

## Introduction

The Willow 8-Digit Hydrologic Unit Code (HUC) subbasin contains 414,244 acres. Forty percent of the subbasin is in Bonneville County, 39 percent in Bingham County and 10 percent in Caribou County. Sixty percent of the basin is privately owned and 40 percent is publicly owned.

Seventy five percent of the basin is in shrubland, rangeland, grass, pasture, or hayland. Fourteen percent is cropland, and the remainder is forest, water, wetlands, developed or barren.

Elevations range from 5,200 feet in the northern portion of the HUC to 9,803 feet in the southeastern portion of the HUC.

Conservation assistance is provided by 3 Soil and Water Conservation Districts, and 3 Resource Conservation and Development offices.

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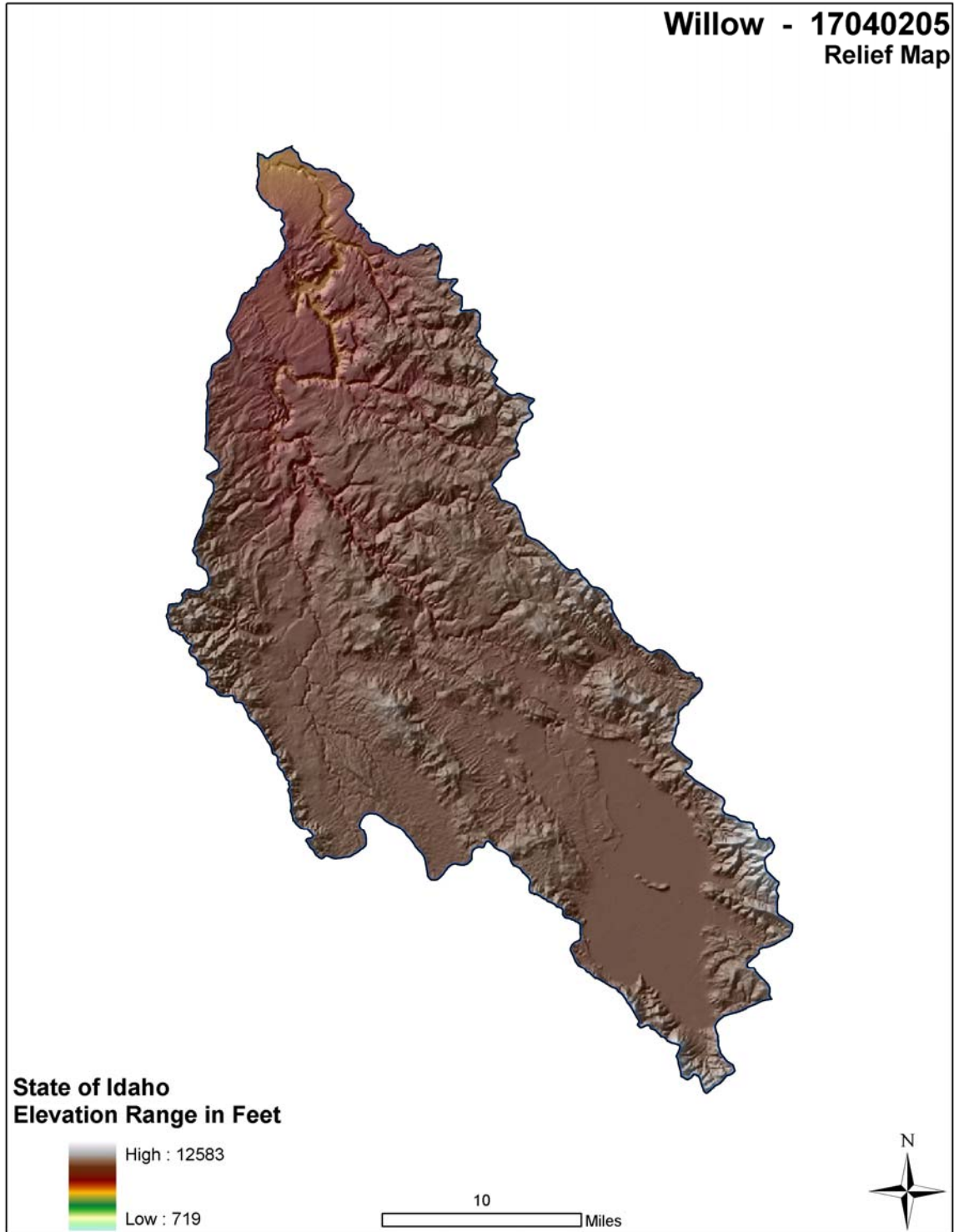
[Footnotes/Bibliography](#)

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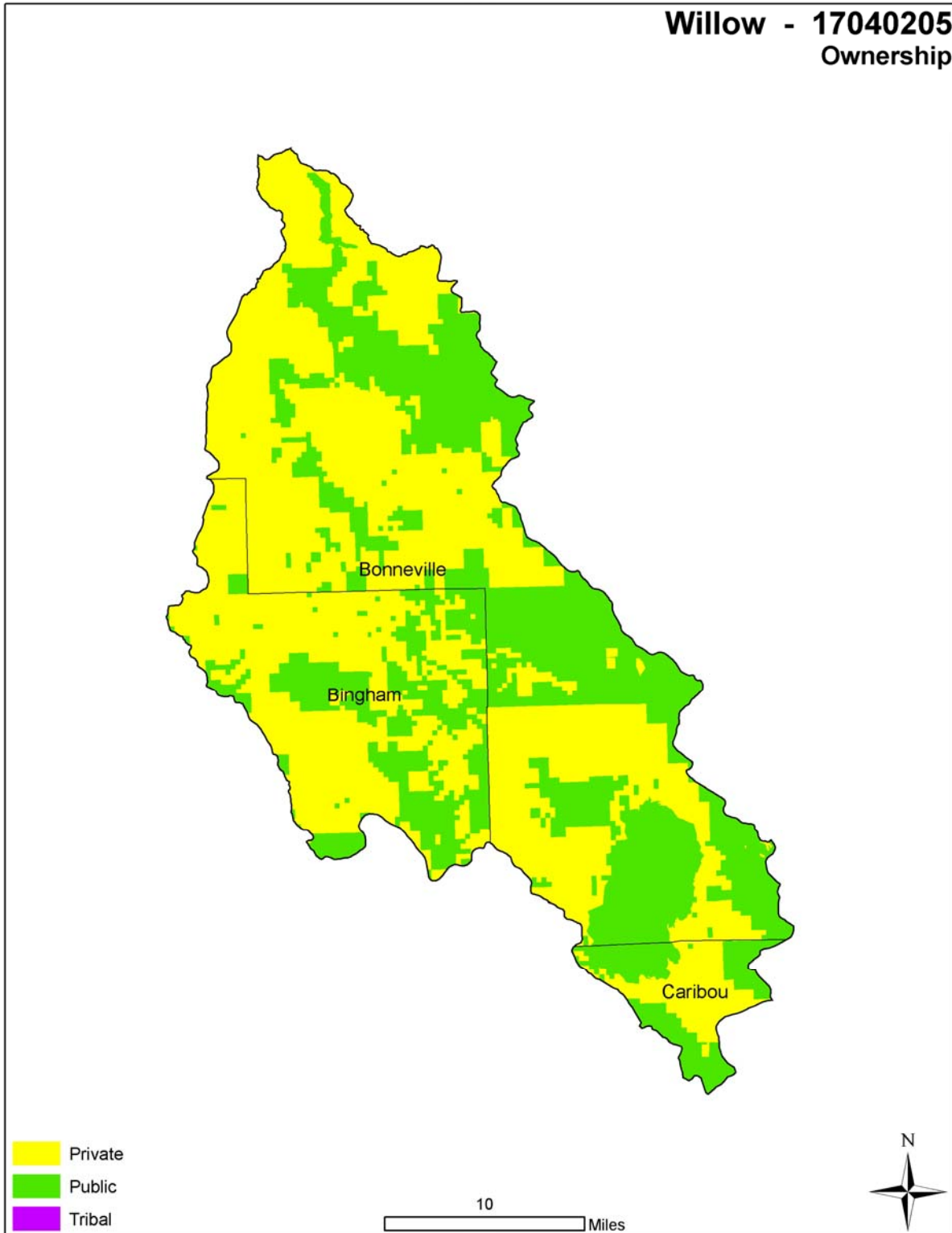
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**Relief Map**



