	Bull Trout Presence (Streamnet)[11]	--	--

		ACRES	PERCENT
Land Cover/Use[2] based on a 100 ft. stretch on both sides of all streams in the 100K Hydro Layer	Forest	6,721	17%
	Grain Crops	408	1%
	Grass/Pasture/Hay Lands	12,426	32%
	Row Crops	760	2%
	Shrub/Rangelands – Includes CRP Lands	16,447	42%
	Water/Wetlands/Developed/Barren	2,331	6%
	Total Acres of 100 ft stream buffers	**39,093**	100%
Land Capability Class[4]	**I** – slight limitations		
	II – moderate limitations		
	III – severe limitations	7,600	8%
	IV – very severe limitations	46,500	50%
	V – no erosion hazard, but other limitations	21,7000	23%
	VI – severe limitations, unsuited for cultivation, limited to pasture, range, forest	17,400	19%
	VII – very severe limitations, unsuited for cultivation, limited to grazing, forest, wildlife		
	VIII – misc areas have limitations, limited to recreation, wildlife, and water supply		
	Total Crop & Pasture Lands	**93,200**	100%

Confined Animal Feeding Operations – Dairies/Feedlots [12, 13]

Operation Type	Number	<300	300-999	1000-4999
Dairy**	2			
Feedlots**	11	3	3	5

**Operation numbers obtained from local ISDA animal inspector.

Resource Settings [/29, 30, 31, 32]

Pasture/Hayland:
Pasture and hayland is limited throughout the subbasin, reasonably considered a subset of the other major land uses, such as cropland and rangeland. Pasture/hayland is typically irrigated; however, non-irrigated riparian areas are used for forage for domestic animals. Irrigated pastureland includes low elevation pastures and high elevation mountain valleys. Pasture/Hayland can be found throughout the subbasin. The elevation of the subbasin ranges from approximately 5,000 feet south of Dubois to almost 10,000 feet along the continental divide. Precipitation ranges from less than 10 inches to 30 inches. Between the Jacoby Ranch and Eighteen Mile Shearing Corrals, located along Camas Creek, the soils are medium textured and dark colored. They have formed chiefly in wind deposited material over basalt bedrock. Much of this area is characterized by a landscape of volcanic cones, craters, fissure vents and rock outcrops along pressure ridges and tumuli on the lava flows. The soils are used for rangeland pasture and wildlife refuge. In the Kilgore area, the soil is generally moderately fine textured and has a high water table. The soil color is very dark due to wetness. Pasture plants are introduced perennial forage species, such as timothy, smooth bromegrass, meadow foxtail, and orchard grass or native grass/rush/sedge complexes. Hayland plants consist of grain and alfalfa hay grown in rotation.

Irrigated Cropland (Sprinkler and Surface Irrigated):
Conventionally tilled, cultivated cropland with a potato/grain rotation. Other commonly raised crops include barley, dry peas, wheat, oats, alfalfa, grass hay, and nursery stock. Elevation ranges from less than 5,000 feet to 6,600 feet and precipitation ranges from less than 10 inches to 30 inches. Most of the irrigated land is situated near the 5,200 foot level, except at Kilgore, which is approximately 6,200 feet. A large majority of the cropland is located in the southern portion of the subbasin, near Hamer and the Camas National Wildlife Refuge. In the Camas National Wildlife Refuge, small grain crops are grown for wildlife and haying and prescribed fires are used for management purposes. The southern part of the subbasin consists of lava fields and lava flows of basalt covered by eolian sands and loess deposits. The Beaver Creek drainage soils are well-drained soils that formed in mixed alluvium on stream terraces. The soils are medium and coarse textured and usually effervescent with reaction to acid. Carbonates are present at the surface and extend through the subsoil. The soils are used for both cropland and rangeland. Soil series consist of Idmonton, Kilgore, Alex, Malm, Matheson, Hagenbarth, Crabcreek, and Richvale; ranging from 0 to 12 percent slopes. It is very difficult to give a generalized estimate on erosion hazards. Soil ratings in this area may be from slight to very severe erosion potential. Factors such as slope and depth to bedrock vary greatly with soils within these map units. The land capability classes of the dominant soils are 4c, 4e, 5w, and 6e. The available water holding capacity ranges from 0.03 to 0.21 inches of water per inch of soil for the major soil types in this area.

Rangeland:
Rangeland is typical of high elevation desert habitat. Rangeland and adjacent riparian corridors are grazed predominantly by cattle and sheep. A significant portion of the Beaver Creek drainage near Dubois is owned and operated by the U.S. Sheep Experiment Station. Elevation ranges from 5,000 feet to 7,200 feet and precipitation ranges from less than 10 inches to 30 inches. Near Monida Pass, the soils are moderately fine to medium textured, and have formed in calcareous sandstone, siltstone, and shales. The soils of this area are

Resource Settings - continued

used almost exclusively for rangeland and wildlife habitat. From approximately Indian Creek east to Idmon, the soils have formed in glacial outwash and residuum from rhyolite. They are dark-colored, medium textured, and used primarily for rangeland. Soil series consist of Blacknoll, Jipper, Jacoby, Eaglecone, Pyrenees, Hotspot, Nayrib, Pinebutte, Vadnais, Stoneman, Maremma, Crystalbutte, Cinderbutte, Malm, Matheson, Becreek, Mogg, Buist, Kilgore, and Idmonton; ranging from 0 to 12 percent slopes, except 5 to 35 percent slopes on crater/butte side slopes. It is very difficult to give a generalized estimate on erosion hazards. Soil ratings in this area may be from slight to very severe erosion potential. Factors such as slope and depth to bedrock vary greatly with soils within these map units. The land capability class of the dominant soils range from 3e to 4e. However, soils that are shallow, rocky or wet are rated at 5w, 6e, 7e, 6s, and 7s. The available water holding capacity is a minimum of 0.3 inches of water per foot of soil for the major soil types in this area. Rangeland management practices typically follow planned grazing systems to include rest and rotation of pastures. This system is augmented with stock water pipelines and tanks to provide watering to the grazing units.

The northern part of the watershed is mountainous, formed by the continental divide. Mostly timber covered, Douglas fir is the main tree species, but lodgepole pine, limber pine, Engelmann spruce, and quaking aspen are common. Shrub species include: antelope bitterbrush, Basin big sagebrush, broom snakeweed, horsebrush, juniper, mountain big sagebrush, rabbitbrush, threetip sagebrush, and Wyoming big sagebrush. Forbs include: arrowleaf balsamroot, aster, buckwheat spp., bushy birdsbeak, buttercup, death camas, globe mallow, larkspur, lupine, onion, phlox, prickly pear cactus, pussytoes, tapertip hawksbeard, western yarrow, woolypod milkvetch, and russian thistle. Grass species include: basin wildrye, bluebunch wheatgrass, bluegrass spp, Idaho fescue, indian ricegrass, mountain brome, needle-and-thread, prairie junegrass, and timothy.

Rangeland east of Dubois is part of the Egin-Hamer wildlife closure area, which provides winter habitat for migrating herds of antelope, deer, elk, and moose. There is an emphasis on sage grouse study and management because the area has one of the largest populations of sage grouse in the state. The entire drainage possesses and supports numerous species of raptors. The sagebrush grassland also provides habitat for badger, coyote, fox, and raccoons.

Grazed Forest:
Forest resource use consists of private and public lands that are grazed by cattle and sheep, harvested for timber, and sources of recreational activities. Elevation ranges from 5,600 feet to 9,000 feet and precipitation ranges from less than 10 inches to 30 inches. Soil series consist of Koffgo, Monida, Zeebar, Edgway, Fitzwil, Vitricryands, Cryumbrepts-Rock Outcrop, Fourme, and Cryaquolls, poorly drained; ranging from 0 to 60 percent slopes. It is very difficult to give a generalized estimate on erosion hazards. Soil ratings in this area may be from slight to very severe erosion potential. Factors such as slope and depth to bedrock vary greatly with soils within these map units. Soil property and interpretation tables are listed by unit in the Targhee National Forest ecological unit inventory. The major limitations associated with the specific soil/units for this drainage are as follows: Fencing is severely limited because of rocky soils; unsurfaced roads and parking areas are severely

