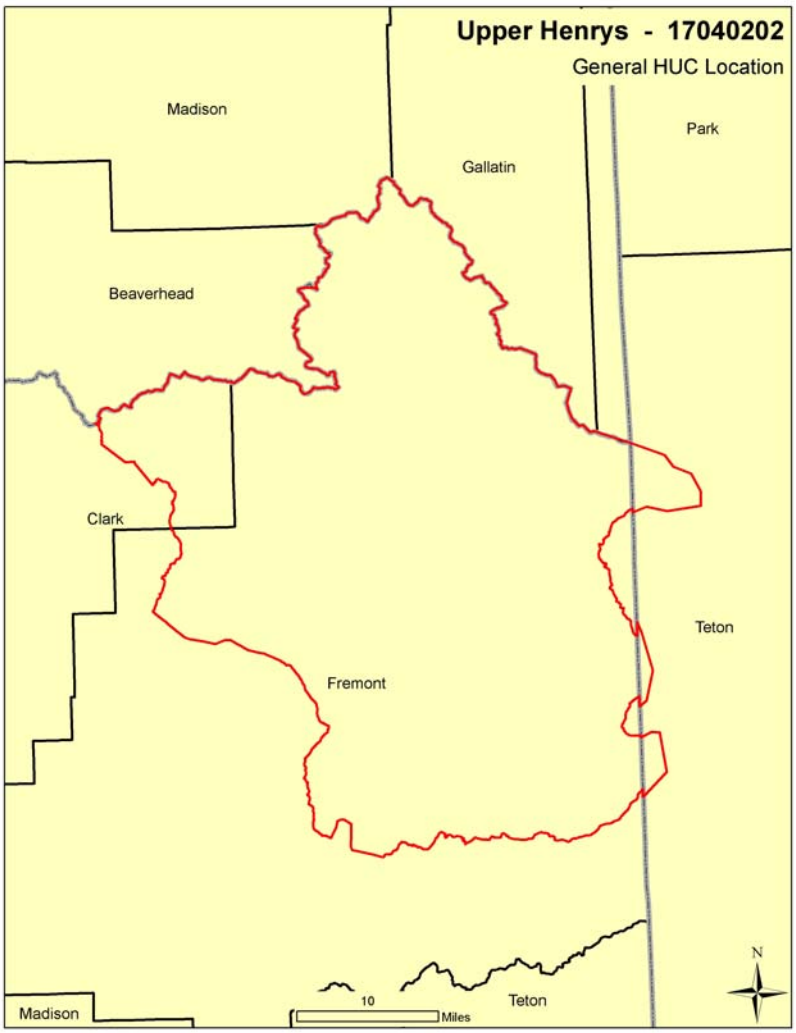
NRCS Natural Resources Conservation Service

Idaho

Upper Henrys - 17040202

8 Digit Hydrologic Unit Profile September 2008



Introduction

The Upper Henrys 8-Digit Hydrologic Unit Code (HUC) subbasin contains 706,550 acres. Ninety-one percent of the subbasin is in Fremont and 6 percent in Clark Counties, Idaho. Less than 3 percent is in Teton County, Wyoming, and less than 1 percent is in Gallatin, Beaverhead, Madison Counties and Yellowstone National Park, Montana. Thirteen percent of the basin is privately owned and 87 percent is publicly owned.

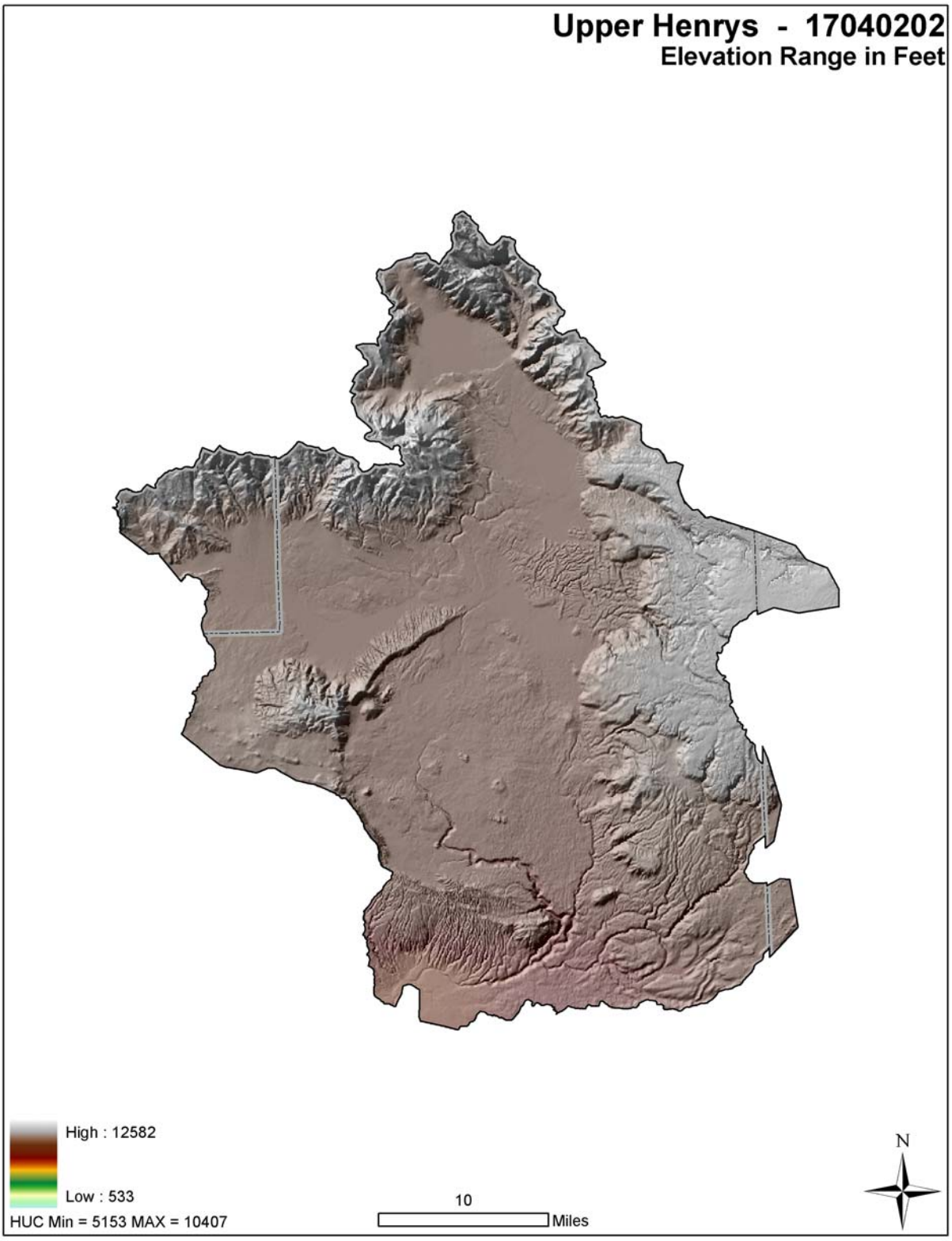
Thirty seven percent of the basin is in shrubland, rangeland, grass, pasture, or hayland. Two percent is cropland, 51 percent is forest and the remainder is water, wetlands, developed or barren.

Elevations range from 10,250 feet in the north end of the HUC at the Montana State border to 5,200 feet in the southern portion of the HUC at Ashton Dam.