**General Ownership<sup>1</sup>**





# Willow - 17040205

Idaho

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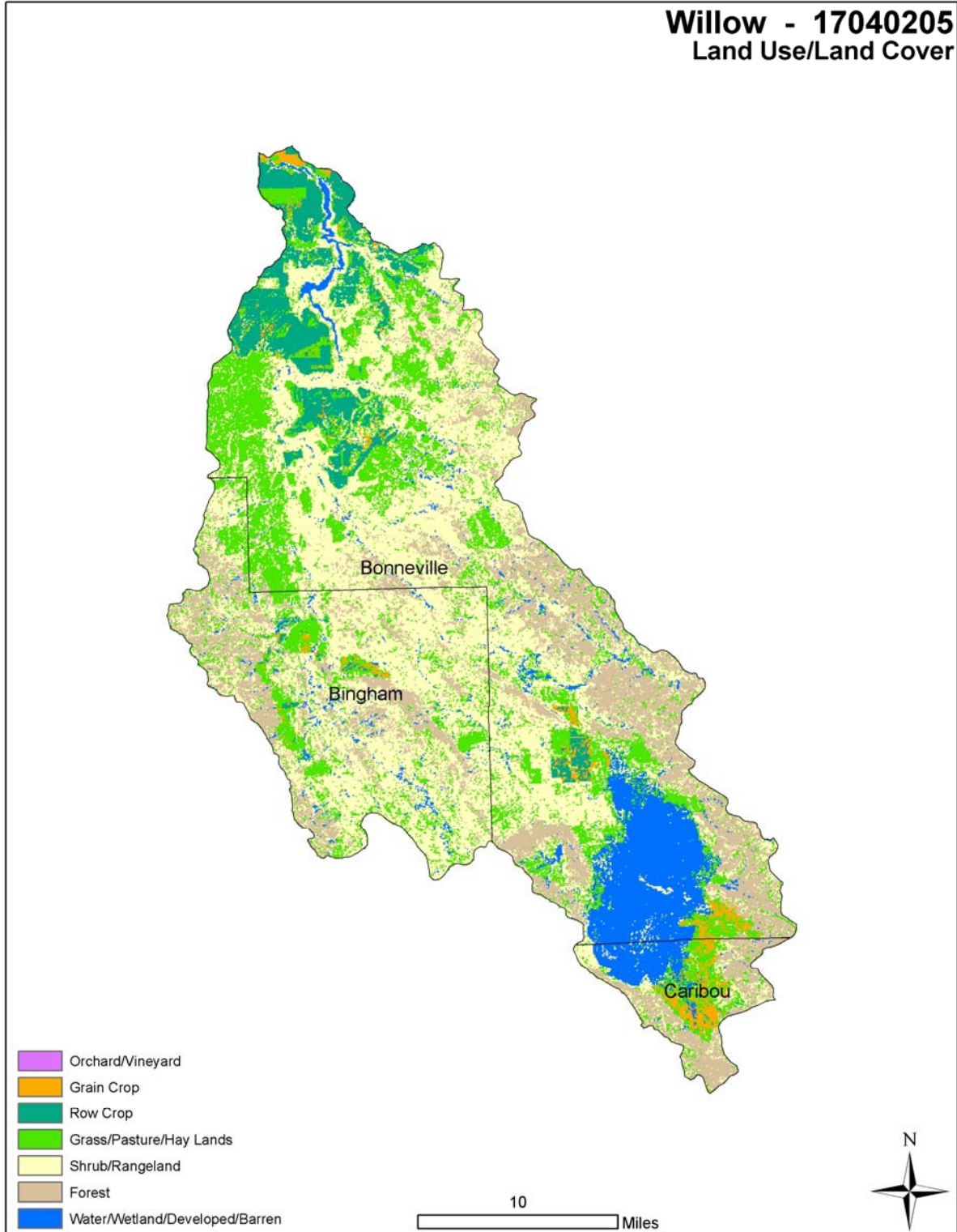
## Physical Description

Land Cover/ Land Use (NLCD <sup>2</sup> )	Ownership - (2003 Draft BLM Surface Map Set <sup>1</sup> )							Totals	% of HUC
	Public		Private*		Tribal				
	Acres	%	Acres	%		%			
Forest	39,940	24	38,010	15	-		77,950	19	
Grain Crops	-	-	7,330	3	-	-	7,330	2	
Conservation Reserve <sup>3</sup> Program (CRP) Land	-	-	16,800	7	-	-	16,800	4	
Grass/Pasture/Hay Lands	22,200	13	50,910	28	-	-	73,110	22	
Orchards/Vineyards/Berries	-	-	-	-	-	-	0	0	
Row Crops	-	-	26,050	11	-	-	26,050	6	
Shrub/Rangelands	77,680	46	98,460	40	-	-	176,140	43	
Water/Wetlands/ Developed/Barren	26,970	16	9,890	4	-	-	36,860	9	
<b>Idaho HUC Totals</b>	<b>166,790</b>	<b>40</b>	<b>247,450</b>	<b>60</b>	<b>-</b>	<b>-</b>	<b>414,240</b>	<b>100</b>	
<b>Irrigated Lands<sup>4</sup></b>	<b>Type of Land</b>		<b>ACRES</b>		<b>% of Irrigated Lands</b>		<b>% of HUC</b>		
	Cultivated Cropland		1,200		20.3		.30		
	Non-Cultivated Cropland *		3,900		66.1		.90		
	Pastureland		800		13.6		.20		
	<b>Total Irrigated Lands</b>		<b>5,900</b>		<b>100</b>		<b>1.4</b>		

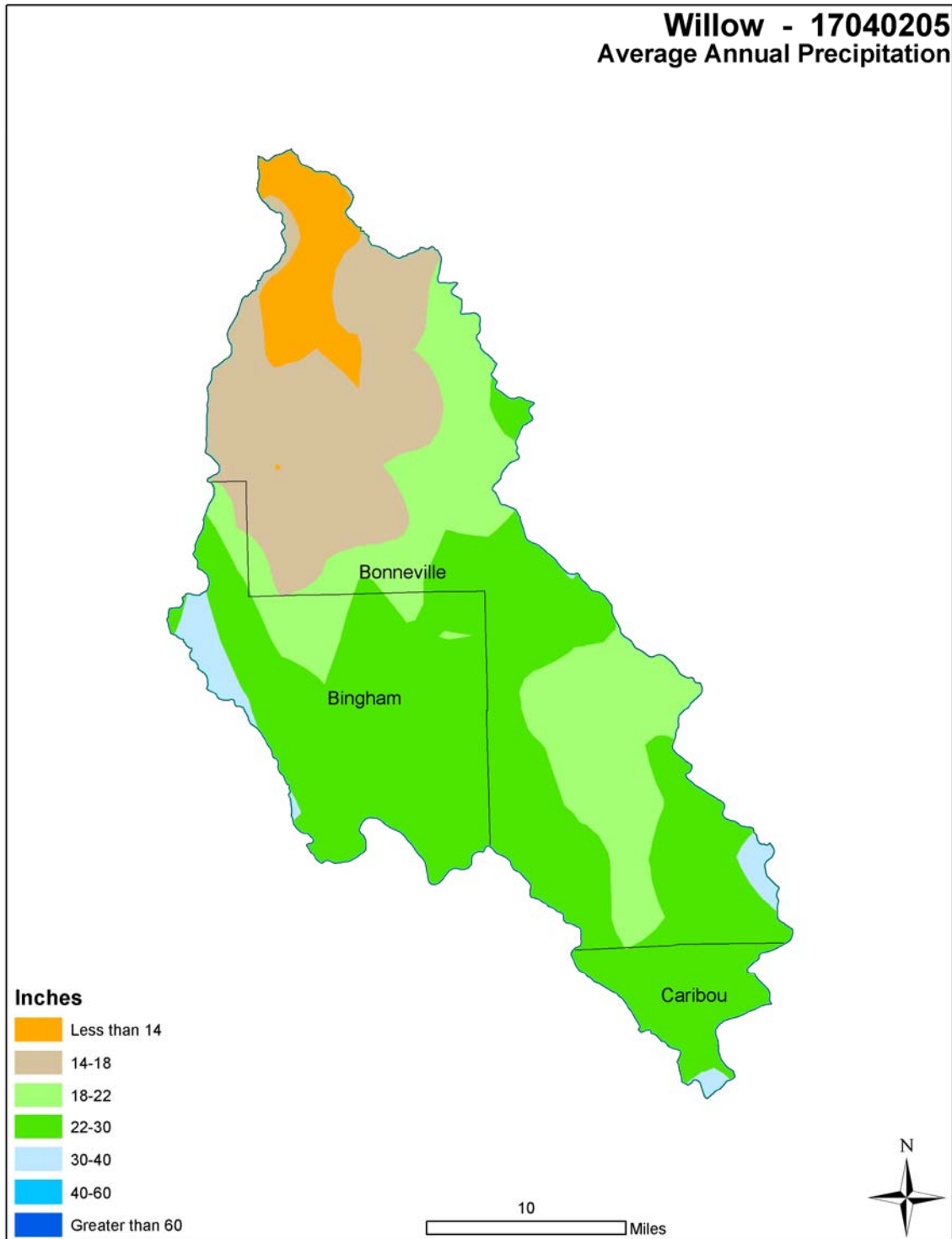
\* Includes permanent hayland and horticultural cropland.

\* Any differences between the acres in the above Table and the Future Conservation Needs Tables in the back of this document is due to the differences in Land Cover acres as opposed to Land Use acres. However the Total Private acres do balance between the Land Use and Land Cover acres.