Resource Settings - continued

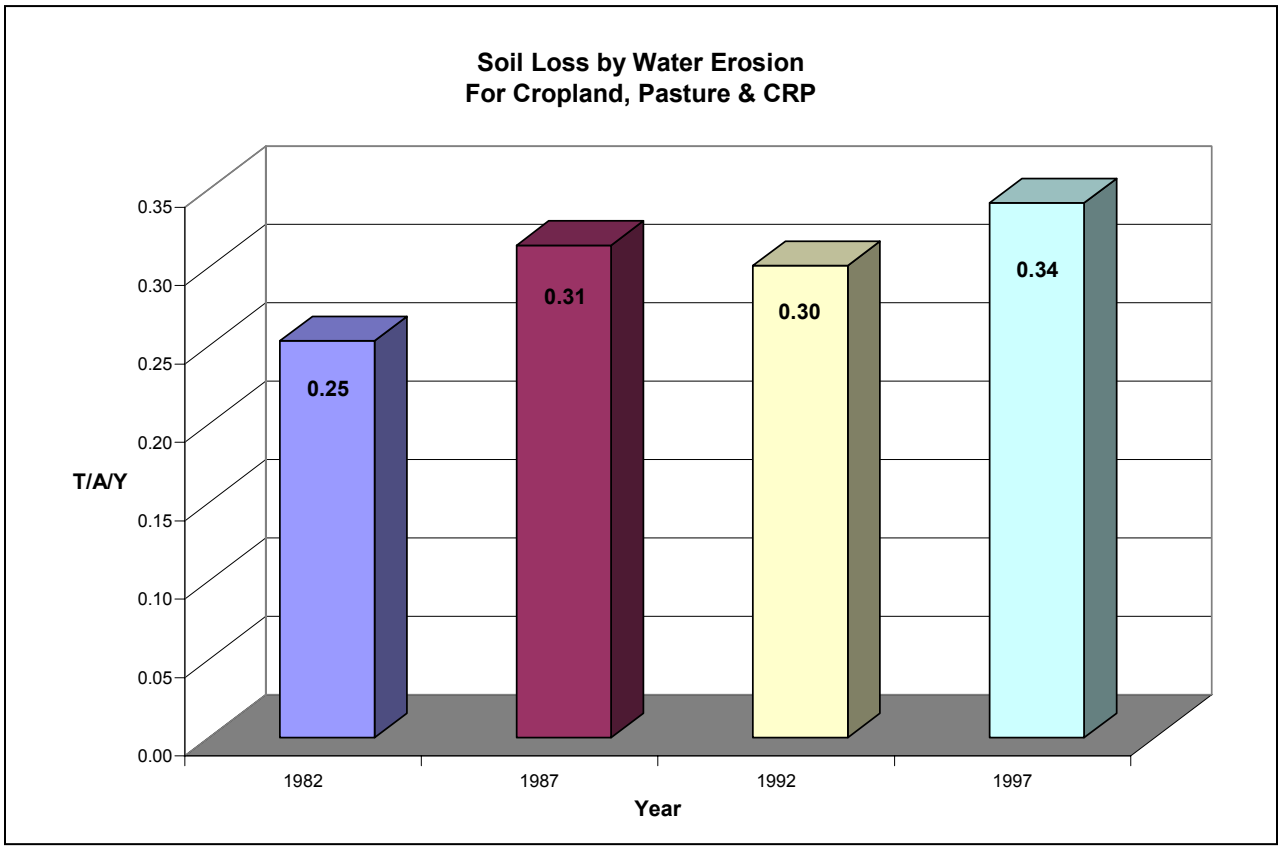
limited because of soils having low strength; the use of heavy equipment for rangeland management is severely limited because of slope; revegetation of cut and fill slopes is severely limited because the soils are droughty; off-road vehicle use is severely limited because the soils erode easily and compact easily. The slopes of some units have a high potential for mass movement. Slump–earth flows and small slumps are common in the drainage ways. Shallow excavations and dwellings without basements are severely limited because of slope. Pond reservoir areas are severely limited because of seepage and slope. The potential for runoff from rain events or snowmelt is high. Evidence of overland and concentrated flows is common. The soils have reduced infiltration rates because of strong, coarse structure and hydrophobic conditions in the surface layers. The available water holding capacity ranges from 0.1 to 0.23 inches of water per inch of soil for the major soil types in this area.

The most abundant tree species include: Douglas fir, lodgepole pine, quaking aspen, sub-alpine fir, and whitebark pine. Shrub species include: currants, huckleberry, mountain big sagebrush, snowberry, spirea, and willow spp. Forbs include: mesic forbs, marsh marigold, milkvetch, prairie-smoke, sticky cinquefoil, and sticky geranium. Grass species include bluebunch wheatgrass, bluegrass, California brome, Idaho fescue, and pinegrass.

Federally listed threatened species that occur in the Beaver-Camas Subbasin include: bald eagle, yellow-billed cuckoo, gray wolf, lynx, grizzly bear, desert valvata and Ute ladies' tresses (http://fishandgame.idaho.gov/cms/tech/CDC/). Some other species with special status listing include the northern goshawk, western toad, ferruginous hawk, North American wolverine, Yellowstone cutthroat trout, northern leopard frog, boreal owl, and the great gray owl. Fish and wildlife that can be found in the Targhee National Forest in this subbasin include: peregrine falcon, great gray owl, boreal owl, flammulated owl, common loon, sage grouse, blue grouse, ruffled grouse, antelope, deer, elk, moose, fisher, weasels, cougar, coyote, fox, red squirrel, snowshoe hare, tiger salamander, boreal chorus frog, and Columbia spotted frog.

Resource Concerns

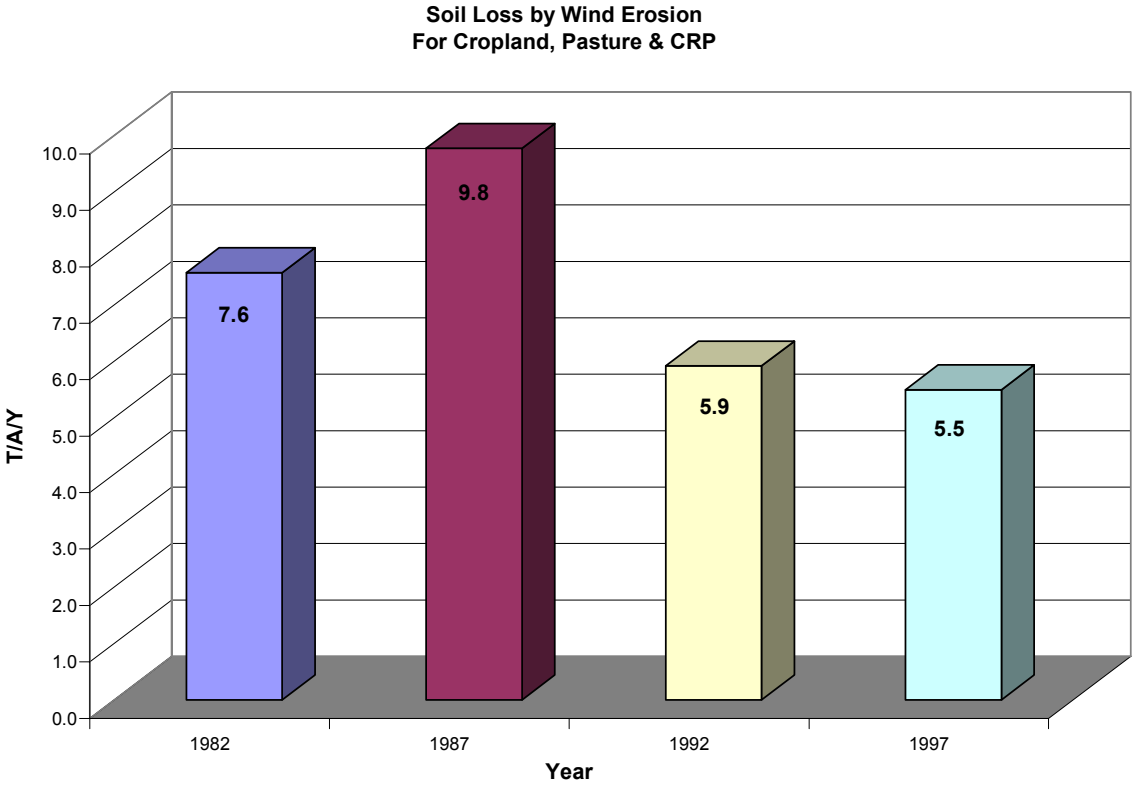
Sheet and rill erosion by water on croplands and pasturelands in this watershed have been essentially static since 1982. Sheet and rill erosion is not a major issue on cropland in this subbasin. Susceptibility to sheet and rill erosion is low in this subbasin because the natural precipitation is low and the cropland is relatively flat.



Controlling erosion not only sustains the long-term productivity of the land, but also affects the amount of soil, pesticides, fertilizer, and other substances that move into the nation's waters.

Resource Concerns – continued

Wind erosion has decreased by slightly more than 2 tons per acre per year on cropland, pasture and CRP in this subbasin between 1982 and 1997. Following a spike in wind erosion to approximately 10 tons per acre per year in 1987, wind erosion has decreased to approximately 5.5 tons per acre per year in 1997.



Conservation practices that can be used to address wind erosion include: surface wetting, surface roughening, windbreak, seedbed preparation (delayed seeding), mulching, and pasture and hayland planting.

Resource Concerns - continued

Impacted Water Bodies[9] (ID 17060306) Named Streams	Stream Miles*	Bacteria	Nutrients	Sediment	Temperature	Dissolved Oxygen	Other or Unknown
Beaver Creek (SK003_05)	10.6		X	X	X		
Beaver Creek (SK014_05)	15.7		X	X	X		
Beaver Creek (SK020_02)	12.9						X
Beaver Creek (SK018_04)	8.9		X	X	X		
Beaver Creek (SK018_02)	40.2		X	X	X		
Beaver Creek (SK015_05)	2.9		X	X	X		
Beaver Creek (SK021_02)	14.7						X
Camas Creek (SK001_06)	18.4		X	X			
Camas Creek (SK002_05)	41.3		X	X	X		
Ching Creek (SK006_03)	11.9						X
Cottonwood Creek Complex (SK026_02)	89.3						X
Crooked/Crab Creek (SK008_02)	30.0						X
Crooked/Crab Creek (SK008_03)	11.0						X
Dry Creek (SK025_03)	7.1						X
Miners Creek (SK019_02)	21.1						X
Rattlesnake Creek (SK016_03)	10.5						X
Rattlesnake Creek (SK016_02)	56.8						X
Threemile Creek (SK017_03)	1.8						X
Threemile Creek (SK017_02)	23.1						X
Warm Creek (SK009_02)	11.7						X
Total Stream Miles:	**440**						

Shading indicates TMDL in place

Shading indicates TMDL in progress

Many of the listed streams are impaired by multiple pollutants, primarily nutrients, sediment and temperature. Agricultural land uses contribute to water quality impacts. Other pollutant sources include timber harvest activities, stormwater runoff and land development. Flow and habitat alteration problems exist within the watershed.

Conservation practices that can be used to address these water quality issues include erosion control, grazing management, residue management, and riparian buffers.

