

Introduction

The American Falls 8-Digit Hydrologic Unit Code (HUC) subbasin contains 1,835,370 acres. Fifty one percent of the subbasin is in Bingham County, 25 percent in Power County, 8 percent in Butte, 7 percent in Bannock, 4 percent in Jefferson, 3 percent in Bonneville and the remaining 2 percent is split between Blaine and Oneida counties. Forty three percent of the basin is publicly owned, 38 percent is privately owned and 19 percent is tribal lands.

Sixty seven percent of the basin is in shrubland, rangeland, grass, pasture, or hayland. Seventeen percent is cropland, 5 percent is CRP and the remainder water, wetlands, forest, barren and developed.

Elevations range from 4,300 feet to over 8,800 feet.

Conservation assistance is provided by 6 Soil and Water Conservation Districts, 3 Soil Conservation Districts, 1 Natural Resource Conservation District and 4 Resource Conservation and Development Offices.

Profile Contents

[Introduction](#)

[Physical Description](#)

[Landuse Map & Precipitation Map](#)

[Common Resource Area](#)

[Resource Settings](#)

[Resource Concerns](#)

[Census and Social Data](#)

[Progress/Status](#)

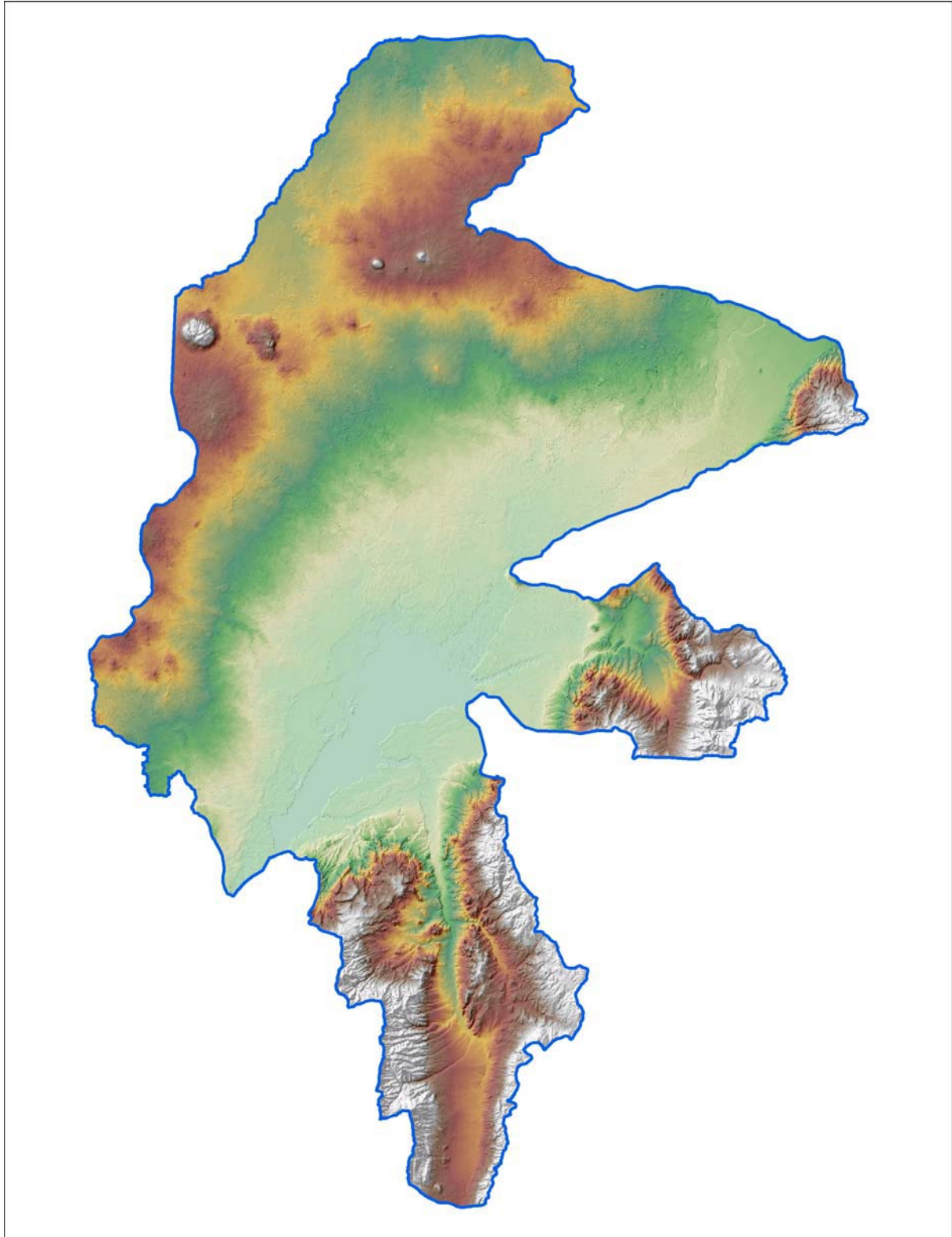
[Footnotes/Bibliography](#)

[Future Conservation Needs](#)

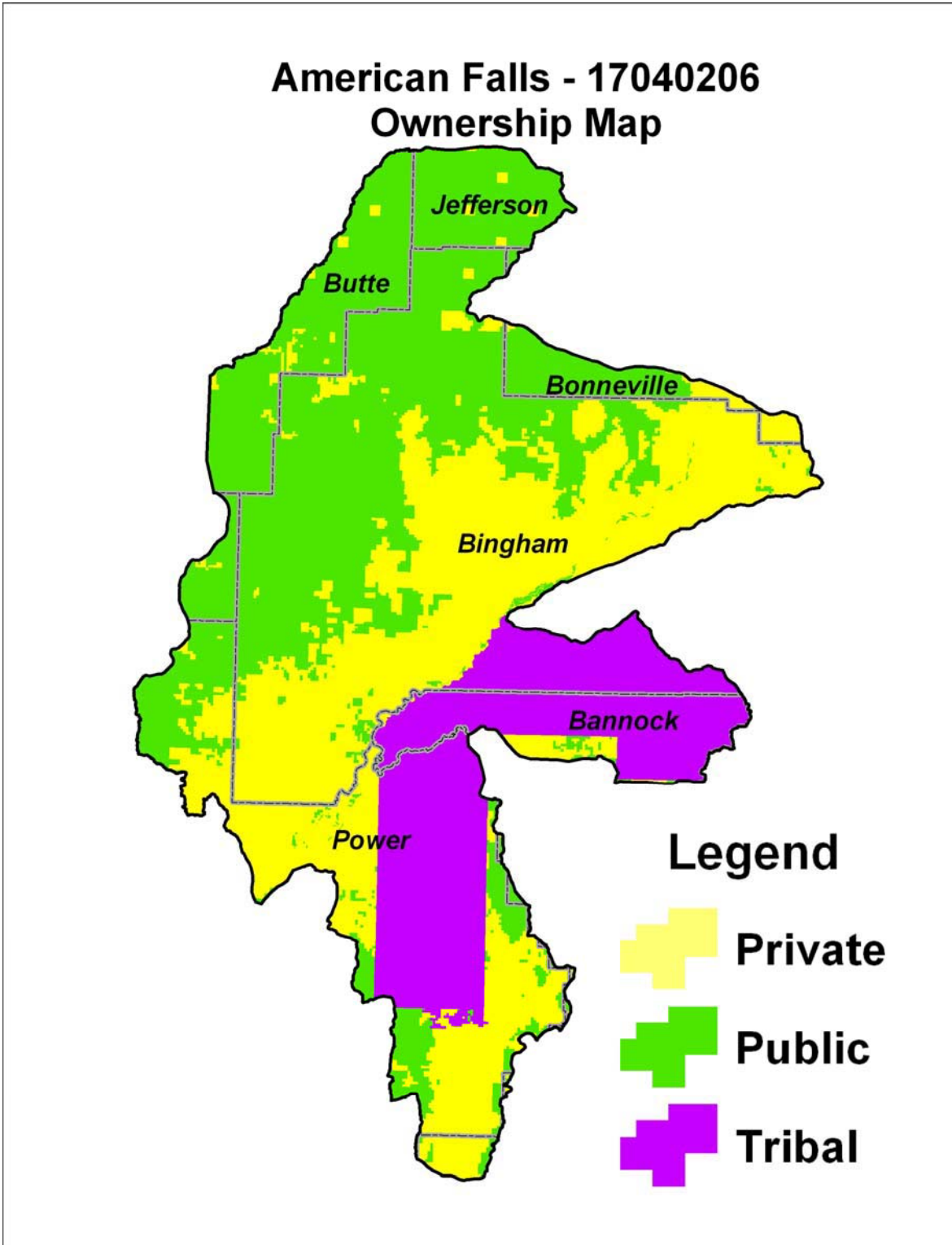
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Relief Map



