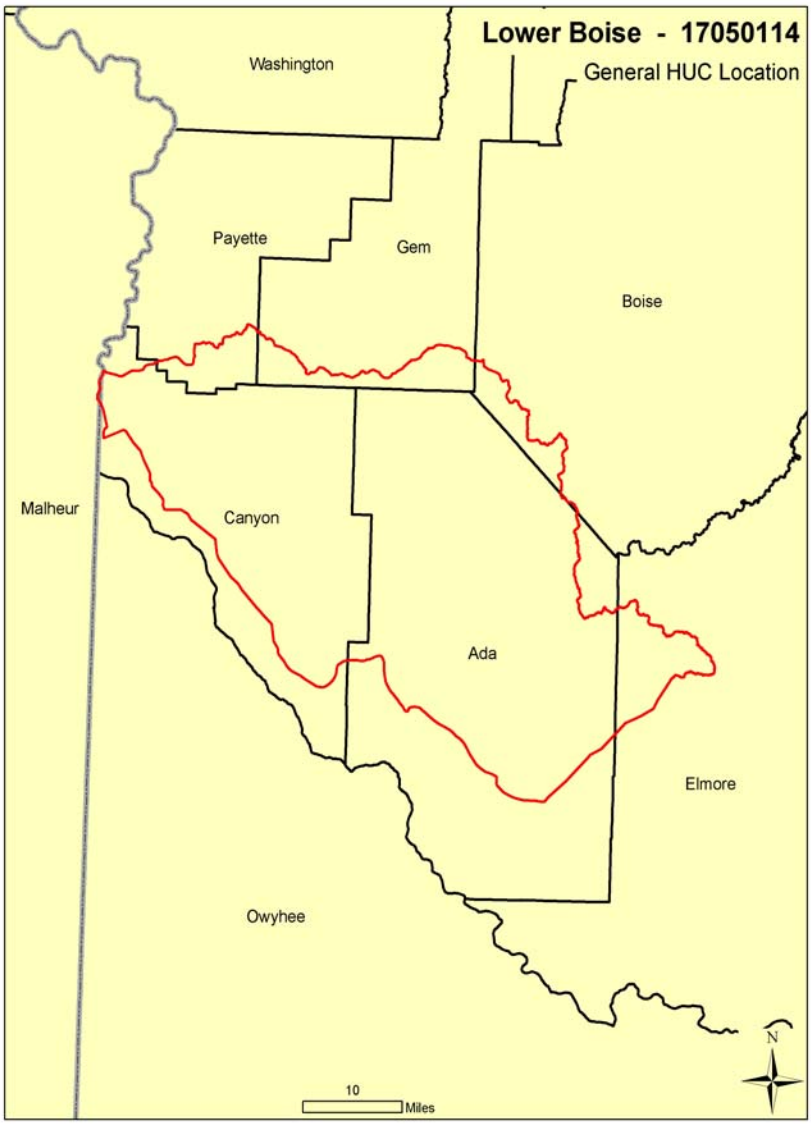
NRCS Natural Resources Conservation Service

Idaho

Lower Boise – 17050114

8 Digit Hydrologic Unit Profile

June 2007



Introduction

The Lower Boise 8-Digit Hydrologic Unit Code (HUC) subbasin contains 880,800 acres. It includes the "Treasure Valley" of southwest Idaho, a rapidly urbanizing area surrounding and including the Boise metropolitan area. Fifty-two percent of the subbasin is in Ada County, thirty-four percent in Canyon County, five percent in Elmore County, four percent in Gem County, three percent in Payette County and two percent is in Boise County. Seventy-six percent of the basin is privately owned and twenty-four percent is publicly owned.

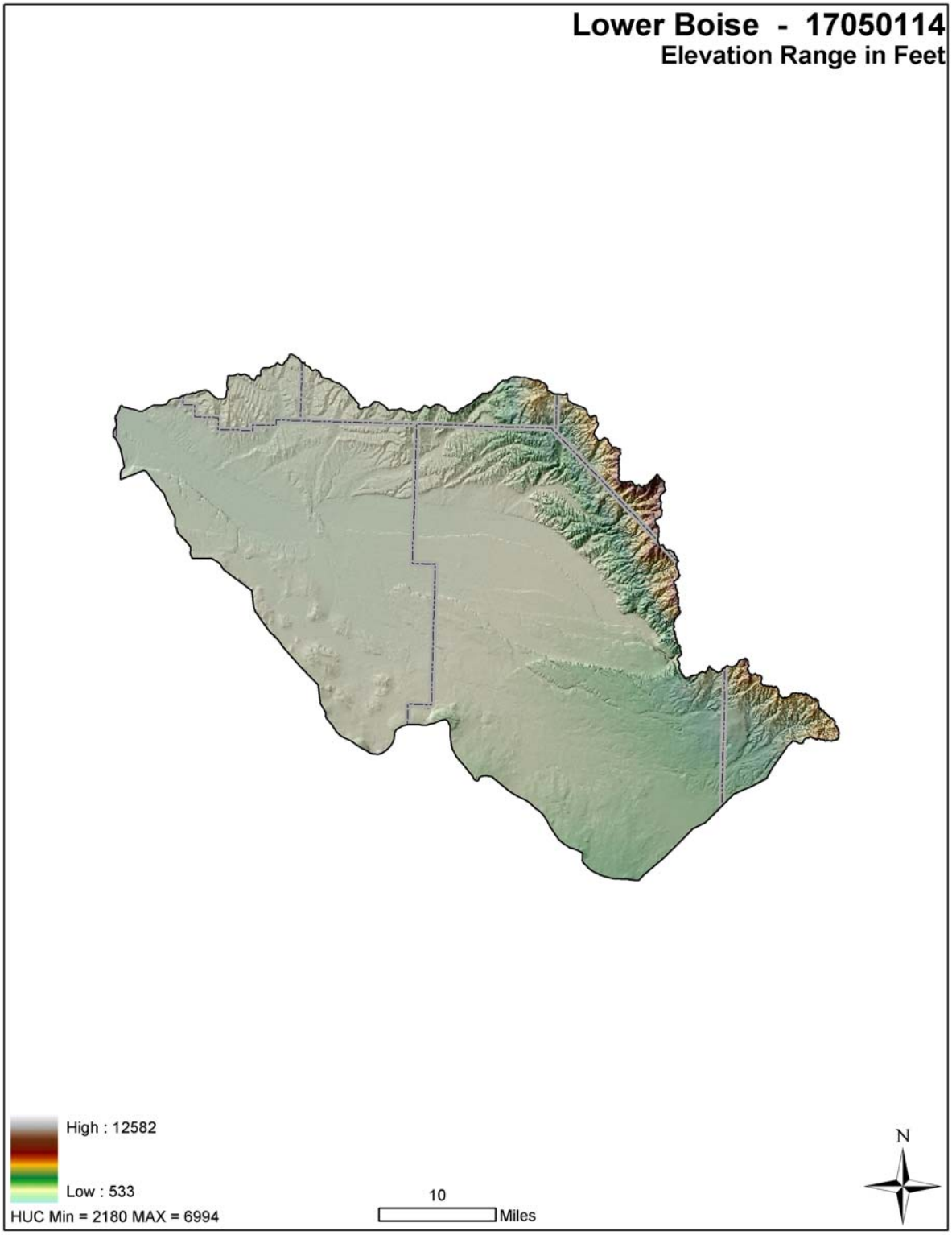
Sixty-seven percent of the basin is in shrubland, rangeland, grass, pasture or hayland. Twenty-four percent is cropland, and the remainder is forest, water, wetlands, developed or barren.

Elevations range from 6,994 feet in the northeastern portion of the HUC to 2,180 feet at the basin outlet on the west.

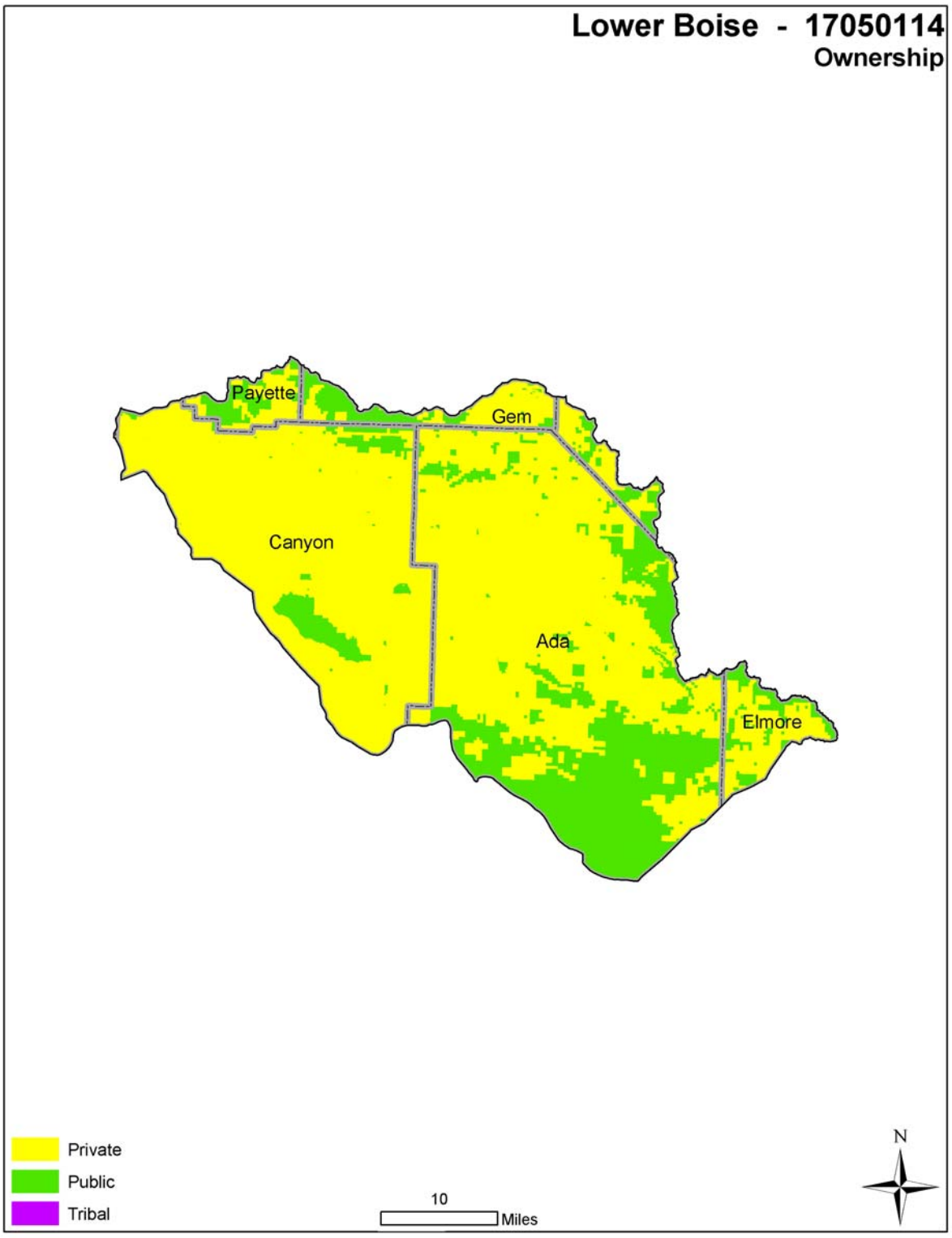
Conservation assistance is provided by two Soil Conservation Districts, four Soil and Water Conservation Districts and two Resource Conservation and Development offices.