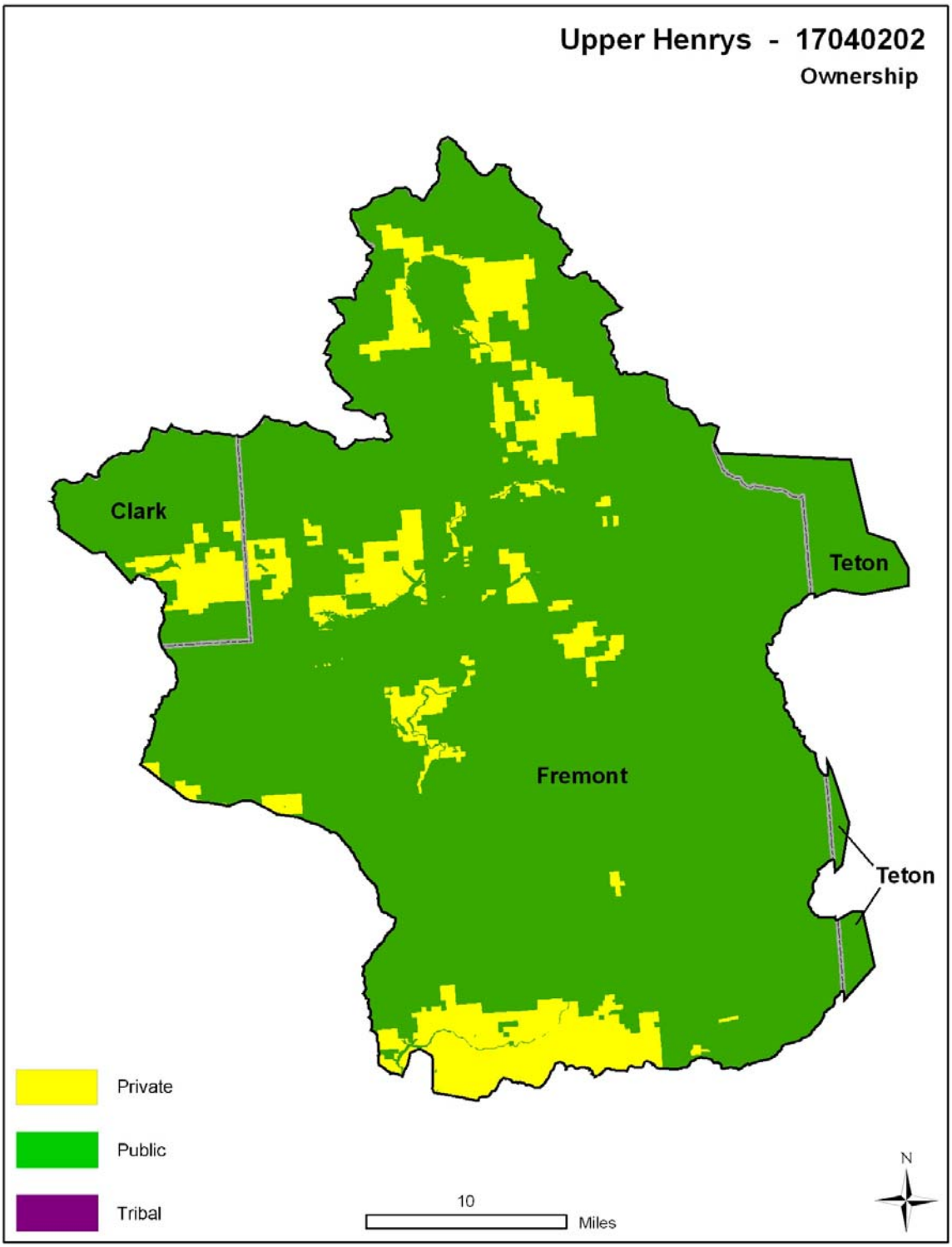
Conservation assistance is provided by 2 Conservation Districts in Idaho, 1 Conservation District in Wyoming, 4 in Montana, and 3 Resource Conservation and Development offices.

Profile Contents

Relief Map


Upper Henrys - 17040202
Elevation Range in Feet
High : 12582
Low : 533
HUC Min = 5153 MAX = 10407
10
Miles
N

General Ownership[/1]



Physical Description

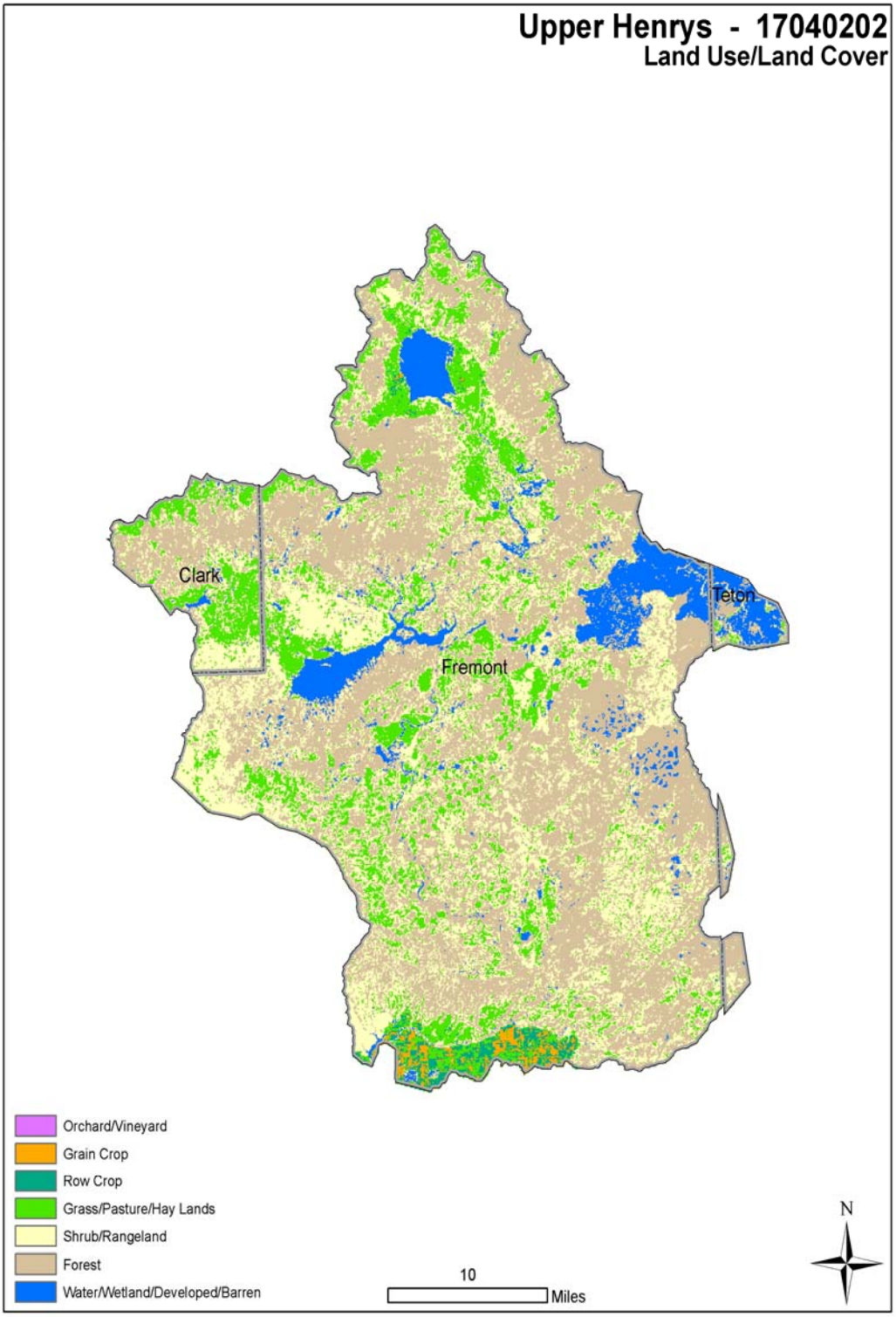
Land Cover / Land Use (NLCD[2])	Ownership - (2003 Draft BLM Surface Map Set[1])							
	Public		Private		Tribal		Totals	% of HUC
	Acres	%	Acres	%	Acres	%		
Forest	343,420	49%	11,660	2%		--	355,080	51%
Grain Crops		--	6,220	1%		--	6,220	1%
Conservation Reserve Program (CRP) Land[3]		--		--		--		0%
Grass/Pasture/Hay Lands	83,580	12%	32,010	4%		--	115,590	16%
Orchards/Vineyards/Berries		--		--		--		0%
Row Crops		--	3,910	<1%		--	3,910	<1%
Shrub/Rangelands	128,480	18%	20,290	3%		--	148,770	21%
Water/Wetlands/ Developed/Barren	60,780	9%	16,200	2%		--	76,980	11%
Idaho HUC Totals	**616,260**	**87%**	**90,290**	**13%**		**--**	**706,550**	**100%**