General Ownership¹

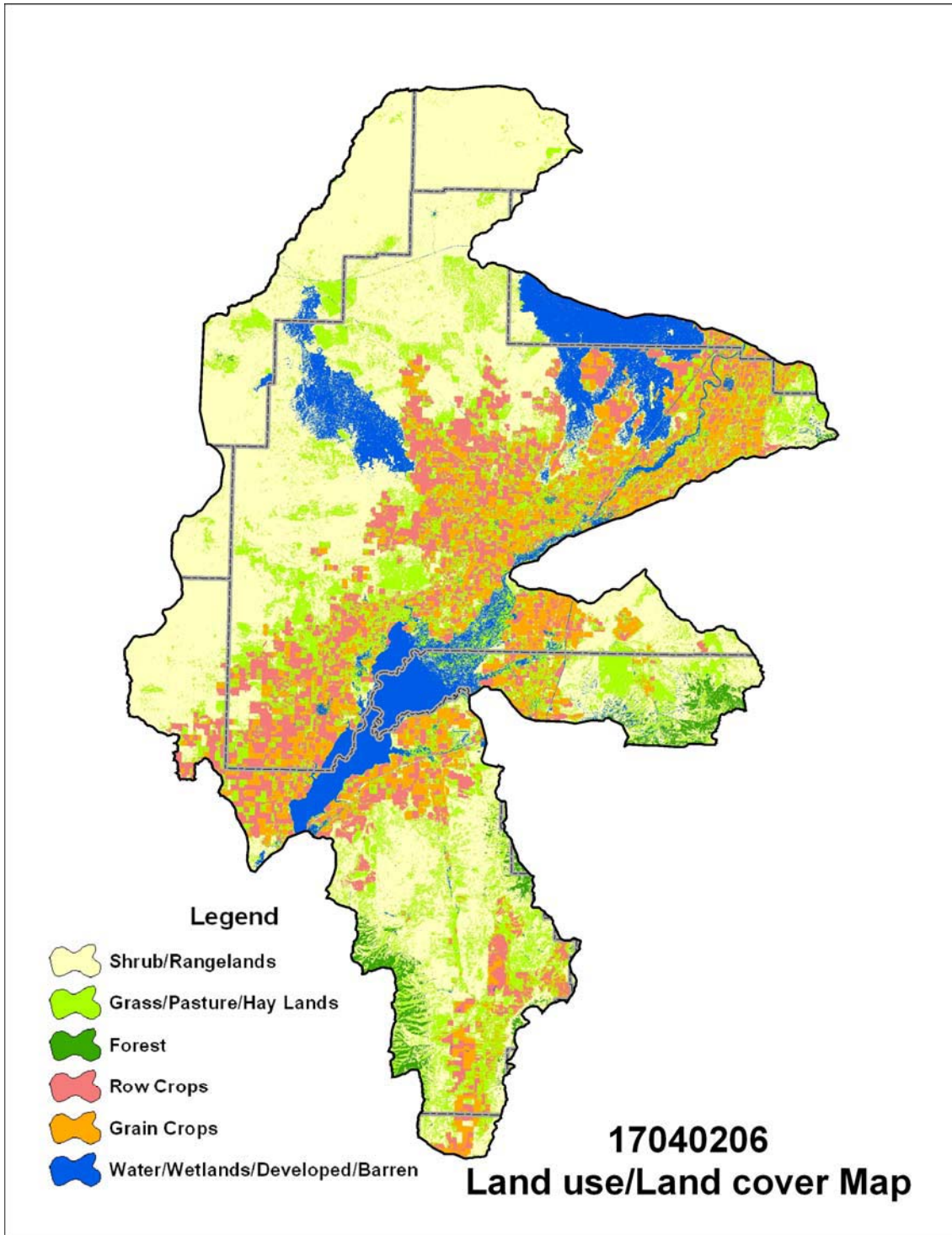


Physical Description

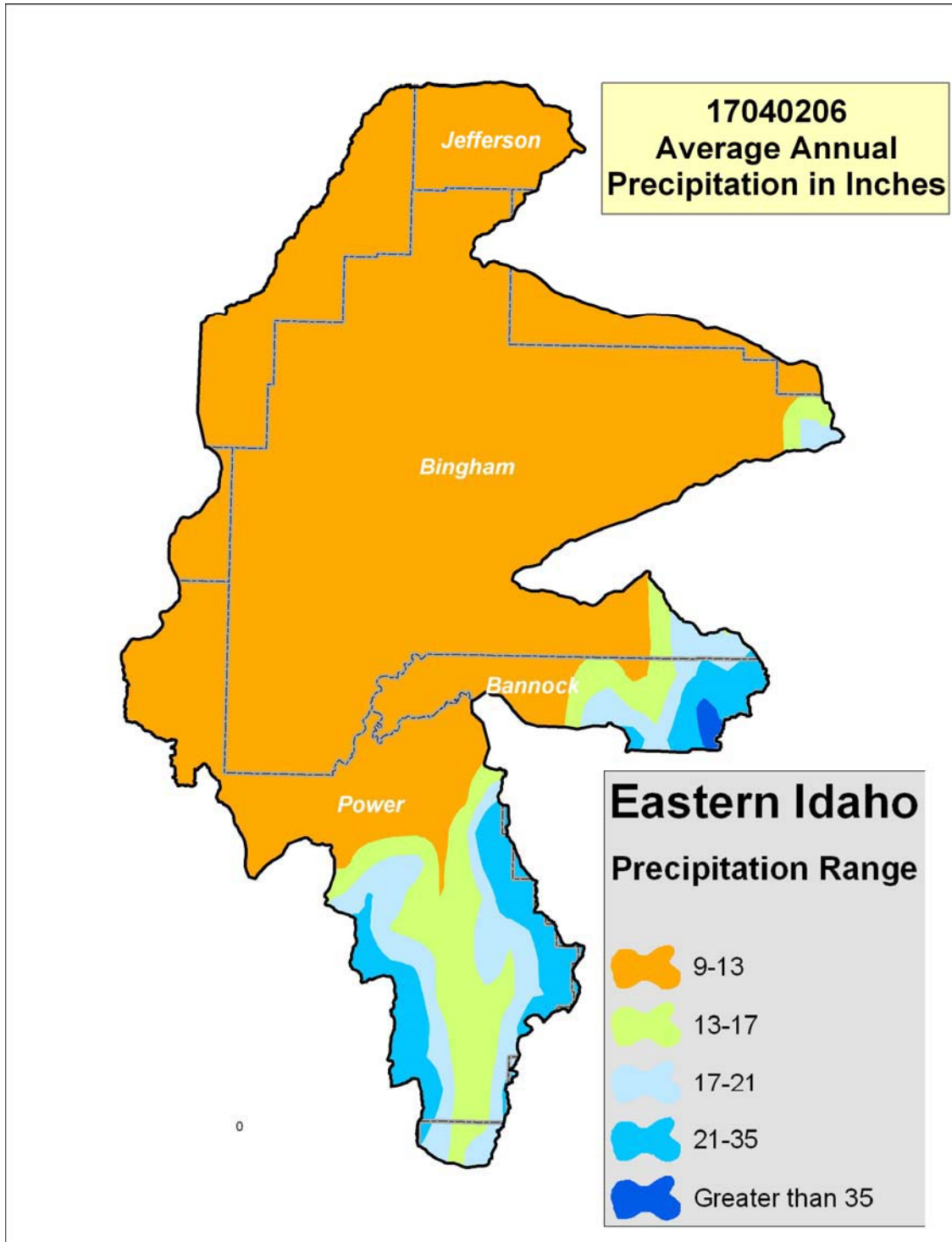
Land Cover/ Land Use (NLCD ^{1,2})	Ownership - (2003 Draft BLM Surface Map Set ¹)							
	Public		Private		Tribal		Totals	% of HUC
	Acres	%	Acres	%	Acres	%		
Forest	14,520	1%	4,160	<1%	15,260	1%	33,940	2%
Grain Crops		--	103,700	6%	21,160	1%	124,860	7%
Conservation Reserve ^{1,3} Program (CRP) Land		--	69,110	4%	23,210	1%	92,320	5%
Grass/Pasture/Hay Lands	86,740	5%	190,500	10%	80,550	4%	357,790	19%
Orchards/Vineyards/Berries		--		--		--		--
Row Crops		--	159,920	9%	15,560	1%	175,480	10%
Shrub/Rangelands	576,740	31%	127,950	7%	159,140	9%	863,830	47%
Water/Wetlands/ Developed/Barren	100,950	6%	47,830	3%	38,370	2%	187,150	11%
Idaho HUC Totals	778,950	43%	703,170	38%	353,250	19%	1,835,370	100%
Irrigated Lands⁴	Type of Land		ACRES		% of Irrigated Lands		% of HUC	
	Cultivated Cropland		348,700		82%		19%	
	Non-Cultivated Cropland *		31,300		7%		2%	
	Pastureland		42,700		10%		2%	
	Total Irrigated Lands		422,700		100%		23%	

* Includes permanent hayland and horticultural cropland.

Land Use/Land Cover²

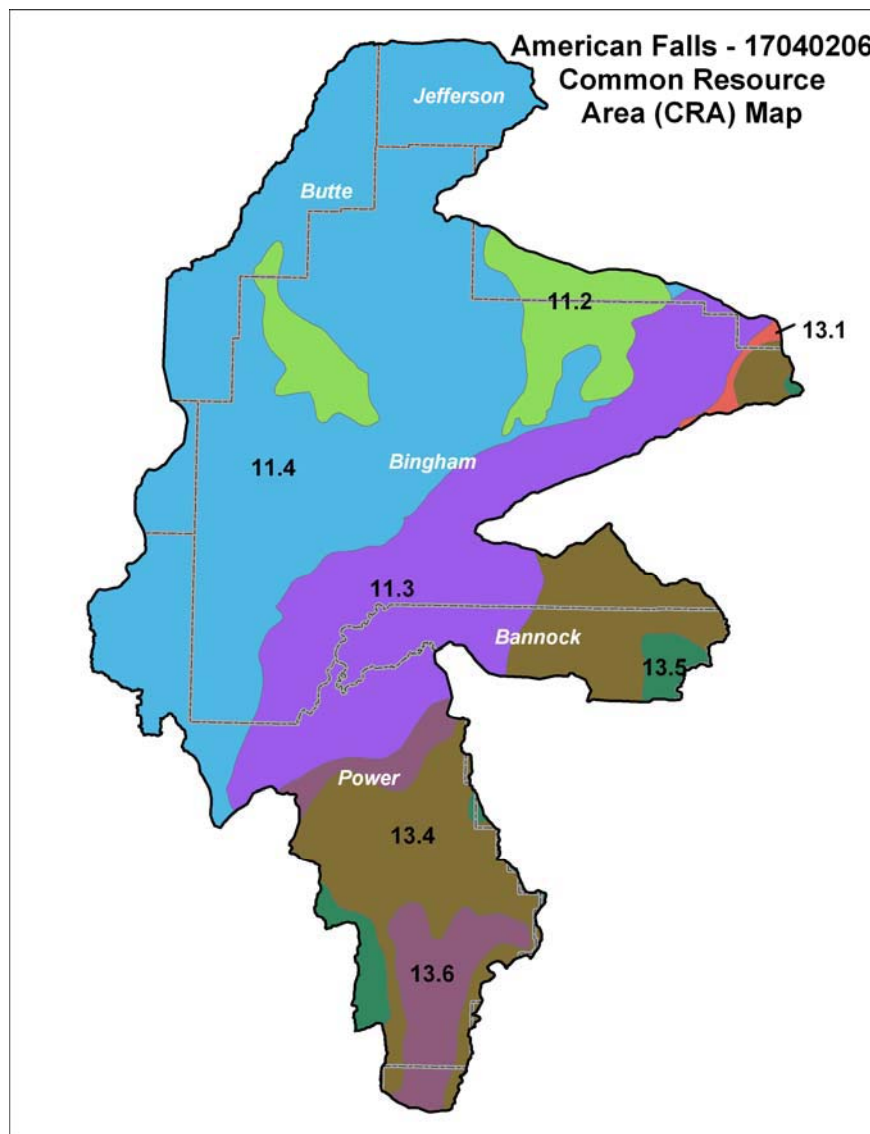


Average Annual Precipitation^{LS}



Common Resource Area Map

The Common Resource Areas (CRA) delineated below for the American Falls 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 Management Guide Sheet information and the eFOTG;
- A geographic linkage with the national MLRA framework.