Profile Contents

Relief Map


Lower Boise - 17050114
Elevation Range in Feet
High : 12582
Low : 533
HUC Min = 2180 MAX = 6994
10
Miles
N

General Ownership[/1]



Physical Description

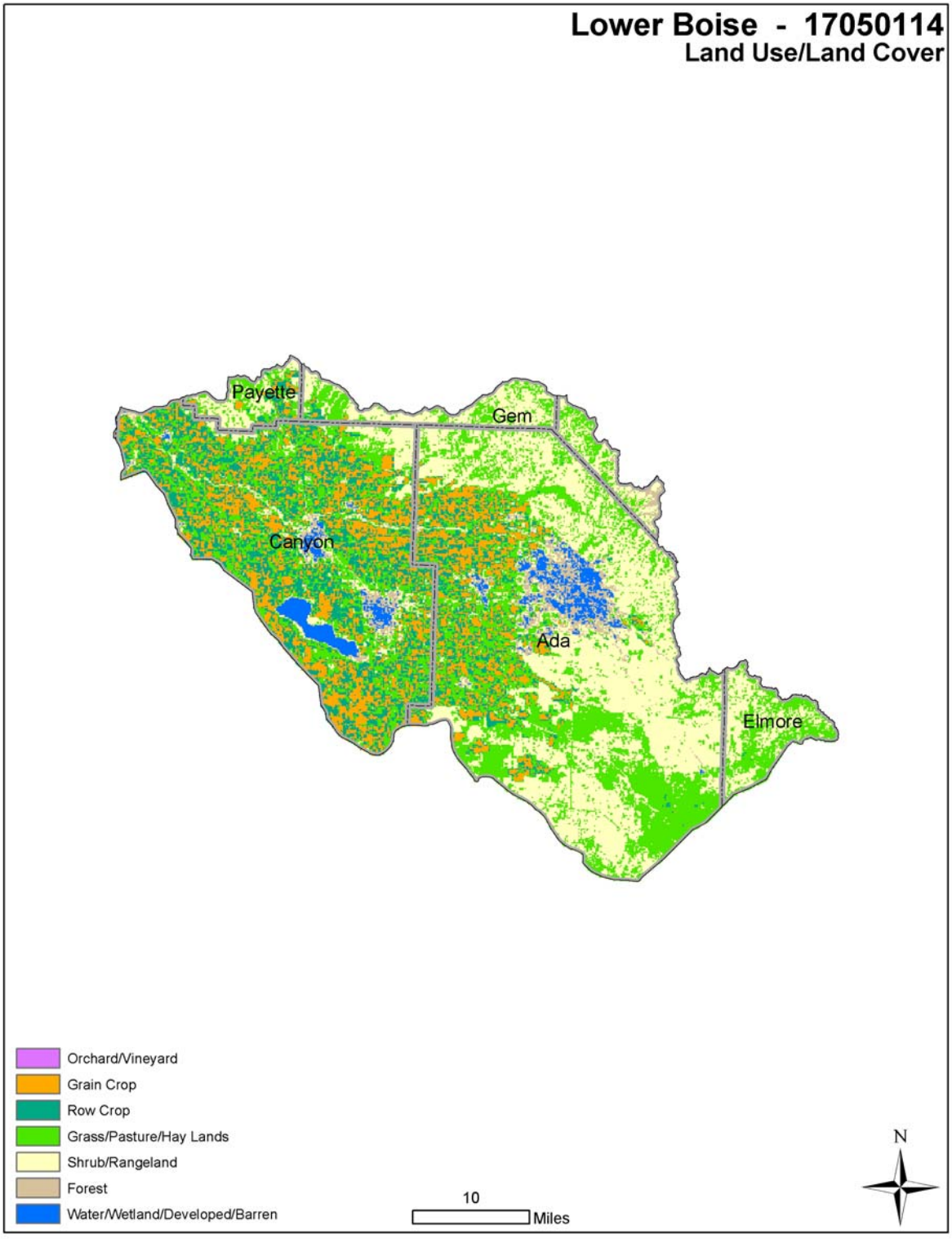
Land Cover / Land Use (NLCD[12])	Ownership - (2003 Draft BLM Surface Map Set[1])							
	Public		Private		Tribal		Totals	% of HUC
	Acres	%	Acres	%		%		
Forest	4,600	<1	4.700	<1	0	-	**9,300**	**1**
Grain Crops	-	-	147,000	17	0	-	**147,000**	**17**
Conservation Reserve Program (CRP) Land[13]	-	-	0	-	0	-	**0**	**0**
Grass/Pasture/Hay Lands	54,900	6	200,200	23	0	-	**255,100**	**29**
Orchards/Vineyards/Berries	-	-	0	-	0	-	**0**	**0**
Row Crops	-	-	63,300	7	0	-	**63,300**	**7**
Shrub/Rangelands	146,700	17	192,000	22	0	-	**338,700**	**38**
Water/Wetlands/ Developed/Barren	9,300	1	58,100	7	0	-	**67,400**	**8**
Idaho HUC Totals	**215,500**	**24**	**665,300**	**76**	**0**	**-**	**880,800**	**100**

Irrigated Lands[14]	Type of Land	ACRES	% of Irrigated Lands	% of HUC
	Cultivated Cropland	188,800	72	21
	Non-Cultivated Cropland *	46,400	18	5
	Pastureland	26,200	10	3
	Total Irrigated Lands	**261,400**	**100**	**29**

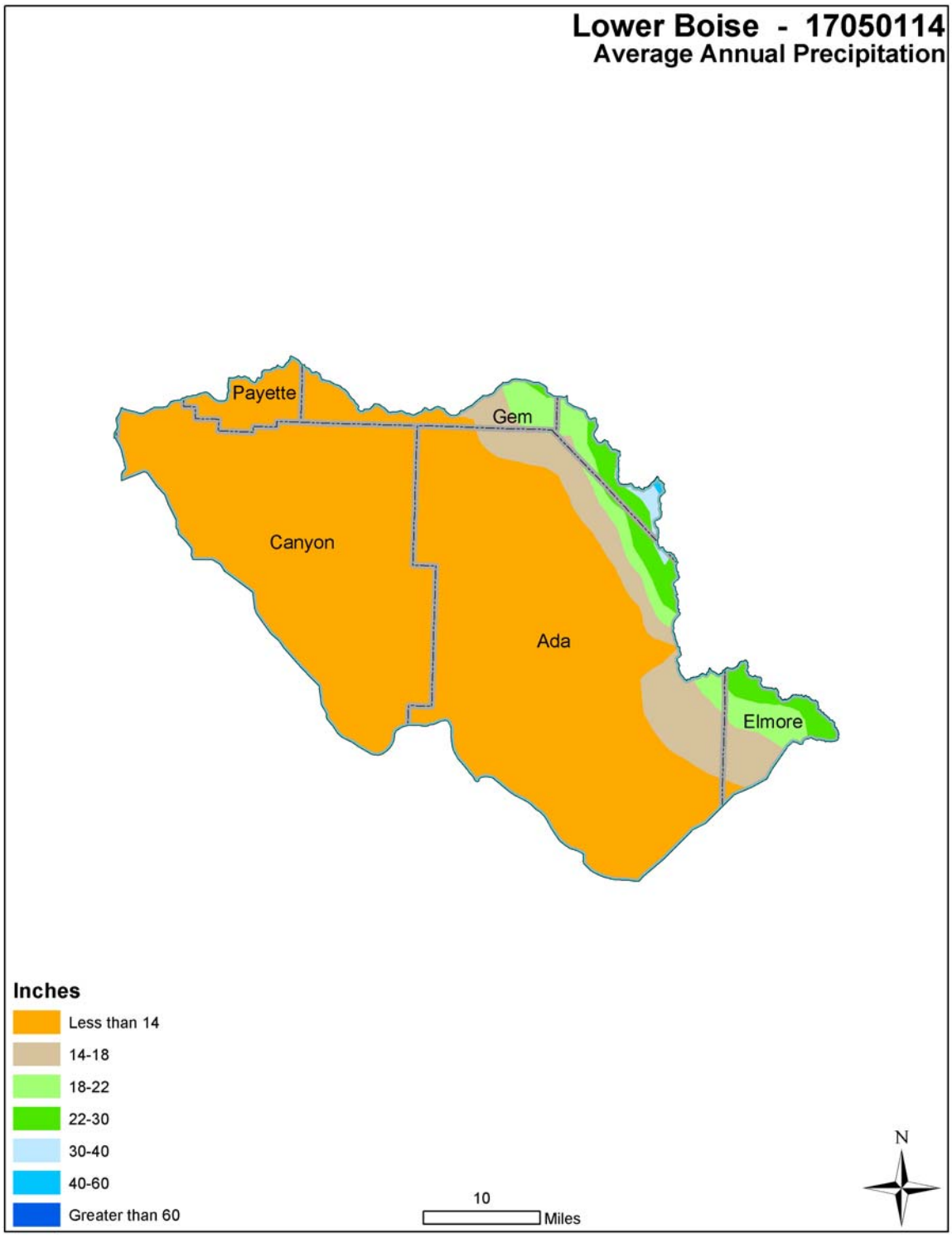
* Includes permanent hayland and horticultural cropland.

* Any differences between the acres in the above Table and the Future Conservation Needs Tables in the back of this document are 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[/2]