Resource Concerns - continued

Watershed Projects, Plans, Studies and Assessments

NWPCC[18]
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USFWS[18, 31]
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USDA Sheep Experimental. Station Studies[18, 31]
Sheep Grazing-Rangeland Ecology Relationship-The Use of Short-Duration Intensive Sheep Grazing to Increase Sheep Utilization of Leafy Spurge (Euphorbia Esula L.).
Selecting Sheep with a Dietary Preference for Leafy Spurge and Developing Management Strategies to Control Leafy Spurge.
The Effect of the Continental Divide National Scenic Trail (Cdnst) on Ecosystem Processes.
Monitoring invasive species using 1-mm GSD geocoded aerial surveys: a cost effective means of getting details, locations, and sample numbers.
Digital Imagery and Landscape-Scale Rangeland Monitoring.
Strategic Grazing: Monitoring the Changes.
The Use of Remote Sensing Imagery to Determine Wildland Burn Severity in Semiarid Sagebrush-Steppe Rangelands
Erosion Following Fire in a Sagebrush Ecosystem of the Northern Great Basin, USA.
Fire impacts on rangeland hydrology and erosion in a steep sagebrush dominated landscape
Erosion on Steep Sagebrush Rangeland Before and after Prescribed Fire.
Quantifying and Predicting Rill Erosion after Fire on Steep Shrub-Dominated Hillslopes.
Impacts of Fire on Hydrology and Erosion in Steep Mountain Big Sagebrush Communities.

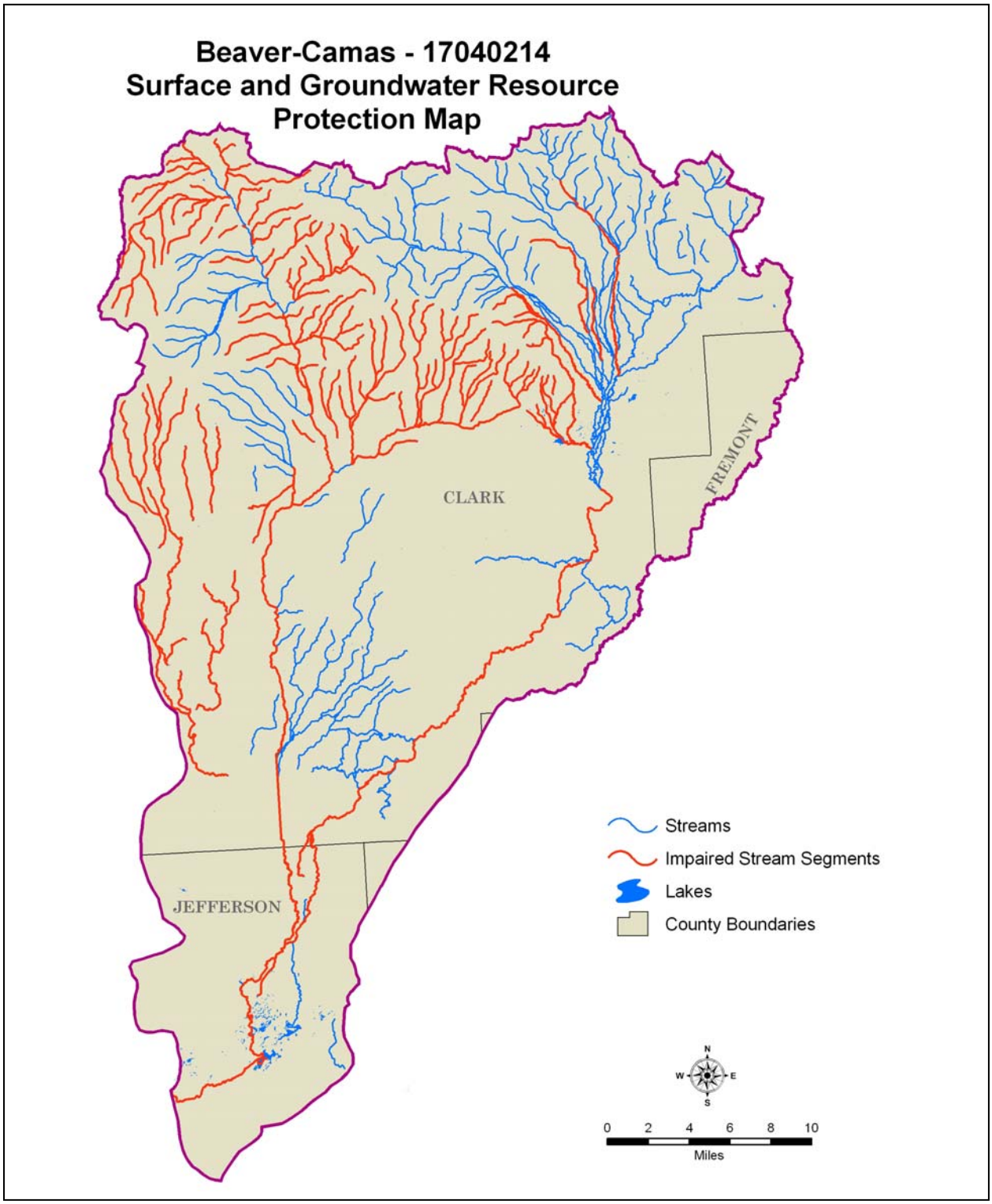
USFS[18, 31]
Caribou-Targhee National Forest, Forest Plan Monitoring and Evaluation Report, Targhee Monitoring Report: 1997-2004.
Targhee National Forest, Ecological Unit Inventory, Volumes 1 and 2, 1999

IDFG[28, 31]
The Mud Lake Rehabilitation Project: An Aerial Application of Emulsified Rotenone Nov.1955.

IDEQ TMDLs[28]
Idaho Department of Environmental Quality. 2005. Beaver-Camas Subbasin Assessment and Total Maximum Daily Loads.

Resource Concerns – continued

Surface and Groundwater Resource Protection



Resource Concerns – continued

Resource Concerns/ Issues by Land Use							
SWAPA Soil, Water, Air, Plants, Animals	**Specific Resource Concern/Issues**	**Pasture**	**Hayland**	**Sprinkler Irrigated Crops**	**Surface Irrigated Crops**	**Rangeland**	**Grazed Forest**
Soil Erosion	Sheet and rill	X	X			X	
	Ephemeral or classic gully			X	X		
	Wind	X	X	X	X	X	
	Streambank	X				X	X
	Irrigation Induced			X	X		
Water Quantity	Inefficient use on irrigated lands				X		
Water Quality, Surface	Suspended sediment	X	X	X	X	X	X
	Nutrients and organics			X	X	X	X
	Temperature	X				X	X
	Pathogens	X				X	X
Water Quality, Ground	Nutrients and organics		X	X	X		
	Pesticides		X	X	X		
Soil Condition	Organic matter depletion		X	X	X		
	Compaction	X	X	X	X		
Plant Condition	Productivity, health and vigor	X	X			X	X
	Plants not adapted or suited	X	X			X	X
	Noxious and invasive plants	X	X	X	X	X	X
	Wildfire hazard						X
	Threatened or Endangered	X	X	X	X	X	X
	Pests						X
Domestic Animals	Inadequate food or water	X				X	X
Fish and Wildlife	Inadequate food or water	X	X	X	X	X	
	Inadequate cover/shelter	X	X	X	X	X	
	Threatened or Endangered	X	X	X	X	X	X

Human considerations: Implementation of conservation practices and enhancement has the potential for change in management and cost of production. Installation of practices will have an upfront cost and require maintenance. In the short run increased management may be required as new techniques are learned. Land may be taken out of production for installation of practices or conversion to other uses, such as wildlife habitat. Long term benefits should result from increased soil health, benefits to water quality and wildlife habitat.

FEDERALLY LISTED THREATENED AND ENDANGERED SPECIES[11, 33]	
Threatened Species	**Candidate Species**
Mammals – Lynx, Grizzly Bear **Birds –** Bald Eagle **Fish –** None **Invertebrates –** Desert Valvata **Plants –** Ute Ladies Tresses	**Mammals** – None **Fish** - None **Birds –** Yellow-billed Cuckoo **Endangered Species**– Gray Wolf
ESSENTIAL FISH HABITAT – None	**CRITICAL FISH HABITAT-** None

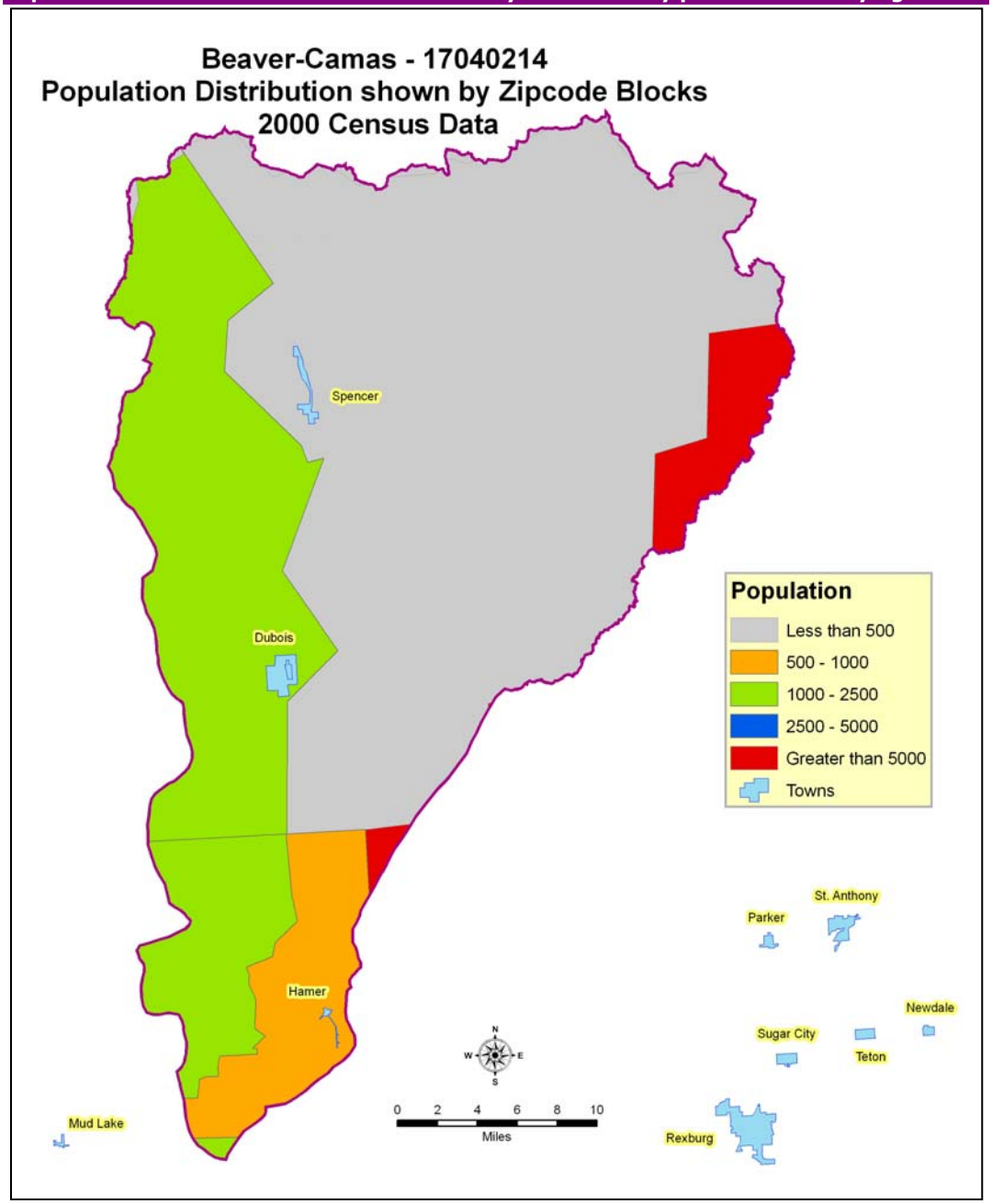
Census and Social Data[/26]