**Land Use/Land Cover<sup>2</sup>**

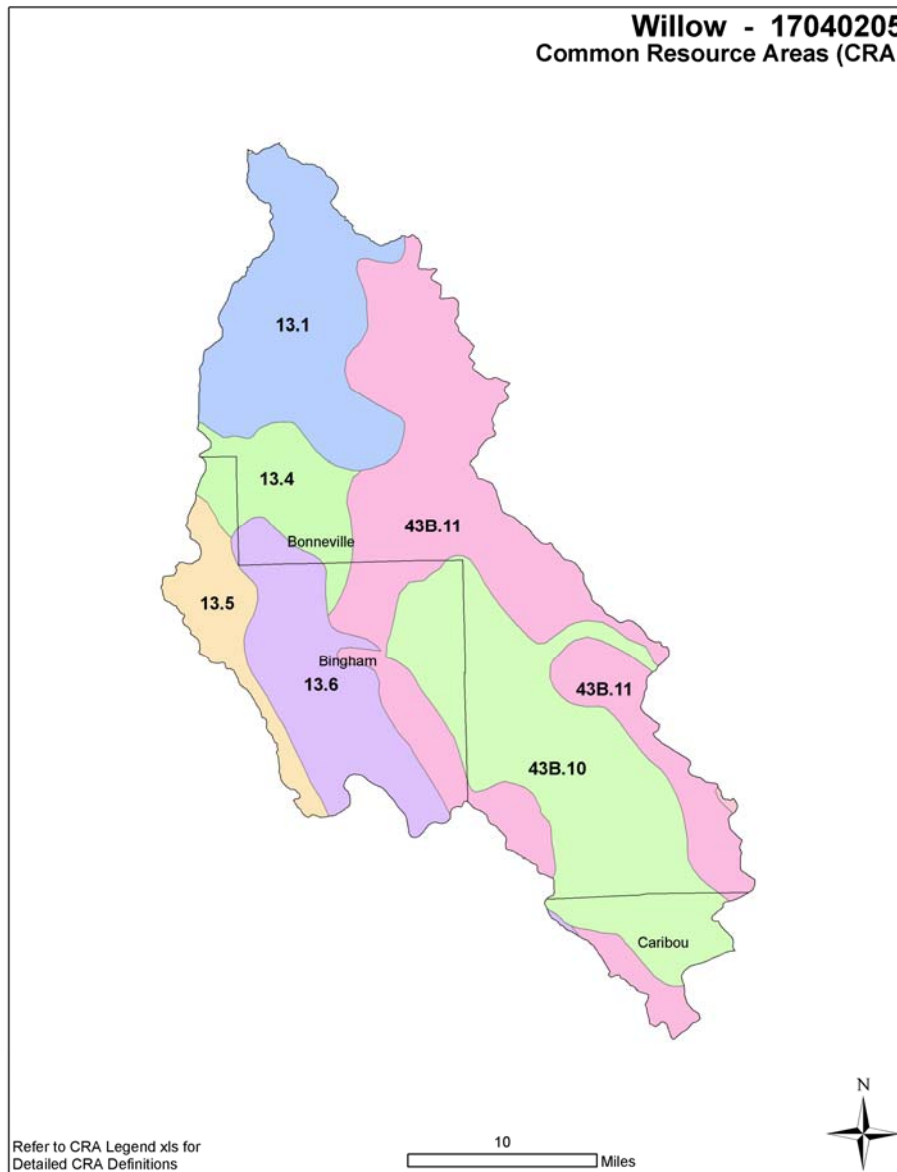


**Average Annual Precipitation<sup>LS</sup>**



### Common Resource Area Map

The Common Resource Areas (CRA) delineated below for the Willow HUC are described in the next section (for additional information, see [http://www.id.nrcs.usda.gov/technical/soils/common\\_res\\_areas.html](http://www.id.nrcs.usda.gov/technical/soils/common_res_areas.html)). A 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 land use/land cover, 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 MLRA framework.

**13.1 Eastern Idaho Plateaus – Dissected Plateaus and Teton Basin:** This unit is used for cropland and rangeland. Potatoes are an important cash crop. Sprinkler irrigated land supports potatoes, alfalfa, and pasture. Non-irrigated land supports small grains. Mollisols developed in thick loess deposits or alluvium and are subject to wind erosion. Potential natural vegetation is sagebrush steppe and is unlike the forests of the higher, more rugged mountains. Wet meadows occur in the poorly-drained soils of the Teton Basin.

**13.4 Eastern Idaho Plateaus – Sagebrush Steppe- and Woodland-Covered Hills and Low Mountains:** This unit occupies an elevational band between the higher mountains and the lower inter-montane valleys. Potential natural vegetation is mostly sagebrush steppe. Cool season grasses are more common than in the adjacent, drier units. Juniper woodland vegetative sites occur on shallow rock soils. Land use is primarily livestock grazing.

**13.5 Eastern Idaho Plateaus – High Elevation Forests and Shrublands:** This unit is mountainous and occupies the elevational band above Sagebrush Steppe Valleys and Woodland-Covered Hills and Low Mountains CRA units. It is characterized by a mix of conifers, mountain brush, and sagebrush grassland. North-facing slopes and many flatter areas support open stands of Douglas-fir, aspen and lodgepole pine. Winters are colder and the Mean annual precipitation is higher than in lower elevational units.

**13.6 Eastern Idaho Plateaus - Sagebrush Steppe Valleys:** This valley unit is flanked by hills and mountains. It is dominated by sagebrush grassland and lacks woodlands, open conifer forest, and the saltbush-greasewood vegetation. Perennial bunchgrasses are more abundant than in the Sagebrush Basins and Slopes in Utah. Valleys mostly drain to the Snake River and fish assemblages are unlike those of the internally-drained basins to the south (MLRA 28A). Grazing is the dominant land use but non-irrigated wheat and barley farming is much more common than in MLRA 28A. This unit is less suitable for cropland and has less available water than many parts of the Snake River Plain (MLRA 11).

**43B.10 Central Rocky Mountains--Cold Valleys:** The Cold Valleys contain bottomlands, terraces, marshlands, alluvial fans, and foothills that are nestled below the Partly Forested Mountains. Mean annual frost-free season is brief, 40 to 90 days, and shorter than in the Sagebrush Steppe Valleys. Potential natural vegetation is mostly sagebrush steppe. Wet bottomlands support sedges, rushes, and willows. Pastureland, rangeland, and small grain, alfalfa, and potato farming occur. Fields, streams, and marshes are important habitat for both nesting and migratory birds.



## Common Resource Area Descriptions - Continued

**43B.11 Central Rocky Mountains – Partly Forested Mountains:** The steep, dry Partly Forested Mountains vary in elevation from about 6,000 to over 9,000 feet. Mean annual precipitation is 500 to 750 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. Soils have a cryic temperature regime and are rocky and shallow. They support open-canopied forests, shrublands, and grasslands; Douglas-fir, lodgepole pine, and aspen are most common on north-facing slopes and gently sloping uplands while mountain big sagebrush and mountain brush dominate south-facing slopes. Its vegetation is distinct from surrounding ecoregions. It is used as summer range and for timber production.

## Streamflow Summary<sup>1</sup>

Willow Creek is a tributary to the Snake River. It originates from streams that drain the east side of the Blackfoot Mountains. The entire drainage area is approximately 630 square miles. Since May 1924, water has been diverted from Grays Lake into Meadow Creek basin, and then into Blackfoot Reservoir. Waters of Willow Creek are connected to the Snake River through a complex irrigation system located below the Ririe Reservoir. Flow from the Ririe Reservoir dam is reduced to no discharge for four to five months (typically December through March) of the year. Annual discharge at the dam is approximately 74,000 ac-ft, with about 40% of discharge occurring April through June (USGS Station 13058000, Oct 1985 – Sep 2005). Flow is the limiting factor for beneficial use support below the Ririe Reservoir.

		CFS	
<b>Irrigated Adjudicated Water Rights<sup>/6)</sup></b>	Surface Water	298.3	
	Groundwater	25.6	
	Total Irrigated Adjudicated Water Rights	323.9	
<b>Stream Flow Data<sup>/7)</sup></b>	USGS Station 13057940, Willow Creek below Tex Creek near Ririe, Idaho. Based on data from October 1985 through September 2005.		<b>ACRE-FEET</b>
		Average Annual	75,500
		April - June Average	52,000
		Percent of Average Annual	69
<b>Stream Data</b>  <i>*Percent of Total Miles of streams in HUC</i>		<b>MILES</b>	<b>PERCENT</b>
	Total Stream Miles <sup>/8)</sup>	1,479	
	Water quality impaired streams <sup>/9,10)</sup>	675	46
	Anadromous Fish Presence (Streamnet) <sup>/11)</sup>	0	0
	Bull Trout Presence (Streamnet) <sup>/11)</sup>	0	0
<b>Land Cover/Use<sup>/2)</sup></b> based on a 100 ft. stretch on both sides of all streams in the 100K Hydro Layer		<b>ACRES</b>	<b>PERCENT</b>
	Forest	6,502	12%
	Grain Crops	721	1%
	Grass/Pasture/Hay Lands	12,361	24%
	Row Crops	2,912	6%
	Shrub/Rangelands – Includes CRP Lands	24,522	47%
	Water/Wetlands/Developed/Barren	5,014	10%
	<b>Total Acres of 100 ft stream buffers</b>	<b>52,032</b>	<b>100%</b>
<b>Land Capability Class<sup>/4)</sup></b>	<b>I</b> – slight limitations	0	0
	<b>II</b> – moderate limitations	2,100	2%
	<b>III</b> – severe limitations	45,400	52%
	<b>IV</b> – very severe limitations	21,900	25%
	<b>V</b> – no erosion hazard, but other limitations	0	0
	<b>VI</b> – severe limitations, unsuited for cultivation, limited to pasture, range, forest	18,000	21%
	<b>VII</b> – very severe limitations, unsuited for cultivation, limited to grazing, forest, wildlife	0	0
	<b>VIII</b> – misc areas have limitations, limited to recreation, wildlife, and water supply	0	0
	<b>Total Crop &amp; Pasture Lands</b>	<b>87,400</b>	<b>100%</b>



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Confined Animal Feeding Operations – Dairies/Feedlots <sup>/12,13,26</sup>						
	Number	<200	200-500	500-750	750-1000	>1000
Dairy	0					
	Number	<300	300-999	1,000-4,999	5,000-9,000	>10,000
Feedlots	0					

## Resource Settings

### Pasture

Some improved dryland pasture with introduced forage species including wheatgrasses, fescues, bromes, timothy, orchardgrass and foxtail in the wet meadows. The older established stands are of low vigor, with encroachment of noxious weeds. Continuous season-long grazing is typical, with below-optimum forage production. Some commercial fertilizers are applied, and pest management practices are limited. Livestock water may be inadequate.

Irrigated pastureland includes both low elevation pastures and those in high elevation mountain valleys. Irrigated pastures are often surface irrigated on variable soils with slopes 1-5%. Irrigation water distributed via earthen ditches, with tailwater eventually returning to rivers or streams. Fields may have been leveled. Irrigation efficiency is 20-35%. Plants are introduced forage species and native perennials, conventionally tilled when rotating pasture (10 years) and grain (2 years). Fertilizers are sometimes applied, but without soil testing or nutrient management. Adjacent riparian areas are important for wildlife.

### Dry Cropland

Primarily winter wheat/fallow (precipitation 10-14 inches) or annual spring barley (precipitation 16-22 inches), on silt loams with slopes 0-8%. Dry cropland is often characterized by significant ephemeral gully and concentrated flow erosion as well as sheet and rill erosion. Conventional tillage results in less than 15% residue after planting. Application of nutrients and pesticides typically does not meet Idaho NRCS standards.