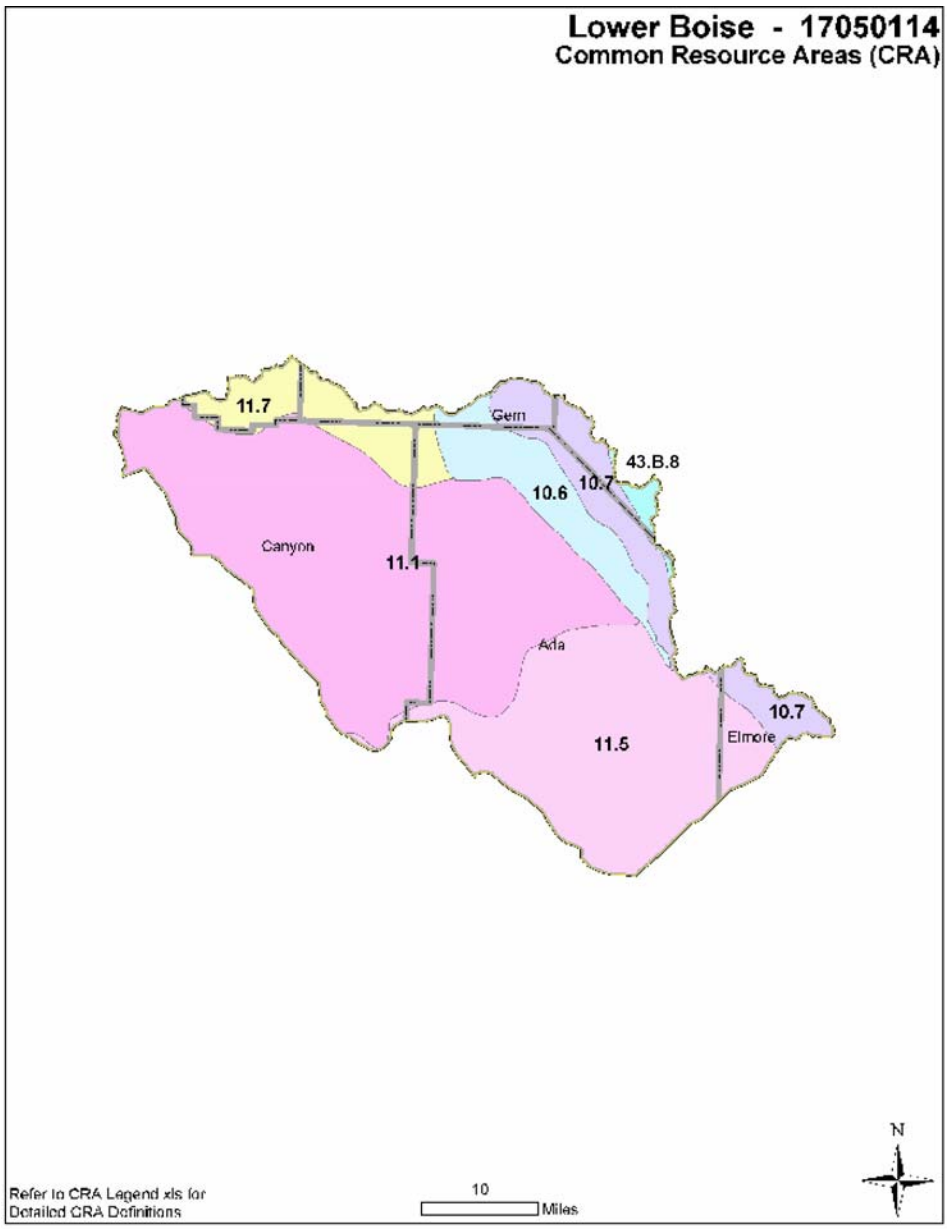


Average Annual Precipitation[/5]



Common Resource Area Map

The Common Resource Areas (CRA) delineated below for the Lower Boise HUC are described in the next section (for additional information, see 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.

10.6 Central Rocky and Blue Mountain Foothills – Unwooded Alkaline Foothill: The shrub- and grass-covered foothill unit is higher and more rugged than adjacent valleys. Sandy, alkaline lacustrine deposits occur unlike in other units and support a unique flora. Potential natural vegetation is saltbush-greasewood and sagebrush steppe. Today, cheatgrass and crested wheatgrass are also common and the unit is used for livestock grazing. The soil temperature regime is dominantly mesic and the soil moisture regime is aridic bordering on xeric. Perennial streams are rare.

10.7 Central Rocky and Blue Mountain Foothills – Foothill Shrublands-Grassland: This unit consists of grass- and shrub- covered foothills in the rain shadow of high mountains. Its hills and benches are dry, treeless, and covered by shrubs and grasses. The vegetation mosaic is unlike open forests. Land use is mostly grazing but rural residential development is expanding near the city of Boise.

11.1 Snake River Plains – Treasure Valley: This unit is characterized by irrigated cropland, pastureland, and rapidly growing cities, suburbs, and industries. Many canals, reservoirs, and diversions are present. Aridic soils predominate and require irrigation to grow commercial crops. Surface water quality has been significantly affected by channel alteration, dams, irrigation return flow, and urban, industrial, and agricultural pollution. Crops include wheat, barley, alfalfa, sugar beets, potatoes, and beans. Crop diversity is greater, temperatures are warmer, and the mean frost free season is longer than in other CRA units. Population density is much greater than in nearby, rangeland-dominated units.

11.5 Snake River Plains – Mountain Home Uplands: This upland shrub- and grass-covered unit is sparsely populated. Local relief is between that of the flanking foothills and the Magic and Treasure Valleys. Soils are warmer than the frigid soils of the Owyhee Mountains. Today, cheatgrass, medusahead, wild rye, and sagebrush occur and livestock carrying capacity is low; native grasses are rare and vegetative regeneration capacity is limited.

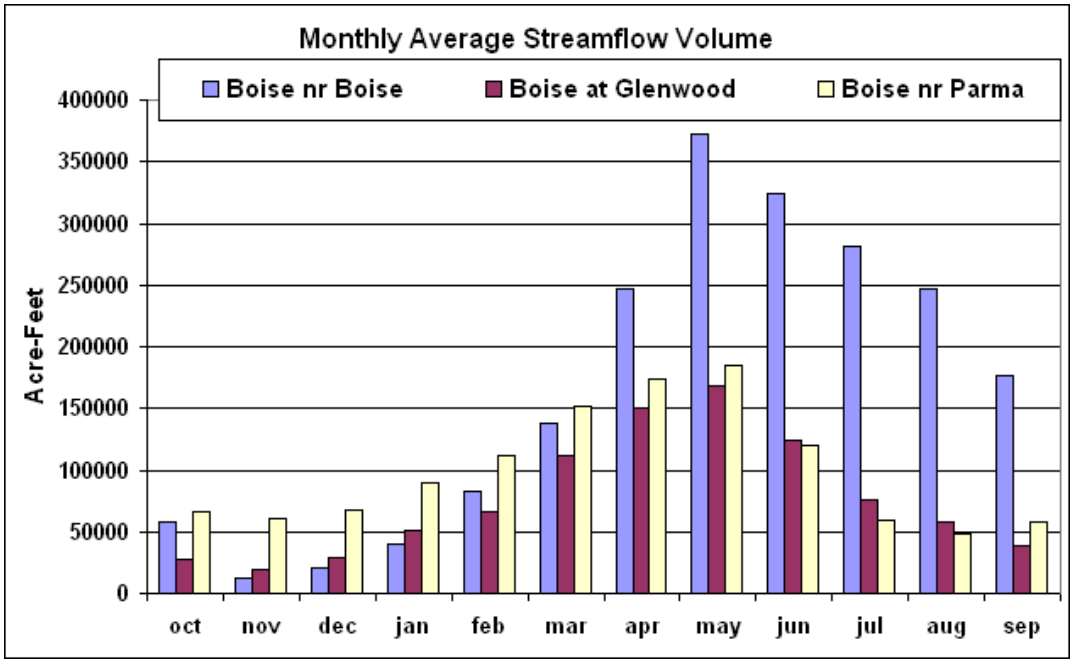
11.7 Snake River Plains – Dry Unwooded Alkaline Foothills: The shrub- and grass-covered foothill unit is higher and more rugged than adjacent valley CRAs. Alkaline lacustrine terrace deposits characterize the soil and support a unique flora. Shallow and moderately deep soils over cemented pans are common. Potential natural vegetation is saltbush-greasewood and sagebrush steppe. Today, cheatgrass and crested wheatgrass are also common and the unit is used for livestock grazing. The soil temperature regime is mesic and the soil moisture regime is aridic.

Common Resource Area Descriptions - Continued

43B.8 Central Rocky Mountains – Southern Forested Mountains: The Southern Forested Mountains ecoregion is mantled by droughty soils derived from granitic rocks and is only marginally affected by maritime influence. Open Douglas-fir is common, grand fir and subalpine fir occur at higher elevations, and ponderosa pine grows in canyons. Mountain sagebrush and forest are found in the south. Streams are subject to high sediment loading when soils are disturbed.

Streamflow Summary[7]

The lower Boise River flow is regulated by Lucky Peak, Arrowrock and Anderson Dam Reservoirs (combined reservoir capacity is 1015.6 KAF). Located in the headwaters are 11 SNOTEL sites that measure mountain snowpack and precipitation and are used to forecast the Boise River streamflow and regulate the reservoir levels. For this particular HUC, there are two main USGS gages that measure surface water conditions on the Boise River and other gages without a long term record. One gage is located near the Glenwood Bridge in Boise (Boise near Glenwood USGS ID 1320600) and the second gage is located downstream near Parma, Idaho (Boise near Parma USGS ID 1321300) just before emptying into the Snake River. Approximately ten river miles upstream of the Boise River near Glenwood station, sits the Boise River near Boise gage (located below Lucky Peak Dam, USGS ID 1320200), which lies outside of the lower Boise HUC but is imperative to note that the hydrology between the two sites is highly complex. The main water use in the area is irrigation but recreation is substantial as the Boise River flows through Idaho State's capital city, Boise. The drainage area of the Boise near Boise gage is 2680 square miles and 3970 square miles at the Boise near Parma station. The two Boise River gages measure an average annual difference of 1.0 million Acre-Feet of water owing to ten large irrigation canals and numerous other small canals; one of the larger canals is the New York Canal (capacity is 2800 cfs or 5552 AF/day and drains 40 miles to Lake Lowell). The average annual flow of the Boise near Boise is 2.0 million Acre-Feet, the Boise near Glenwood is 920 thousand Acre-Feet and the Boise near Parma is 1.2 million Acre-Feet. The April through July flow accounts for 56% of the average annual flow for the Boise near Glenwood, 45% for the Boise near Parma and for 61% percent of the average annual flow at the upstream station, Boise near Boise. The Boise near Parma gage measures an increase of streamflow during October through March due to delayed return flows from irrigated fields and local inflow from small stream tributaries between the two gages. Dams, numerous diversions, and local flood control policies have significantly altered the flow regime and the physical and biological characteristics of the lower Boise River. Water does not follow natural drainage paths in much of the lower Boise valley. Natural drainages in the lowlands and irrigated areas of the valley have been deepened, lengthened, straightened, and diverted while drains, laterals, and canals have been constructed. The stream alterations and man-made waterways have created new drainage areas that are significantly different from the natural subwatershed areas.



Irrigated Adjudicated Water Rights[6])		**CFS**	
	Surface Water	3,190	
	Groundwater	2,513	
	Total Irrigated Adjudicated Water Rights	5,703	
Stream Flow Data[7]	USGS 13020200, Boise near Boise, 55 Years of data used		**ACRE-FEET**
		Average Annual	1,998,515
		April – July Average	1,224,431
		Percent of Average Annual	61
Stream Data **Percent of Total Miles of streams in HUC*		**MILES**	**PERCENT**
	Total Stream Miles[8]	3,860	--
	Water quality impaired streams[9,10]	907	23
	Anadromous Fish Presence (Streamnet)[11]	--	--
	Bull Trout Presence (Streamnet)[11]	0	0
Land Cover/Use[2] based on a 100 ft. stretch on both sides of all streams in the 100K Hydro Layer		**ACRES**	**PERCENT**
	Forest	1,390	1
	Grain Crops	24,220	18
	Grass/Pasture/Hay Lands	44,230	33
	Row Crops	9,350	7
	Shrub/Rangelands – Includes CRP Lands	43,750	33
	Water/Wetlands/Developed/Barren	11,400	8
	Total Acres of 100 ft stream buffers	**134,340**	100
Land Capability Class[4]	**I** – slight limitations	59,000	19
	II – moderate limitations	65,900	22
	III – severe limitations	104,200	34
	IV – very severe limitations	26,200	9
	V – no erosion hazard, but other limitations	0	0
	VI – severe limitations, unsuited for cultivation, limited to pasture, range, forest	36,700	12
	VII – very severe limitations, unsuited for cultivation, limited to grazing, forest, wildlife	12,100	4
	VIII – misc areas have limitations, limited to recreation, wildlife, and water supply	0	0
	Total Crop & Pasture Lands	**304,100**	100

Confined Animal Feeding Operations – Dairies/Feedlots[12,13, 26]						
	Number	**<200**	**200-500**	**500-750**	**750-1000**	**>1000**
Dairy	98	59	17	9	6	7
	Number	**<300**	**300-999**	**1,000-4,999**	**5,000-9,000**	**>10,000**
Feedlots	36	18	7	9	1	1

Resource Settings

Surface Irrigated Cropland
Conventionally tilled, often intensively cultivated cropland on 0-7% slopes. Precipitation is 12 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. Crops grown include: onions, sugar beets, silage corn, grain corn, mint, specialty crops, and winter wheat. Alfalfa may be included in the rotation and is typically maintained for three to four years. Irrigation-induced erosion exceeds the threshold and contributes to water quality concerns. Fertilizers and pesticides are applied. Nutrient, pest, and/or irrigation water management may be less than desirable. Impacted surface and/or ground water quality is common.