11.2 Snake River Plains – Lava Fields: This unit consists of basalt lava flows, cinder cones, and spatter cones. Exposed basalt or very shallow loessial soils over volcanics are characteristic and are either barren or sparsely covered by shrubs and grasses. Soil moisture regime is aridic and soil temperature regime is dominantly mesic. Livestock carrying capacity is very low. Surface water availability is very limited. This unit includes the part of the Idaho National Engineering Laboratory. Lithology, depth to bedrock, livestock carrying capacity, and water availability are unlike neighboring units.

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

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

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.

Common Resource Area Descriptions - Continued

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).

Streamflow Summary⁷

The average annual flow of the Snake River just above Shelley, Idaho is approximately 4,424,800 acre-feet (1983-2004), and the average annual flow below American Falls Reservoir is 5,450,400 acre-feet (1983-2004). Flow is regulated by American Falls Reservoir and other reservoirs, having a combined usable capacity of 4,600,000 acre-feet. Upstream reservoir releases may be made for flood control or for passing water for downstream use. Considerable water leaks into the Snake River Plain Aquifer above the American Falls Reservoir Station (near Neely, Idaho). The flows of the Snake River below American Falls are highly regulated and display less of the typical snowmelt hydrograph pattern.

		CFS		
Irrigated Adjudicated Water Rights ^{/6)}	Surface Water	4,390		
	Groundwater	4,645		
	Total Irrigated Adjudicated Water Rights	9,035		
				ACRE-FEET
Stream Flow Data ^{/7}	USGS 13077000, Snake River at Neely ID, 1983-2004	Average Annual	5,450,400	
		March-July Average	3,278,700	
		Percent of Average Annual	Mar – Jul 60%	
Stream Data			PERCENT	
	Total Stream Miles ^{/8}	4,526	%	
	Water Quality Impaired Streams ^{/9,10}	706.3	16%*	
	Anadromous Fish Presence (Streamnet) ^{/11}	0	--	
	Bull Trout Presence (Streamnet) ^{/11}	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	947	1%	
	Grain Crops	7,139	10%	
	Grass/Pasture/Hay Lands	19,153	27%	
	Row Crops	8,155	12%	
	Shrub/Rangelands – Includes CRP Lands	29,726	42%	
	Water/Wetlands/Developed/Barren	5,271	7%	
Total Acres of 100 ft stream buffers		70,391	100%	
Land Capability Class ^{/4}	I – slight limitations	0	0	
	II – moderate limitations	315,700	62%	
	III – severe limitations	86,600	17%	
	IV – very severe limitations	73,200	14%	
	V – no erosion hazard, but other limitations	1,900	<1%	
	VI – severe limitations, unsuited for cultivation, limited to pasture, range, forest	32,700	6%	
	VII – very severe limitations, unsuited for cultivation, limited to grazing, forest, wildlife	3,200	<1%	
	VIII – misc areas have limitations, limited to recreation, wildlife, and water supply	0	0	
	Total Crop & Pasture Lands		513,300	100%

Confined Animal Feeding Operations – Dairies/Feedlots /12,13, 26						
	Number	<200	200-500	500-750	750-1000	>1000
Dairy	53	43	8	1	1	0
	Number	<300	300-999	1,000-4,999	5,000-9,999	>10,000
Feedlots	17	2	5	8	1	1

Resource Settings

Pasture

Some improved dryland pasture with introduced forage species including wheatgrasses, fescues, bromes, and orchardgrass. Older established stands of low vigor, with encroachment of noxious weeds. Continuous season-long grazing is typical. No commercial fertilizers are applied, and pest management practices are limited. Livestock water may be inadequate.

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 0-15%. Often characterized by significant ephemeral and concentrated flow erosion. Conventional tillage results in <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 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 by siphon tube or gated pipe, but there is also some border irrigation. A variety of crops are grown in many combinations, including corn (silage, sweet, grain), beets, peas and beans. Small grains and/or alfalfa are included in many rotations. Irrigation-induced erosion exceeds the threshold. Wind erosion may be a problem following low residue row crops. 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. Wind erosion is typically a problem from March to June, creating air quality and visibility hazards. Various combinations of small grains, alfalfa, beets, corn, potatoes, beans and barley are grown. Some rotations contain less than 50% high residue crops. 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.



Idaho

American Falls - 17040206

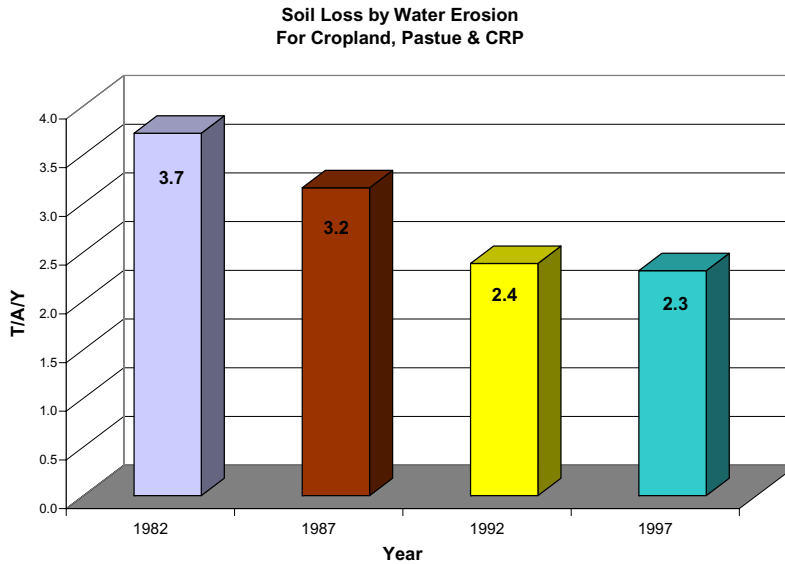
8 Digit Hydrologic Unit Profile

June 2006

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. 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.

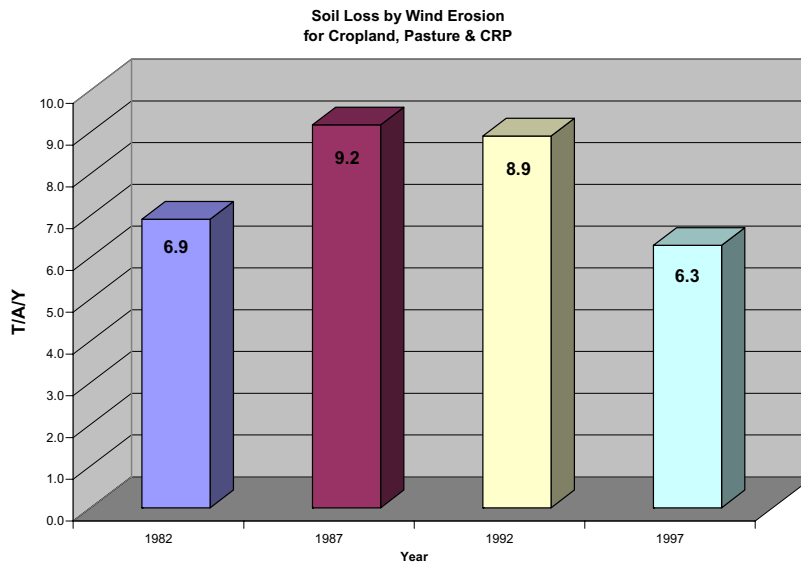
Resource Concerns



Sheet and rill erosion by water on the sub basin croplands, pasturelands and CRP have been essentially static since 1992 but has decreased by almost 1 ½ tons per acre per year since 1982. Sheet and rill erosion is not a major issue on cropland in this subbasin, with the exception of the Arbon Valley area. Susceptibility to sheet and rill erosion is low in this subbasin because the natural precipitation is low and the cropland is relatively flat.⁴

The Arbon Valley area has a predominantly wheat/fallow dryland rotation. Sheet and rill and ephemeral erosion are considered a moderate to severe problem in this area.

Wind erosion has decreased by about ½ tons per acre per year on cropland, pasture and CRP in this sub basin between 1982 and 1997. Following a spike in wind erosion in 1987 and 1992, wind erosion has decreased by approximately 3 tons per acre per year. The spike in wind erosion in 1987 and 1992 was primarily caused by an increase in potatoes and sugar beet acreage.