### Surface Irrigated Cropland

Conventionally tilled, often intensively cultivated cropland on 0-7% slopes. Precipitation is 14 inches or less. Soils are typically sandy loams, silt loams, and loams, and may have been extensively land-leveled in the past. Most irrigation is by siphon tube or gated pipe, but there is also some border irrigation. Typical rotations include silage corn, small grains, and alfalfa, although annual grain is also common. Irrigation-induced erosion exceeds the threshold. Wind erosion is a resource problem following low residue row crops. Surface roughening and cover crops are often utilized to reduce wind erosion problems. Nutrient, pest, and/or irrigation water management may be less than desirable. Impacted surface and/or ground water quality is common.

### Sprinkler Irrigated Cropland

Conventionally tilled cropland on soils ranging from sands to loams. Rotations containing less than 66% high residue crops can lead to wind erosion problems. Wind erosion is typically a problem from March to June, creating air quality and visibility hazards in some portions of the subbasin. Various combinations of small grains, alfalfa, beets, corn, potatoes, beans and barley are grown. Potatoes with one or two years of spring grain is a typical rotation on slopes ranging from 0-8%.

**Resource Settings** - continued

These rotations may have sheet and rill and ephemeral gully erosion problems in the spring following potatoes. Sprinkler-irrigation induced erosion may also be a concern, especially on steeper slopes. Nutrient and pest management may be less than desirable. Irrigation water management and maintenance of sprinkler systems may be less than desirable. Wildlife habitat is often inadequate with limited permanent cover.

**Hayland**

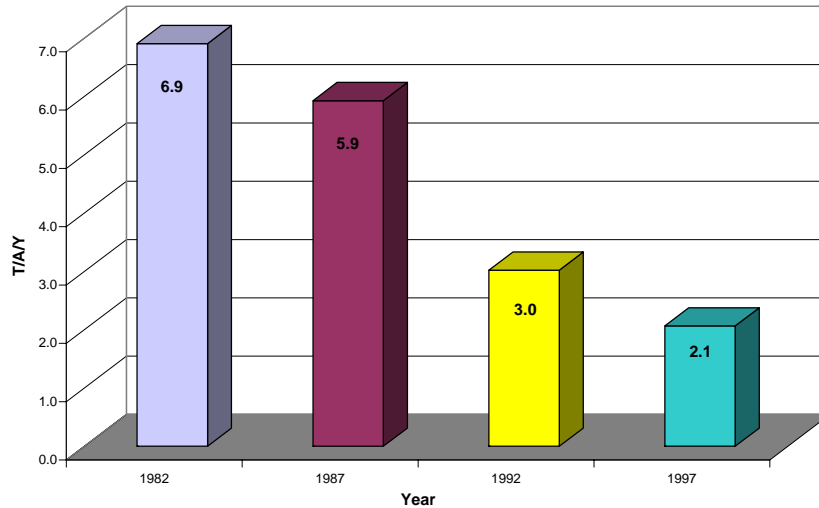
Conventionally tilled, surface and sprinkler irrigated on 0-7% slopes. Irrigation water is normally plentiful. Small grains and alfalfa are grown in rotation, with alfalfa typically maintained for 4-6 years. Grazing of crop aftermath is common. Nutrient, pest or irrigation water management may be less than desirable.

**Rangeland**

Low elevation desert to high elevation, steep rangeland. Low elevation desert characterized by sagebrush and perennial bunchgrasses. Frequent fires have eliminated some areas of sagebrush, with annual cheatgrass and other invaders dominant. Carrying capacity can be limited by available water. Land is utilized by antelope and livestock in winter and early spring. Mid-elevation rangeland has precipitation ranging from 12-16 inches. This range consists of sagebrush and perennial bunchgrasses with variable soils on nearly level flats to benches and rolling hills. High elevation range has precipitation greater than 16 inches, on steep slopes and high mountain valleys. Access to riparian areas on all rangeland types is not typically managed, and temperature, nutrients, and sediment may be an associated water quality concern.

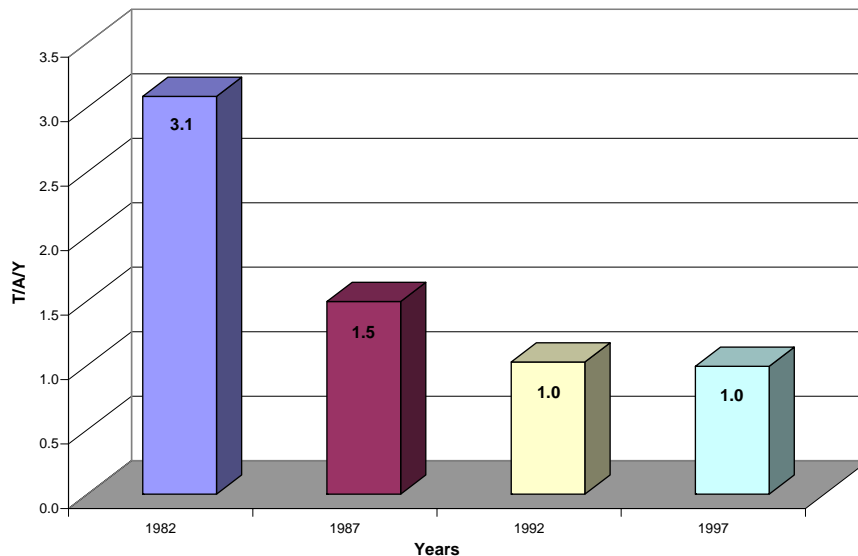
**Resource Concerns**

**Soil Loss by Water Erosion  
For Cropland, Pasture & CRP**



Sheet and rill erosion by water on the sub basin croplands, pasturelands and CRP have decreased by almost 7 tons per acre since 1982. Major factors in this decrease has been the establishment of over 16,800 acres of CRP between 1982 and 1997, and the many water quality projects that have been planned and implemented by the SWCD.<sup>4</sup>

**Soil Loss by Wind Erosion  
For Cropland, Pasture & CRP**



Wind erosion has decreased from about 3 tons per acre per year in 1982 to about 1 ton per acre year in 1997 on cropland, pasture and CRP in this sub basin.

**Resource Concerns – Continued**

Impacted Water Bodies <sup>1,9,10</sup> (ID17040205)	Stream Miles	Sediment, Siltation or TSS	Nutrients	Bacteria	Temperature	Dissolved Oxygen	Flow Alteration <sup>1</sup>	Other or Unknown
Grays Lake (SK021-02)								x
Ririe Reservoir (SK002_03, 05)		x						
Birch Creek (SK006_02, 03)	15.1	x <sup>2</sup>					x <sup>3</sup>	
Brockman Creek (SK024_02)	20.0			x	x <sup>3</sup>			
Brockman Creek (SK024_03, SK025_02, 03)	25.1	x	x <sup>2</sup>		x <sup>3</sup>			
Bucks Creek (SK012_02)	2.8	x						
Bulls Fork (SK030_02)	23.4							x
Corral Creek (SK026_02)	7.2	x			x			
Crane Creek (SK014_03)	11.1							x
Crane Creek (SK014_02)	45.0	x						
Grays Lake Outlet (SK019_04)	12.6				x <sup>3</sup>			x
Grays Lake Outlet (SK020_04)	11.6	x			x			
Grays Lake Outlet (SK020_02)	7.2	x <sup>2</sup>	x <sup>2</sup>				x	
Grays Lake Outlet (SK016_04, SK017_04))	13.3				x			
Hell Creek (SK029_02, 03)	49.2	x	x <sup>2</sup>		x <sup>3</sup>			
Homer Creek (SK018_02, 03)	77.8	x			x <sup>3</sup>			
Lava Creek (SK028_02, 03)	18.0	x			x			
Long Valley Creek (SK015_02)	4.1						x <sup>3</sup>	
Meadow Creek (SK032_03)	1.2	x			x <sup>3</sup>			
Meadow Creek (SK032_02)	40.6	x <sup>3</sup>		x	x <sup>3</sup>			
Mill Creek (SK012_02, 03)	16.9	x			x			
Mud Creek (SK009_02)	9.8							x
Rock Creek (SK005_02)	4.2				x <sup>3</sup>			
Sawmill Creek (SK027_02)	8.4	x			x			
Sellars Creek (SK010_03)	4.2	x			x		x	
Tex Creek (SK031_03)	8.9	x			x <sup>2</sup>			
Tex Creek (SK031_02)	41.5	x <sup>3</sup>			x <sup>3</sup>			x
Willow Creek (SK005_02, SK008_02)	85.2			x				x
Willow Creek (SK005_04, SK008_04)	11.7		x <sup>3</sup>		x			
Willow Creek (SK005_05, SK004_05)	20.2	x	x <sup>3</sup>		x <sup>3</sup>			
Willow Creek (SK011_02)	23.3	x			x		x	
Willow Creek (SK005_02, SK008_02)	37.4							x
Willow Creek (SK001_05)	5.5	x <sup>2</sup>					x <sup>3</sup>	
Willow Creek (SK013_03, SK011_04)	12.1	x	x <sup>3</sup>		x <sup>3</sup>			
<b>TOTAL STREAM MILES:</b>	<b>674.6</b>							

<sup>1</sup> Flow alteration is not considered a pollutant by the Idaho Department of Environmental Quality, and is not addressed by the TMDL.

<sup>2</sup> Assessment proposes to delist on the next Integrated Report.

<sup>3</sup> Assessment documented exceedances, and recommends listing for the specified pollutant on the next Integrated Report.

Shading indicates TMDL in place.

**Resource Concerns – Continued**

The primary source of sediment input to water quality impaired streams within the Willow Creek watershed is streambank erosion. Streambank erosion from over-utilization of riparian habitat is widespread in the watershed. Improper grazing management is a major concern. Overutilization of the riparian vegetation can also lead to stream widening and reduced shading, thus leading to surface water temperature concerns. Additional potential sources of sediment pollution in the subbasin include roads built too close to streams or improperly maintained, erosion from cultivated fields, mass wasting or landslides related to improper engineering techniques, and urban runoff.