Irrigated Lands[4]	Type of Land	ACRES	% of Irrigated Lands	% of HUC
	Cultivated Cropland	14,900	40.3%	2.1%
	Non-Cultivated Cropland *	0	0.0%	0.0%
	Pastureland	22,100	59.7%	3.1%
	Total Irrigated Lands	**37,000**	**100.0%**	**5.2%**

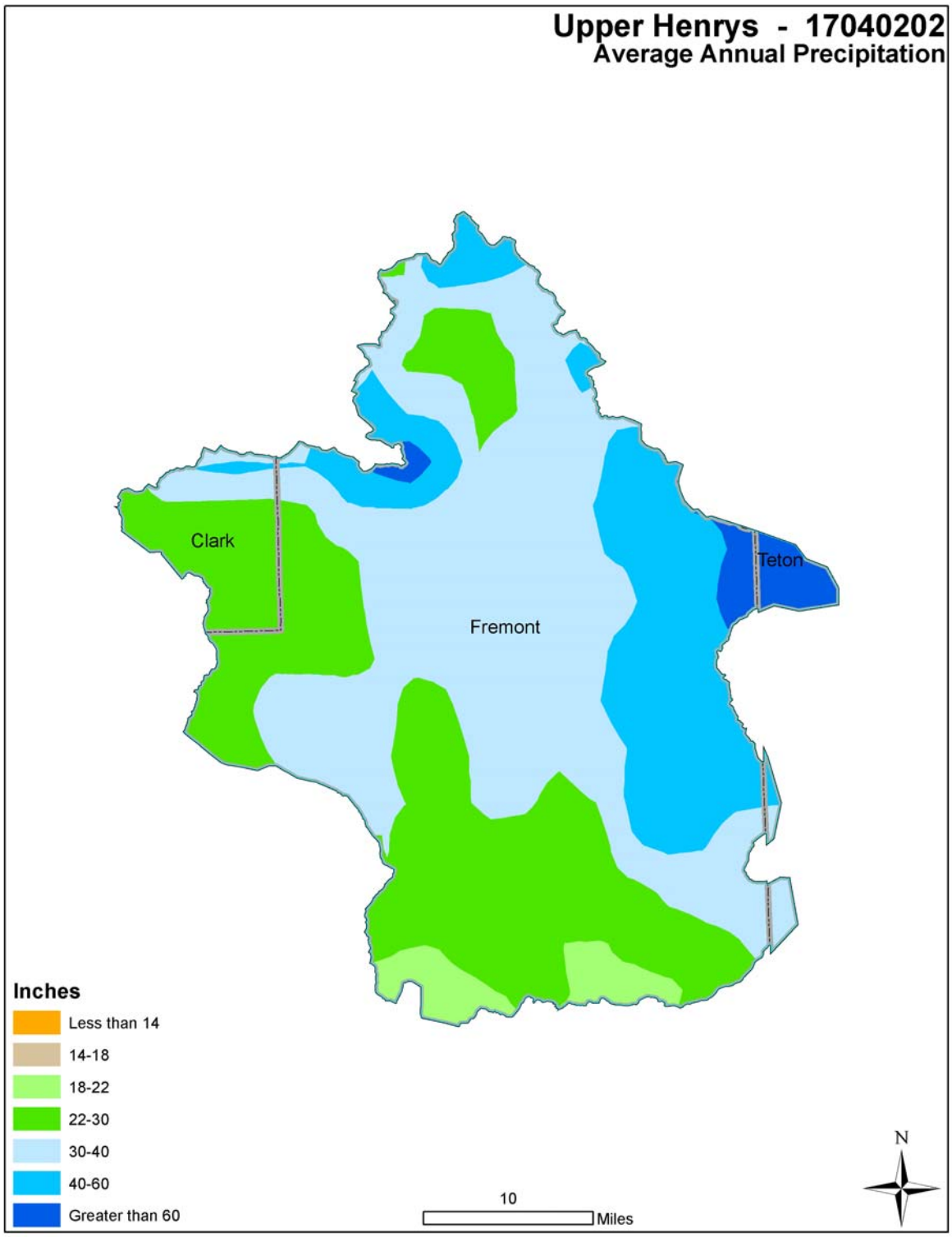
- * Includes permanent hayland and horticultural cropland.
- [3] CRP acres are included in Grass/Pasture/Haylands.

* 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]

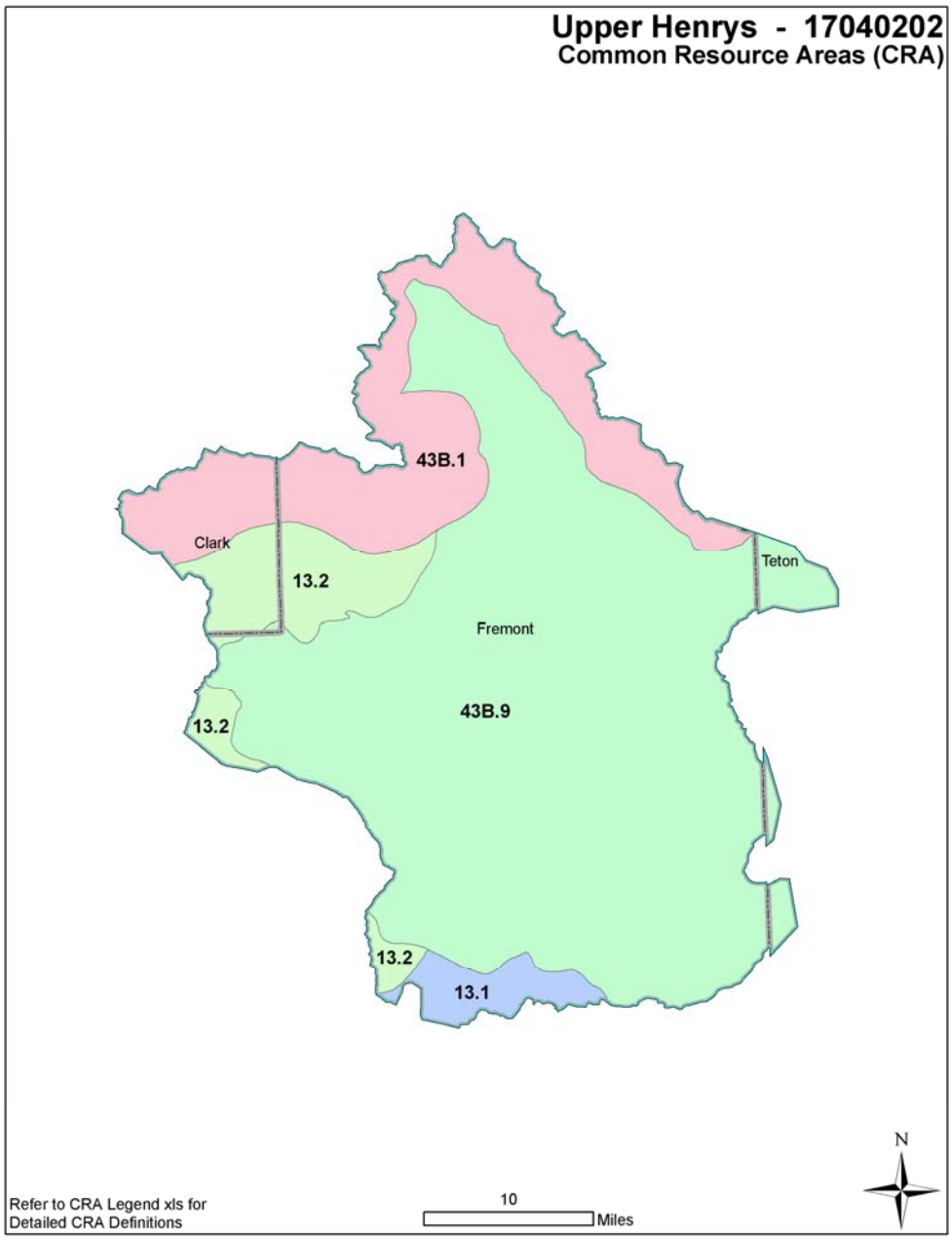


Average Annual Precipitation[/5]



Common Resource Area Map

The Common Resource Areas (CRA) delineated below for the Upper Henrys 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.