Population: 1,406

Number of Farms: 154

	0-49 acres	50-999 acres	1000+ acres
Number of Farms	62	57	35

Population distribution shown below is heavily influenced by presence of outlying towns.



Census and Social Data - continued

Sixty seven percent of farm operators are farmers by occupation. The remaining operators have off-farm jobs as their primary occupation. The majority of operators are male but women make up 26% of the total. Ninety-eight percent of all operators are white. Non-white operators are of African American, Hispanic, American Indian and Asian background.

Farm size ranges from less than 10 acres to more than 1,000 acres with an average of 1780 acres. Agricultural land in the watershed is a mix of woodland, cropland, range, pasture and hayland. Land users in the watershed utilize EQIP, CRP, Continuous CRP, WHIP, WRP and other programs to implement conservation plans

Farm size, market value of production and government payments to farmers are down over the past several years. Farm sales range from less than $1,000 to more than $500,000 per year. Sixty nine percent of farms reported sales of less than $50,000 per year.

The Census of Agriculture is authorized under PL 105-113 and uses the definition of a farm as any place from which $1,000 or more of agricultural products are produced or sold, or normally would have been sold, during the census year.

	Number of farms	Average size farm	Market Value of Production (Average Farm)	Government Payments (Average Farm)
1997	170	2,140	$342,100	$21,100
2002	150	1,780	$305,200	$20,800
Change	-11.8%	-16.8%	-10.8%	-1.4%

Economic Profile

	Watershed	Idaho	United States
Population (2000)	1,406		
Per Capita Personal Income (2002)	$23,700	$25,476	$30,906
Median Home Value (2000)	$69,500	$106,300	$119,600
Percent Unemployment (2004)	6.8%	4.7%	5.5%
Percent Below Poverty Level (2003)	15.2%	11.8%	12.5%

Progress / Status

PRS DATA				
Conservation Treatment Applied	**FY04**	**FY05**	**FY06**	**Total**
Brush Management (314) (ac)			445	445
Conservation Cover (327) (ac)			1	1
Fence (382) (ft)	5,398	17,121	21,120	43,639
Irrigation System, Microirrigation (441) (ac)			1	1
Irrigation System, Sprinkler (442) (ac)			186	186
Irrigation Water Management (449) (ac)		215	1	216
Mulching (484) (ac)	2			2
Nutrient Management (590) (ac)		3	223	226
Pasture and Hay Planting (512) (ac)		403		403
Pest Management (595) (ac)	103		150	253
Pipeline (516) (ft)		3,300		3,300
Prescribed Burning (338) (ac)		4,000		4,000
Prescribed Grazing (528) (ac)		140		140
Prescribed Grazing (528A) (ac)		3	872	875
Upland Wildlife Habitat Management (645) (ac)	190		1	191
Use Exclusion (472) (ac)	2		1	3
Watering Facility (614) (no)		1	1	2
Windbreak/Shelterbelt Establishment (380) (ft)	1,154		800	1,954

Progress in the last seven years has been focused on:

~ erosion control
~ nutrient management

Resource concerns that require ongoing attention:

~ erosion control
~ nutrient management
~ prescribed grazing
~ riparian area improvement
~ water quality & water quantity
~ irrigation water use efficiency
~ irrigation water management
~ pest management
~ stockwater supply

Lands Removed from Production through Farm Bill Programs

- Conservation Reserve Program (CRP): **3147**
- Wetland Restoration Program (WRP): **436**

Footnotes/Bibliography

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

1. Ownership Layer – Source: This spatial data contains surface management land status (sometimes known as "ownership") and Public Land Survey System (PLSS) information for Idaho. The Bureau of Land Management (BLM) in Idaho creates and maintains these spatial data layers. The primary source of the spatial features is the BLM Geographic Coordinate Database (GCDB), which contains official survey records and corresponding geodetic control information maintained by the BLM Cadastral program. In areas where GCDB records are unavailable, the spatial features are taken from a variety of sources including the BLM Idaho Resource Base Data collection, US Geological Survey Digital Line Graphs (DLGs), and US Forest Service Cartographic Feature Files (CFFs), among others. The source of the attribute information is the BLM Master Title Plats (MTPs) and careful cooperation with other government agencies that own or manage land parcels. The layer is available from the Inside Idaho (Interactive Numeric & Spatial Information Data Engine): http://inside.uidaho.edu For current ownership status, consult official records at appropriate federal, state or county offices. Ownership classes grouped to calculate Public Ownership vs. Private Ownership.

2. National Land Cover Dataset (NLCD): NLCD 92 (National Land Cover Data 1992) is a 21-category land cover classification scheme that has been applied consistently over the conterminous U.S. It is based primarily on the unsupervised classification of Landsat TM (Thematic Mapper) 1992 imagery. Ancillary data sources included topography, census, agricultural statistics, soil characteristics, other land cover maps, and wetlands data. The NLCD 92 classification is provided as raster data with a spatial resolution of 30 meters. The layer is available from: http://edcwww.cr.usgs.gov/products/landcover/nlcd.html Description: Abstract: These data can be used in a geographic information system (GIS) for any number of purposes such as assessing wildlife habitat, water quality, pesticide runoff, land use change, etc. The State data sets are provided with a 300 meter buffer beyond the State border to facilitate combining the State files into larger regions.

3. Farm Services Agency, USDA, 2005. CRP acres from GIS (CLU) database.

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 due to 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. PRISM Climate Mapping Project. Annual precipitation data.
See http://www.ocs.orst.edu/prism_new.html for further information.

6. Irrigated Adjudicated Water Rights – Idaho Department of Water Resources
http://www.idwr.idaho.gov/water/srba/mainpage/

7. USGS Idaho Streamflows, gaging station data (http://waterdata.usgs.gov/id/nwis/sw/) and estimates for ungaged streams based on statistical data (http://streamstats.usgs.gov/html/idaho.html).

8. National Hydrology Dataset (NHD). Developed by the US Geological Survey in cooperation with U.S. Environmental Protection Agency and other state and local partners (http://nhd.usgs.gov).

9. IDEQ. 2002 Integrated Report (approved December 2005). http://www.deq.idaho.gov/water/data_reports/surface_water/monitoring/integrated_report.cfm.

10. Idaho Soil Conservation Commission (SCC), Water Quality Program for Agriculture (WQPA). http://www.scc.state.id.us/waq.htm

11. StreamNet is a cooperative venture of the Pacific Northwest's fish and wildlife agencies and tribes and is administered by the Pacific States Marine Fisheries Commission. Streamnet provided data and data services in support of the region's Fish and Wildlife Program and other efforts to manage and restore the region's aquatic resources. Official Streamnet website: http://www.streamnet.org/

12. (Dairy) Idaho Department of Water Resources: http://www.idwr.state.id.us/gisdata/gis_data-new.htm

13. (Feedlot) Idaho State Department of Agriculture: http://www.agri.state.id.us/ FOIA request.

14. Natural Resource Conservation Service, Watershed Projects Planned and Authorized, http://www.nrcs.usda.gov/programs/watershed

15. Natural Resource Conservation Service, Watershed Plans, Studies and Assessments completed, http://www.nrcs.usda.gov/programs/watershed/Surveys_Plng.html#Watershed%20Surveys%20and%20Plan

16. Idaho Department of Environmental Quality (IDEQ), Surface Water Quality: Subbasin Assessments, TMDLs, and Implementation Plans. http://www.deq.state.id.us/water/data_reports/surface_water/tmdls/sba_tmdl_master_list.cfm

17. Idaho Department of Environmental Quality, Watershed protection: Nonpoint source management (319 grant), Reports and program resources. http://www.deq.state.id.us/water/data_reports/surfacewater.nps/reports/cfm

18. Subbasin assessments and plans are developed by local groups (SWCDs, Watershed Councils, Tribes and others) as part of the Northwest Power and Conservation Council's fish and wildlife program in the Columbia River Basin. This program is funded and implemented by the Bonneville Power Administration. http://www.nwcouncil.org/fw/subbasinplanning/Default.htm

19. Idaho Soil Conservation Commission (SCC), TMDL watershed implementation plans: agricultural component http://www.deq.state.id.us/water/data_reports/surface_water/nps/reports.cfmponent. http://www.scc.state.id.us/PDF/Ag%Component%20Status%20Report%20-%202004.pdf

20. Idaho State Department of Agriculture (ISDA). Groundwater water quality regional projects. http://www.agri.idaho.gov/gw/gwdatasummary.htm

21. Idaho Department of Water Resources (IDWR). State Comprehensive Water Plans. http://www.idwr.idaho.gov/waterboard/planning/Comp_Basin_Plans.htm

22. 303d Listed Streams designated by the Idaho Department of Environmental Quality (1998) and approved by the Environmental Protection Agency, Section 303d Clean Water Act 23.