Resource Concerns – Continued

Impacted Water Bodies ^{/9.10} (ID17040206)	Stream Miles	Sediment, Siltation or TSS	Nutrients	Bacteria	Temperature	Dissolved Oxygen	Flow Alteration ¹	Other or Unknown
American Falls Reservoir (SK001L_0L, SK001_05)		x ²	x		x ²	x ²		
Bannock Creek (SK002_02, 03,04, 05)	287.6	x	x	x ²				
Cedar Spillway			x					
Clear Creek			x					
Colburn Wasteway			x					
Crystal Springs			x					
Danielson Creek (SK000_02a)	4.4	x ²	x ²					x
Hazard Creek (SK025_02a)	4.1	x ²	x ²					x
Knox Creek (SK009_02,03)	31.6	x ²	x ²					x
McTucker Creek (SK024_02)	4.1	x	x ²					
Moonshine Creek (SK006_02)	39.5	x						
Nash Spill			x					
Rattlesnake Creek (SK010_02,03,04)	69.9	x						
R Spill			x					
Seagull Bay Tributary			x					
Snake River (SK022_02)	217.3	x	x ²		x ²			
Spring Creek			x					
Spring Hollow			x					
Sterling Wasteway			x					
Sunbeam Creek (SK005_02)	24.0	x	x ²				x	
West Fork Bannock Creek (SK008_02)	23.8	x						
TOTAL STREAM MILES:	706.3							

¹ Flow alteration not listed for many segments, but identified as impacting the Snake River and tributaries within the watershed.

² Proposed change to 2002 Integrated Report. Miles not listed for waterbodies with nutrient TMDLs established to meet loads in downstream segments.

Shading indicates TMDL (draft) in place.



American Falls - 17040206

Idaho

8 Digit Hydrologic Unit Profile

June 2006

Resource Concerns – Continued

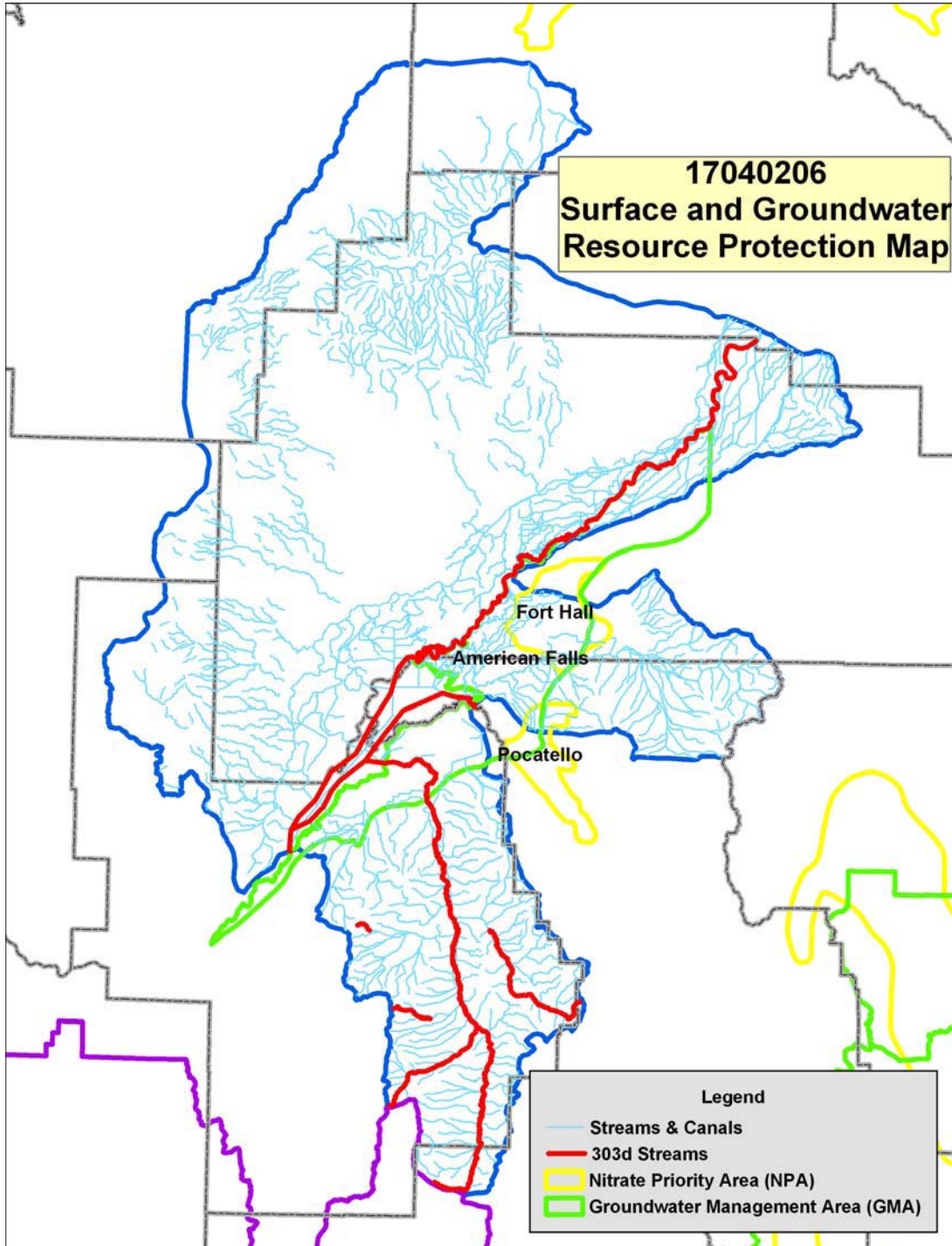
Nutrients and sediment are the major pollutants which impact beneficial uses of surface waters in this watershed. The American Falls Reservoir has a history of algal bloom problems. A variety of human activities are potential sources of pollutants in the watershed, including irrigated and dryland agriculture, grazing, urban stormflow and septic systems, feedlots/dairies, and roads. Flow alteration is a problem in this highly regulated system. Shoreline erosion is a major concern for American Falls Reservoir, and portions of major tributaries in the watershed have poor bank stability. There are two areas in the watershed where ground water is impacted by nitrates (designated Nitrate Priority Areas). An area within the Ft. Hall Reservation has been impacted by soil fumigants.

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

Watershed Projects, Plans, Studies, and Assessments*	
Federal:	State:
NRCS Watershed Plans/Studies/Assessments ^{/14,15}	IDEQ TMDLs ^{/16}
Fort Hall Preliminary Investigation Report (1991)	American Falls SBA –TMDL – Draft (2004)
Fort Hall Ground Water Quality Plan (On-going)	IDEQ 319 Projects ^{/17}
	None
NWPCC Subbasin Plans and Assessments ^{/18}	SCC Plans/Projects ^{/19}
Upper Snake Subbasin Assessment (2004)	None
	ISDA Regional Water Quality Projects ^{/20}
	Southern Eastern Snake River Plain Regional Study (on-going)
	IDWR Comprehensive Basin Plans ^{/21}
	None

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

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



NOTE: The 303(d) list (IDEQ 1998) has recently been replaced with the Integrated Report (IDEQ 2005). There may be slight discrepancies between this map and impacted waters listed in the Integrated Report.

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				
	Ephemeral or classic gully			x				
	Irrigation-induced		x		x			
	Wind				x	x		
	Streambank	x					x	
Water Quantity	Inefficient use on irrigated lands	x	x		x	x		
Water Quality, Surface	Suspended sediment	x	x		x		x	
	Nutrients and organics	x	x		x		x	
Water Quality, Ground	Nutrients and organics		x		x	x		
	Pesticides		x		x	x		
Soil Condition	Organic matter depletion			x	x	x		
	Compaction	x						
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.

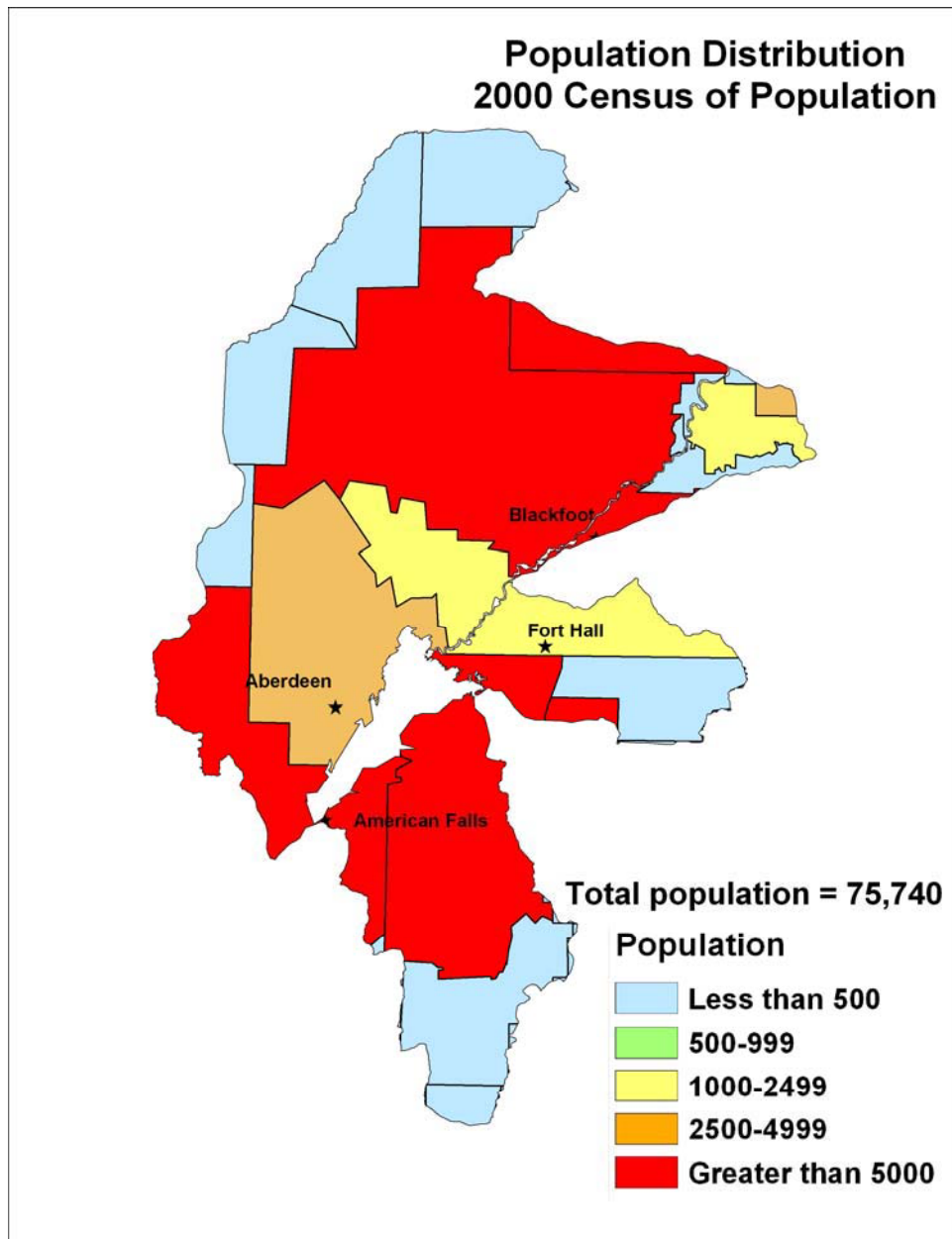
FEDERALLY LISTED THREATENED AND ENDANGERED SPECIES ^{/25}	
Threatened and Endangered Species	Candidate Species
Mammals – None Birds – Bald Eagle Fish – None Invertebrates – Bliss Rapids Snail, Desert Valvata Plants – None	Birds – Yellow-billed Cuckoo
	PROPOSED SPECIES - None
ESSENTIAL FISH HABITAT – None	CRITICAL FISH HABITAT – None