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.

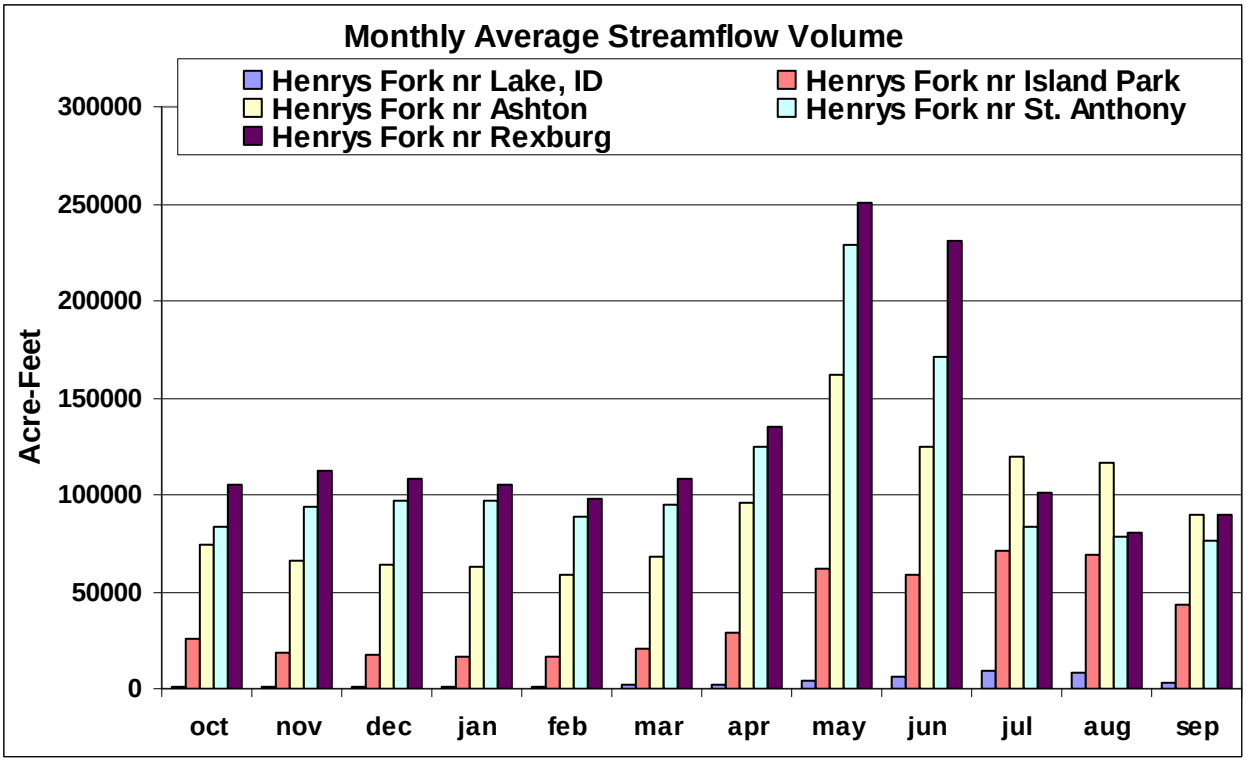
13.2 Eastern Idaho Plateaus – Eastern Snake River Basalt Plains: This unit is characterized by shallow, stony soils that are unsuitable for cultivation. Only small areas have soils deep enough to be farmed under sprinkler irrigation. Rangeland is widespread. Potential natural vegetation is mostly sagebrush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

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

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

Streamflow Summary[7]

Upper Henry's Fork houses two USGS streamflow gages on the Henry's Fork River: Henry's Fork near Lake, ID (USGS ID # 13039500) and Henry's Fork near Island Park, ID (USGS ID #13042500). The River begins at the outlet of Henry's Lake, which is located in Idaho with Montana just to the north and Yellowstone National Park, Wyoming, just to the east. The headwaters of the River begins in a forested environment, then the River flows through the valley suitable for farming, then through the high desert with unusual sand dunes and sage brush before emptying into the Snake River past Rexburg, about 117 river miles later. Between Henry's Lake and Island Park Reservoir, there is a combination of six SNOTEL and snow courses that monitor mountain weather and snowpack that are used to forecast summer streamflow volumes and assist with reservoir operations. There are more SNOTEL sites and snow courses in the Teton and Falls River drainages that contribute to the downstream flow and other lower elevation valley climate stations that exist in the Henry's Fork Watershed. The mean annual flow of the Henry's Fork near Lake, ID for years 1920-2006 is 39,419 Acre-Feet and the April through July runoff period accounts for 52% of the yearly flow. The mean annual flow of the Henry's Fork near Island Park for years 1933-2006 is an order of magnitude higher than its upstream neighbor at 448,507 Acre-Feet and the April through July flow accounts for 49% of the yearly streamflow volume. The Henry's Fork near Island Park streamflow is regulated by both Henry's Lake and Island Park Reservoirs. Above this station, nearly 15,500 Acres of land are irrigated from the River.



Streamflow Summary - Continued

Irrigated Adjudicated Water Rights[6])		**CFS**	
	Surface Water	1250.1	
	Groundwater	21.8	
	Total Irrigated Adjudicated Water Rights	1271.9	
Stream Flow Data[7]	Henry's Fork near Island Park, Idaho; USGS ID #13042500; 1933-2006		**ACRE-FEET**
		Average Annual	448,507
		April–July Average	220,512
		Percent of Average Annual	49
Stream Data **Percent of Total Miles of streams in HUC*		**MILES**	**PERCENT**
	Total Stream Miles[8]	2086	
	Water quality impaired streams[9,10]	348	17
	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	31,530	43
	Grain Crops	480	0.7
	Grass/Pasture/Hay Lands	13,580	18
	Row Crops	160	0.2
	Shrub/Rangelands – Includes CRP Lands	15,075	20.1
	Water/Wetlands/Developed/Barren	13,250	18
	Total Acres of 100 ft stream buffers	**74,070**	
Land Capability Class[4]	**I** – slight limitations	0	0.0
	II – moderate limitations	0	0.0
	III – severe limitations	15,900	22.1
	IV – very severe limitations	12,600	17.5
	V – no erosion hazard, but other limitations	17,200	23.9
	VI – severe limitations, unsuited for cultivation, limited to pasture, range, forest	26,300	36.5
	VII – very severe limitations, unsuited for cultivation, limited to grazing, forest, wildlife	0	0.0
	VIII – misc areas have limitations, limited to recreation, wildlife, and water supply	0	0.0
	Total Crop, Pasture Lands & CRP	**72,000**	100.0

Streamflow Summary - Continued

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

Resource Settings

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

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

Surface Irrigated Cropland
Conventionally tilled, often intensively cultivated cropland on 0-7% slopes. Precipitation is 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, but there is also some border irrigation. Typical rotations include silage corn, small grains, and alfalfa, although annual grain is also common. Irrigation-induced erosion exceeds the threshold. Wind erosion is a resource problem following low residue row crops. Surface roughening and cover crops is often utilized to reduce wind erosion problems. Nutrient, pest, and/or irrigation water management may be less than desirable. Impacted surface and/or ground water quality is common.