Sprinkler Irrigated Cropland
Cropland is conventionally tilled and often planted to row crops. Typical crops grown include beans, potatoes, sugar beets, mint, silage corn, grain corn, specialty crops, small grains and alfalfa. Crop rotations may contain less than 50 percent high residue crops. Sprinkler-irrigation induced erosion may be a concern, especially on steeper slopes. Fertilizers and pesticides are applied. Typical soils are sandy loams to loams with slopes from zero to eight percent. Precipitation is eight to 12 inches per year. The irrigation water source is groundwater and surface water from irrigation districts. Hand-lines, wheel-lines and pivots, as well as micro-irrigation with drip-tape, are commonly used to irrigate crops. Irrigation water management and maintenance of sprinkler systems may be less than desirable. Fertilizers and pesticides and manure are commonly applied. Nutrient and pest management are less than desirable. Wildlife habitat is often inadequate with limited permanent cover.

Pasture
Some improved dryland pasture in scattered, isolated small parcels with introduced forage species including wheatgrasses, fescues, bromes, and orchardgrass. The older established stands are of low vigor, with encroachment of invasive or noxious weeds. Continuous season-long grazing is typical, with below-optimum forage production. No commercial fertilizers are applied, and pest management practices are limited. Livestock water may be inadequate.

Irrigated pastureland is primarily low elevation pastures. Annual precipitation is eight to fourteen inches, and the growing season is 120 to 160 days. Irrigated pastures are often surface irrigated on variable soils with slopes 1-5%. Irrigation water is 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 but are often impacted by livestock.

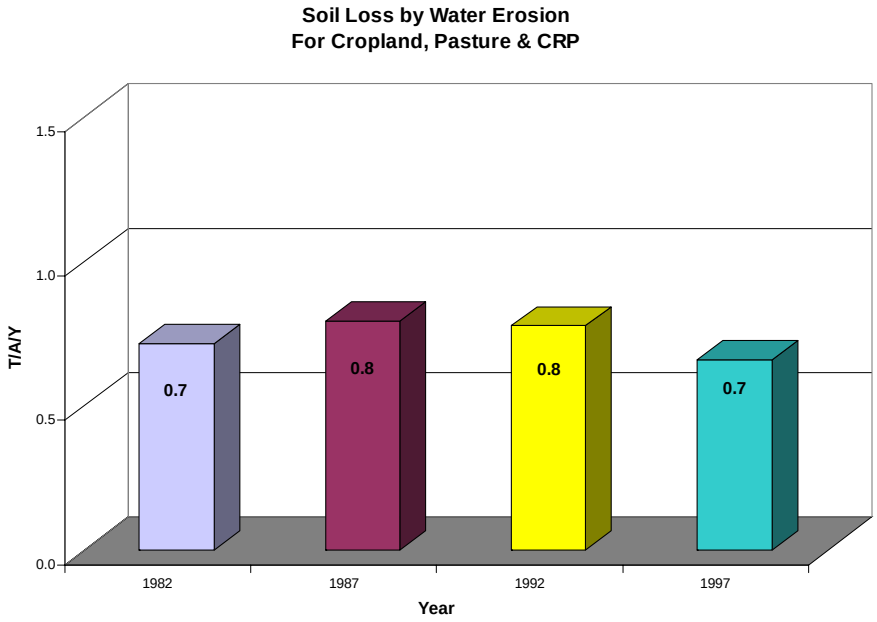
Resource Settings - continued

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. Precipitation is 10 to 20 inches per year with a growing season ranging from 80 to 160 days. Typical soils are loamy sands or finer with slopes of zero to seven percent. Fertilizers and pesticides are applied. Nutrient, pest or irrigation water management may be less than desirable.

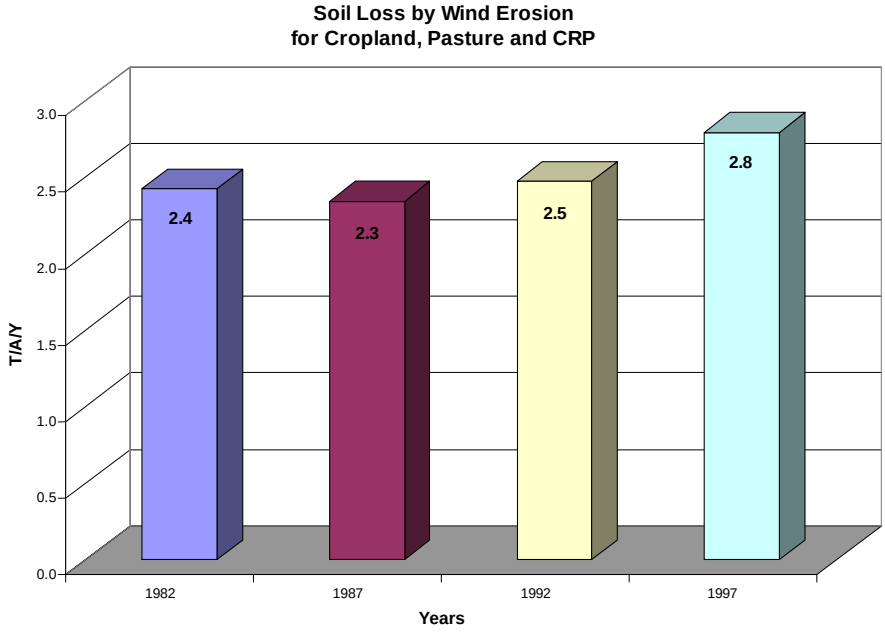
Rangeland
Low elevation desert to high elevation, steep rangeland. Low elevation desert characterized by sagebrush and perennial bunchgrasses, with annual precipitation ranging from 8-12 inches. Frequent fires have eliminated some areas of sagebrush, with annual cheatgrass and other invaders dominant. 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.

Urban Land
Urban development has created land use conflicts with agriculture and natural areas as residential and commercial development and ranchettes expand into rural areas. Ranchettes and small acreage lots may be overstocked for the resource. Specialty crops for the urban market (grass seed, vegetable crops, nursery stock) are common. Most towns and cities have regulations and ordinances addressing water management and erosion control. Impacted urban lands include multiple use lands ranging from parks, school grounds, construction sites, golf courses, drainage ways, and other public access areas. Most areas need stormwater control or treatment, erosion control, or heavy use area protection. Applications of nutrients and/or pesticides may pose a resource concern. Invasive and noxious plants and weeds may impact land and water resources. Water use for urban landscaping, domestic households, commercial and industrial use is increasing rapidly. Use of irrigation canals as open/recreational space by the public creates conflicts and is a widespread safety concern. Surface and ground water quality degradation from petrochemicals and heavy metals (oil, antifreeze, asbestos, mercury) from automobile and industrial emissions are resource concerns. Mercury buildup in downstream water bodies has been documented (Brownlee Reservoir on the Snake River). Air quality degradation is rapidly increasing due to automobile emissions, creation of dust at construction sites, and an urban heat sink. Air inversions occur year-round and exacerbate the poor air quality conditions.

Resource Concerns



Sheet and rill erosion by water on the sub basin croplands and pasturelands have been essentially static since 1982. Sheet and rill erosion is not a major issue on cropland in this sub basin. Susceptibility to sheet and rill erosion is low in this sub basin because the natural precipitation is low and the cropland is relatively flat. There is no CRP in this sub basin.



Wind erosion on the sub basin's croplands and pasturelands has been essentially static since 1982. A very slight increase in erosion rates was recorded between 1987 and 1997.

Impacted Water Bodies[9,10] (ID17050114)	Stream Miles	Sediment, Siltation or TSS	Nutrients	Bacteria	Temperature	Dissolved Oxygen	Flow Alteration[1]	Other or Unknown
Lake Lowell (SW004_06)			x			x		
Blacks Creek (SW009_02)	56.2							x
Blacks Creek (SW009_03)	7.5							x
Boise River (SW011a_06)	32.2	X			x			
Boise River (SW011b_06)	2.3						x	
Boise River (SW005_06)	44.1	X		x	x			
Boise River (SW001_06)	45.4	X	x[2]	x	x			
Boise River (SW001_02)	4.1				x			
Fivemile Creek (SW010_03)	65.0	x[2]		x		x[2]		
Fivemile Creek (SW010_02)	22.6	x[2]	x[2]			x[2]		
Indian Creek (SW003_02)	280.3	X	x[2]	x				
Indian Creek (SW003_03)	57.2	X		x	x			
Indian Creek (SW003_04)	27.3	X	x[2]		x	x		
Indian Creek (SW002_04)	10.9			x	x			
Langley/Graveyard Gulch (SW016_03)	5.6	X	x			x		
Mason Creek (SW006_03)	29.8	x[2]	x[2]	x[3]		x[2]		
Sand Hollow Creek (SW017_03)	18.2	X		x		x[2]		
Sand Hollow Creek (SW017_06)	2.7	X	x[2]			x[2]		
Stewart Gulch/Cottonwood/Crane Creeks (SW012_03)	5.9							x
Stewart Gulch/Cottonwood/Crane Creeks (SW012_02)	63.7							x
Tenmile Creek (SW008_03)	29.5	x[2]	x[2]	x				
Willow Creek (SW015_02, SW015_03)	96.1				x			x
TOTAL STREAM MILES:	906.6							

[1] Flow alteration is not considered a pollutant by the Idaho Department of Environmental Quality, and is not addressed by the TMDL.
[2] Assessment proposes to delist on the next Integrated Report.
[3] Assessment documented exceedances, and recommends listing for the specified pollutant on the next Integrated Report.
Shading indicates TMDL in place.

Pollutants enter the lower Boise River largely from nonpoint sources, including agricultural activities, stormwater runoff, runoff from construction activities, and bank erosion. The most significant sources of sediment and nutrients from agricultural practices are surface irrigated row crops and surface irrigated pastures. A substantial amount of the sediment that erodes from agricultural lands is deposited in drains and canals and may be liberated during maintenance activities. Sediment may also be liberated from the river substrate when irrigators alter instream structures to improve diversions. Nutrients that enter the river from ground water generally have their source in the same land use activities that contribute nutrients directly to surface water.