Census and Social Data [/26](#)

Population: 75,740

Number of Farms: 1,499

	0-49 acres	50-999 acres	1000+ acres
Number of Farms	853	457	189



Census and Social Data - continued

Fifty seven percent of farm operators are farmers by occupation. The remaining operators have off-farm jobs as their primary occupation. The majority of operators are male; women make up 7.7 percent of the total. Ninety-two 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 880 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 and market value of production to farmers are up over the past several years. Government payments to farmers are up substantially for the same period. Farm sales range from less than \$1,000 to more than \$500,000 per year. Seventy four 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.

	Average size farm	Market Value of Production (Average Farm)	Government Payments (Average Farm)
1997	850	\$201,100	\$20,800
2002	880	\$242,100	\$25,600
Change	4.0%	20.0%	23.0%

	Watershed	Idaho	United States
Population (2000)	75,740		
Per Capita Personal Income (2001)	\$19,900	\$24,500	\$30,400
Median Home Value (2000)	\$87,200	\$106,600	\$119,600
Percent Unemployment (2002)	6.8%	5.4%	5.78%
Percent Below Poverty Level (2003)	13.7%	11.8%	12.7%

This watershed is unique because of the number of acres in the Shoshone-Bannock Fort Hall Indian Reservation. Tribal land encompasses 544,000 acres. There are approximately 70 Tribal member farmers in the watershed who are actively engaged in farm operations. Land use is as follows. 320,000 acres of range, 175,000 acres of irrigated acres, most of which is leased to non-Tribal farmers. 35,000 non-irrigate acres of which 7,000 are cropped and 28,000 acres are in CRP. The remainder of acres are home sites, industrial, native river bottom, pasture and miscellaneous.

Fort Hall straddles Bannock Bingham and Power counties, and is in the Pocatello metro area. The community was named for the 1834 fort, which was named for Henry Hall.

Progress/Status

PRS Data					
Conservation Treatment Acres	FY04	FY05	FY06	Avg/Year	Total
Waste Management (number)	1	0	0	0.3	1
Residue Management (acres)	434	1912	300	882.0	2646
Irrigation System (sprinkler)(acres)	578	346	407	443.7	1331
Irrigation Water Conveyance, Pipeline, High Pressure Underground Plastic (430DD) (ft)	5823	18636	11469	11976.0	35928
Irrigation Water Management (acres)	690	1209	522	807.0	2421
Nutrient Management (acres)	520	2435	119	1024.7	3074
Pest Management (acres)	5035	2121	147	2434.3	7303
Prescribed Grazing (acres)	1680	805	1689	1391.3	4174
Fence (ft)	6000	36850	3260	15370.0	46110
Pipeline (516) (ft)	5035	8304	8803	7380.7	22142
Wildlife Habitat (acres)	1403	1042	321	922.0	2766
Windbreak/Shelterbelt Establishment (380) (ft)	40983	16250	1860	19697.7	59093

Progress in the last three years has been focused on:

- ~ irrigation water management
- ~ nutrient management
- ~ pest management
- ~ erosion control

Resource concerns that require ongoing attention:

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

Lands Removed from Production through Farm Bill Programs

- Conservation Reserve Program (CRP): **92,320 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. 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/techni>
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. 2004. American Falls Subbasin Assessment and TMDL (draft).
http://www.deq.state.id.us/water/data_reports/surface_water/tmdls/american_falls/american_falls.cfm



American Falls - 17040206

Idaho

8 Digit Hydrologic Unit Profile

June 2006

11. StreamNet is a cooperative venture of the Pacific Northwest's fish and wildlife agencies and tribes and is administered by the [Pacific States Marine Fisheries Commission](#). Streamnet provided data and data services in support of the region's Fish and Wildlife Program and other efforts to manage and restore the region's aquatic resources. Official Streamnet website: <http://www.streamnet.org/>
12. (Dairy) Idaho Department of Water Resources: http://www.idwr.state.id.us/gisdata/gis_data-new.htm
13. (Feedlot) Idaho State Department of Agriculture: <http://www.agri.state.id.us/> FOIA request.
14. Natural Resource Conservation Service, Watershed Projects Planned and Authorized, <http://www.nrcs.usda.gov/programs/watershed>
15. Natural Resource Conservation Service, Watershed Plans, Studies and Assessments completed, http://www.nrcs.usda.gov/programs/watershed/Surveys_Plnq.html#Watershed%20Surveys%20and%20Plan
16. Idaho Department of Environmental Quality (IDEQ), Surface Water Quality: Subbasin Assessments, TMDLs, and Implementation Plans. http://www.deq.state.id.us/water/data_reports/surface_water/tmdls/sba_tmdl_master_list.cfm
17. Idaho Department of Environmental Quality, Watershed protection: Nonpoint source management (319 grant), Reports and program resources. http://www.deq.state.id.us/water/data_reports/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/Default.htm>
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
22. 303d Listed Streams designated by the Idaho Department of Environmental Quality (1998) and approved by the Environmental Protection Agency, Section 303d Clean Water Act
23. Groundwater Management Areas and Critical Groundwater Management Areas designated by the Idaho Department of Water Resources. <http://www.idwr.idaho.gov/hydrologic/projects/gwma/>
24. Nitrate Priority Areas. IDEQ has developed a list of degraded ground water areas. This list focuses on nitrate and ranks the top 25 nitrate-degraded areas (referred to as "nitrate priority areas") in the state based on the severity of the degradation, the population affected, and the trend; the rank of "1" indicates the most severely impacted area in the state. http://www.deq.state.id.us/water/prog_issues/ground_water/nitrate.cfm#ranking
25. NRCS Field Office Technical Guide, Section II, Threatened and Endangered List and the Idaho Conservation Data Center, Idaho Department of Fish and Game <http://fishandgame.idaho.gov/cms/tech/CDC/>
26. Data were taken from the 2002 Agricultural Census and adjusted by percent of HUC in the county or by percent of zip code area in the HUC, depending on the level of data available. Data were also taken from the U.S. Census, 2000 by zip code and adjusted by percent of zip code in the HUC. http://www.nass.usda.gov/Census_of_Agriculture/Census_by_State/Idaho/index.asp

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.

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 system for the Years 2004 through 2006.

Current Conditions	Total acres	Riparian Potential
Total Dry Cropland	82,700	
Typical Management Unit/Ownership	880	8,270
Current Farm Bill participation	15%	

Current Level of Treatment for Dry Cropland:

Dry Cropland Practices	Quantity		Costs		Effects				Implementation			
	Unit	Quantity	Additional Investment Cost	Annual O&M and Mngt. Cost	Water Conservation	Water Storage	Fish Habitat	WQ	FOP	WHP	CRFP	Other
Dry Cropland	Ac.	82,700			-3	-/+	-2	-3				
Conservation Crop Rotation (328)	Ac.	215	\$ -	\$ -					X			X
Residue Management Mulch Till (329B)(345)	Ac.	5,883		\$ 88,200					X			X
Residue Management No Till/Strip Till (329A)	Ac.	940	\$ -	\$ 14,100					X			X
Water and Sediment Control Basin (638)	No.	10	\$ -	\$ 300					X			X
Upland Wildlife Habitat Management (64-5)	Ac.	2,371	\$ 35,600	\$ 11,900					X			X



American Falls - 17040206
8 Digit Hydrologic Unit Profile

Idaho

June 2006

Conservation Activities for Dry Cropland/Hayland * - Continued

Future Conditions	Riparian Potential	Total Acres
Dry Cropland Acres		74,430
Conversion to Riparian RMS	8,270	8,270
Total Acres		82,700