23. Groundwater Management Areas and Critical Groundwater Management Areas designated by the Idaho Department of Water Resources. http://www.idwr.idaho.gov/hydrologic/projects/gwma/

24. Nitrate Priority Areas. IDEQ has developed a list of degraded ground water areas. This list focuses on nitrate and ranks the top 25 nitrate-degraded areas (referred to as "nitrate priority areas") in the state based on the severity of the degradation, the population affected, and the trend; the rank of "1" indicates the most severely impacted area in the state. http://www.deq.state.id.us/water/prog_issues/ground_water/nitrate.cfm#ranking

25. NRCS Field Office Technical Guide, Section II, Threatened and Endangered List and the Idaho Conservation Data Center, Idaho Department of Fish and Game http://fishandgame.idaho.gov/cms/tech/CDC/

26. 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. Data were also taken from the U.S. Census, 2000 by zip code and adjusted by percent of zip code in the HUC. http://www.nass.usda.gov/Census_of_Agriculture/Census_by_State/Idaho/index.asp

27. Idaho State Department of Agriculture (ISDA).Surface water quality reports. http://www.agri.state.id.us/Categories/Environment/water/swReports.php

28. Idaho Department of Environmental Quality (IDEQ), 2005. Beaver-Camas Subbasin Assessment and TMDL. http://deq.idaho.gov/

29. Heitt, Bill, 2006. NRCS Soil Scientist, Idaho Falls, ID.. Personal communication.

30. Bagley, Cleve, 2006. NRCS Soil Conservation Technician Rexburg, ID. Personal communication

31. Targhee National Forest, Ecological Unit Inventory, Volumes 1 and 2, USDA, USFS.

32. USDA, NRCS, Guidance documents for resource management systems, Field Office Technical Guide, Section III, Clark County, Idaho.

33. Idaho. Conservation Data Center. http://fishandgame.idaho.gov/cdc/

Future Conservation Needs

The following Tables are an estimate of the future needs of conservation practices in the watershed.

Estimates of future needs in the watershed are based on the following factors:

1. Estimates of total conservation needs based on benchmark conditions in the watershed
2. Present level of conservation installation reported in the NRCS web based reporting system
3. Local knowledge of the area, past and ongoing project activities and professional judgement
4. Practices previously installed which have exceeded their expected life (life span), are no longer accomplishing the conservation objective, and may need to be replaced or upgraded

**The following Current Conditions Tables have been developed to estimate the present level of conservation installed within the HUC, based on what has been reported in the PRMS and PRS Reporting system for the Years 2004 through 2006.*

Current Conditions (Private)		Total Acres	Riparian Acres
Total Dry Grass/Pasture/Hay		27,935	3,106
Typical Management Unit/Ownership		1,780	
Current Farm Bill Participation		5%	

Current Level of Treatment for Dry Grass/Pasture/Hay

Grass/Pasture/Hay	Quantity		Costs		Effects				Implementation			
Practices	Unit	Quantity	Investment Cost	Annual O&M and Mngt.Cost	Water Conservation	Water Storage	Habitat	WQ	EQIP	WHIP	CREP	Other
Dry Grass/Pasture/Hay	Ac.	27,935			-3	-/+	-2	-3				
Brush Management (314)	Ac.	223	$ -	$60					X			
Conservation Cover (327)	Ac.	1	$ -	$0						X		X
Fence (382)	Ft.	16365	$ -	$650					X	X		X
Nutrient Management (590)	Ac.	85	$ -	$430					X			
Pasture and Hay Planting (512)	Ac.	202	$ -	$200					X			
Pest Management (595)	Ac.	95	$ -	$950					X			X
Pipeline (516)	Ft.	1650	$ -	$90					X			X
Prescribed Burning (338)	Ac.	2000	$ -	$3,000					X			
Prescribed Grazing (528)	Ac.	508	$ -	$2,540					X			
Upland Wildlife Habitat Management (645)	Ac.	72	$ -	$360					X	X		X
Use Exclusion (472)	Ac.	1	$ -	$0					X	X		X
Watering Facility (614)	No.	1	$ -	$20					X			X
Windbreak/Shelterbelt Establishment (380)	Ft.	977	$ -	$40						X		
Total RMS Costs			**$ -**	**$ 8,340**								

Future Conditions		Total Acres	Riparian Acres
Total Dry Grass/Pasture/Hay Lands		27,935	
Conversion to Riparian RMS			3,106
Total Acres		31,041	

Project Future Level of Treatment for Dry Grass/Pasture/Hay Lands

Grass/Pasture/Hay Land	Quantity		Costs		Effects				Implementation			
Practices	Unit	Quantity	Investment Cost	Annual O&M and Mngt.Cost	Water Conservation	Water Storage	Habitat	WQ	EQIP	WHIP	CREP	Other
Dry Grass/Pasture/Hay Land	Ac.	27,935			+3	+3	+3	+3				
Fence (wire-4 strand) (382)	Ft.	460,928	$ 889,100	$ 17,780					X	X		X
Forage Harvest Management (511)	Ac.	16,761	$	$ -					X			
Heavy Use Area Protection (561)	Ac.	10	$ 150,000	$ 7,500					X			X
Nutrient Management (590)	Ac.	20,951	$ 310,900	$ 103,640					X			
Pasture and Hayland Planting (512)	Ac.	11,174	$ 1,108,900	$ 11,090					X			
Pest Management (595)	Ac.	25,142	$ 667,300	$ 226,020					X			X
Pipeline (516)	Ft.	57,616	$ 151,100	$ 3,020					X			X
Prescribed Grazing (528)	Ac.	25,142	$ 369,500	$ 123,170					X			
Pumping Plant (533)	No.	11	$ 38,000	$ 760					X			X
Riparian Forest Buffer (391)	Ac.	279	$ 418,500	$ 4,190					X			X
Riparian Herbaceous Cover (390)	Ac.	559	$ 167,700	$ 1,680					X			
Spring Development (574)	No.	29	$ 68,200	$ 3,410					X			
Upland Wildlife Habitat Management (645)	Ac.	4,190	$ 32,900	$ 10,950					X	X		X
Watering Facility (614)	No.	20	$ 28,500	$ 290					X			X
Water Well (642)	No.	11	$ 88,000	$ 880					X			
Total RMS Costs			**$ 4,488,600**	**$ 514,380**								

Current Level of Treatment for Dry Grass/Pasture/Hay Lands Riparian

Dry Grass/Pasture/Hay Lands Riparian	Quantity		Costs		Effects				Implementation			
Practices	Unit	Quantity	Investment Cost	Annual O&M and Mngt.Cost	Water Conservation	Water Storage	Habitat	WQ	EQIP	WHIP	CREP	Other
Grass/Pasture/Hay Lands Riparian	Ac.	3,106			-3	-/+	-2	-3				
Fence (382)	Ft.	51,249	$ 102,500	$ 2,000					X	X		X
Total RMS Costs			**$ 102,500**	**$ 2,000**								

Future Level of Treatment for Dry Grass/Pasture/Hay Lands Riparian

Dry Grass/Pasture/Hay Lands Riparian	Quantity		Costs		Effects				Implementation			
Practices	Unit	Quantity	Investment Cost	Annual O&M and Mngt.Cost	Water Conservation	Water Storage	Habitat	WQ	EQIP	WHIP	CREP	Other
Dry Grass/Pasture/Hay Lands Riparian	Ac.	3,106			+3	+3	+2	+3				
Channel Bank Vegetation (322)	Ac.	31	$ 93,000	$ 1,900					X			
Animal Trails and Walkways (575)	Ft.	500	$ 2,500	$ 250					X			
Channel Stabilization (584)	Ft.	3,912	$ 78,200	$ 390					X			
Critical Area Planting (342)	Ac.	16	$ 7,600	$ 230					X			
Fence (wire-4 strand) (382)	Ft.	51,249	$ 102,500	$ 2,050					X	X		X
Heavy Use Area Protection (561)	Ac.	5	$ 75,000	$ 3,750					X			X
Prescribed Grazing (528)	Ac.	777	$ 11,700	$ 3,890					X			
Riparian Forest Buffer (391)	Ac.	31	$ 46,500	$ 470					X			X
Riparian Herbaceous Cover (390)	Ac.	62	$ 18,600	$ 190					X			
Stream Crossing (578)	No.	5	$ 17,500	$ 880					X			
Stream Habitat Improvement Management (395)	Ac.	16	$ 280,000	$ 5,600					X			
Streambank/Shoreline Protection (580)	Ft.	3,912	$ 176,100	$ 3,520					X			
Structure for Water Control (587)	No.	5	$ 2,500	$ 30					X			
Tree/Shrub Establishment (612)	Ac.	16	$ 7,200	$ 70					X			X
Use Exclusion (472)	Ac.	155	$ 5,400	$ 160					X	X		X
Wetland Creation (658)	Ac.	16	$ 80,000	$ 800					X			
Wetland Enhancement (659)	Ac.	16	$ 32,000	$ 320					X			
Wetland Wildlife Habitat Management (644)	Ac.	155	$ 2,300	$ 780					X			
Wildlife Watering Facility (648)	No.	5	$ 3,900	$ 40					X			
Total RMS Costs			**$ 1,042,500**	**$ 25,320**								

Potential RMS Effects for Dry Grass/Pasture/Hayland

Cost Items and Programs		Costs	O&M Costs
Non Farm Bill Programs		$276,600	$27,000
Potential Farm Bill Programs		$5,254,500	$512,700
Operator O&M and Management Cost			$539,700
Annual Management Incentives (3yrs - Incentive Payments)		$ 1,394,600	
Operator Investment		$2,206,600	
Federal Costshare		$1,929,900	
Total RMS Costs		**$ 5,531,100**	**$539,700**
Estimated Level of Participation			95%
Total Acres in RMS System			29,500
Anticipated Cost at Estimated Level of Participation			$5,254,500
Total Annual Forage Production Benefits (animal unit months)			3,621
Participating landowners will be in compliance with TMDLs			
Improves habitat for ESA endangered and threated species			