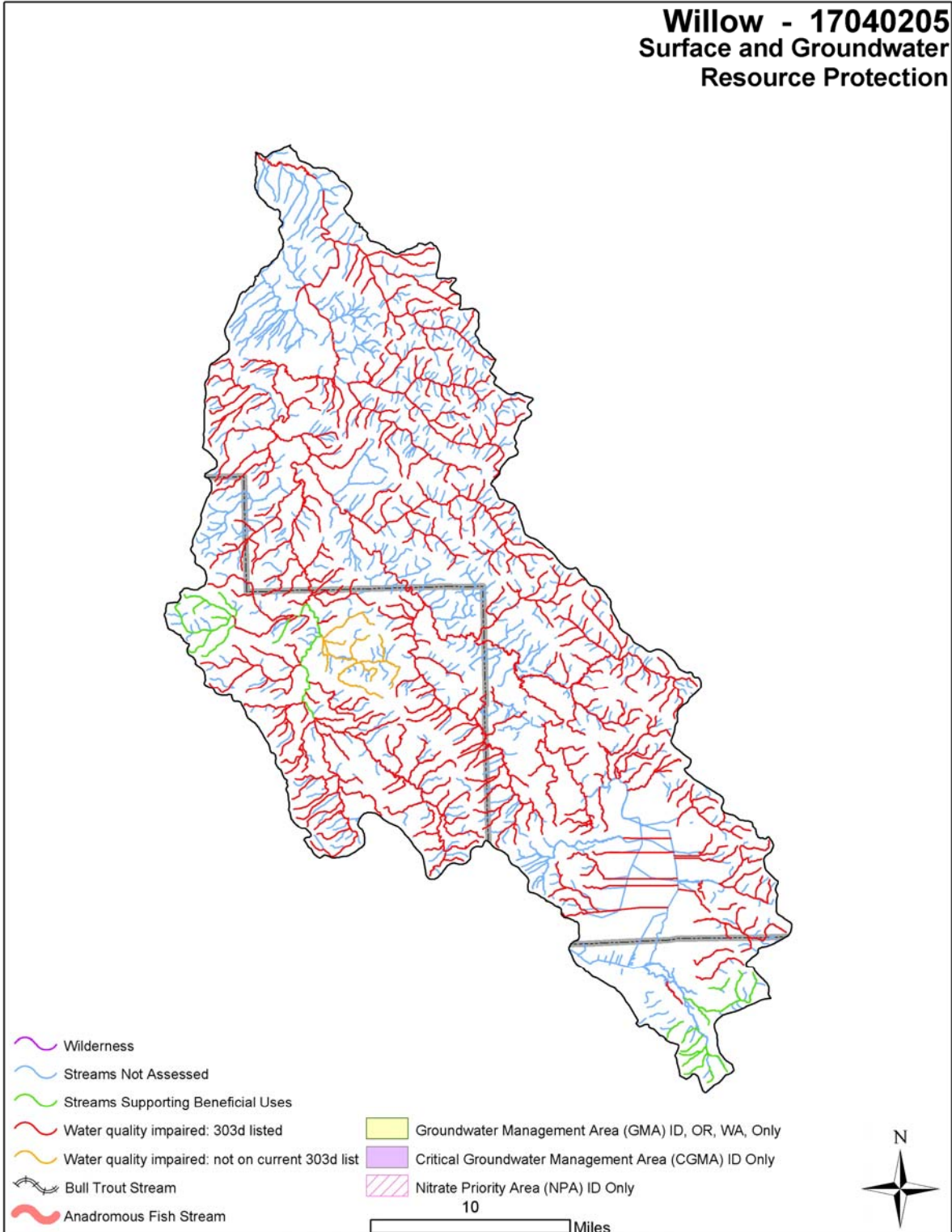
Flow alteration in the subbasin is attributed to diversion for stock watering and irrigation. It is not likely that beneficial uses will be restored in streams of the watershed where dewatering from surface water diversion occurs during significant portions of the year.

Conservation practices that can be used to address these water quality issues include erosion control, grazing management, irrigation water management, residue management, nutrient management, streambank enhancement/restoration, and riparian buffers.

<b>Watershed Projects, Plans, Studies, and Assessments*</b>	
<b>Federal:</b>	<b>State:</b>
<b>NRCS Watershed Plans/Studies/Assessments</b> <sup>/14,15</sup>	<b>IDEQ TMDLs</b> <sup>/18</sup>
	Willow Creek Subbasin Assessment and TMDL (2004)
	<b>IDEQ 319 Projects</b> <sup>/17</sup>
	None
<b>NWPCC Subbasin Plans and Assessments</b> <sup>/18</sup>	<b>SCC Plans/Projects</b> <sup>/19</sup>
Upper Snake Subbasin Assessment (2004)	Willow Creek SAWQP Plan (1980)
	Badger Creek SAWQP Implementation (1983)
	Meadow Creek SAWQP Implementation (1984)
	Tex Creek SAWQP Implementation (1985)
	<b>ISDA Regional Water Quality Projects</b> <sup>/20</sup>
	Willow Creek Phase I Water Quality Monitoring Project (2006)
	<b>IDWR Comprehensive Basin Plans</b> <sup>/21</sup>
	None

\* Listing includes past efforts in the watershed, and on-going studies and assessments.

**Surface and Groundwater Resource Protection** [/22,23,24](#)







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## Resource Concerns – Continued

Resource Concerns/ Issues by Land Use								
SWAPA*	Specific Resource Concerns/Issues	Pasture	Hayland	Dry Crops	Surface Irrigated Crops	Sprinkler Irrigated Crops	Rangeland	Grazed and Ungrazed Forest
Soil Erosion	Sheet and rill			x		x		
	Ephemeral or classic gully			x		x		
	Irrigation-induced				x			
	Wind				x	x		
	Streambank	x	x	x	x	x	x	
Water Quantity	Inefficient use on irrigated lands	x	x		x	x		
Water Quality, Surface	Suspended sediment	x	x	x	x	x	x	
	Nutrients and organics	x	x	x	x	x		
Water Quality, Ground	Nutrients and organics		x	x	x	x		
	Pesticides		x	x	x	x		
Soil Condition	Organic matter depletion			x		x		
	Compaction	x		x		x		
Plant Condition	Productivity, health and vigor	x	x	x			x	
	Noxious and invasive plants	x			x		x	
	Wildfire hazard						x	
Domestic Animals	Inadequate feed or water	x					x	
Fish and Wildlife	Inadequate water						x	
	Inadequate cover/shelter	x			x	x	x	

\* SWAPA: - Soil, Water, Air, Plants and Animals

**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.

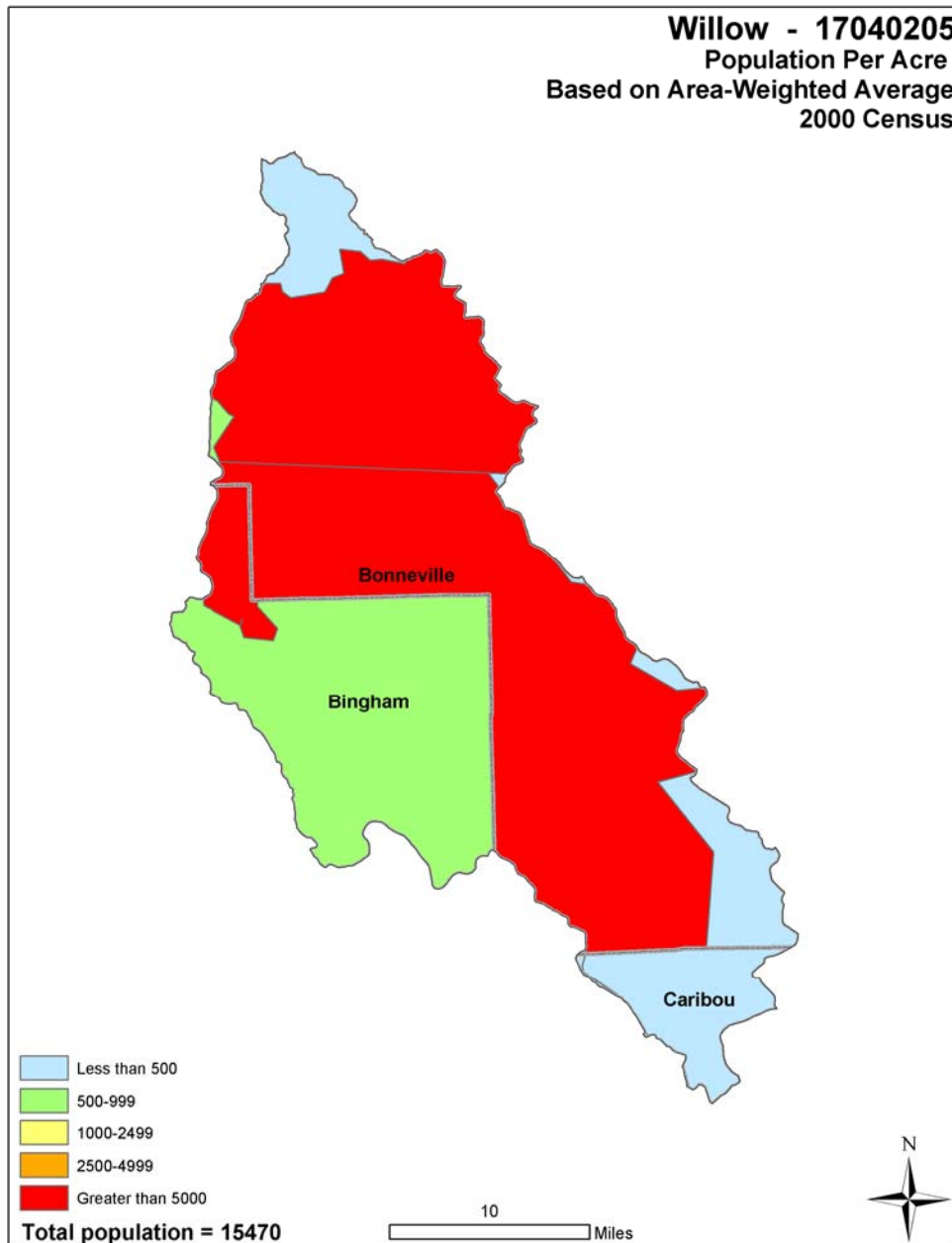
FEDERALLY LISTED THREATENED AND ENDANGERED SPECIES <sup>25</sup>	
<b>Threatened and Endangered Species</b> Mammals – Lynx Birds – Bald Eagle Fish – None Invertebrates – None Plants – None	<b>Candidate Species</b> Fish – None Birds – None  <b>PROPOSED SPECIES</b> None
<b>ESSENTIAL FISH HABITAT</b> – None	<b>CRITICAL FISH HABITAT</b> – None

**Census and Social Data** [/26](#)

Population: 15,470

Number of Farms: 303

	0-49 acres	50-999 acres	1000+ acres
<b>Number of Farms</b>	183	86	34





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### Census and Social Data - continued

Fifty-three 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; women make up 8.4 percent of the total. Ninety-seven percent of all operators are white. Non-white operators are of Hispanic, American Indian and Asian background.