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	EQP	WHP	CRFP	Other
Dry Cropland	Ac.	74,430			+3	+1	+2	+3	X			X
Conservation Crop Rotation (328)	Ac.	74,430	\$ -	\$ -					X			X
Contour Farming (330)	Ac.	74,430	\$ 558,200	\$ 186,100					X			X
Deep Tillage (324)	Ac.	74,430	\$ 3,349,400	\$ 1,116,500					X			X
Diversion (362)	Ft.	152,430	\$ 419,200	\$ 8,400					X			X
Forage Harvest Management (511)	Ac.	29,780	\$ -	\$ -					X			X
Grassed Waterway (412)	Ac.	420	\$ 756,000	\$ 15,100					X	X		X
Nutrient Management (590)	Ac.	74,430	\$ 1,116,500	\$ 372,200					X			X
Pasture & Hayland Planting (512)	Ac.	29,780	\$ 2,978,000	\$ 29,800					X	X	X	X
Pest Management (595)	Ac.	74,430	\$ 2,232,900	\$ 744,300					X			X
Residue and Tillage Management Mulch Till (345)	Ac.	37,220	\$ 1,410,200	\$ 470,100					X			X
Residue and Tillage Management No Till / Strip Till / Direct Seed (329)	No.	37,210	\$ 1,632,200	\$ 544,100					X			X
Sediment Basin (350)	No.	470	\$ 1,292,500	\$ 38,800					X		X	X
Stripcropping (585)	Ac.	37,230	\$ 930,800	\$ 9,300					X			X
Terrace (600)	Ft.	3,658,370	\$ 8,048,400	\$ 80,500					X			X
Upland Wildlife Habitat Management (645)	Ac.	11,170	\$ 132,000	\$ 55,900					X			X
Water and Sediment Control Basin (638)	No.	3,740	\$ 3,916,500	\$ 117,500					X			X
Windbreak/Shelterbelt Establishment (380)	Ft.	304,870	\$ 1,548,700	\$ 15,500					X			X

Conservation Activities for Dry Cropland/Hayland * - Continued

Dry Cropland		Quantity		Costs		Effects				Implementation		
Practices	Unit	Quantity	Investment Cost	Annual O&M and Mngt. Cost	Water Conservation	Water Storage	Habitat	WQ	FQP	WHIP	CREP	Other
Dry Cropland Riparian	Ac.	8,270			+3	+2	+3	+3				
Channel Bank Vegetation (322)	Ac.	830	\$ 4,150,000	\$ 83,000					X			X
Channel Stabilization (584)	Ft.	19,980	\$ 359,600	\$ 1,800					X			X
Fence (382)	Ft.	137,810	\$ 241,200	\$ 4,800					X	X		X
Pest Management (595)	Ac.	8,270	\$ 248,100	\$ 82,700					X			X
Pipeline (516)	Ft.	145,070	\$ 391,700	\$ 7,800					X			X
Prescribed Grazing (528)	Ac.	8,270	\$ 124,100	\$ 41,400					X			X
Pumping Plant (533)	No.	55	\$ 156,800	\$ 3,100					X			X
Riparian Forest Buffer (391)	Ac.	460	\$ 1,380,000	\$ 13,800					X			X
Riparian Herbaceous Cover (390)	Ac.	460	\$ 23,000	\$ 200					X	X		X
Streambank & Shoreline Prot (580)	Ft.	49,960	\$ 1,199,000	\$ 119,900					X	X		X
Tree/Shrub Establishment (612)	Ac.	120	\$ 54,000	\$ 500					X			X
Upland Wildlife Management (645)	Ac.	1,240	\$ 18,600	\$ 6,200					X	X		X
Use Exclusion (472)	Ac.	410	\$ 14,400	\$ 400					X	X		X
Watering Facility (614)	No.	110	\$ 110,000	\$ 1,100					X			X
Wetland Wildlife Management (644)	Ac.	830	\$ 12,500	\$ 4,200					X			X
Total RMS Costs			\$ 38,804,500	\$ 4,175,000								

Conservation Activities for Dry Cropland/Hayland * - Continued

Potential RMS Effects Summary for Dry Cropland				
Cost Items and Programs		Costs	O&M Costs	
Non Farm Bill Programs		\$ 1,940,200	\$ 208,800	
Potential Farm Bill Programs		\$ 36,864,300	\$ 3,966,200	
Operator O&M and Management Cost			\$ 4,175,000	
Annual Management Incentives (3 yrs - Incentive Payments)		\$ 10,834,700		
Operator Investment		\$ 8,447,600		
Federal Costshare		\$ 19,522,200		
Total RMS Costs		\$ 38,804,500	\$ 4,175,000	
Estimated Level of Participation				75%
Total Acres in RMS System				62,025
Anticipated Cost at Estimated Level of Participation		\$		29,103,400
Increases infiltration and storage of water in soil profile				
Participating landowners will be in compliance with TMDLs				
Improves habitat for ESA endangered & threatened species				



Idaho

American Falls - 17040206
8 Digit Hydrologic Unit Profile

June 2006

Conservation Activities for Irrigated Cropland/Hayland

Current Conditions	Total acres
Total Irrigated Cropland/Hayland	380,000
Typical Management Unit/Ownership	880
Surface Irrigated Cropland/Hayland	57,000
Sprinkler Irrigated Cropland/Hayland	323,000
Current Farm Bill participation	15%

Current Level of Treatment for Irrigated Cropland/Hayland:

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	FQIP	WHIP	CRFP	Other
Practices												
Surface Irrigation	Ac.	57,000			-3	-/+	-2	-3				
Conservation Crop Rotation (328)	Ac.	649	\$ -	\$ -					X			X
Irrigation Water Conveyance (430EE)	Ft.	3,630	\$ -	\$ 100					X			X
Irrigation Water Management (449)	Ac.	1,073	\$ -	\$ 8,000					X			X
Pasture and Hay Planting (512)	Ac.	93	\$ -	\$ 100					X			X
Pest Management (595)	Ac.	2,903	\$ -	\$ 29,000					X			X
Pumping Plant (533)	No.	3	\$ -	\$ 200					X			X
Nutrient Management (590)	Ac.	1,718	\$ -	\$ 8,600					X			X
Structure for Water Control (587)	No.	8	\$ -	\$ 80					X			X
Windbreak/Shelterbelt Establishment (380)	Ft.	39,527	\$ -	\$ 2,008					X			X
Sprinkler Irrigation	Ac.	323,000			+1	-/+	+1	+3				
Conservation Crop Rotation (328)	Ac.	2,274	\$ -	\$ -					X			X
Irrigation System, Sprinkler (442)	Ac.	5,446	\$ -	\$ 76,244					X			X
Irrigation Water Conveyance (430DD)	Ft.	34,845	\$ -	\$ 1,300					X			X
Irrigation Water Management (449)	Ac.	2,863	\$ -	\$ 21,500					X			X
Pest Management (595)	Ac.	3,012	\$ -	\$ 30,100					X			X
Pumping Plant (533)	No.	2	\$ -	\$ 166					X			X
Nutrient Management (590)	Ac.	4,280	\$ -	\$ 21,400					X			X

Conservation Activities for Irrigated Cropland/Hayland – Continued

Future Conditions	Total Acres
Surface Irrigated Cropland/Hayland	19,000
Sprinkler Irrigated Cropland/Hayland	361,000
Total Irrigated Cropland/Hayland Acres	380,000

Project Future Level of Treatment for Irrigated Cropland/Hayland:

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	CRFP	Other
Surface Irrigation	Ac.	19,000			+2	+1	+2	+2	X			X
Anionic Polyacrylamide, (PAM) (450)	Ac.	19,000	\$ 855,000	\$ 285,000					X			X
Conservation Crop Rotation (328)	Ac.	19,000	\$ -	\$ -					X			X
Constructed Wetland (656)	No.	2	\$ 100,000	\$ 1,000					X			X
Forage Harvest Management (511)	Ac.	19,000	\$ -	\$ -					X			X
Irrigation System, Surface (443)	Ac.	14,500	\$2,175,000	\$ 65,300					X			X
Irrigation System, Gated Surge (443)	Ac.	1,500	\$ 825,000	\$ 24,800					X			X
Irrigation Tailwater Recovery (447)	No.	60	\$ 906,000	\$ 27,200					X			X
Irrig. System, Micro Irrigation (Drip) (441)	Ac.	1,500	\$1,875,000	\$ 93,800					X			X
Irrigation Water Conveyance (430 EE)	Ft.	68,620	\$ 258,000	\$ 1,300					X	X		X
Irrigation Water Conveyance (430 HH) (Gated Pipe)	Ft.	34,310	\$ 140,000	\$ 1,400					X	X		X
Irrigation Water Management (449) - Low Level	Ac.	13,300	\$ 275,100	\$ 91,700					X			X
Irrigation Water Management (449) -Meters and Moisture Sensors	Ac.	5,700	\$ 171,000	\$ 57,000					X			X
Land Leveling/Smoothing (464 & 466)	Ac.	4,750	\$ 950,000	\$ 28,500					X			X
Nutrient Management (590)	Ac.	19,000	\$ 259,200	\$ 86,400					X			X
Pest Management (595)	Ac.	19,000	\$ 482,900	\$ 161,000					X			X
Sediment Basin (350)	No.	120	\$ 330,000	\$ 9,900					X			X
Residue Management Mulch Till (345)	Ac.	19,000	\$ 855,000	\$ 285,000					X			X

Conservation Activities for Irrigated Cropland/Hayland – Continued

Project Future Level of Treatment for Irrigated Cropland/Hayland (Continued):													
Practices	Quantity		Costs			Effects				Implementation			
	Unit	Quantity	Additional Investment Cost	Annual O&M and Mngt. Cost		Water Conservation	Water Storage	Habitat	WQ	EQP	WHIP	CRFP	Other
Residue Management Seasonal (344)	Ac.	19,000	\$ 855,000	\$ 285,000						X			X
Structure for Water Control (587) -Fish Screen	No.	240	\$2,880,000	\$ 28,800						X			X
Surface Roughening (609)	Ac.	19,000	\$ 427,500	\$ 142,500						X			X
Upland Wildlife Habitat Management (645)	Ac.	2,850	\$ 42,800	\$ 14,300						X			X
Well Decommissioning (355)	No.	32	\$ 27,200	\$ -						X			X
Windbreak/Shelterbelt Establishment (380)	Ft.	312,220	\$1,385,300	\$ 13,900						X			X