Sprinkler Irrigated Cropland
Conventionally tilled cropland on soils ranging from sands to loams. Rotations containing less than 66% high residue crops can lead to wind erosion problems. Wind erosion is typically a problem from March to June, creating air quality and visibility hazards in some portions of the subbasin.

Resource Settings – Continued

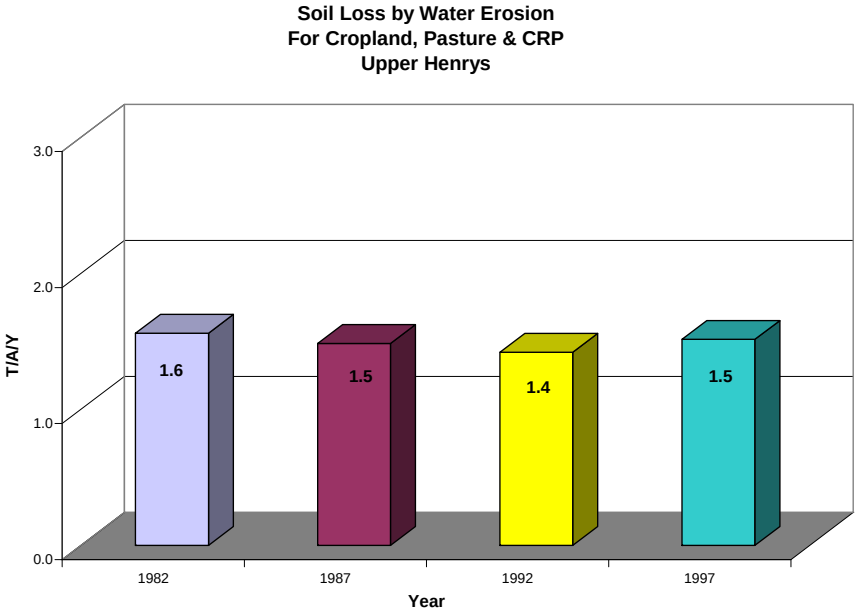
Various combinations of small grains, alfalfa, beets, corn, potatoes, beans and barley are grown. Potato with one or two years of spring grain is a typical rotation on slopes ranging from 0-8%.

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

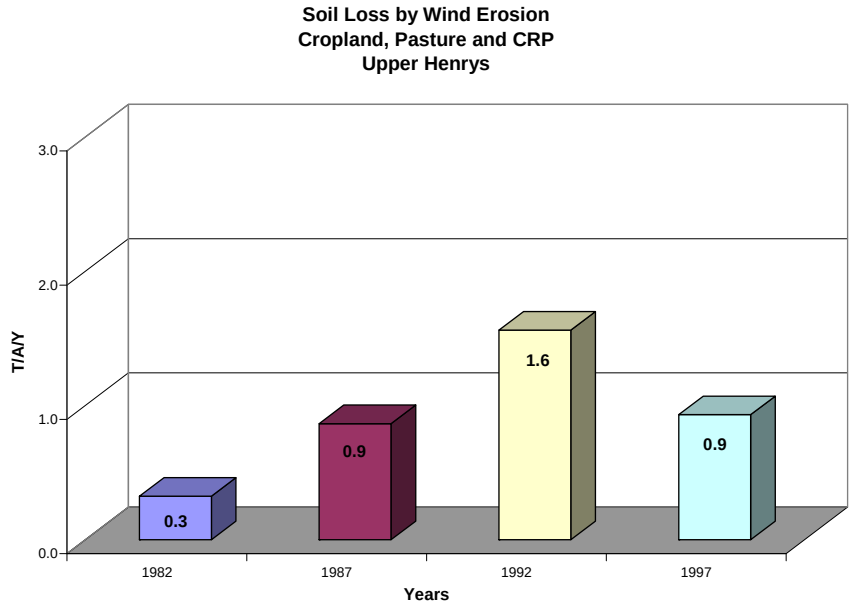
Hayland
Conventionally tilled, surface and sprinkler irrigated on 0-7% slopes. Irrigation water is normally plentiful. Small grains and alfalfa are grown in rotation, with alfalfa typically maintained for 4-6 years. Grazing of crop aftermath is common. Nutrient, pest or irrigation water management may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

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

Resource Concerns



Sheet and rill erosion by water on the sub basin croplands, pasturelands and CRP 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 cropland is relatively flat.



Wind erosion rates on the sub basin's croplands, pasturelands and CRP have fluctuated slightly from about .3 tons per acre per year in 1982 to about 1.6 tons per acre per year in 1987 and then decreased back down to about 1 ton per acre per year in 1997.

Resource Concerns – Continued

Impacted Water Bodies[9,10] (ID17040202)	Stream Miles	Sediment, Siltation or TSS	Nutrients	Bacteria	Temperature	Dissolved Oxygen	Flow/Habitat Alteration[1]	Other or Unknown
Buffalo River (SK018_03)	9.1							x
Duck Creek (SK036_03)	4.8				x			
Howard Creek (SK033_02)	15.2				x			
Icehouse Creek (SK044_02)	17.7	x						
Porcupine Creek (SK007_02)	16.3	x						
Sheridan Creek (SK045_03)	18.6	x					x[2]	
Targhee Creek (SK034_02,03)	38.2				x			
Timber Creek (SK035_02,03)	20.4				x			
Warm River (Sk005_02,03,04)	95.3				x			
Warm River (SK002_05)	0.6				x			
Willow Creek (SK046_04)	10.0				x			
TOTAL STREAM MILES:	**347.9**							

[1] Flow and habitat alteration are not considered pollutants by the Idaho Department of Environmental Quality, and are not addressed by the TMDL.
[2] Assessment documented concerns, and recommends listing for the specified pollutant on the next Integrated Report.
[3] Assessment recommends delisting on the next Integrated Report.
Shading indicates TMDL in place.

The quality of surface waters within the subbasin is generally good, with almost half of the water derived from springs in nearly pristine condition. The northern portion of the subbasin is geologically rich in phosphorus, and the highly enriched waters of Henry's Lake support a trophy trout fishery. Approximately 110 miles of streams in the Upper Henry's Fork subbasin are designated as state "recreational" or "natural" protected rivers by the Idaho Department of Water Resources. Henry's Fork, Warm River and Buffalo River are state designated Special Resource Waters by Idaho Department of Environmental Quality. A decline in the cutthroat fishery was first observed in the 1960s and reached its most critical point in the early 1980s. In March 1991, the fishery suffered the first documented water quality-related mortality in almost 40 years. Seasonal oxygen depletion killed approximately 10,000 fish in the vicinity of Hatchery Creek, and possibly as many as 100,000 throughout the lake.

A subbasin assessment was conducted in the late 1990s. The assessment indicated that both Henry's Lake and Henry's Fork support the beneficial uses of cold water biota and salmonid spawning. The phosphorus and dissolved oxygen issues in Henry's Lake are inherent properties to the system and the product of natural processes. A TMDL was not developed for Henry's Lake or Henry's Fork. Instead, resources were directed toward implementation of recommendations made in the *Report on Henry's Lake Clean Lakes Project* and the *Henry's Lake SAWQP Final Planning Report.* Limited biological assessments on other water bodies in the subbasin were initiated, and IDEQ determined that the majority of streams were in full support of the beneficial

Resource Concerns – Continued

uses. However, many streams in the Ashton Reservoir subwatershed were not assessed due to their intermittent nature and lack of easy access. Since the subbasin assessment was completed, several streams have been identified as water quality impaired due to temperature or sediment. Additional streams in the basin have been assessed as not supporting beneficial uses, but specific pollutants have not yet been identified.