Farm size ranges from less than 10 acres to more than 1,000 acres with an average of 560 acres. Agricultural land in the watershed is a mix of cropland, range, pasture and hay land. Land users in the watershed utilize EQIP, CRP, Continuous CRP and other programs to implement conservation plans.

Farm size is unchanged while market value of production is up over the past several years. Government payments to farmers are also up for the period. Farm sales range from less than \$1,000 to more than \$500,000 per year. Eighty-one percent of the 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 (acre)	Market Value of Production (Average Farm)	Government Payments (Average Farm)
1997	1,010	560	\$120,900	\$11.400
2002	1,030	560	\$146,300	\$18,600
Change	2.0%	0.0%	21.0%	63.2%

#### Economic Profile:

	Watershed	Idaho	United States
Population (2000)	15,500	1,294,000	281,422,000
Per Capita Personal Income	\$23,100	\$24,500	\$30,400
Median Home Value	\$90,300	\$106,600	\$119,600
Percent Unemployment	4.1%	5.4%	5.9%
Percent Below Poverty Level	11.9%	11.8%	12.5%

## Progress/Status

PRS Data					
Conservation Treatment Acres	FY04	FY05	FY06	Avg/Year	Total
Conservation Cover (327) (acres)	10594	709	1857	4386.7	13160
Use Exclusion (472) (acres)	9976	280	324	3526.7	10580
Wildlife Watering Facility (648) (no.)	3	0	0	1.0	3
Upland Wildlife Habitat (645) (acres)	10158	654	758	3856.7	11570
Prescribed Grazing (528 & 528A) (acres)	523	665	1229	805.7	2417
Pest Management ((595) (acres)	9951	383	296	3543.3	10630
Brush Management (314) (acres)	660	0	1904	854.7	2564
Fence (382) (ft)	0	5844	18710	8184.7	24554
Spring Development (574) (no.)	2	15	15	10.7	32
Pipeline (516) (ft)	0	4784	17571	7451.7	22355
Watering Facility (614) (no.)	2	14	25	13.7	41

Progress in the last three years has been focused on:

- ~ grazing management
- ~ wildlife habitat management
- ~ livestock water availability
- ~ conversion of dryland to permanent cover
- ~ erosion control

Resource concerns that require ongoing attention:

- ~ rangeland health
- ~ water quality and water quantity
- ~ prescribed grazing
- ~ pest management
- ~ wildlife habitat improvements
- ~ erosion control
- ~ irrigation water management
- ~ nutrient management

## Lands Removed from Production through Farm Bill Programs

- Conservation Reserve Program (CRP): **16,800 acres**
- Wetland Reserve Program (WRP): **None**

## 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. 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](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](http://www.deq.idaho.gov/water/data_reports/surface_water/monitoring/integrated_report.cfm).
10. IDEQ. 2004. Willow Creek Subbasin Assessment and TMDL.  
[http://www.deq.state.id.us/water/data\\_reports/surface\\_water/tmdls/willow\\_creek/willow\\_creek.cfm](http://www.deq.state.id.us/water/data_reports/surface_water/tmdls/willow_creek/willow_creek.cfm)



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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](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%20OPlan](http://www.nrcs.usda.gov/programs/watershed/Surveys_Plng.html#Watershed%20Surveys%20and%20OPlan)
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](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/surface\\_water/nps/reports.cfm](http://www.deq.state.id.us/water/data_reports/surface_water/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/>.
19. Idaho Soil Conservation Commission (SCC), TMDL watershed implementation plans: agricultural component, <http://www.scc.state.id.us/PDF/Ag%20Component%20Status%20Report%20-%202004.pdf>, and Water Quality Program, <http://www.scc.state.id.us/Docs/WOPA%20FACT%20SHEET.doc>
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](http://www.idwr.idaho.gov/waterboard/planning/Comp_Basin_Plans.htm)
22. IDEQ. 2002 Integrated Report (approved December 2005). [http://www.deq.idaho.gov/water/data\\_reports/surface\\_water/monitoring/integrated\\_report.cfm](http://www.deq.idaho.gov/water/data_reports/surface_water/monitoring/integrated_report.cfm).
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](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](http://www.nass.usda.gov/Census_of_Agriculture/Census_by_State/Idaho/index.asp)



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## **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 judgment
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.



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**Conservation Activities for Dry Cropland/Hayland\***

*\*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 systems for the years 1999 through 2006.*

<b>Current Conditions</b>	Total acres	Riparian Potential
Total Dry Cropland	55,700	6,680
Typical Management Unit/Ownership	560	
Current Farm Bill participation	15%	

<b>Current Level of Treatment for Dry Cropland:</b>												
Dry Cropland	Quantity		Costs		Effects				Implementation			
Practices	Unit	Quantity	Additional Investment Cost	Annual O&M and Mngt. Cost	Water Conservation	Water Storage	Fish Habitat	WQ	EQIP	WHIP	CREP	Other
Dry Cropland	Ac.	55,700			-3	-/+	-2	-3				
Conservation Cover (327)	Ac.	12,531	\$ -	\$ 45,100					X			X
Pest management (595)	Ac.	9,988	\$ -	\$ 99,900					X			X
Upland Wildlife Habitat Management (645)	Ac.	12,069	\$ -	\$ 60,300					X			X
Use Exclusion (472)	Ac.	11,532	\$ -	\$ 12,100					X			X





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**Conservation Activities for Dry Cropland/Hayland - Continued**

Future Conditions	Riparian Potential	Total Acres
Dry Cropland Acres		49,020
Conversion to Riparian RMS	6,680	6,680
Total Acres		55,700

Project Future Level of Treatment for Dry Cropland:												
Dry Cropland	Quantity		Costs		Effects				Implementation			
	Unit	Quantity	Additional Investment Cost	Annual O&M and Mngt. Cost	Water Conservation	Water Storage	Habitat	WQ	EQIP	WHIP	CREP	Other
<b>Dry Cropland</b>	Ac.	49,020			+3	+1	+2	+3				
Conservation Crop Rotation (328)	Ac.	49,020	\$ -	\$ -					X			X
Contour Farming (330)	Ac.	49,020	\$ 367,700	\$ 122,600					X			X
Deep Tillage (324)	Ac.	49,020	\$ 2,205,900	\$ 735,300					X			X
Diversion (362)	Ft.	101,640	\$ 279,500	\$ 5,600					X			X
Forage Harvest Management (511)	Ac.	19,610	\$ -	\$ -					X			X
Grassed Waterway (412)	Ac.	280	\$ 504,000	\$ 10,100					X	X		X
Nutrient Management (590)	Ac.	49,020	\$ 735,300	\$ 245,100					X			X
Pasture & Hayland Planting (512)	Ac.	19,610	\$ 1,961,000	\$ 19,600					X		X	X
Pest Management (595)	Ac.	49,020	\$ 1,171,000	\$ 390,300					X			X
Residue and Tillage Management Mulch Till (345)	Ac.	24,510	\$ 1,103,000	\$ 367,700					X			X
Residue and Tillage Management No Till / Strip Till / Direct Seed (329)	Ac.	24,510	\$ 2,205,900	\$ 735,300					X			X
Sediment Basin (350)	No.	310	\$ 581,300	\$ 17,400					X		X	X
Stripcropping (585)	Ac.	24,510	\$ 612,800	\$ 6,100					X			X
Terrace (600)	Ft.	407,680	\$ 5,296,900	\$ 53,000					X			X
Upland Wildlife Habitat Management (645)	Ac.	7,350	\$ -	\$ -					X			X
Water and Sediment Control Basin (638)	No.	2,450	\$ 2,450,000	\$ 73,500					X			X
Windbreak/Shelterbelt Establishment (380)	Ft.	203,280	\$ 304,900	\$ 3,000					X			X



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**Conservation Activities for Dry Cropland/Hayland - Continued**

Future Level of Treatment for Dry Cropland												
Dry 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
<b>Dry Cropland Riparian</b>	Ac.	6,680			+3	+2	+3	+3				
Channel Bank Vegetation (322)	Ac.	670	\$ 3,467,300	\$ 69,300					X			X
Channel Stabilization (584)	Ft.	54,070	\$ 1,081,400	\$ 5,400					X			X
Fence (382)	Ft.	110,880	\$ 194,000	\$ 3,900					X	X		X
Nutrient Management (590)	Ac.	6,680	\$ 100,200	\$ 33,400					X	X		X
Pest Management (595)	Ac.	6,680	\$ 200,400	\$ 66,800					X			X
Pipeline (516)	Ft.	110,220	\$ 297,600	\$ 6,000					X			X
Prescribed Grazing (528)	Ac.	6,680	\$ 100,200	\$ 33,400					X			X
Pumping Plant (533)	No.	42	\$ 73,500	\$ 700					X			X
Riparian Forest Buffer (391)	Ac.	1,240	\$ 1,860,000	\$ 18,600					X			X
Riparian Herbaceous Cover (390)	Ac.	1,240	\$ 372,000	\$ 3,700					X	X		X
Streambank & Shoreline Prot (580)	Ft.	270,350	\$ 12,841,600	\$1,284,200					X	X		X
Tree/Shrub Establishment (612)	Ac.	310	\$ 144,200	\$ 1,400					X	X		X
Upland Wildlife Management (645)	Ac.	1,000	\$ 15,000	\$ 5,000					X	X		X
Use Exclusion (472)	Ac.	340	\$ 11,900	\$ 400					X	X		X
Watering Facility (614)	No.	84	\$ 88,200	\$ 900					X			X
Wetland Wildlife Management (644)	Ac.	670	\$ 10,100	\$ 3,400					X			X
<b>Total RMS Costs</b>			<b>\$ 40,636,800</b>	<b>\$4,321,100</b>								