Current Conditions (Private)		Total Acres	Riparian Acres
Surface Irrigated Grass/Pasture/Hay		30,150	
Sprinkler Irrigated Grass/Pasture/Hay		3,350	
Total Irrigated Grass/Pasture/Hay		33,500	3,355
Typical Management Unit/Ownership		1,780	
Current Farm Bill Participation		5%	

Current Level of Treatment for Irrigated Grass/Pasture/Hay:												
Grass/Pasture/Hay	Quantity		Costs		Effects				Implementation			
Practices	Unit	Quantity	Investment Cost	Annual O&M and Mngt.Cost	Water Conservation	Water Storage	Habitat	WQ	EQIP	WHIP	CREP	Other
Surface Irrigated Grass/Pasture/Hay	Ac.	30,150			-3	-/+	-2	-3				
Brush Management (314)	Ac.	223	$ -	$60					X			
Conservation Cover (327)	Ac.	1	$ -	$0						X		X
Fence (382)	Ft.	14729	$ -	$590					X	X		X
Irr. System, Microirrigation (441)	Ac.	1	$ -	$80					X			
Irrigation Water Management (449)	Ac.	162	$ -	$1,620					X			X
Nutrient Management (590)	Ac.	77	$ -	$390					X			
Pasture and Hay Planting (512)	Ac.	182	$ -	$180					X			
Pest Management (595)	Ac.	86	$ -	$860					X			X
Pipeline (516)	Ft.	1238	$ -	$70					X			X
Prescribed Burning (338)	Ac.	2000	$ -	$3,000					X			
Prescribed Grazing (528)	Ac.	508	$ -	$2,540					X			
Upland Wildlife Habitat Management (645)	Ac.	54	$ -	$270					X	X		X
Use Exclusion (472)	Ac.	1	$ -	$0					X	X		X
Watering Facility (614)	No.	1	$ -	$20					X			X
Windbreak/Shelterbelt Establishment (380)	Ft.	733	$ -	$30						X		

Current Level of Treatment for Irrigated Grass/Pasture/Hay:												
Grass/Pasture/Hay	Quantity		Costs		Effects				Implementation			
Practices	Unit	Quantity	Investment Cost	Annual O&M and Mngt.Cost	Water Conservation	Water Storage	Habitat	WQ	EQIP	WHIP	CREP	Other
Sprinkler Irrigated Grass/Pasture/Hay	Ac.	3,350			-3	-/+	-2	-3				
Fence (382)	Ft.	1637	$ -	$70					X	X		X
Irrigation Sprinkler System (442)	Ac.	186	$ -	$2,050					X			
Irrigation Water Management (449)	Ac.	54	$ -	$540					X			X
Nutrient Management (590)	Ac.	8	$ -	$40					X			
Pasture and Hay Planting (512)	Ac.	10	$ -	$10					X			
Pest Management (595)	Ac.	9	$ -	$90					X			X
Pipeline (516)	Ft.	413	$ -	$20					X			X
Upland Wildlife Habitat Management (645)	Ac.	18	$ -	$90					X	X		X
Windbreak/Shelterbelt Establishment (380)	Ft.	244	$ -	$10						X		
Total RMS Costs			**$ -**	**$ 9,710**								

Future Conditions		Total Acres	Riparian Acres
Surface Irrigated Grass/Pasture/Hay		7,537	
Sprinkler Irrigated Grass/Pasture/Hay		25,963	
Total Irrigated Grass/Pasture/Hay		33,500	
Conversion to Riparian RMS			3,355

Project Future Level of Treatment for Irrigated Grass/Pasture/Hay Lands												
Irrigated Grass/Pasture/Hay Land	Quantity		Costs		Effects				Implementation			
Practices	Unit	Quantity	Investment Cost	Annual O&M and Mngt.Cost	Water Conservation	Water Storage	Habitat	WQ	EQIP	WHIP	CREP	Other
Surface Irrigated Grass/Pasture/Hay	Ac.	7,537			+2	+2	+3	+3				
Brush Management (314)	Ac.	377	$ 3,900	$ 40					X	X		X
Conservation Crop Rotation (328)	Ac.	6,783	$ -	$ -								
Conservation Cover (327)	Ac.	1,884	$188,300	$5,650					X			
Fence (382)	Ft.	31,090	$32,700	$650					X			X
Cover Crop (340)	Ac.	1,884	$94,200	$94,200					X			
Forage Harvest Management (511)	Ac.	6,783	$ -	$ -								
Heavy Use Area Protection (561)	Ac.	10	$150,000	$7,500					X			X
Irr. System, Microirrigation (441)	Ac.	1,884	$2,824,500	$141,230					X			
Irrigation System.Surface and Sub-Surface (443)	Ac.	1,884	$2,260,800	$67,820					X			
Irr. Sys. Tailwater Recovery (447)	Ea.	10	$151,000	$4,530					X			
Irr. Wtr. Conveyance, Pipeline, High Pressure, Undergrd, Plastic (430DD)	Ft.	15,545	$152,000	$760					X			
Irr. Wtr. Conveyance, Pipeline, Rigid Gated Pipeline (430HH)	Ft.	7,773	$40,500	$400					X			
Irrigation Water Management (449)	Ac.	6,783	$198,600	$66,210					X			X
Nutrient Management (590)	Ac.	6,783	$100,600	$33,530					X			X
Pasture and Hay Planting (512)	Ac.	1,884	$170,200	$1,700					X			X
Pest Management (595)	Ac.	6,783	$200,900	$66,970					X			

Project Future Level of Treatment for Irrigated Grass/Pasture/Hay Lands												
Surface Irrigated Grass/Pasture/Hay Land (continued)	Quantity		Costs		Effects				Implementation			
Practices	Unit	Quantity	Investment Cost	Annual O&M and Mngt.Cost	Water Conservation	Water Storage	Habitat	WQ	EQIP	WHIP	CREP	Other
Pipeline (516)	Ft.	31,090	$80,600	$1,610					X			X
Prescribed Burning (338)	Ac.	2,261	$39,200	$39,150					X			X
Prescribed Grazing (528)	Ac.	5,653	$77,200	$25,730					X			
Upland Wildlife Habitat Management (645)	Ac.	754	$10,500	$3,500					X			
Use Exclusion (472)	Ac.	1,884	$65,900	$1,980					X	X		X
Watering Facility (614)	No.	15	$21,000	$210					X			X
Windbreak/Shelterbelt Establishment (380)	Ft.	7,773	$33,000	$330					X			

Project Future Level of Treatment for Irrigated Grass/Pasture/Hay Lands												
Irrigated Grass/Pasture/Hay Land	Quantity		Costs		Effects				Implementation			
Practices	Unit	Quantity	Investment Cost	Annual O&M and Mngt.Cost	Water Conservation	Water Storage	Habitat	WQ	EQIP	WHIP	CREP	Other
Sprinkler Irrigated Grass/Pasture/Hay	Ac.	25,963										
Conservation Crop Rotation (328)	Ac.	23,368	$ -	$ -								
Conservation Cover (327)	Ac.	6,491	$649,100	$19,470					X			
Fence (382)	Ft.	31,090	$58,900	$1,180					X			X
Cover Crop (340)	Ac.	6,491	$324,600	$324,550					X			
Forage Harvest Management (511)	Ac.	23,368	$ -	$ -								
Heavy Use Area Protection (561)	Ac.	10	$150,000	$7,500					X			X
Irr. Wtr. Conveyance, Pipeline, High Pressure, Undergrd, Plastic (430DD)	Ft.	53,549	$523,700	$2,620					X			
Irr. Wtr. Conveyance, Pipeline, Rigid Gated Pipeline (430HH)	Ft.	26,774	$139,500	$1,390					X			
Irrigation System, Sprinkler (442)	Ac.	22,613	$12,437,200	$248,740					X			
Irrigation Water Management (449)	Ac.	23,368	$699,400	$233,140					X			X
Nutrient Management (590)	Ac.	23,368	$350,400	$116,800					X			X
Pasture and Hay Planting (512)	Ac.	6,491	$648,100	$6,480					X			X
Pest Management (595)	Ac.	23,368	$700,800	$233,590					X			
Pipeline (516)	Ft.	26,774	$71,200	$1,420					X			X
Prescribed Burning (338)	Ac.	5,193	$779,000	$778,950					X			X
Prescribed Grazing (528)	Ac.	12,982	$194,700	$64,910					X			
Upland Wildlife Habitat Management (645)	Ac.	2,596	$38,700	$12,890					X			
Use Exclusion (472)	Ac.	6,491	$227,200	$6,820					X	X		X
Watering Facility (614)	No.	14	$21,000	$210					X			X
Windbreak/Shelterbelt Establishment (380)	Ft.	13,387	$59,100	$590					X			
Total RMS Costs			**$24,968,200**	**$ 2,624,950**								

Current Level of Treatment for Irrigated Grass/Pasture/Hay Lands Riparian												
Irrigated Grass/Pasture/Hay Riparian	Quantity		Costs		Effects				Implementation			
Practices	Unit	Quantity	Investment Cost	Annual O&M and Mngt.Cost	Water Conservation	Water Storage	Habitat	WQ	EQIP	WHIP	CREP	Other
Grass/Pasture/Hay Lands Riparian	Ac.	3,355			-3	-/+	-2	-3				
Fence (382)	Ft.	10,910	$ 21,800	$ 440					**X**	**X**		**X**
Windbreak/Shelterbelt Establishment (380)	Ft.	293	$1,300	$10						**X**		
Total RMS Costs			**$ 21,800**	**$ 440**								