Conservation Activities for Irrigated Cropland/Hayland – Continued

Project Future Level of Treatment for Irrigated Cropland/Hayland:												
Irrigated Cropland/Hayland	Quantity		Costs			Effects				Implementation		
	Unit	Quantity	Additional Investment Cost	Annual O&M and Mngt. Cost	Water Conservation	Water Storage	Habitat	WQ	EQP	WHIP	CREP	Other
Practices												
Sprinkler Irrigation	Ac.	361,000			+3	+2	+2	+3				
Cover Crop (340)	Ac.	90,250	\$ 4,512,500	\$ 45,100					X			X
Conservation Crop Rotation (328)	Ac.	361,000	\$ -	\$ -					X			X
Constructed Wetland (656)	No.	36	\$ 1,080,000	\$ 10,800					X			X
Forage Harvest Management (511)	Ac.	90,250	\$ -	\$ -					X			X
Irrigation System, Sprinkler (442)	Ac.	361,000	\$248,887,800	\$ 4,977,800					X			X
Irrigation Water Conveyance (430DD)	Ft.	627,000	\$ 4,393,800	\$ 22,000					X			X
Irrigation Water Management (449) - Low level	Ac.	256,310	\$ 5,702,600	\$ 1,900,900					X			X
Irrigation Water Management (449) - Meters and Moisture Sensors	Ac.	104,690	\$ 3,140,700	\$ 1,046,900					X			X
Nutrient Management (590)	Ac.	361,000	\$ 5,369,800	\$ 1,789,900					X			X
Pest Management (595)	Ac.	361,000	\$ 10,739,600	\$ 3,579,900					X			X
Residue Mngt, Mulch Till (345)	Ac.	361,000	\$ 16,245,000	\$ 5,415,000					X			X
Residue Management Seasonal (344)	Ac.	361,000	\$ 16,245,000	\$ 5,415,000					X			X
Residue Mngt, No Till/Strip Till (329)	Ac.	36,100	\$ 1,624,500	\$ 541,500					X			X
Sediment Basin (350)	No.	560	\$ 1,540,000	\$ 46,200					X			X
Structure for Water Control (587) -Fish Screen	No.	495	\$ 5,940,000	\$ 59,400					X			X
Surface Roughening (609)	Ac.	361,000	\$ 8,122,500	\$ 2,707,500					X			X
Upland Wildlife Habitat Management (645)	Ac.	54,150	\$ 812,300	\$ 270,800					X			X
Well Decommissioning (355)	No.	140	\$ 119,000	\$ -					X			X
Windbreak/Shelterbelt Establishment (380)	Ft.	2,976,700	\$ 15,121,600	\$ 151,200					X			X
Total RMS Costs			\$365,671,700	\$29,683,700								

Conservation Activities for Irrigated Cropland/Hayland – Continued

Potential RMS Effects Summary for Irrigated Cropland/Hayland	Costs	O&M Costs
Cost Items and Programs		
Non Farm Bill Programs	\$ 18,283,600	\$ 1,484,200
Potential Farm Bill Programs	\$347,388,100	\$28,199,500
Operator O&M and Management Cost		\$29,683,700
Annual Management Incentives (3 yrs - Incentive Payments)	\$ 72,225,500	
Operator Investment	\$ 87,074,300	
Federal Costs	\$206,371,900	
Total RMS Costs	\$365,671,700	\$29,683,700
Estimated Level of Participation		75%
Total Acres in RMS System		285,000
Anticipated Cost at Estimated Level of Participation	\$	274,253,800
Total Acre Feet of Water Saved Annually		318,612
Increases infiltration and storage of water in soil profile		
Participating landowners will be in compliance with TMDLs		
Improves habitat for ESA endangered & threatened species		

Conservation Activities for Irrigated Pasture

	Total Acres	Riparian/ Wetland Potential
Current Conditions		
Surface Irrigated Pasture	42,200	
Sprinkler Irrigated Pasture	500	
Total Irrigated Pasture	42,700	5,550
Typical Management Unit/Ownership	880	
Current Farm Bill participation	15%	

Current Level of Treatment for Irrigated Pasture:

Practices	Quantity		Costs		Effects				Implementation			
	Unit	Quantity	Additional Investment Cost	Annual O&M and Mngt. Cost	Water Conservation	Water Storage	Fish Habitat	WQ	EQP	WHP	CRFP	Other
Surface Irrigation	Ac.	42,200			-3	-/+	-2	-3				
Fence (382)	Ft.	24,689	\$ -	\$ 900					X			X
Irrigation Water Management (449)	Ac.	75	\$ -	\$ 600					X			X
Nutrient Management (590)	Ac.	181	\$ -	\$ 900					X			X
Pest Management (595)	Ac.	196	\$ -	\$ 2,000					X			X
Pipeline (516)	Ft.	9,905	\$ -	\$ 500					X			X
Prescribed Grazing (528)	Ac.	1,173	\$ -	\$ 5,900					X			X
Watering Facility (614)	No.	16	\$ -	\$ 200					X			X
Sprinkler Irrigation	Ac.	500			+2	+1	+1	+3				
Fence (382)	Ft.	6,260	\$ -	\$ 200					X			X
Irrigation System Sprinkler (442)	Ac.	159	\$ -	\$ 2,200					X			X
Irrigation Water Conveyance (430DD)	Ft.	1,017	\$ -	\$ 40					X			X
Irrigation Water Management (449)	Ac.	147	\$ -	\$ 1,100					X			X
Nutrient Management (590)	Ac.	121	\$ -	\$ 600					X			X
Pasture and Hayland Planting (512)	Ac.	76	\$ -	\$ 80					X			X
Pest Management (595)	Ac.	121	\$ -	\$ 1,200					X			X
Prescribed Grazing (528)	Ac.	431	\$ -	\$ 2,200					X			X
Watering Facility (614)	No.	6	\$ -	\$ 100					X			X

Conservation Activities for Irrigated Pasture – Continued

Future Conditions	Total Acres
Surface Irrigated Pasture	5,050
Sprinkler Irrigated Pasture	32,100
Total Conversion to Riparian Pasture RMS	5,550
Total Acres	42,700

Project Future Level of Treatment for Irrigated Pasture:

Practices	Unit	Quantity	Costs			Effects				Implementation				
			Additional Investment Cost	Annual O&M and Mngt. Cost	Water Conservation	Water Storage	Habitat	WQ	FOP	WHIP	CRFP	Other		
Surface Irrigation	Ac.	5,050			+1									
Fence (382)	Ft.	84,480	\$ 104,600	\$ 2,100						X				X
Irrigation System Surface (443)	Ac.	5,050	\$ 757,500	\$ 22,700						X	X		X	X
Irrigation Tailwater Recovery (447)	No.	8	\$ 120,800	\$ 3,600						X				X
Irrigation Water Conveyance (430HH)	Ft.	166,650	\$ 679,900	\$ 6,800						X				X
Irrigation Water Conveyance (430EE)	Ft.	333,300	\$ 1,323,200	\$ 6,600						X				X
Irrigation Water Management (449)	Ac.	5,050	\$ 111,900	\$ 37,300						X				X
Nutrient Management (590)	Ac.	5,050	\$ 73,000	\$ 24,300						X				X
Pasture & Hayland Planting (512)	Ac.	2,020	\$ 202,000	\$ 2,000						X				X
Pest Management (595)	Ac.	5,050	\$ 145,600	\$ 48,500						X				X
Prescribed Grazing (528)	Ac.	5,050	\$ 58,200	\$ 19,400						X				X
Structure for Water Control (587)-Fish Screen	No.	63	\$ 756,000	\$ 7,600						X	X			X
Upland Wildlife Management (645)	Ac.	760	\$ 11,400	\$ 3,800						X				X
Watering Facility (614)	No.	32	\$ 16,000	\$ 200						X				X
Windbreak/Shelterbelt Establish(380)	Ft.	84,480	\$ 429,200	\$ 4,300						X				X



Idaho

American Falls - 17040206
8 Digit Hydrologic Unit Profile

June 2006

Conservation Activities for Irrigated Pasture – Continued

Project Future Level of Treatment for Irrigated Pasture (Continued):												
Practices	Quantity		Costs			Effects				Implementation		
	Unit	Quantity	Additional Investment Cost	Annual O&M and Mngt. Cost	Water Conservation	Water Storage	Habitat	WQ	EQP	WHIP	CREP	Other
Sprinkler Irrigation	Ac.	32,100			+3			+3	X			
Fence (382)	Ft.	529,650	\$ 915,900	\$ 18,300								X
Irrigation Water Conveyance (430DD)	Ft.	521,400	\$ 3,861,200	\$ 19,300					X			X
Irrigation System Sprinkler (442)	Ac.	32,100	\$22,358,700	\$447,200					X			X
Irrigation Water Management (449)	Ac.	32,100	\$718,900	\$239,600					X			X
Nutrient Management (590)	Ac.	32,100	\$479,700	\$159,900					X			X
Pasture & Hayland Planting (512)	Ac.	12,840	\$1,276,400	\$12,800					X			X
Pest Management (595)	Ac.	32,100	\$959,400	\$319,800					X			X
Prescribed Grazing (528)	Ac.	32,100	\$475,000	\$160,500					X			X
Structure for Water Control (587)-Fish Screen	No.	200	\$2,400,000	\$24,000					X	X		X
Upland Wildlife Management (645)	Ac.	4,820	\$72,300	\$24,100					X			X
Watering Facility (614)	No.	200	\$194,000	\$1,900					X			X
Windbreak/Shelterbelt Establish(380)	Ft.	529,650	\$2,690,600	\$26,900					X			X
Riparian Pastures	Ac.	5,550			+1		+3	+3				
Channel Bank Vegetation (322)	Ac.	560	\$ 2,800,000	\$ 56,000					X			X
Channel Stabilization (584)	Ft.	10,630	\$ 191,300	\$ 1,000					X			X
Fence (382)	Ft.	92,400	\$ 161,700	\$ 3,200					X	X		X
Nutrient Management (590)	Ac.	5,550	\$ 83,300	\$ 27,800					X			X
Pasture & Hayland Planting (512)	Ac.	2,220	\$ 222,000	\$ 2,200					X			X
Pest Management (595)	Ac.	5,550	\$ 166,500	\$ 55,500					X			X
Pipeline (516)	Ft.	92,400	\$ 249,500	\$ 5,000					X			X
Prescribed Grazing (528)	Ac.	5,550	\$ 83,300	\$ 27,800					X			X
Riparian Forest Buffer (391)	Ac.	250	\$ 750,000	\$ 7,500					X			X
Riparian Herbaceous Cover (390)	Ac.	250	\$12,500	\$100					X	X	X	X