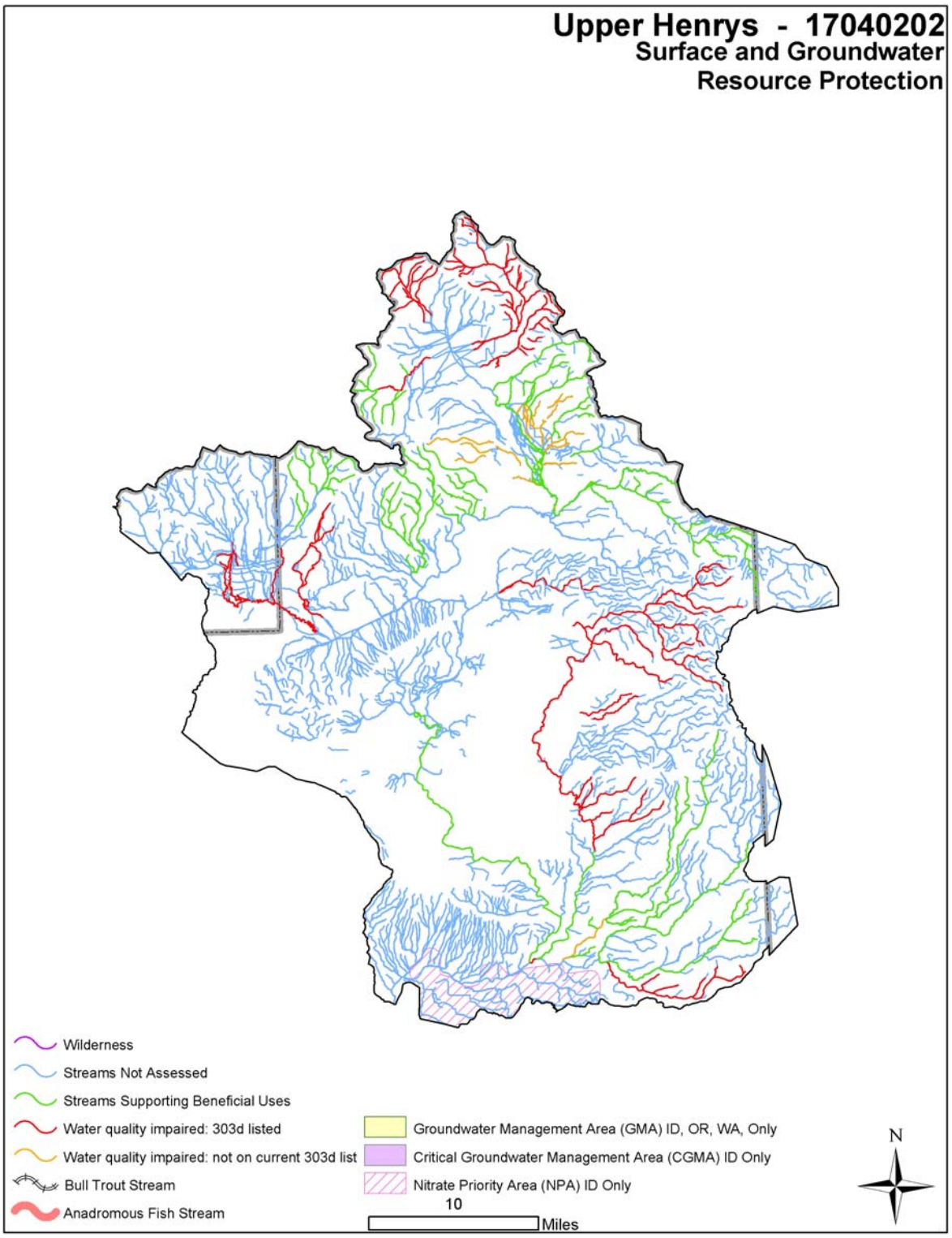
The shallow aquifer in the southern portion of the subbasin is highly vulnerable, and groundwater is nitrate-impaired. The Ashton Nitrate Priority Area is ranked eighth on the IDEQ list of twenty-five priority areas. From 1990 to 2003, there has been a considerable increase in median nitrate values in the area, with over 75% of wells exceeding 5 mg/L. Some pesticides have also been detected. The wells providing drinking water to the city of Ashton have shown elevated nitrate levels, but have not exceeded 10 mg/L to date. A ground water quality management plan for the Ashton Nitrate Priority Area is scheduled for completion by IDEQ in 2009.

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

Watershed Projects, Plans, Studies, and Assessments*	
Federal:	***State:***
NRCS Watershed Plans/Studies/Assessments[14,15]	**IDEQ TMDLs**[16]
	Upper Henrys Fork Subbasin Assessment (1998)
	IDEQ 319 Projects/[17]
	Ashton Groundwater Protection Project (2000-06)
	Sheridan Creek Restoration (1998)
NWPCC Subbasin Plans and Assessments[18]	**SCC Plans/Projects**[19]
Upper Snake Province Assessment (2004)	Henrys Lake SAWQP 1995
	ISDA Regional Water Quality Projects[20]
	Central Henrys Fork Basin Regional GW Study (on-going)
	IDWR Comprehensive Basin Plans[21]
	Henrys Fork Basin Comp State Water Plan (1992)

* 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

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

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

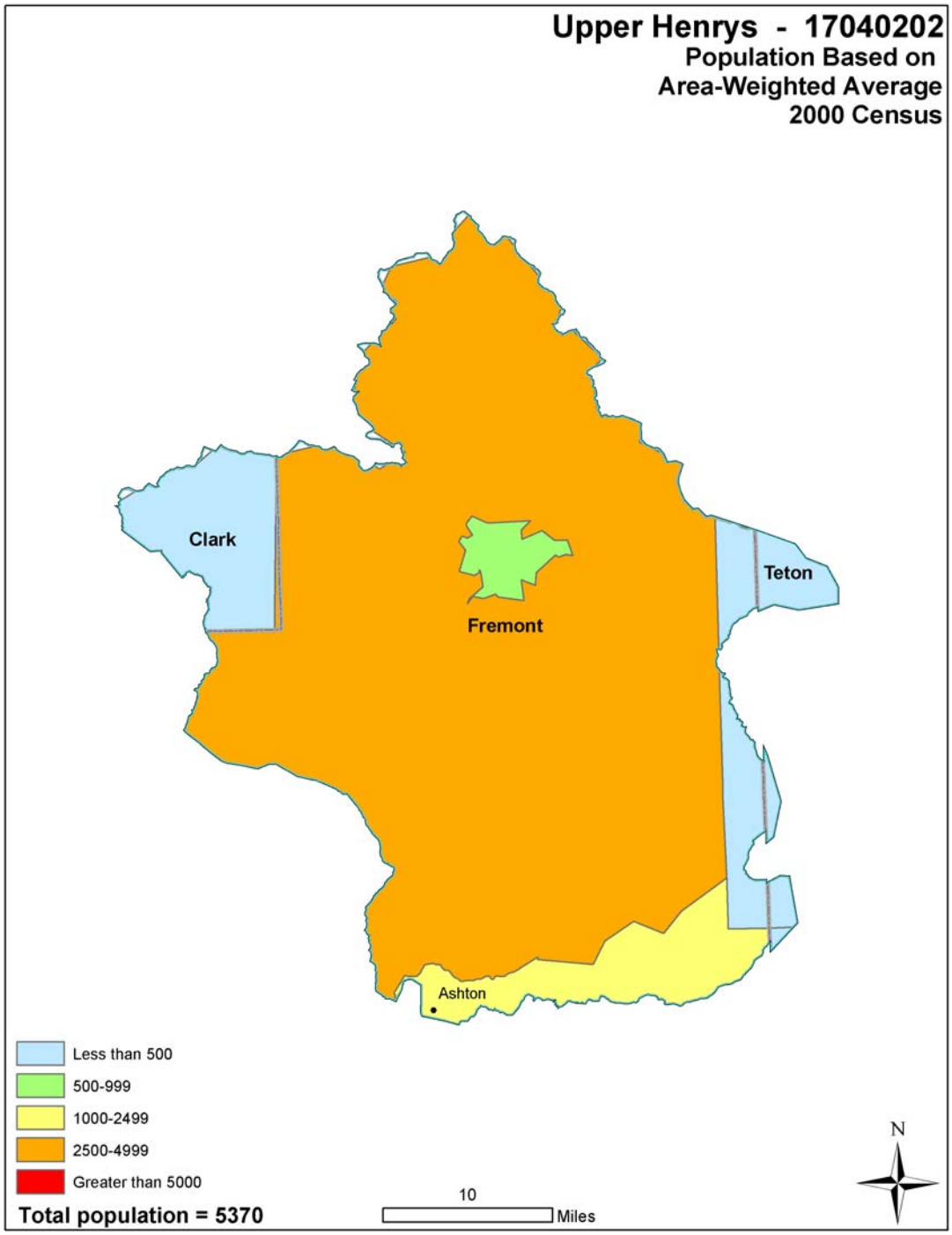
Human considerations: Implementation of conservation practices and enhancement has the potential for change in management and cost of production. Installation of practices will have an upfront cost and require maintenance. In the short run increased management may be required as new techniques are learned. 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 – Gray Wolf, Lynx, Grizzly Bear **Birds –** None **Fish –** None **Invertebrates –** None **Plants –** None	**Plants** – None **PROPOSED SPECIES –** None
ESSENTIAL FISH HABITAT – None	**CRITICAL FISH HABITAT –** None