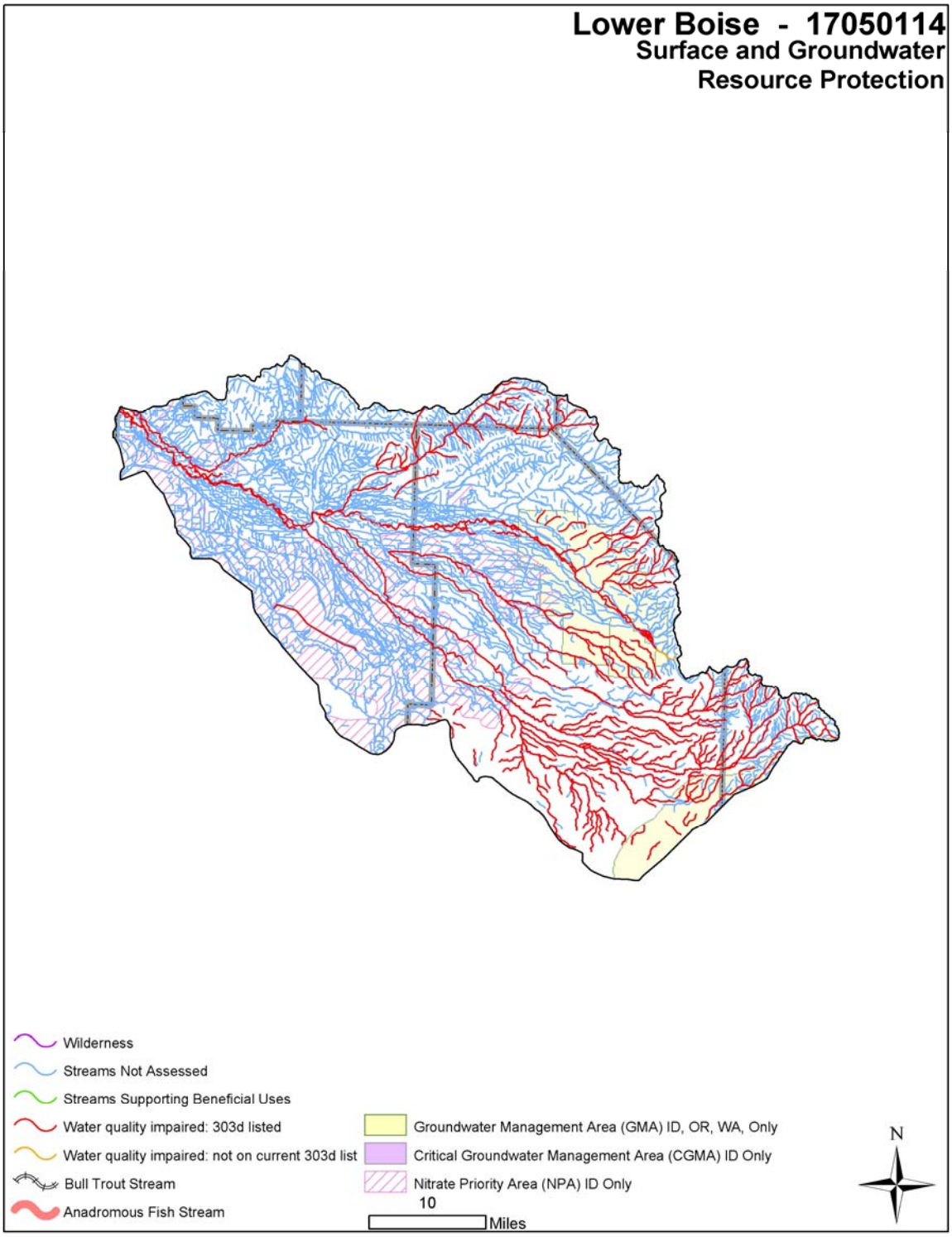
Possible nonpoint sources of bacteria include agricultural operations (primarily livestock), failed septic systems, and wildfowl populating the river corridor. Temperature increases in the Boise River are affected by point and nonpoint source discharges, water management practices, alteration of the river channel and atmospheric sources. The Boise River channel has been significantly altered from its natural condition due to flood control and the downstream affects of Lucky Peak Dam. Channelization, clearing for flood control purposes, and altered flow regimes have reduced natural braiding and riparian areas, and have adverse effects on habitat. There are three areas in the watershed, comprising approximately 260,000 acres, where ground water is impacted by nitrates (designated Nitrate Priority Areas). Well testing data have also shown detections of various pesticides, but not at levels of concern for humans.

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

Watershed Projects, Plans, Studies, and Assessments*	
Federal:	***State:***
NRCS Watershed Plans/Studies/Assessments[14,15]	**IDEQ TMDLs**[16]
Lower Boise River Water Quality Plan (1994) Conway Gulch SAWQP (1993) 8th Street Fire EWP Restoration (1996) Hilltop Fire EWP Restoration (2000)	Lower Boise River Subbasin Assessment and TMDL (2000) Lower Boise River Nutrient and Tributary Subbasin Assessment (2001)
Other Federal Studies	**IDEQ 319 Projects/**[17]
FEMA/USGS Boise River Floodplain Study/Update (2003)	Integrating Urban Design, Ecology, and Water Quality Objectives (1999) Jerrell Glenn Wetland Restoration (2004) Indian Creek LID Demonstration (2004) Downtown Boise Graywater Recycling Demonstration (2004) Boise River Side Channel Reconstruction (2004)
NWPCC Subbasin Plans and Assessments[18]	**SCC Plans/Projects**[19]
Middle Snake Subbasin Assessment (2004)	Lower Boise TMDL Agriculture Implementation Plan (2003)
	15-Mile Creek WQPA/One-Plan Conservation Program Demo, with Idaho Department of Environmental Quality
	ISDA Regional Water Quality Projects[20]
	Northwest Ada County Groundwater Monitoring (2006) Lower Boise Basin Groundwater Quality Monitoring (on-going) Mason Creek Drain Study (2002) Mill Sough Water Quality Monitoring Report (2003) Lake Lowell Irrigation Return Drains Study (2003)
	IDWR Comprehensive Basin Plans[21]
	Lower Boise River Comprehensive Basin Plan (in process)
Other (Local, SWCD):	
Partners for Clean Water – NPDES, Boise City, Boise State University, Garden City, Drainage District #3, Ada County Highway Department, Idaho Transportation Department Dry Creek Water Quality/Drainage Initiative Boise Foothills Cooperative Weed Management Area Hubbard Reservoir Restoration	

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

Surface and Groundwater Resource Protection[1,22,23,24]



Resource Concerns – Continued

SWAPA*	Specific Resource Concerns/Issues	Pasture	Hayland	Surface Irrigated Crops	Sprinkler Irrigated Crops	Rangeland	Urban
Soil Erosion	Sheet and rill				x		x
	Ephemeral or classic gully						x
	Irrigation-induced			x	x		x
	Wind						x
	Streambank	x				x	x
Water Quantity	Inefficient use on irrigated lands	x	x	x	x		x
	Groundwater Depletion			x	x		x
Water Quality, Surface	Suspended sediment	x	x	x	x	x	x
	Nutrients and organics	x	x	x	x		x
	Heavy metals						x
	Petroleum						x
Water Quality, Ground	Nutrients and organics		x	x	x		x
	Pesticides		x	x	x		x
	Heavy metals						x
	Petroleum						x
Soil Condition	Organic matter depletion			x	x		
	Compaction	x			x		x
Plant Condition	Productivity, health and vigor	x	x			x	
	Noxious and invasive plants	x		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	x
Air	Particulate matter (dust)					x	x
	Ozone						x

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

FEDERALLY LISTED THREATENED AND ENDANGERED SPECIES[25]	
Threatened and Endangered Species	**Candidate Species**
Mammals – None **Birds –** Bald Eagle **Fish –** Bull Trout **Invertebrates –** None **Plants –** None	**Plants** – None **Birds** – Yellow-billed cuckoo **PROPOSED SPECIES** - None
ESSENTIAL FISH HABITAT – None	**CRITICAL FISH HABITAT –** Proposed

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.

Urban development in the Lower Boise River watershed has increased rapidly since 1994. It continues to increase and expand at a pace that exceeds most predictions. Urbanization of land that was open space as farmland or rangeland presents its own type of resource problems that will require treatment as well as reduce the projected needs for traditional conservation treatment associated with existing cropland and rangeland that is converted to urban use:

Water quality – is impacted primarily due to an increase in impervious surfaces (streets, driveways, rooftops, sidewalks, parking lots). Stormwater runoff carries petro chemicals, pathogens, sediment and heat; seven BMPs are available to address this problem and public education is a critical component to help limit the contaminants and protect water quality.

Water conservation (use) – a large influx of population has increased the need for water for domestic households (clothes, dish and car washing, showers and landscape irrigation). Surface water that was used on cropland is sometimes available for irrigation, but not always.

Habitat loss – is impacted due to the loss of open space from farmland and rangeland. Encroachment by people, buildings, roadways, and infrastructure impacts habitat for birds, mammals, reptiles, and amphibians.

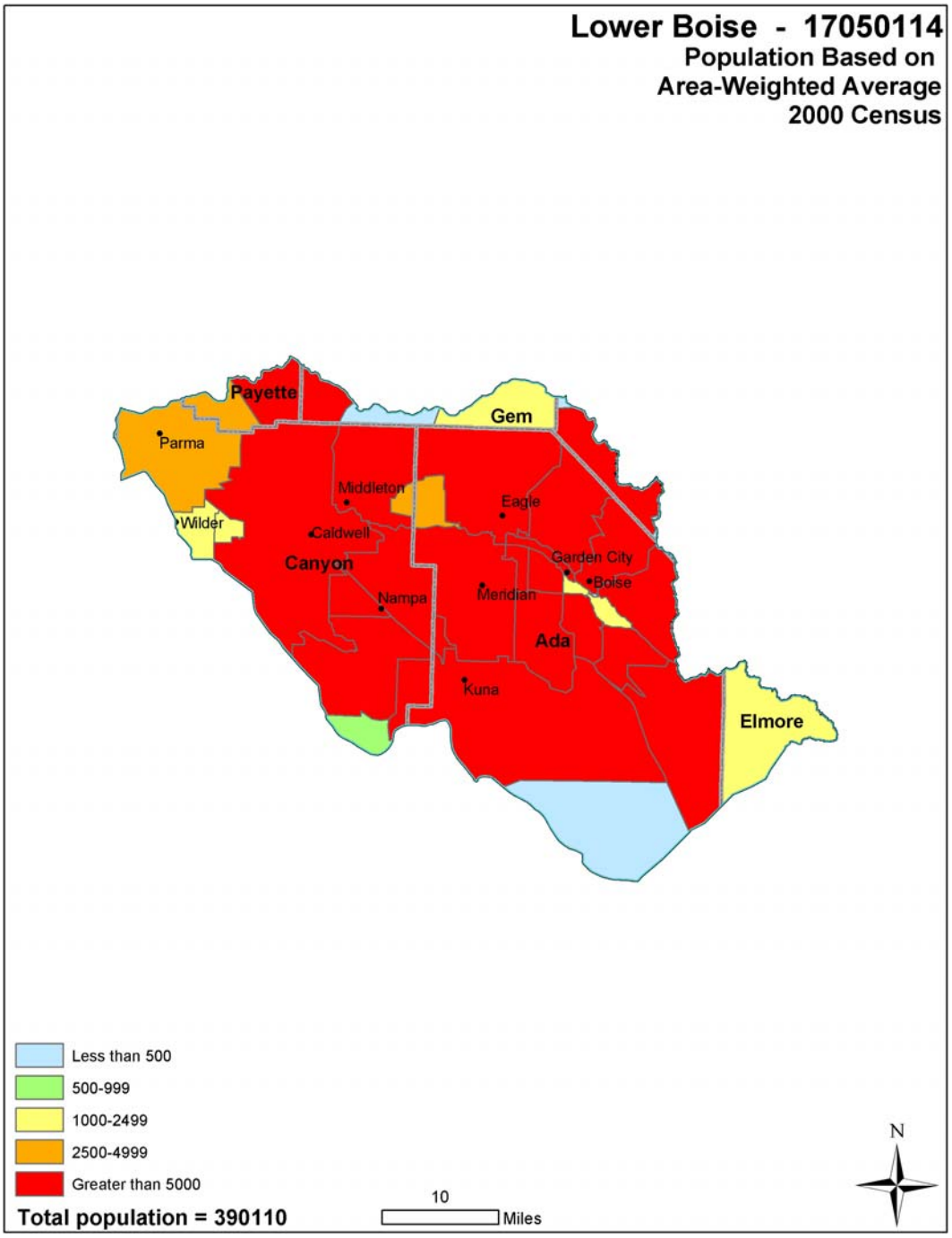
Construction sites - (homes, businesses, roadways, intersections, highway/interstate interchanges) impacts contribute to soil compaction, sheet and rill erosion, wind erosion (dust), air quality degradation (dust), surface water quality impairment (sediment), and ground water contamination/disruption (interference).