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**Conservation Activities for Dry Cropland/Hayland - Continued**

<b>Potential RMS Effects Summary for Dry Cropland</b>		
<b>Cost Items and Programs</b>	<b>Costs</b>	<b>O&amp;M Costs</b>
Non Farm Bill Programs	\$ 2,031,800	\$ 216,100
Potential Farm Bill Programs	\$ 38,605,000	\$4,105,000
Operator O&M and Management Cost		\$4,321,100
Annual Management Incentives (3 yrs – Incentive Payments)	\$ 8,214,700	
Operator Investment	\$ 9,629,400	
Federal Costshare	\$ 22,792,700	
<b>Total RMS Costs</b>	<b>\$ 40,636,800</b>	<b>\$4,321,100</b>
Estimated Level of Participation		75%
Total Acres in RMS System		41,775
Anticipated Cost at Estimated Level of Participation	\$	30,477,600
Participating landowners will be in compliance with TMDLs		
Improves habitat for ESA endangered & threatened species		



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**Conservation Activities for Irrigated Cropland/Hayland**

<b>Current Conditions</b>		Total acres
Total Irrigated Cropland/Hayland		5,100
Typical Management Unit/Ownership		560
Surface Irrigated Cropland/Hayland		1,280
Sprinkler Irrigated Cropland/Hayland		3,820
Current Farm Bill participation		15%

<b>Current Level of Treatment for Irrigated Cropland/Hayland:</b>												
Irrigated Cropland/Hayland	Quantity		Costs		Effects				Implementation			
	Unit	Quantity	Additional Investment Cost	Annual O&M and Mngt. Cost	Water Conservation	Water Storage	Fish Habitat	WQ	EQIP	WHIP	CREP	Other
Practices												
Surface Irrigation	Ac.	1,280			-3	-/+	-2	-3				
Sprinkler Irrigation	Ac.	3,820			+1	-/+	+1	+3				



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**Conservation Activities for Irrigated Cropland/Hayland - Continued**

<b>Future Conditions</b>		Total Acres
Sprinkler Irrigated Cropland/Hayland		5,100
Total Irrigated Cropland/Hayland Acres		5,100

<b>Project Future Level of Treatment for Irrigated Cropland/Hayland:</b>												
Irrigated Cropland/Hayland	Quantity		Costs		Effects				Implementation			
	Unit	Quantity	Additional Investment Cost	Annual O&M and Mngt. Cost	Water Conservation	Water Storage	Habitat	WQ	EQIP	WHIP	CREP	Other
<b>Sprinkler Irrigation</b>	Ac.	5,100			+3	+2	+2	+3				
Cover Crop (340)	Ac.	1,280	\$ 64,000	\$ 600					X			X
Conservation Crop Rotation (328)	Ac.	5,100	\$ -	\$ -					X			X
Constructed Wetland (656)	No.	5	\$ 85,000	\$ 900					X			X
Forage Harvest Management (511)	Ac.	1,280	\$ -	\$ -					X			X
Irrigation System, Sprinkler (442)	Ac.	5,100	\$ 2,805,000	\$ 56,100					X			X
Irrigation Water Conveyance (430DD)	Ft.	1,120	\$ 114,500	\$ 600					X			X
Irrigation Water Management (449) - Low level	Ac.	3,570	\$ 80,300	\$ 26,800					X			X
Irrigation Water Management (449) -Meters and Moisture Sensors	Ac.	1,530	\$ 34,400	\$ 11,500					X			X
Nutrient Management (590)	Ac.	5,100	\$ 76,500	\$ 25,500					X			X
Pest Management (595)	Ac.	5,100	\$ 153,000	\$ 51,000					X			X
Residue Mngt, Mulch Till (345)	Ac.	5,100	\$ 229,500	\$ 76,500					X			X
Residue Management Seasonal (344)	Ac.	5,100	\$ 114,800	\$ 38,300					X			X
Residue Mngt, No Till/Strip Till (329)	Ac.	510	\$ 45,900	\$ 15,300					X			X
Sediment Basin (350)	No.	8	\$ 15,000	\$ 500					X			X
Structure for Water Control (587) -Fish Screen	No.	30	\$ 93,600	\$ 900					X			X
Surface Roughening (609)	Ac.	5,100	\$ 114,800	\$ 38,300					X			X



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**Conservation Activities for Irrigated Cropland/Hayland - Continued**

<b>Project Future Level of Treatment for Irrigated Cropland/Hayland (Continued):</b>												
Irrigated Cropland/Hayland	Quantity		Costs		Effects				Implementation			
	Unit	Quantity	Additional Investment Cost	Annual O&M and Mngt. Cost	Water Conservation	Water Storage	Habitat	WQ	EQIP	WHIP	CREP	Other
Practices												
Upland Wildlife Habitat Management (645)	Ac.	770	\$ 11,600	\$ 3,900					X			X
Well Decommissioning (355)	No.	8	\$ 6,800	\$ -					X			X
Windbreak/Shelterbelt Establishment (380)	Ft.	84,480	\$ 126,700	\$ 1,300					X			X
<b>Total RMS Costs</b>			<b>\$ 4,171,400</b>	<b>\$ 348,000</b>								



**Conservation Activities for Irrigated Cropland/Hayland - Continued**

<b>Potential RMS Effects Summary for Irrigated Cropland/Hayland</b>		
<b>Cost Items and Programs</b>	<b>Costs</b>	<b>O&amp;M Costs</b>
Non Farm Bill Programs	\$ 208,600	\$ 17,400
Potential Farm Bill Programs	\$ 3,962,800	\$ 330,600
Operator O&M and Management Cost		\$ 348,000
Annual Management Incentives (3 yrs - Incentive Payments)	\$ 860,800	
Operator Investment	\$ 984,100	
Federal Costs	\$ 2,326,500	
<b>Total RMS Costs</b>	<b>\$ 4,171,400</b>	<b>\$ 348,000</b>
Estimated Level of Participation		75%
Total Acres in RMS System		3,825
Anticipated Cost at Estimated Level of Participation	\$	3,128,600
Total Acre Feet of Water Saved Annually		5,025
Increases infiltration and storage of water in soil profile		
Participating landowners will be in compliance with TMDLs		
Improves habitat for ESA endangered & threatened species		



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**Conservation Activities for Irrigated Pasture**

	Total Acres	Riparian/ Wetland Potential
<b>Current Conditions</b>		
Surface Irrigated Pasture	160	
Sprinkler Irrigated Pasture	640	
Total Irrigated Pasture	800	100
Typical Management Unit/Ownership	560	
Current Farm Bill participation	15%	

<b>Current Level of Treatment for Irrigated Pasture:</b>												
Practices	Quantity		Costs		Effects				Implementation			
	Unit	Quantity	Additional Investment Cost	Annual O&M and Mngt. Cost	Water Conservation	Water Storage	Fish Habitat	WQ	EQIP	WHIP	CREP	Other
Surface Irrigation	Ac.	160			-3	-/+	-2	-3				
Sprinkler Irrigation	Ac.	640			+2	+1	+1	+3				





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**Conservation Activities for Irrigated Pasture - Continued**

<b>Future Conditions</b>			Total Acres
Surface Irrigated Pasture			-
Sprinkler Irrigated Pasture			700
Total Conversion to Riparian Pasture RMS			100
Total Acres			800

<b>Project Future Level of Treatment for Irrigated Pasture (Continued):</b>												
Practices	Quantity		Costs		Effects				Implementation			
	Unit	Quantity	Additional Investment Cost	Annual O&M and Mngt. Cost	Water Conservation	Water Storage	Habitat	WQ	EQIP	WHIP	CREP	Other
<b>Sprinkler Irrigation</b>	Ac.	700			+3	+3	+2	+3				
Fence (382)	Ft.	26,400	\$ 46,200	\$ 900					X			X
Irrigation Water Conveyance (430DD)	Ft.	2,640	\$ 14,300	\$ 100					X			X
Irrigation System Sprinkler (442)	Ac.	700	\$ 3,000	\$ 100					X			X
Irrigation Water Management (449)	Ac.	700	\$ 15,800	\$ 5,300					X			X
Nutrient Management (590)	Ac.	700	\$ 10,500	\$ 3,500					X			X
Pasture & Hayland Planting (512)	Ac.	700	\$ 70,000	\$ 700					X			X
Pest Management (595)	Ac.	700	\$ 21,000	\$ 7,000					X			X
Prescribed Grazing (528)	Ac.	700	\$ 10,500	\$ 3,500					X			X
Structure for Water Control (587)-Fish Screen	No.	18	\$ 56,200	\$ 600					X	X		X
Upland Wildlife Management (645)	Ac.	110	\$ 1,700	\$ 600					X			X
Watering Facility (614)	No.	10	\$ 10,500	\$ 100					X			X
Windbreak/Shelterbelt Establish(380)	Ft.	26,400	\$ 39,600	\$400					X			X



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**Conservation Activities for Irrigated Pasture - Continued**