Census and Social Data[126]

Population: 5,370

Number of Farms: 100



Census and Social Data - Continued

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.

Census and Social data shown below are based on county-wide statistics and records and may not accurately reflect the actual watershed-specific portion of the counties.

Sixty 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 9.5 percent of the total. Ninety-eight 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 900 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.

For the period of 1997 through 2002, the number of farms in the watershed has increased by 16.3 percent. Farm size is down 14.3 percent. The market value of production is down, dropping 9.3 percent. Government payments to farmers have increased by 13.0 percent. Farm sales range from less than $1,000 to more than $500,000 per year. Seventy-six percent of farms reported sales of less than $50,000 per year.

	Number of farms	Average size farm	Market Value of Production (Average Farm)	Government Payments (Average Farm)
1997	86	1,050	$201,500	$13,100
2002	100	900	$182,500	$14,800
Change	16.3%	-14.3%	-9.3%	13.0%

Economic Profile:

	Watershed	Idaho	United States
Population	5,370	1,466,000	299,398,000
Per Capita Personal Income (2005)	$29,700	$28,500	$34,500
Median Home Value (2000)	$78,200	$106,600	$119,600
Percent Unemployment (2006)	3.7%	3.4%	4.6%
Percent Below Poverty Level (2004)	13.2%	11.5%	12.7%

Progress/Status

PRS Data							
Conservation Treatment Acres	FY04	FY05	FY06	FY07	FY08	Avg/Year	Total
Access Road (560) (ft)	1800	0	0	0	0	360.0	1800
Conservation Cover (327) (acres)	82	215	9	162	0	93.6	468
Conservation Crop Rotation (328) (acres)	0	0	0	0	144	28.8	144
Deep Tillage (324) (acres)	0	0	0	0	144	28.8	144
Dike (356) (ft)	200	0	0	0	0	40.0	200
Fence (ft)	9434	0	0	0	2411	2369.0	11845
Grade Stabilization Structure (410) (number)	4	0	0	0		1.0	4
Heavy Use Area Protraction (561) (acres)	0	0	0	0	149	29.8	149
Irrigation System, Sprinkler (442) (acres)	0	0	4901	0	144	1009.0	5045
Irrigation System, Surface and subsurface (443) (acres)	0	0	9	0	0	1.8	9
Irrigation Water Conveyance, Pipeline, High Pressure, Underground Plastic (430DD) (ft)	0	0	0	0	26544	5308.8	26544
Irrigation Water Management (449) (acres)	0	0	0	0	1907	381.4	1907
Nutrient Management (acres)		2343	3060	3097	451	2237.8	8951
Open Channel (582) (ft)	570	0	0	0	0	114.0	570
Pest Management (acres)		218	54	10532	115	2729.8	10919
Pipeline (516) (ft)	4350	0	0	0	0	870.0	4350
Pond (378) (number)	0	0	0	1	1	0.4	2
Prescribed Grazing (acres)	0	0	10393	0		2598.3	10393
Residue and Tillage Management, Mulch Till (345) (acres)	0	0	0	0	144	28.8	144
Structure for Water Control (587) (number)	1	0	0	1	0	0.4	2
Surface Roughening (609) (acres)	0	0	0	0	144	28.8	144
Tree/Shrub Establishment (612) (acres)	0	0	2	0	0	0.4	2
Upland Wildlife Habitat Management (645) (acres)	0	218	10397	162	144	2184.2	10921
Use Exclusion (472) (acres)	0	218	4	162		96.0	384

Progress / Status - Continued

PRS Data - continued							
Conservation Treatment Acres	FY04	FY05	FY06	FY07	FY08	Avg/Year	Total
Water and Sediment Control Basins (638) (number)	0	0	0	0	6	1.2	6
Wetland Restoration (657) (acres)	240	0	0	6	6	50.4	252
Wetland Wildlife Management (644) (acres)	0	0	240	0	0	48.0	240

Progress in the last five years has been focused on:

~ irrigation water management
~ nutrient management
~ pest management
~ erosion control
~ water quality and quantity

Resource concerns that require ongoing attention:

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

Lands Removed from Production through Farm Bill Programs

- Conservation Reserve Program (CRP): **None**
- Wetland Reserve Program (WRP): **455 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. 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://water.usgs.gov/osw/streamstats/idaho.html).
8. National Hydrography 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. Upper Henrys Subbasin Assessment and TMDL. http://www.deq.idaho.gov/water/data_reports/surface_water/tmdls/snake_river_henrys_creek/henrys_fork_snake_river.cfm

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.idaho.gov/gisdata/gis_data.htm
13. (Feedlot) Idaho State Department of Agriculture: http://www.agri.state.id.us/ FOIA request.
14. Natural Resource Conservation Service, Watershed Projects Planned and Authorized, http://www.nrcs.usda.gov/programs/watershed
15. Natural Resource Conservation Service, Watershed Plans, Studies and Assessments completed, http://www.nrcs.usda.gov/programs/watershed/Surveys_Plng.html#Watershed%20Surveys%20and%20Plan
16. Idaho Department of Environmental Quality (IDEQ), Surface Water Quality: Subbasin Assessments, TMDLs, and Implementation Plans. http://www.deq.state.id.us/water/data_reports/surface_water/tmdls/sba_tmdl_master_list.cfm
17. Idaho Department of Environmental Quality, Watershed protection: Nonpoint source management (319 grant), Reports and program resources. http://www.deq.idaho.gov/water/data_reports/surface_water/nps/reports.cfm
18. Subbasin assessments and plans are developed by local groups (SWCDs, Watershed Councils, Tribes and others) as part of the Northwest Power and Conservation Council's fish and wildlife program in the Columbia River Basin. This program is funded and implemented by the Bonneville Power Administration. http://www.nwcouncil.org/fw/subbasinplanning/
19. Idaho Soil Conservation Commission (SCC), TMDL watershed implementation plans: agricultural component, http://www.scc.state.id.us/waq.htm, and Water Quality Program, http://www.scc.state.id.us/Docs/WQPA%20FACT%20SHEET.doc
20. Idaho State Department of Agriculture (ISDA). Groundwater water quality regional projects. http://www.agri.state.id.us/Categories/Environment/water/gwReports.php
21. Idaho Department of Water Resources (IDWR). State Comprehensive Water Plans. http://www.idwr.idaho.gov/waterboard/planning/Comp_Basin_Plans.htm
22. IDEQ. 2002 Integrated Report (approved December 2005). http://www.deq.idaho.gov/water/data_reports/surface_water/monitoring/integrated_report.cfm.
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.agcensus.usda.gov/Publications/2002/Census_by_State/Idaho/index.asp

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 2004 through 2008.

The following Future Conditions Tables are estimates 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 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.