Future Level of Treatment for Irrigated Grass/Pasture/Hay Lands Riparian												
Irr. Grass/Pasture/Hay Riparian	Quantity		Costs		Effects				Implementation			
Practices	Unit	Quantity	Investment Cost	Annual O&M and Mngt.Cost	Water Conservation	Water Storage	Habitat	WQ	EQIP	WHIP	CREP	Other
Irr. Grass/Pasture/Hay Riparian	Ac.	3,355			+3	+3	+2	+3				
Channel Bank Vegetation (322)	Ac.	33	$ 98,200	$ 1,960					X			
Animal Trails and Walkways (575)	Ft.	500	$ 2,500	$ 250					X			
Channel Stabilization (584)	Ft.	3,912	$ 78,200	$ 390					X			
Fence (wire-4 strand) (382)	Ft.	55,358	$ 88,900	$ 1,780					X	X		X
Nutrient Management (590)	Ac.	2516	$12,600	$12,580					X			X
Pasture and Hay Planting (512)	Ac.	1,342	$134,200	$1,340					X			
Pest Management (595)	Ac.	3020	$90,600	$30,200					X			X
Prescribed Grazing (528)	Ac.	839	$ 12,600	$ 4,200					X			X
Riparian Forest Buffer (391)	Ac.	34	$ 51,000	$ 510					X			X
Riparian Herbaceous Cover (390)	Ac.	67	$ 20,100	$ 200					X			
Stream Crossing (578)	No.	5	$ 17,500	$ 880					X			X
Stream Habitat Improvement Management (395)	Ac.	17	$ 297,500	$ 5,950					X			
Streambank/Shoreline Protection (580)	Ft.	3,912	$ 176,100	$ 3,520					X			
Tree/Shrub Establishment (612)	Ac.	34	$ 15,300	$ 150					X			X
Use Exclusion (472)	Ac.	168	$ 5,900	$ 180					X	X		X
Wetland Creation (658)	Ac.	34	$ 170,000	$ 1,700					X			
Wetland Enhancement (659)	Ac.	34	$ 68,000	$ 680					X			
Wetland Wildlife Habitat Management (644)	Ac.	168	$ 2,500	$ 840					X			
Wildlife Watering Facility (648)	No.	5	$ 3,900	$ 40					X			
Windbreak/Shelterbelt Establishment (380)	Ft.	6920	$29,800	$300						X		
Total RMS Costs			**$ 1,345,600**	**$ 67,350**								

Potential RMS Effects for Irrigated Grass/Pasture/Hayland

Cost Items and Programs		Costs	O&M Costs
Non Farm Bill Programs		$1,315,700	$134,600
Potential Farm Bill Programs		$24,998,100	$2,557,700
Operator O&M and Management Cost			$2,692,300
Annual Management Incentives (3yrs - Incentive Payments)		$ 1,980,200	
Operator Investment		$12,824,700	
Federal Costshare		$11,508,900	
Total RMS Costs		**$ 26,313,800**	**$2,692,300**
Estimated Level of Participation			95%
Total Acres in RMS System			31,800
Anticipated Cost at Estimated Level of Participation			$24,998,100
Total Annual Forage Production Benefits (animal unit months)			2,703
Total Acre Feet of Water Saved Annually			55,980
Increases infiltration and storage of water in soil profile			
Participating landowners will be in compliance with TMDLs			
Improves habitat for ESA endangered and threated species			

Current Conditions			Total Acres
Total Cropland			38,726
Surface Irrigated Cropland			16,500
Sprinkler Irrigated Cropland			13,500
Total Irrigated Cropland			30,000
Typical Management Unit/Ownership			1,780
Current Farm Bill Participation			15%

Current Level of Treatment for Irrigated Cropland

Irrigated Cropland	Quantity		Costs		Effects				Implementation			
Practices	Unit	Quantity	Additional Investment Cost	Annual O&M and Mngt.Cost	Water Conservation	Water Storage	Habitat	WQ	EQIP	WHIP	CREP	Other
Surface Irrigated Cropland	Ac.	16,500			+1	-/+	+1	+3				
Irrigation System, Microirrigation (441)	Ac.	1	$ -	$ 80					X	X		
Irrigation Water Management (449)	Ac.	72	$ -	$ 700					X			
Mulching (484)	Ac.	2	$ -	$ 100					X	X		
Nutrient Management (590)	Ac.	19	$ -	$ 100					X			
Pest Management (595)	Ac.	21	$ -	$ 210					X			X
Upland Wildlife Habitat Management (645)	Ac.	16	$ -	$ 80					X	X		X
Sprinkler Irrigated Cropland	Ac.	13,500										
Irrigation System, Sprinkler (442)	Ac.	186	$ -	$ 2,050					X			
Irrigation Water Management (449)	Ac.	144	$ -	$ 1,400					X			
Nutrient Management (590)	Ac.	37	$ -	$ 190					X			
Pest Management (595)	Ac.	42	$ -	$ 420					X			X
Upland Wildlife Habitat Management (645)	Ac.	32	$ -	$ 160					X	X		X
Total RMS Costs			**$ 0**	**$ 5,490**								

Future Conditions		Total Acres	Riparian Acres
Surface Irrigated Cropland		4,125	124
Sprinkler Irrigated Cropland		25,875	760
Total Irrigated Cropland		30,000	884

Project Future Level of Treatment for Irrigated Cropland

Irrigated Cropland	Quantity		Costs		Effects				Implementation			
Practices	Unit	Quantity	Investment Cost	Annual O&M and Mngt.Cost	Water Conservation	Water Storage	Habitat	WQ	EQIP	WHIP	CREP	Other
Surface Irrigated Cropland	Ac.	4,125			+2	+1	+2	+2				
Comp. Nut. Mgmt Plan (100)	No.	6	$ 6,000	$ 6,000					X			
Conservation Crop Rotation (328)	Ac.	3,713	$ -	$ -					X			
Cover Crop (340)	Ac.	1,031	$ 51,600	$ 51,600					X			
Forage Harvest Mgmt. (511)	Ac.	1,031	$ -	$ -					X			
Irr Sys Micro Irrigation (441)	Ac.	413	$ 618,000	$ 30,900					X	X		
Irr Water Conveyance (430DD)	Ft.	8,508	$ 63,100	$ 1,260					X			
Irrigation Water Mgmt (449)	Ac.	4,125	$ 121,600	$ 40,530					X			
Irrigation Land Leveling (464)	Ac.	206	$ 51,500	$ 1,550					X			
Nutrient Mgmt (590)	Ac.	3,713	$ 55,400	$ 18,470					X			
Pest Mgmt (595)	Ac.	3,713	$ 110,800	$ 36,920					X			X
Pumping Plant (533)	No.	1	$ 3,500	$ 70					X			X
Residue Mgmt (No-Till, Strip Till, Direct Seed) (329)	Ac.	825	$ 74,300	$ 24,750					X			
Structure for Water Control (587)	No.	1	$ 500	$ 10					X			
Surface Roughening (609)	Ac.	1,031	$ 7,700	$ 7,700					X			
Windbreak/Shelterbelt Est. (380)	Ft.	8,508	$ 38,300	$ 38,300						X		

Project Future Level of Treatment for Irrigated Cropland

Irrigated Cropland	Quantity		Costs		Effects				Implementation			
Practices	Unit	Quantity	Investment Cost	Annual O&M and Mngt.Cost	Water Conservation	Water Storage	Habitat	WQ	EQIP	WHIP	CREP	Other
Riparian Surface Irrigated Cropland	Ac.	124										
Channel Bank Vegetation (322)	Ac.	1	$ 3,000	$ 60					X			
Channel Stabilization (584)	Ft.	2,582	$ 51,600	$ 260					X			
Critical Area Planting (342)	Ac.	1	$ 500	$ 10					X			
Fence (382)	Ft.	2,046	$ 4,100	$ 80					X	X		X
Heavy Use Protection (561)	Ac.	3	$ 45,000	$ 2,250					X			X
Prescribed Grazing (528)	Ac.	31	$ 500	$ 160					X			
Riparian Forest Buffer (391)	Ac.	1	$ 1,500	$ 20					X			X
Riparian Herbaceous Cover (390)	Ac.	2	$ 600	$ 10					X			
Stream Crossing (578)	No.	3	$ 10,500	$ 530					X			
Stream Hab Improve Mgmt (395)	Ac.	1	$ 17,500	$ 350					X			
Streambank/Shoreline Prot. (580)	Ft.	2,582	$ 116,200	$ 2,320					X			
Tree/Shrub Establishment (612)	Ac.	1	$ 500	$ -					X			X
Use Exclusion (472)	Ac.	6	$ 200	$ 10					X	X		X
Wetland Creation (658)	Ac.	1	$ 5,000	$ 50					X			
Wetland Enhancement (659)	Ac.	1	$ 2,000	$ 20					X			
Wetland Wildlife Hab. Mgmt.(644)	Ac.	6	$ 100	$ 30					X			
Wildlife Watering Facility (648)	No.	3	$ 2,300	$ 20					X			

Project Future Level of Treatment for Irrigated Cropland

Irrigated Cropland	Quantity		Costs		Effects				Implementation			
Practices	Unit	Quantity	Investment Cost	Annual O&M and Mngt.Cost	Water Conservation	Water Storage	Habitat	WQ	EQIP	WHIP	CREP	Other
Sprinkler Irrigated Cropland	Ac.	25,875										
Comp. Nut. Mgmt. Plan (100)	No.	4	$ 4,000	$ 4,000					X			
Conservation Crop Rotation (328)	Ac.	23,288	$ -	$ -					X			
Cover Crop (340)	Ac.	6,469	$ 323,500	$ 323,500					X			
Forage Harvest Mgmt. (511)	Ac.	6,469	$ -	$ -					X			
Irr Sys Micro Irrigation (441)	Ac.	2,588	$ 3,882,000	$ 194,100					X	X		
Irrigation Sys Sprinkler (442)	Ac.	12,375	$ 6,766,700	$ 135,330					X			
Irrigation Water Mgmt (449)	Ac.	25,875	$ 771,900	$ 257,310					X			
Nutrient Mgmt (590)	Ac.	23,288	$ 348,800	$ 116,260					X			
Pest Mgmt (595)	Ac.	23,288	$ 697,400	$ 232,460					X			X
Pumping Plant (533)	No.	4	$ 13,800	$ 280					X			X
Residue Mgmt (No-Till, Strip Till, Direct Seed) (329)	Ac.	5,175	$ 465,800	$ 155,250					X			
Structure for Water Control (587)	No.	4	$ 2,000	$ 20					X			
Surface Roughening (609)	Ac.	6,469	$ 48,500	$ 48,500					X			
Upland Wildlife Hab Mgmt (645)	Ac.	518	$ 7,300	$ 2,430					X	X		X
Windbreak/Shelterbelt Est. (380)	Ft.	53,367	$ 240,200	$ 240,200						X		