<b>Project Future Level of Treatment for Irrigated Pasture (Continued):</b>												
Practices	Quantity		Costs		Effects				Implementation			
	Unit	Quantity	Additional Investment Cost	Annual O&M and Mngt. Cost	Water Conservation	Water Storage	Habitat	WQ	EQIP	WHIP	CREP	Other
<b>Riparian Pastures</b>	Ac.	100			+1	+1	+3	+3				
Channel Bank Vegetation (322)	Ac.	10	\$ 51,800	\$ 1,000					X			X
Channel Stabilization (584)	Ft.	860	\$ 17,200	\$ 100					X			X
Fence (382)	Ft.	7,920	\$ 13,900	\$ 300					X	X	X	X
Nutrient Management (590)	Ac.	100	\$ 1,500	\$ 500					X			X
Pasture & Hayland Planting (512)	Ac.	40	\$ 4,000	\$ 0					X			X
Pest Management (595)	Ac.	100	\$ 3,000	\$ 1,000					X			X
Pipeline (516)	Ft.	3,960	\$ 10,700	\$ 200					X			X
Prescribed Grazing (528)	Ac.	100	\$ 1,500	\$ 500					X			X
Riparian Forest Buffer (391)	Ac.	20	\$ 30,000	\$ 300					X			X
Riparian Herbaceous Cover (390)	Ac.	20	\$ 6,000	\$ 100					X	X	X	X
Streambank & Shoreline Prot (580)	Ft.	2,140	\$ 101,700	\$ 10,200					X			X
Tree/Shrub Establishment (612)	Ac.	10	\$ 4,700	\$ 0					X			X
Upland Wildlife Management (645)	Ac.	15	\$ 200	\$ 100					X			X
Use Exclusion (472)	Ac.	5	\$ 200	\$ 0					X	X	X	X
Watering Facility (614)	No.	3	\$ 50	\$ 0					X		X	X
Wetland Wildlife Management (644)	Ac.	10	\$ 200	\$ 100					X			X
<b>Total RMS Costs</b>			<b>\$ 545,950</b>	<b>\$ 37,200</b>								



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**Conservation Activities for Irrigated Pasture - Continued**

<b>RMS Cost Summary for Irrigated Pasture:</b>		
<b>Cost Items and Programs</b>	<b>Costs</b>	<b>O&amp;M Costs</b>
Non Farm Bill Programs	\$ 27,300	\$ 1,900
Potential Farm Bill Programs	\$ 518,650	\$ 35,300
Operator O&M and Management Cost		\$ 37,200
Annual Management Incentives (3 yrs - Incentive Payments)	\$ 57,900	
Operator Investment	\$ 142,500	
Federal Costshare	\$ 345,550	
<b>Total RMS Farm Bill Costs</b>	<b>\$ 545,950</b>	
Estimated Level of Participation		60%
Total Acres in RMS System		480
Anticipated Cost at Estimated Level of Participation	\$	327,600
Total Acre Feet of Water Saved Annually		700
Total Annual Forage Production Benefits (animal unit months)		100
Improves ground water and surface water quality by minimizing off-site transport		
Improves riparian habitat for ESA endangered & threatened species		



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**Conservation Activities for Grazed Rangeland, Dry Pasture and Forestland**

Current Conditions	Grazed	Ungrazed	Riparian/Wetland/Potential	Total Acres
Private Rangeland and Dry Pasture	143,240		15,920	159,160
Typical Management Unit/Ownership	560			
Current Farm Bill participation	15%			

Current Level of Treatment for Grazed Rangeland, Dry Pasture and Forestland:													
Practices	Quantity		Costs		Effects				Implementation				
	Unit	Quantity	Investment Cost	Annual O&M and Mngt. Cost	Water Conservation	Water Storage	Habitat	WQ	EQIP	WHIP	WRP	CREP	Other
Range / Pasture (w/prescribed grazing)	Ac.	159,160	\$ -		+/-	+/-	+/-	+/-					
Brush management (314)	Ac.	2,564	\$ -	\$ 500					X				X
Fence (382)	Ft.	24,554	\$ -	\$ 900					X				X
Pest Management (595)	Ac.	5,698	\$ -	\$ 57,000					X				X
Pipeline (516)	Ft.	22,818	\$ -	\$ 1,200					X				X
Prescribed Grazing (528)	Ac.	11,372	\$ -	\$ 56,900					X				X
Spring Development (574)	No.	33	\$ -	\$ 400					X				X
Upland Wildlife Habitat Mgment (645)	Ac.	5,602	\$ -	\$ 28,000					X				X
Watering Facility (614)	No.	42	\$ -	\$ 400					X				X
Water Well (642)	No.	1	\$ -	\$ -					X				X



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**Conservation Activities for Grazed Rangeland, Dry Pasture and Forestland – Continued**

Future Conditions	Rangeland / Pasture	Riparian	Total Acres
	143,240	15,920	159,160

Future Level of Treatment for Grazed Rangeland, Dry Pasture and Forestland:													
Practices	Quantity		Costs		Effects				Implementation				
	Unit	Quantity	Investment Cost	Annual O&M and Mngt. Cost	Water Conservation	Water Storage	Habitat	WQ	EQIP	WHIP	WRP	CREP	Other
Grazed Range, Pasture and Forestland	Ac.	143,240			+3	+2	+3	+3					
Brush Management (314)	Ac.	52,520	\$ 1,050,400	\$ 10,500					X				X
Fence (382)	Ft.	2,362,800	\$ 4,091,900	\$ 81,800					X				X
Firebreak (394)	Ft.	591,360	\$ 1,141,300	\$ 228,300					X				X
Pest Management (595)	Ac.	143,240	\$ 4,126,300	\$1,375,400					X				X
Pipeline (516)	Ft.	591,360	\$ 1,535,100	\$ 30,700					X				X
Pond (378)	No.	60	\$ 408,000	\$ 4,100					X				X
Prescribed Grazing (528)	Ac.	143,240	\$ 1,384,600	\$ 461,500					X				X
Range Planting (550)	Ac.	52,520	\$ 4,726,800	\$ 47,300					X				X
Spring Development (574)	No.	220	\$ 517,000	\$ 2,600					X	X			X
Upland Wildlife Management (645)	Ac.	28,650	\$ 429,800	\$ 143,300					X	X			X
Watering Facility (614)	No.	220	\$ 186,900	\$ 1,900					X				X
Well (642)	No.	110	\$ 330,000	\$ 3,300					X				X



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**Conservation Activities for Grazed Rangeland, Dry Pasture and Forestland – Continued**

Future Level of Treatment for Grazed Rangeland, Dry Pasture and Forestland:													
Practices	Quantity		Costs		Effects				Implementation				
	Unit	Quantity	Investment Cost	Annual O&M and Mngt. Cost	Water Conservation	Water Storage	Habitat	WQ	EQIP	WHIP	WRP	CREP	Other
Range, Pasture & Forest Riparian	Ac.	15,920			+3	+2	+3	+3					
Channel Bank Vegetation (322)	Ac.	1,590	\$ 8,228,300	\$ 164,600						X			
Channel Stabilization (584)	Ft.	153,870	\$ 3,077,400	\$ 15,400					X				X
Fence (382)	Ft.	16,000	\$ 28,000	\$ 600					X	X	X		X
Pest Management (595)	Ac.	15,920	\$ 477,600	\$ 159,200					X				X
Pipeline (516)	Ft.	66,000	\$ 178,200	\$ 3,600					X				X
Prescribed Grazing (528)	Ac.	15,920	\$ 167,200	\$ 55,700					X				X
Pumping Plant (533)	No.	7	\$ 12,300	\$ 100					X				X
Riparian Forest Buffer (391)	Ac.	1,770	\$ 2,655,000	\$ 26,600					X				X
Riparian Herbaceous Cover (390)	Ac.	1,770	\$ 531,000	\$ 5,300					X	X	X		X

X



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**Conservation Activities for Grazed Rangeland, Dry Pasture and Forestland – Continued**

Future Level of Treatment for Grazed Rangeland, Dry Pasture and Forestland:													
Practices	Quantity		Costs		Effects				Implementation				
	Unit	Quantity	Investment Cost	Annual O&M and Mngt. Cost	Water Conservation	Water Storage	Habitat	WQ	EQIP	WHIP	WRP	CREP	Other
Range, Pasture & Forest Riparian (cont.)					+3	+2	+3	+3					
Streambank & Shoreline Prot (580)	Ft.	384,680	\$ 9,232,300	\$ 923,200					X	X			X
Tree/Shrub Establishment (612)	Ac.	880	\$ 396,000	\$ 4,000					X				X
Upland Wildlife Management (645)	Ac.	3,180	\$ 47,700	\$ 15,900					X	X			X
Use Exclusion (472)	Ac.	1,770	\$ 62,000	\$ 1,900					X	X	X		X
Watering Facility (614)	No.	25	\$ 25,000	\$ 300					X		X		X
Wetland Wildlife Management (644)	Ac.	1,590	\$ 23,900	\$ 8,000					X		X		X
<b>Total RMS Costs</b>			<b>\$ 60,425,000</b>	<b>\$4,206,200</b>									



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**Conservation Activities for Grazed Rangeland, Dry Pasture and Forestland – Continued**

<b>RMS Cost Summary for Grazed Rangeland, Pasture and Forestland:</b>		
<b>Cost Items and Programs</b>	<b>Costs</b>	<b>O&amp;M Costs</b>
Non Farm Bill Programs	\$ 3,021,300	\$ 210,300
Potential Farm Bill Programs	\$ 57,403,700	\$3,995,900
Operator O&M and Management Cost		\$4,206,200
Annual Management Incentives (3 yrs - Incentive Payments)	\$ 6,585,500	
Operator Investment	\$ 15,725,900	
Federal Costshare	\$ 38,113,600	
<b>Total RMS Farm Bill Costs</b>	<b>\$ 60,425,000</b>	
Estimated Level of Participation		35%
Total Acres in RMS System		50,100
Anticipated Cost at Estimated Level of Participation	\$	21,148,800
Total Annual Forage Production Benefits (acre unit months)		7,800
Improves infiltration and storage of water in soil profile		
Improves upland wildlife habitat for deer, elk, antelope and other species		
Improves water quality by reducing erosion and sediment delivery to streams		