Recreation use - impacts urban land that is set aside as open space. Planned communities have large acreage tracts preserved as open space. The accompanying trail systems can potentially provide a source of erosion, sediment delivery, fire hazard and introduction of noxious/invasive plants.

Census and Social Data[126]

Population: 390,110

Number of Farms: 1,650



Census and Social Data - continued

Forty-nine 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 13.1 percent of the total. Ninety-four 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 190 acres. Agricultural land in the watershed is a mix of cropland, range, pasture and hay land. Land users in the watershed utilize EQIP and other programs to implement conservation plans.

Farm size is down 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-seven 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	1,650	210	$117,800	$3,500
2002	1,640	190	$129,600	$8,500
Change	- 0.6%	- 9.5%	10.0%	145.8%

Economic Profile:

	Watershed	Idaho	United States
*Population (2000)	390,000	1,294,000	281,422,000
Per Capita Personal Income (2001)	$26,200	$24,500	$30,400
Median Home Value (2000)	$114,600	$106,600	$119,600
Percent Unemployment (2002)	5.9%	5.8%	5.4%
Percent Below Poverty Level (2003)	11.2%	11.8%	12.5%

* Ada and Canyon Counties comprise one of the fastest growing areas in the US. Updated census projections for June, 2007 indicate the watershed population is greater than 490,000.

Progress / Status

PRS Data						
Conservation Treatment Acres	FY04	FY05	FY06	FY07	Avg/Year	Total
Conservation Crop Rotation (328) (acres)	2043	385	1081	533	1010.5	4042
Dike (356) (ft)	2846	1184	0	0	1007.5	4030
Nutrient Management (590) (acres)	1519	3377	2139	397	1858.0	7432
Pasture and Hay Planting (512) (acres)	153	50	70	2	68.8	275
Prescribed Grazing (528&528A) (acres)	887	646	122	0	413.8	1655
Pest Management (595) (acres)	1369	2470	1440	270	1387.3	5549
Residue Management Seasonal (344) (acres)	1127	254	141	14	384.0	1536
Fence (382) (ft)	13158	4812	3696	5612	6819.5	27278
Spring Development (574) (no.)	0	0	0	0	0.0	0
Pipeline (516) (ft)	0	1100	2530	3768	1849.5	7398
PAM erosion control (450 (acres)	76	69	76	0	55.3	221
Irrigation Water Management (449)	2621	1866	2194	290	1742.8	6971
Irrigation System, Sprinkler (442) (acres)	206	1123	1550	537	854.0	3416
Structure For Water Control (587) (no.)	14	24	30	14	20.5	82
IWC Concrete canal lining 428A)	10195	4910	1260	0	4091.3	16365
IWC High & Low Pressure Pipeline (430DD) & (430EE) (ft)	9543	23451	31268	20443	21176.3	84705
IWC Gated Pipeline (430HH) (ft)	900	15959	1080	4215	5538.5	22154
Waste Storage Facility (313) (no.)	7	4	7	1	4.8	19
Comprehensive Nutrient Management Plan (100) (no.)	0	4	9	2	3.8	15
Upland Wildlife Management (645)(acres)	40	1	28	4	18.3	73
Wetland Enhancement (659) (acres)	13	0	0	4	4.3	17
Wetland Restoration (657) (acres)	1	12	40	12	16.3	65
Wetland Wildlife Management (644)(acres)	28	1	32	16	19.3	77
Windbreak/Shelterbelt Estab. (380)(ft)	1447	0	4505	0	1488.0	5952

Progress in the last seven years has been focused on:

~ erosion control

~ irrigation water management

~ nutrient management

~ pest management

Resource concerns that require ongoing attention:

~ erosion control
~ water quality
~ water conservation/quantity
~ native plant community health and restoration
~ wildlife habitat improvement
~ noxious and invasive plant species control/management

Lands Removed from Production through Farm Bill Programs

- Conservation Reserve Program (CRP): **0 acres**
- Wetland Reserve Program (WRP): **60 acres**

Lands Removed from Production through Other Local Initiatives

- Planned Community Easements: **8,431 acres**
- Wetland Mitigation Banking Easement: **438 acres**
- Land Trust Set Asides: **80 acres**

Footnotes/Bibliography

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 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. IDEQ. 2000. Lower Boise River Subbasin Assessment and TMDL. http://www.deq.state.id.us/water/data_reports/surface_water/tmdls/boise_river_lower/boise_river_lower.cfm

Conservation Activities and Future Conservation Needs

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 2005.

The following Future Conditions Tables are estimates of the future needs of conservation practices in the watershed.

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

1. Estimates of total additional conservation needs to reach “Resource Management System” level of treatment based on benchmark conditions in the watershed

2. Local knowledge of the area, past and ongoing project activities and professional judgment

3. 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.

4. Urban development of land that was open space as farmland or rangeland presents its own type of resource problems that will require treatment as well as reduce the projected needs for traditional conservation associated with existing cropland and rangeland that is converted to urban use.

Conservation Activities for Irrigated Cropland / Hayland

Current Conditions		Total acres
Total Irrigated Cropland/Hayland		256,700
Typical Management Unit/Ownership		60
Surface Irrigated Cropland/Hayland		185,000
Sprinkler Irrigated Cropland/Hayland		71,700
Current Farm Bill participation		3%

Current Level of Treatment for Irrigated Cropland/Hayland:

Irrigated Cropland/Hayland	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
Surface Irrigation	Ac.				-3	-/+	-2	-3				
Conservation Crop Rotation (328)	Ac.	2,013	$ -	$ -					X			X
Irrigation System, Surface (443)	Ac.	1,312	-	$ 5,900					X			X
Irrigation Water Conveyance Canal (428A)	Ft.	8,816	-	$ 300								
Irrigation Water Conveyance (430HH)	Ft.	18,979	-	$ 400					X			X
Irrigation Tail Water Recovery (447)	No.	3	-	$ 1,400					X			X
Irrigation Water Management (449)	Ac.	2,106	-	$ 15,800					X			X
PAM Erosion Control (450)	Ac.	221	-	$ 3,300								
Pasture and Hayland Planting (512)	Ac.	35	-	$ -					X			X
Pest Management (595)	Ac.	1,541	-	$ 15,400					X			X
Pumping Plant (533)	No.	12	-	$ 800					X			X
Nutrient Management (590)	Ac.	2,437	-	$ 12,200					X			X
Residue Management Mulch Till (345)	Ac.		-	-					X			X
Residue Management Seasonal (344)	Ac.	466	-	$ 3,500					X			X
Structure for Water Control (587)	No.	25	-	$ 300					X			X
Surface Roughening (609)	Ac.	390	-	$ 2,900					X			X
Windbreak/Shelterbelt Establishment (380)	Ft.											

Conservation Activities for Irrigated Cropland / Hayland (continued)

Current Level of Treatment for Irrigation Cropland/Hayland (continued)												
Irrigated Cropland/Hayland	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
Sprinkler Irrigation	Ac.				-/+	-/+	-/+	-/+				
Conservation Crop Rotation (328)	Ac.	1,994	$ -	$ -					X			X
Irrigation System, Sprinkler (442)	Ac.	3,430	-	$ 37,700					X			X
Irrigation System, Micro (441)	Ac.	90	-	$ 6,800								
Irrigation Water Conveyance (430DD)	Ft.	51,523	-	$ 1,400					X			X
Irrigation Water Conveyance (430EE)	Ft.	16,298	-	$ 300								
Irrigation Water Management (449)	Ac.	3925	-	$ 29,400					X			X
Pest Management (595)	Ac.	2243	-	$ 22,400					X			X
Pumping Plant (533)	No.	46	-	$ 2,900					X			X
Nutrient Management (590)	Ac.	2701	-	$ 13,500					X			X
Residue Management Mulch Till (345)	Ac.		-	$ -					X			X
Residue Management Seasonal (344)	Ac.	1053	-	$ 7,900					X			X
Structure for Water Control (587)	No.	34	-	$ 400					X			X
Surface Roughening (609)	Ac.	1053	-	$ 7,900					X			X
Upland Wildlife Habitat Management (645)	Ac.	20	-	$ 100					X			X
Windbreak/Shelterbelt Establishment (380)	Ft.	4505	-	$ 100					X			X

Conservation Activities for Irrigated Cropland / Hayland (continued)

Future Conditions			Total Acres
Surface Irrigated Cropland/Hayland			102,400
Sprinkler Irrigated Cropland/Hayland			49,600
Total Irrigated Cropland/Hayland Acres			152,000

Projected Additional Treatment needs for Irrigated Cropland/Hayland:

Irrigated Cropland/Hayland	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 Irrigation	Ac.				+1	+1	+3	+1				
Anionic Polyacrylamide, (PAM) (450)	Ac.	55,296	$ 488,300	$ 829,400					X			X
Conservation Crop Rotation (328)	Ac.	92,160	-	-					X			X
Constructed Wetland (656)	No.	2	$ 34,000	$ 300					X			X
Irrigation System, Surface (443)	Ac.	46,080	$ 912,000	$ 207,400					X			X
Irrigation System, Gated Pipe/Surge (443)	Ac.	9,216	$ 935,400	$ 58,100					X			X
Irrigation Tailwater Recovery (447)	No.	92	$ 1,389,200	$ 41,700					X			X
Irrig. System, Micro Irrigation (Drip) (441)	No/Ac	225	$ 337,500	$ 16,900					X			X
Irrigation Water Conveyance (430 EE)	Ft.	760,320	$ 3,018,500	$ 15,100					X	X		X
Irrigation Water Conveyance (430 HH)	Ft.	91,238	$ 372,300	$ 3,700					X	X		X
Irrigation Water Management (449) - Low Level	Ac.	92,160	$ 1,382,400	$ 460,800					X			X
Irrigation Water Management (449) - Meters and Moisture Sensors	Ac.	922	$ 27,700	$ 9,200					X			X
Land Leveling/Smoothing (466 & 464)	Ac.	1,843	$ 368,600	$ 11,100					X			X
Nutrient Management (590)	Ac.	92,160	$ 1,382,400	$ 460,800					X			X
Pest Management (595)	Ac.	92,160	$ 2,764,800	$ 921,600					X			X
Sediment Basin (350)	No.	102	$ 191,300	$ 5,700					X			X
Residue Management Mulch Till (345)	Ac.	8,295	$ 373,300	$ 124,400					X			X
Residue Management Seasonal (344)	Ac.	64,512	$ 1,451,500	$ 483,800					X			X