Project Future Level of Treatment for Irrigated Cropland

Irrigated Cropland	Quantity		Costs		Effects				Implementation			
Practices	Unit	Quantity	Investment Cost	Annual O&M and Mngt.Cost	Water Conservation	Water Storage	Habitat	WQ	EQIP	WHIP	CREP	Other
Riparian Sprinkler Irrigated Cropland	Ac.	760										
Channel Bank Vegetation (322)	Ac.	8	$ 24,000	$ 480					X			
Channel Stabilization (584)	Ft.	1,330	$ 26,600	$ 130					X			
Critical Area Planting (342)	Ac.	8	$ 3,800	$ 110					X			
Fence (382)	Ft.	12,540	$ 25,100	$ 500					X	X		X
Heavy Use Protection (561)	Ac.	2	$ 30,000	$ 1,500					X			X
Prescribed Grazing (528)	Ac.	190	$ 2,900	$ 950					X			
Riparian Forest Buffer (391)	Ac.	8	$ 12,000	$ 120					X			X
Riparian Herbaceous Cover (390)	Ac.	16	$ 4,800	$ 50					X			
Stream Crossing (578)	No.	2	$ 7,000	$ 350					X			
Stream Hab Improve Mgmt (395)	Ac.	4	$ 70,000	$ 1,400					X			
Streambank/Shoreline Prot. (580)	Ft.	1,330	$ 59,900	$ 1,200					X			
Tree/Shrub Establishment (612)	Ac.	8	$ 3,600	$ 40					X			X
Use Exclusion (472)	Ac.	38	$ 1,300	$ 40					X	X		X
Wetland Creation (658)	Ac.	8	$ 40,000	$ 400					X			
Wetland Enhancement (659)	Ac.	8	$ 16,000	$ 160					X			
Wetland Wildlife Hab. Mgmt.(644)	Ac.	38	$ 600	$ 190					X			
Wildlife Watering Facility (648)	No.	2	$ 1,600	$ 20					X			
Total RMS Costs			**$15,364,500**	**$1,981,520**								

Potential RMS Effects for Irrigated Cropland

Cost Items and Programs		Costs	O&M Costs
Non Farm Bill Programs		$768,200	$99,100
Potential Farm Bill Programs		$14,596,300	$1,882,400
Operator O&M and Management Cost			$1,981,500
Annual Management Incentives (3yrs - Incentive Payments)		$2,657,400	
Operator Investment		$6,737,700	
Federal Costshare		$5,969,400	
Total RMS Costs		**$15,364,500**	**$1,981,500**
Estimated Level of Participation			95%
Total Acres in RMS System			28,500
Anticipated Cost at Estimated Level of Participation			$14,596,300
Total Acre Feet of Water Saved Annually			42,060
Participating landowners will be in compliance with TMDLs			
Improves habitat for ESA endangered and threated species			

Current Conditions		Total Acres	Riparian Acres
Rangeland		127,565	
Grazed Forest		2,882	
Total Rangeland/Grazed Forest		130,447	6,083
Typical Management Unit/Ownership		1,780	
Current Farm Bill Participation		5%	

Current Level of Treatment for Rangeland/Grazed Forest

Rangeland/Grazed Forest	Quantity		Costs		Effects				Implementation			
Practices	Unit	Quantity	Additional Investment Cost	Annual O&M and Mngt.Cost	Water Conservation	Water Storage	Habitat	WQ	EQIP	WHIP	CREP	Other
Rangeland/Grazed Forest	Ac.	130,447										
Brush Management (314)	Ac.											
Fence (wire-4 strand) (382)	Ft.											
Pipeline (516)	Ft.											
Prescribed Grazing (528)	Ac.											
Pumping Plant (533)	No.											
Range Planting (550)	Ac.											
Heavy Use Area Protection (561)	Ac.											
Spring Development (574)	No.											
Pest Management (590)	Ac.											
Watering Facility (614)	No.											
Water Well (642)	No.											
Upland Wildlife Habitat Management (645)	Ac.											
Total RMS Costs			**$ 0**	**$ 0**								

Future Conditions		Total Acres	Riparian Potential
Rangeland		127,565	
Grazed Forest		2,882	
Conversion to Riparian RMS			6,083
Total Rangeland/Grazed Forest Acres		130,447	

Future Level of Treatment for Rangeland/Grazed Forest

Rangeland/Grazed Forest	Quantity		Costs		Effects				Implementation			
Practices	Unit	Quantity	Investment Cost	Annual O&M and Mngt.Cost	Water Conservation	Water Storage	Habitat	WQ	EQIP	WHIP	CREP	Other
Rangeland/Grazed Forest	Ac.	130,447			+3	+2	+3	+3				
Brush Management (314)	Ac.	652	$ 16,300	$ 160					X			
Fence (wire-4 strand) (382)	Ft.	538094	$ 1,076,200	$ 21,520					X	X		X
Pipeline (516)	Ft.	538094	$ 1,452,900	$ 29,060					X			X
Prescribed Grazing (528)	Ac.	117402	$ 1,761,000	$ 587,010					X			
Pumping Plant (533)	No.	13	$ 45,000	$ 900					X			X
Range Planting (550)	Ac.	6522	$ 587,000	$ 528,300					X			
Heavy Use Area Protection (561)	Ac.	102	$ 1,528,700	$ 76,430					X			X
Spring Development (574)	No.	204	$ 479,000	$ 23,950					X			
Pest Management (590)	Ac.	117402	$ 3,522,100	$1,174,020					X			
Watering Facility (614)	No.	102	$ 152,900	$ 1,530					X			X
Water Well (642)	No.	13	$ 104,400	$ 1,040					X			
Upland Wildlife Habitat Management (645)	Ac.	39134	$ 587,000	$ 195,670					X	X		X
Total RMS Costs			**$11,312,500**	**$2,639,590**								

Current Level of Treatment for Rangeland/Grazed Forest Riparian

Rangeland/Grazed Forest Riparian	Quantity		Costs		Effects				Implementation			
Practices	Unit	Quantity	Investment Cost	Annual O&M and Mngt.Cost	Water Conservation	Water Storage	Habitat	WQ	EQIP	WHIP	CREP	Other
Rangeland/Grazed Forest Riparian	Ac.	6,083										
Channel Bank Vegetation (322)	Ac.											
Critical Area Planting (342)	Ac.											
Fence (wire-4 strand) (382)	Ft.											
Riparian Forest Buffer (391)	Ac.											
Use Exclusion (472)	Ac.											
Pipeline (516)	Ft.											
Prescribed Grazing (528)	Ac.											
Pumping Plant (533)	Ac.											
Heavy Use Area Protection (561)	No.											
Spring Development (574)	No.											
Stream Crossing (578)	No.											
Structure for Water Control (587)	No.											
Pest Management (590)	Ac.											
Tree/Shrub Establishment (612)	Ac.											
Watering Facility (614)	No.											
Total RMS Costs			**$ 0**	**$ 0**								

Future Level of Treatment for Rangeland/Grazed Forest Riparian

Rangeland/Grazed Forest	Quantity		Costs		Effects				Implementation			
Practices	Unit	Quantity	Investment Cost	Annual O&M and Mngt.Cost	Water Conservation	Water Storage	Habitat	WQ	EQIP	WHIP	CREP	Other
Rangeland/Grazed Forest	Ac.	6,083			+3	+2	+3	+3				
Channel Bank Vegetation (322)	Ac.	30	$ 91,200	$ 1,820					X			
Critical Area Planting (342)	Ac.	30	$ 14,400	$ 430					X			
Fence (wire-4 strand) (382)	Ft.	12,546	$ 25,100	$ 500					X	X		X
Riparian Forest Buffer (391)	Ac.	30	$ 45,600	$ 460					X			X
Use Exclusion (472)	Ac.	122	$ 4,300	$ 130					X	X		X
Pipeline (516)	Ft.	12,546	$ 33,900	$ 680					X			X
Prescribed Grazing (528)	Ac.	3,042	$ 45,600	$ 15,210					X			
Pumping Plant (533)	Ac.	5	$ 16,400	$ 330					X			X
Heavy Use Area Protection (561)	No.	10	$ 142,600	$ 7,130					X			X
Spring Development (574)	No.	5	$ 11,200	$ 560					X			
Stream Crossing (578)	No.	5	$ 16,600	$ 830					X			
Structure for Water Control (587)	No.	5	$ 2,500	$ 30					X			
Pest Management (590)	Ac.	3,042	$ 91,200	$ 30,420					X			
Tree/Shrub Establishment (612)	Ac.	30	$ 13,700	$ 140					X			X
Watering Facility (614)	No.	10	$ 14,300	$ 140					X			X
Total RMS Costs			**$ 568,600**	**$ 58,810**								

Potential RMS Effects for Rangeland/Grazed Forest							
Cost Items and Programs						**Costs**	**O&M Costs**
Non Farm Bill Programs						$594,100	$134,900
Potential Farm Bill Programs						$11,287,000	$2,563,500
Operator O&M and Management Cost							$2,698,400
Annual Management Incentives (3yrs - Incentive Payments)						$6,006,900	
Operator Investment						$858,100	
Federal Costshare						$5,016,100	
Total RMS Costs						**$11,881,100**	**$2,698,400**
Estimated Level of Participation							95%
Total Acres in RMS System							123,900
Anticipated Cost at Estimated Level of Participation							$11,287,000
Total Annual Forage Production Benefits (animal unit months)							17,163
Participating landowners will be in compliance with TMDLs							
Improves habitat for ESA endangered and threated species							