Conservation Activities for Irrigated Pasture – Continued

Project Future Level of Treatment for Irrigated Pasture (Continued):												
Practices	Quantity		Costs			Effects			Implementation			
	Unit	Quantity	Additional Investment Cost	Annual O&M and Mngt. Cost	Water Conservation	Water Storage	Habitat	WQ	EQP	WHIP	CRFP	Other
Streambank & Shoreline Prot (580)	Ft.	26,570	\$ 637,700	\$ 63,800					X			X
Tree/Shrub Establishment (612)	Ac.	120	\$ 54,000	\$ 500					X			X
Upland Wildlife Management (645)	Ac.	830	\$ 12,500	\$ 4,200					X			X
Use Exclusion (472)	Ac.	280	\$ 9,800	\$ 300					X	X		X
Watering Facility (614)	No.	70	\$ 70,000	\$ 700					X			X
Wetland Wildlife Management (644)	Ac.	560	\$ 8,400	\$ 2,800					X			X
Total RMS Costs			\$46,703,900	\$1,901,900								

RMS Cost Summary for Irrigated Pasture:

Cost Items and Programs	Costs	O&M Costs
Non Farm Bill Programs	\$ 2,335,200	\$ 95,100
Potential Farm Bill Programs	\$ 44,368,700	\$1,806,800
Operator O&M and Management Cost		\$1,901,900
Annual Management Incentives (3 yrs - Incentive Payments)	\$ 3,459,400	
Operator Investment	\$ 12,562,500	
Federal Costshare	\$ 30,682,000	
Total RMS Farm Bill Costs	\$ 46,703,900	\$1,901,900
Estimated Level of Participation		60%
Total Acres in RMS System		25,620
Anticipated Cost at Estimated Level of Participation	\$	28,022,300
Total Acre Feet of Water Saved Annually		56,203
Total Annual Forage Production Benefits (animal unit months)		103,400
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	335,250		37,250	372,500
Typical Range Management Unit	880			
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.	372,500	\$ -		+/-	+/-	+/-		X				X
Prescribed Grazing (528)	Ac.	14,737	\$ -	\$ 73,700					X				X
Pest Management (595)	Ac.	29	\$ -	\$ 300					X				X
Watering Facility (614)	No.	3	\$ -	\$ 30					X				X
Pipeline (516)	Ft.	7,548	\$ -	\$ 400					X				X
Fence (382)	Ft.	7,920	\$ -	\$ 300					X				X



American Falls - 17040206
8 Digit Hydrologic Unit Profile

Idaho

June 2006

Conservation Activities for Grazed Rangeland, Dry Pasture and Forestland - Continued

Future Conditions	Rangeland / Pasture	Riparian	Total Acres
	335,250	37,250	372,500

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	EQP	WHIP	WRP	CRP	Other
Grazed Range, Pasture and Forestland	Ac.	335,250			+3	+2	+3	+3					
Brush Management (314)	Ac.	110,630	\$ 2,212,600	\$ 22,100					X				X
Fence (382)	Ft.	5,531,550	\$ 9,666,400	\$ 193,300					X				X
Firebreak (394)	Ft.	1,384,360	\$ 2,671,800	\$ 534,400					X				X
Pest Management (595)	Ac.	335,250	\$10,056,600	\$3,352,200					X				X
Pipeline (516)	Ft.	1,384,360	\$ 3,717,400	\$ 74,300					X				X
Pond (378)	No.	130	\$ 650,000	\$ 6,500					X				X
Prescribed Grazing (528)	Ac.	335,250	\$ 4,807,700	\$1,602,600					X				X
Range Planting (550)	Ac.	110,630	\$ 9,956,700	\$ 99,600					X				X
Spring Development (574)	No.	525	\$ 1,233,800	\$ 6,200					X	X			X
Upland Wildlife Management (645)	Ac.	67,050	\$ 1,005,800	\$ 335,300					X	X			X
Watering Facility (614)	No.	525	\$ 522,000	\$ 5,200					X				X
Well (642)	No.	260	\$ 780,000	\$ 7,800					X				X
Range & Pasture Riparian	Ac.	37,250			+3	+2	+3	+3					
Channel Bank Vegetation (322)	Ac.	3,730	\$18,650,000	\$ 373,000					X				X
Channel Stabilization (584)	Ft.	90,130	\$ 1,622,300	\$ 8,100					X				X
Fence (382)	Ft.	306,330	\$ 536,100	\$ 10,700					X	X			X
Pest Management (595)	Ac.	37,250	\$ 1,117,500	\$ 372,500					X				X
Pipeline (516)	Ft.	76,580	\$ 206,800	\$ 4,100					X				X
Prescribed Grazing (528)	Ac.	37,250	\$ 558,800	\$ 186,300					X				X
Pumping Plant (533)	No.	16	\$ 45,600	\$ 900					X				X
Riparian Forest Buffer (391)	Ac.	1,030	\$ 3,090,000	\$ 30,900					X				X
Riparian Herbaceous Cover (390)	Ac.	1,030	\$ 51,500	\$ 500					X	X			X

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

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	FOIP	WHIP	WRP	CRFP	Other
Range & Pasture Riparian (cont.)														
Streambank & Shoreline Prot (580)	Ft.	225,330	\$ 5,407,900	\$ 540,800						X	X			X
Tree/Shrub Establishment (612)	Ac.	375	\$ 168,800	\$ 1,700						X				X
Upland Wildlife Management (645)	Ac.	7,450	\$ 111,800	\$ 37,300						X	X			X
Use Exclusion (472)	Ac.	750	\$ 26,300	\$ 800						X	X	X		X
Watering Facility (614)	No.	58	\$ 58,000	\$ 600						X		X		X
Wetland Wildlife Management (644)	Ac.	3,730	\$ 56,000	\$ 18,700						X		X		X
Total RMS Costs			\$78,988,200	\$7,826,400										

RMS Cost Summary for Grazed Rangeland, Pasture and Forestland:

Cost Items and Programs	Costs	O&M Costs
Non Farm Bill Programs	\$ 3,949,400	\$ 391,300
Potential Farm Bill Programs	\$75,038,800	\$7,435,100
Operator O&M and Management Cost		\$7,826,400
Annual Management Incentives (3 yrs - Incentive Payments)	\$17,714,200	
Operator Investment	\$18,280,600	
Federal Costshare	\$42,993,400	
Total RMS Farm Bill Costs	\$78,988,200	
Estimated Level of Participation		35%
Total Acres in RMS System		117,300
Anticipated Cost at Estimated Level of Participation	\$	27,645,900
Total Annual Forage Production Benefits (acre unit months)		18,800
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		

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 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), 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), 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).

Current conditions and future needs for CAFOs and AFOs reflect the following component practices of Waste Storage Facility (313).

Current Conditions	Unit	Quantity	Total
CAFOs	Ac.	53	11
AFOs	No.	-	59
Current Farm Bill participation	15%	-	-
Total CAFOs and AFOs		17	70

Current Level of Treatment for Headquarters												
Practices	Quantity		Costs		Effects			Implementation				
	Unit	Quantity	Investment Cost	Annual O&M and Mngt. Cost	Water Conservation	Water Storage	Habitat	WQ	EQP	WHP	CRFP	Other
Dairy	Ac.	53			+/-	-1	-3	-3				
Waste Storage Facility (313) CAFO	No.	-	\$ -	\$ -					X			X
Waste Storage Facility (313) AFO	No.	-	\$ -	\$ -					X			X
Feed Lot	Ac.	17			+/-	+/-	-3	-3				
Waste Storage Facility (313) CAFO	No.	-	\$ -	\$ -					X			X
Waste Storage Facility (313) AFO	No.	6	\$ -	\$ 5,400					X			X



Conservation Activities for Headquarters – Continued

Future Conditions	Total Dairies & Feedlots
Dairies Needing Structural Practices	12
Dairies Needing Management Practices	37
Feedlots Needing Management and Structural Practices	15
Total Dairies and Feedlots	64

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

Project Future Level of Treatment for Headquarters															
Practices	Unit	Quantity	Costs		Effects				Implementation						
			Investment Cost	Annual O&M and Mngt. Cost	Water Conservation	Water Storage	Habitat	WQ	EQIP	WHIP	WRP	CRFP	Other		
Dairy	Ac.				+3	+2	+3	+3							
Structural/Management Practices	No.	12													
Waste Storage Facility (313) CAFO	No.	-	\$ -	\$ -								X			X
Waste Storage Facility (313) AFO	No.	12	\$ 540,000	10,800							X				X
Management Practices		37													
Waste Storage Facility (313) CAFO	No.	1	\$ 10,000	200							X				X
Waste Storage Facility (313) AFO	No.	36	\$ 187,200	3,744							X				X
Feed Lot	Ac.				+3	+1	+3	+3							
Structural/Management Practices	No.	15													
Waste Storage Facility (313) CAFO	No.	9	\$ 87,500	\$ 15,750							X				X
Waste Storage Facility (313) AFO	No.	6	\$ -	\$ -							X				X
Total RMS Costs			\$ 1,524,700	\$ 30,494											

Conservation Activities for Headquarters – Continued

RMS Cost Summary for Headquarters		
Cost Items and Programs	Costs	O&M Costs
Non Farm Bill Programs	\$ 76,200	\$ 1,500
Potential Farm Bill Programs	\$ 1,448,500	\$ 28,994
Operator O&M and Management Cost		\$ 30,494
Annual Management Incentives (3 yrs - Incentive Payments)	\$ 290,500	
Operator Investment	\$ 365,700	
Federal Costshare	\$ 868,500	
Total RMS Costs	\$ 1,524,700	\$ 30,494
Estimated Level of Participation		90%
Total CAFO/AFO in RMS System		63
Anticipated Cost at Estimated Level of Participation	\$	1,372,200
Reduces impact to ground and surface water quality		
90% participation reflects Local, State and Federal regulations		