Conservation Activities for Irrigated Cropland / Hayland (continued)

Projected Additional Treatment needs for Irrigated Cropland/Hayland (continued):

Irrigated Cropland/Hayland	Quantity		Costs		Effects				Implementation			
Surface Irrigation Continued	Unit	Quantity	Additional Investment Cost	Annual O&M and Mngt. Cost	Water Conservation	Water Storage	Habitat	WQ	EQIP	WHIP	CREP	Other
Surface Roughening (609)	Ac.	1,500	$ 33,800	$ 11,300					X			X
Upland Wildlife Habitat Management (645)	Ac.	1,843	$ 27,600	$ 9,200					X			X
Windbreak/Shelterbelt Establishment (380)	Ft.	20,700	$ 31,100	$ 300					X			X
Surface Roughening (609)												
Sprinkler Irrigation	Ac.				+3	+2	+2	+3				
Conservation Crop Rotation (328)	Ac.	44,640	-	-					X			X
Constructed Wetland (656)	No.	8	$ 80,000	$ 800					X			X
Forage Harvest Management (511)	Ac.	446	-	-					X			X
Irrigation System, Sprinkler (442)	Ac.	4,460	$ 2,453,000	$ 49,100					X			X
Irrigation Water Conveyance (430DD)	Ft.	223,200	$ 1,209,700	$ 6,000					X			X
Irrigation Water Management (449) - Low level	Ac.	44,640	$ 669,600	$ 223,200								
Irrigation Water Management (449) - Meters and Moisture Sensors	Ac.	446	$ 13,400	$ 4,500					X			X
Nutrient Management (590)	Ac.	44,640	$ 669,600	$ 223,200					X			X
Pest Management (595)	Ac.	44,640	$ 1,339,200	$ 446,400					X			X
Residue Mngt, Mulch Till (345)	Ac.	4,018	$ 180,800	$ 60,300					X			X
Residue Management Seasonal (344)	Ac.	31,248	$ 703,100	$ 234,400					X			X
Residue Mngt, No Till/Strip Till (329)	Ac.	2,009	$ 180,800	$ 60,300					X			X
Upland Wildlife Habitat Management (645)	Ac.	893	$ 13,400	$ 4,500					X			X
Windbreak/Shelterbelt Establishment (380)	Ft.	251,100	$ 376,700	$ 3,800					X			X
Total RMS Costs			$ 32,411,000	$4,987,300								

Conservation Activities for Irrigated Cropland / Hayland (continued)

Potential RMS Effects Summary for Irrigated Cropland/Hayland		
Cost Items and Programs	Costs	O&M Costs
Non Farm Bill Programs	$ 1,620,600	$ 249,400
Potential Farm Bill Programs	$30,790,400	$4,737,900
Operator O&M and Management Cost		$4,987,300
Annual Management Incentives (3 yrs - Incentive Payments)	$13,701,700	
Operator Investment	$ 5,892,800	
Federal Costshare	$12,816,500	
Total RMS Costs	$32,411,000	$4,987,300
Estimated Level of Participation		35%
Total Acres in RMS System		53,200
Anticipated Cost at Estimated Level of Participation	$	11,343,900
Total Acre Feet of Water Saved Annually		75,030*
Increases infiltration and storage of water in soil profile		
Participating landowners will be in compliance with TMDLs		
Improves habitat for ESA endangered & threatened species		
Reduces impact to ground and surface water quality		

* adjusted for urban development, savings related to participation in NRCS Program.

Conservation Activities for Irrigated Pasture

Current Conditions		Total Acres	Riparian/ Wetland Potential
Surface Irrigated Pasture		18,800	2,063
Sprinkler Irrigated Pasture		7,400	812
Total Irrigated Pasture		26,200	2,875
Typical Management Unit/Ownership		10	
Current Farm Bill participation		3%	

Current Level of Treatment for Irrigated Pasture:

	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
Surface Irrigation	Ac.				-3	-/+	-2	-3				
Fence (382)	Ft.	8,612	$ -	$ 300					X			
Irrigation System Surface (443)	Ac.	173		$ 800								
Irrigation Water Conveyance (430HH)	Ft.	2,620	-	$ 110					X			
IrrigationWaterConveyanceCanal(428A)	Ft.	7,549		$ 260								
Irrigation Water Management (449)	Ac.	318	-	$ 2,400					X			
Nutrient Management (590)	Ac.	1,354	-	$ 6,800					X			
Pest Management (595)	Ac.	706	-	$ 7,100					X			
Pipeleine (516)	Ft.	3,768	-	$ 200								
Prescribed Grazing (528)	Ac.	646	-	$ 3,200								
Pumping Plant (533)	No.	4	-	$ 300								
Water Well (642)	No.	1	-	$ 40								
Watering Facility (614)	No.	8	-	$ 100					X			

Conservation Activities for Irrigated Pasture (continued)

Current Level of Treatment for Irrigated Pasture:												
	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
Sprinkler Irrigation	Ac.				+2	+1	+1	+3				
Fence (382)	Ft.	10,529	$ -	$ 400.00					X			
Irrigation System Sprinkler (442)	Ac.	200	-	$ 2,200					X			
Irrigation Water Conveyance (430DD)	Ft.	6,809	-	$ 180					X			
Irrigation Water Conveyance (430EE)	Ft.	2,570		$ 50								
Irrigation Water Management (449)	Ac.	516	-	$ 3,900					X			
Nutrient Management (590)	Ac.	122	-	$ 600					X			
Pasture and Hayland Planting (512)	Ac.	221	-	$ 220					X			
Pipeleine (516)	Ft.	2,630		$ 140								
Pest Management (595)	Ac.	738	-	$ 7,400					X			
Prescribed Grazing (528)	Ac.	970	-	$ 4,900					X			
Water Well (642)	No.	1	-	$ 40								
Watering Facility (614)	No.	8	-	$ 100					X			

Conservation Activities for Irrigated Pasture (continued)

Future Conditions		Total Acres
Surface Irrigated Pasture		9,970
Sprinkler Irrigated Pasture		3,924
Total Conversion to Riparian Pasture RMS		1,711
Total Acres		15,605

Project Future Level of Treatment for Irrigated Pasture:

	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 Irrigation	Ac.				+/-	+/-	+1	+1				
Fence (382)	Ft.	224,000	$ 392,000	$ 7,800					X			X
Irrigation System Surface (443)	Ac.	3,589	$ 538,400	$ 16,200					X	X	X	X
Irrigation Water Conveyance (430HH)	Ft.	71,784	$ 292,900	$ 2,900					X			X
Irrigation Water Conveyance (430EE)	Ft.	78,000	$ 309,700	$ 1,500					X			X
Irrigation Water Management (449)	Ac.	8,973	$ 201,900	$ 67,300					X			X
Nutrient Management (590)	Ac.	8,973	$ 134,600	$ 44,900					X			X
Pasture & Hayland Planting (512)	Ac.	897	$ 89,700	$ 900					X			X
Pest Management (595)	Ac.	8,973	$ 269,200	$ 89,700					X			X
Prescribed Grazing (528)	Ac.	8,973	$ 134,600	$ 44,900					X			X
Upland Wildlife Management (645)	Ac.	897	$ 13,500	$ 4,500					X			X
Watering Facility (614)	No.	225	$ 236,300	$ 2,400					X			X
Windbreak/Shelterbelt Establish(380)	Ft.	89,700	$ 134,600	$ 1,300					X			X

Conservation Activities for Irrigated Pasture (continued)

Project Future Level of Treatment for Irrigated Pasture (Continued):												
	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
Sprinkler Irrigated	Ac.				+3	+3	+2	+3				
Fence (382)	Ft.	88,300	$ 154,500	$ 3,100					X			X
Irrigation Water Conveyance (430DD)	Ft.	21,200	$ 114,900	$ 600					X			X
Irrigation System Sprinkler (442)	No.	1,413	$ 777,200	$ 15,500					X			X
Irrigation Water Management (449)	Ac.	3,532	$ 79,500	$ 26,500					X			X
Nutrient Management (590)	Ac.	3,532	$ 53,000	$ 17,700					X			X
Pasture & Hayland Planting (512)	Ac.	353	$ 35,300	$ 400					X			X
Pest Management (595)	Ac.	3,532	$ 106,000	$ 35,300					X			X
Prescribed Grazing (528)	Ac.	3,532	$ 53,000	$ 17,700					X			X
Upland Wildlife Management (645)	Ac.	353	$ 5,300	$ 1,800					X			X
Watering Facility (614)	No.	88	$ 92,400	$ 900					X			X
Windbreak/Shelterbelt Establish(380)	Ft.	35,300	$ 53,000	$ 500					X			X

Conservation Activities for Irrigated Pasture (continued)

Project Future Level of Treatment for Irrigated Pasture (Continued):													
Riparian Pastures	Ac.				+1	+1	+3	+3					
Channel Bank Vegetation (322)	Ac.	3	$ 15,500	$ 300					X			X	
Channel Stabilization (584)	Ft.	43,332	$ 866,600	$ 4,300					X			X	
Fence (382)	Ft.	38,500	$ 67,400	$ 1,300					X	X	X	X	
Nutrient Management (590)	Ac.	1,540	$ 23,100	$ 7,700					X			X	
Pasture & Hayland Planting (512)	Ac.	154	$ 15,400	$ 200					X			X	
Pest Management (595)	Ac.	1,540	$ 46,200	$ 15,400					X			X	
Pipeline (516)	Ft.	15,600	$ 42,100	$ 800					X			X	
Prescribed Grazing (528)	Ac.	1,540	$ 23,100	$ 7,700					X			X	
Riparian Forest Buffer (391)	Ac.	15	$ 22,500	200					X			X	
Riparian Herbaceous Cover (390)	Ac.	15	$ 4,500	-					X	X	X	X	
Streambank & Shoreline Prot (580)	Ft.	3,369	$ 160,000	$ 16,000					X			X	
Tree/Shrub Establishment (612)	Ac.	46	$ 21,400	$ 200					X			X	
Upland Wildlife Management (645)	Ac.	154	$ 2,300	$ 800					X			X	
Use Exclusion (472)	Ac.	154	$ 5,400	$ 200					X	X	X	X	
Watering Facility (614)	No.	39	$ 41,000	$ 400					X		X	X	
Wetland Wildlife Management (644)	Ac.	15,400	$ 231,000	$ 77,000					X			X	
Total RMS Costs	$5,859,000	$536,800											

Conservation Activities for Irrigated Pasture (continued)

Projected Additional Treatment Needs for Irrigated Pasture (Continued):												
	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
Riparian Pastures	Ac.				+1	+1	+3	+3				
Channel Bank Vegetation (322)	Ac.	3	$ 15,500	$ 300					X			X
Channel Stabilization (584)	Ft.	43,332	$ 866,600	$ 4,300					X			X
Fence (382)	Ft.	38,500	$ 67,400	$ 1,300					X	X	X	X
Nutrient Management (590)	Ac.	1,540	$ 23,100	$ 7,700					X			X
Pasture & Hayland Planting (512)	Ac.	154	$ 15,400	$ 200					X			X
Pest Management (595)	Ac.	1,540	$ 46,200	$ 15,400					X			X
Pipeline (516)	Ft.	15,600	$ 42,100	$ 800					X			X
Prescribed Grazing (528)	Ac.	1,540	$ 23,100	$ 7,700					X			X
Riparian Forest Buffer (391)	Ac.	15	$ 22,500	$ 200					X			X
Riparian Herbaceous Cover (390)	Ac.	15	$ 4,500	$ -					X	X	X	X
Streambank & Shoreline Prot (580)	Ft.	3,369	$ 160,000	$ 16,000					X			X
Tree/Shrub Establishment (612)	Ac.	46	$ 21,400	$ 200					X			X
Upland Wildlife Management (645)	Ac.	154	$ 2,300	$ 800					X			X
Use Exclusion (472)	Ac.	154	$ 5,400	$ 200					X	X	X	X
Watering Facility (614)	No.	39	$ 41,000	$ 400					X		X	X
Wetland Wildlife Management (644)	Ac.	15,400	$ 231,000	$ 77,000					X			X
Total RMS Costs			$ 5,859,000	$ 536,800								

Conservation Activities for Irrigated Pasture (continued)

RMS Cost Summary for Irrigated Pasture:

Cost Items and Programs	Costs	O&M Costs
Non Farm Bill Programs (5 percent of total)	$ 293,000	$ 26,800
Potential Farm Bill Programs 95 percent of total	$ 5,566,000	$510,000
Operator O&M and Management Cost		$536,800
Annual Management Incentives (3 yrs - Incentive Payments)	$ 1,376,300	
Operator Investment	$ 1,340,400	
Federal Costshare	$ 3,142,300	
Total RMS Farm Bill Costs	$ 5,859,000	
Estimated Level of Participation		35%
Total Acres in RMS System		5,500
Anticipated Cost at Estimated Level of Participation	$	2,050,700
Total Acre Feet of Water Saved Annually		8,120
Total Annual Forage Production Benefits (animal unit months)		12,200
Improves ground water and surface water quality by minimizing off-site transport		
Improves riparian habitat for ESA endangered & threatened species		

Conservation Activities for Grazed Rangeland, Dry Pasture and Forestland

Current Conditions	Grazed	Ungrazed	Riparian/Wetland/Potential	Total Acres
Private Rangeland and Dry Pasture	324,300		61,514	324,300
Typical Range Management Unit	12,000			
Current Farm Bill participation	<1%			

Current Level of Treatment for Rangeland and Dry Pasture:													
	Quantity		Costs		Effects				Implementation				
Practices	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.				+/-	+/-	+/-	+/-					
Prescribed Grazing (528)	Ac.	-	$ -	$ -					X				X
Pest Management (595)	Ac.	-	-	-					X				X
Spring Development (574)	No.	-	-	-					X				X
Watering Facility (614)	No.	-	-	-					X				X
Pipeline (516)	Ft.	-	-	-					X				X
Fence (382)	Ft.	-	-	-					X				X

Conservation Activities for Grazed Rangeland, Dry Pasture and Forestland (continued)

Future Conditions	Rangeland / Pasture	Riparian	Total Acres
	185,800	43,500	229,300

Projected Additional Treatment Needs for Rangeland and Dry Pasture:

			Quantity		Costs		Effects				Implementation				
Practices	Unit	Quantity	Investment Cost	Annual O&M and Mngt. Cost	Water Conservation	Water Storage	Habitat	WQ	EQIP	WHIP	WRP	CREP	Other
Rangeland and Dry Pastureland	Ac.				+3	+2	+3	+3					
Fence (382)	Ft.	465,000	$ 813,800	$ 16,300					X				X
Pest Management (595)	Ac.	185,800	$ 5,574,000	$1,858,000					X				X
Pipeline (516)	Ft.	155,000	$ 418,500	$ 8,400					X				X
Pond (378)	No.	31	$ 210,800	$ 2,100					X				X
Prescribed Grazing (528)	Ac.	185,800	$ 1,114,800	$ 371,600					X				X
Range Planting (550)	Ac.	7,440	$ 669,600	$ 6,700					X				X
Spring Development (574)	No.	31	$ 72,900	$ 400					X	X			X
Upland Wildlife Management (645)	Ac.	92,900	$ 1,393,500	$ 464,500					X	X			X
Watering Facility (614)	No.	62	$ 65,100	$ 700					X				X
Well (642)	No.	16	$ 64,000	$ 600					X				X

Conservation Activities for Grazed Rangeland, Dry Pasture and Forestland (continued)

	Quantity		Costs		Effects				Implementation				
Practices	Unit	Quantity	Investment Cost	Annual O&M and Mngt. Cost	Water Conservation	Water Storage	Habitat	WQ	EQIP	WHIP	WRP	CREP	Other
Range & Pasture Riparian	Ac.				+3	+2	+3	+3					
Channel Bank Vegetation (322)	Ac.	68	$ 351,900	$ 7,000					X				X
Channel Stabilization (584)	Ft.	51,980	$ 1,039,600	$ 5,200					X				X
Fence (382)	Ft.	105,000	$ 183,800	$ 3,700					X	X	X		X
Pest Management (595)	Ac.	43,500	$ 1,305,000	$ 435,000					X				X
Pipeline (516)	Ft.	35,000	$ 94,500	$ 1,900					X				X
Prescribed Grazing (528)	Ac.	43,500	$ 261,000	$ 87,000					X				X
Riparian Forest Buffer (391)	Ac.	2,175	$ 3,262,500	$ 32,600					X				X
Riparian Herbaceous Cover (390)	Ac.	2,175	$ 652,500	$ 6,500					X	X	X		X
Streambank & Shoreline Prot (580)	Ft.	40,428	$ 1,920,300	$ 192,000					X	X			X
Tree/Shrub Establishment (612)	Ac.	870	$ 404,600	$ 4,000					X				X
Upland Wildlife Management (645)	Ac.	4,350	$ 65,300	$ 21,800					X	X			X
Use Exclusion (472)	Ac.	4,350	$ 152,300	$ 4,600					X	X	X		X
Watering Facility (614)	No.	44	$ 46,200	$ 500					X		X		X
Wetland Wildlife Management (644)	Ac.	4,350	$ 65,300	$ 21,800					X		X		X
Total RMS Costs			$20,201,800	$3,552,900									

Conservation Activities for Grazed Rangeland, Dry Pasture and Forestland (continued)

RMS Cost Summary for Rangeland:

Cost Items and Programs	Costs	O&M Costs
Non Farm Bill Programs (5 percent of total)	$ 1,010,100	$ 177,600
Potential Farm Bill Programs 95 percent of total	$19,191,700	$3,375,300
Operator O&M and Management Cost		$3,552,900
Annual Management Incentives (3 yrs - Incentive Payments)	$ 9,778,900	
Operator Investment	$ 3,363,300	
Federal Costshare	$ 7,059,600	
Total RMS Farm Bill Costs	$20,201,800	
Estimated Level of Participation		5%
Total Acres in RMS System		11,500
Anticipated Cost at Estimated Level of Participation	$	1,010,100
Total Annual Forage Production Benefits (acre unit months)		1,700
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		

Conservation Activities for Headquarters

Confined Animal Feed Operations (CAFO - 700 Head Dairies or 1,000 Head Feeder Cattle) and Animal Feed Operations (AFO 200-700 Head of Dairy or 300 to 1,000 Head Feeder Cattle) are variable in complexity depending on size, number of cows and location of the waste storage facility. Kinds and amounts of component practices required for proper operation are site specific, but typically include the following practices. Note that an AFO can be designated as a CAFO regardless of number of animals if it is found to be a significant polluter.

Anaerobic Digester (366), Composting Facility (317), Access Road (560), Corral Dust Management (785), Dikes (356), Diversions (362), Fence (382), Heavy Use Area Protection (561), Irrigation Water Conveyance (430EE) (430DD), Pipeline (516), Pond (378), Pond Sealing or Lining (521), Pump Plant (533), Roof Runoff Structure (558), Separator, Structure for Water Control (587), Underground Outlet (620), Underground Outlet (620), Waste Treatment Lagoon (359), Watering Facility (614), Well Decommissioning (355), Windbreak/Shelterbelt Establishment (380), Dry Stack Areas and Ramps.

Management practices commonly used include. Critical Area Planting (342), Filter Strip (393), Manure Transfer (634), Nutrient Management (590), Pest Management (595) and Waste Utilization (633).

Conservation Activities for Headquarters (continued)

Current Conditions		Total
CAFOs		24
AFOs		110
Current Farm Bill participation	15%	
Total CAFOs and AFOs		134

Current Level of Treatment for Headquarters

	Quantity		Costs		Effects				Implementation				
Practices	Unit	Quantity	Investment Cost	Annual O&M and Mngt. Cost	Water Conservation	Water Storage	Habitat	WQ	EQIP	WHIP	WRP	CREP	Other
Dairy	No.				+/-	-1	-3	-3					
Waste Storage Facility (313) CAFO	No.	-	$ -	$ -					X				
Waste Storage Facility (313) AFO	No.	15		$ 13,500					X				
Feed Lot	No.				+/-	+/-	+/-	+/-					
Waste Storage Facility (313) CAFO	No.	-	$ -	$ -					X				
Waste Storage Facility (313) AFO	No.	4	-	$3,600.00					X				

Numbers of Dairies and Feedlots needing treatment were estimated based on input from Idaho Department of Agriculture and the local NRCS Field Offices.

Conservation Activities for Headquarters (continued)

Projected Additional Treatment Needs for Headquarters													
	Quantity		Costs		Effects				Implementation				
Practices	Unit	Quantity	Additional Investment Cost	Annual O&M and Mngt. Cost	Water Conservation	Water Storage	Habitat	WQ	EQIP	WHIP	WRP	CREP	Other
Dairy	No.				+3	+2	+3	+3					
Structural/Management Practices													
Waste Storage Facility (313) CAFO	No.	-	$ -	$ -					X				X
Waste Storage Facility (313) AFO	No.	70	$3,150,000	$ 63,000					X				X
Feed Lot	No.				+3	+1	+3	+3					
Structural/Management Practices													
Waste Storage Facility (313) CAFO	No.	-	$ -	$ -					X				X
Waste Storage Facility (313) AFO	No.	21	$ 945,000	$ 18,900									
Total RMS Costs		91	$4,095,000	$ 81,900									

Conservation Activities for Headquarters (continued)

RMS Cost Summary for Headquarters

Cost Items and Programs	Costs	O&M Costs
Non Farm Bill Programs	$ 204,800	$ 4,100
Potential Farm Bill Programs	$3,890,200	$ 77,800
Operator O&M and Management Cost		$ 81,900
Annual Management Incentives (3 yrs – Incentive Payments)	$ 409,500	
Operator Investment	1,075,000	
Federal Costshare	$2,610,500	
Total RMS Costs	$4,095,000	
Estimated Level of Participation		35%
Total CAFO/AFO in RMS System		32
Anticipated Cost at Estimated Level of Participation	$	1,433,300
Reduces impact to ground and surface water quality		
90% participation reflects Local, State and Federal regulations		