Conservation Activities for Irrigated Cropland / Hayland

Current Conditions		Total acres	Riparian Potential
Total Irrigated Cropland/Hayland		14,900	
Typical Management Unit/Ownership		540	
Surface Irrigated Cropland/Hayland		1,490	
Sprinkler Irrigated Cropland/Hayland		13,410	
Current Farm Bill participation		15%	
Conversion to Riparian RMS (Potential)			1,340

Future Conditions	Riparian Potential	Total Acres
Sprinkler Irrigated Cropland/Hayland		13,560
Conversion to Riparian RMS	1,340	1,340
Total Irrigated Cropland/Hayland Acres		13,560

Projected 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
Sprinkler Irrigation	Ac.	13,560			+3	+2	+2	+3				
Cover Crop (340)	Ac.	1,700	$ 85,000	$ 900					X			X
Conservation Crop Rotation (328)	Ac.	6,780	-	-					X			X
Constructed Wetland (656)	No.	2	36,400	400					X			X
Forage Harvest Management (511)	Ac.	1,700	-	-					X			X

Conservation Activities for Irrigated Cropland / Hayland - Continued

Projected Treatment Needs for Irrigated 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	Habitat	WQ	EQIP	WHIP	CREP	Other
Sprinkler Irrigation (Continued)	Ac.	13,560			+3	+2	+2	+3				
Irrigation System, Microirrigation (441)	Ac.	1,360	1,849,600	92,500					X			X
Irrigation System, Sprinkler (442)	Ac.	1,490	819,500	16,400					X			X
Irrigation Water Conveyance (430DD)	Ft.	24,550	210,900	1,100					X			X
Irrigation Water Management (449) - Low level	Ac.	4,750	71,300	23,800					X			X
Irrigation Water Management (449) - Meters and Moisture Sensors	Ac.	2,030	91,400	30,500					X			X
Nutrient Management (590)	Ac.	6,780	203,400	67,800					X			X
Pest Management (595)	Ac.	6,780	162,700	54,200					X			X
Pumping Plant (533)	No.		-	-					X			X
Residue Mngt, Mulch Till (345)	Ac.	6,780	305,100	101,700					X			X
Residue Management Seasonal (344)	Ac.	6,780	152,600	50,900					X			X
Residue Mngt, No Till/Strip Till (329)	Ac.	1,360	122,400	40,800					X			X
Sediment Basin (350)	No.	11	20,900	600					X			X
Structure for Water Control (587) -Fish Screen	No.	45	149,900	1,500					X			X
Surface Roughening (609)	Ac.	6,780	152,600	50,900					X			X
Upland Wildlife Habitat Management (645)	Ac.	1,360	40,800	13,600					X			X
Well Decommissioning (355)	No.	10	8,500	-					X			X
Windbreak/Shelterbelt Establishment (380)	Ft.	224,400	338,800	3,400					X			X

Conservation Activities for Irrigated Cropland / Hayland - Continued

Projected Treatment Needs for Irrigated 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	Habitat	WQ	EQIP	WHIP	CREP	Other
Riparian	Ac.	1,340			+1	+1	+3	+3				
Channel Bank Vegetation (322)	Ft.	4,760	$ 9,800	$ 200					X			X
Channel Stabilization (584)	Ft.	4,760	119,000	6,000					X			X
Pasture & Hayland Planting (512)	Ac.	540	86,400	900					X			X
Pest Management (595)	Ac.	1,340	32,200	10,700					X			X
Riparian Forest Buffer (391)	Ac.	110	165,000	1,700					X			X
Riparian Herbaceous Cover (390)	Ac.	110	33,000	300					X	X	X	X
Streambank & Shoreline Prot (580)	Ft.	11,910	565,700	28,300					X			X
Tree/Shrub Establishment (612)	Ac.	55	25,900	300					X			X
Upland Wildlife Management (645)	Ac.	200	6,000	2,000					X			X
Wetland Wildlife Management (644)	Ac.	140	4,200	1,400					X			X
Total RMS Costs			$ 5,869,000	$ 602,800								

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	$ 293,500	$ 30,100
Potential Farm Bill Programs	$ 5,575,500	$ 572,700
Operator O&M and Management Cost		$ 602,800
Annual Management Incentives (3 yrs - Incentive Payments)	$ 1,344,700	
Operator Investment	$ 2,408,900	
Federal Cost Share	$ 2,115,400	
Total RMS Costs	$ 5,869,000	$ 602,800
Estimated Level of Participation		75%
Total Acres in RMS System		11,200
Anticipated Cost at Estimated Level of Participation	$	4,401,800
Total Acre Feet of Water Saved Annually		9,400
Increases infiltration and storage of water in soil profile		
Participating landowners will be in compliance with TMDLs		
Improves habitat for ESA endangered & threatened species		

Conservation Activities for Irrigated Pasture

Current Conditions	Total Acres	Riparian/ Wetland Potential
Surface Irrigated Pasture	7,680	
Sprinkler Irrigated Pasture	4,420	
Total Irrigated Pasture	22,100	2,650
Typical Management Unit/Ownership	540	
Current Farm Bill participation		

Future Conditions	Total Acres
Surface Irrigated Pasture	
Sprinkler Irrigated Pasture	19,450
Total Conversion to Riparian Pasture RMS	2,650
Total Acres	22,100

Projected Treatment Needs for Irrigated Pasture:

	Quantity		Costs		Effects				Implementation			
Practices	Unit	Quantity	Investment Cost	Annual O&M and Mngt. Cost	Water Conservation	Water Storage	Habitat	WQ	EQIP	WHIP	CREP	Other
Sprinkler Irrigation	Ac.	19,450			+3	+3	+2	+3				
Fence (382)	Ft.	322,080	$ 698,900	$ 14,000					X			X
Irrigation Water Conveyance (430DD)	Ft.	293,040	2,022,000	10,100					X			X
Irrigation System Sprinkler (442)	Ac.	17,680	9,724,000	194,500					X			X

Conservation Activities for Irrigated Pasture – Continued

Projected Treatment Needs for Irrigated Pasture (Continued):

	Quantity		Costs		Effects				Implementation			
Practices	Unit	Quantity	Investment Cost	Annual O&M and Mngt. Cost	Water Conservation	Water Storage	Habitat	WQ	EQIP	WHIP	CREP	Other
Sprinkler Irrigation	Ac.	19,450			+3	+3	+2	+3				
Irrigation Water Management (449)	Ac.	17,680	265,200	88,400					X			X
Nutrient Management (590)	Ac.	17,680	265,200	88,400					X			X
Pasture & Hayland Planting (512)	Ac.	7,070	1,131,200	11,300					X			X
Pest Management (595)	Ac.	17,680	424,300	141,400					X			X
Pipeline (516)	Ft.	290,400	850,900	4,300					X			X
Prescribed Grazing (528)	Ac.	17,680	265,200	88,400					X			X
Structure for Water Control (587)-Fish Screen	No.	220	732,600	7,300					X	X		X
Upland Wildlife Management (645)	Ac.	2,650	79,500	26,500					X			X
Watering Facility (614)	No.	110	95,700	1,000					X			X
Windbreak/Shelterbelt Establish(380)	Ft.	290,400	438,500	4,400					X			X
Riparian Pastures	Ac.	2,650			+1	+1	+3	+3				
Animal Trails and Walkways (575)	Ft.	21,120	$ 105,600	$ 1,100					X			X
Channel Bank Vegetation (322)	Ft.	7,140	14,600	300					X			X
Channel Stabilization (584)	Ft.	7,140	178,500	8,900					X			X
Fence (382)	Ft.	87,120	189,100	3,800					X	X	X	X
Nutrient Management (590)	Ac.	2,650	39,800	13,300					X			
Pasture & Hayland Planting (512)	Ac.	1,060	169,600	1,700					X			X
Pest Management (595)	Ac.	2,650	63,600	21,200					X			X
Pipeline (516)	Ft.	43,560	127,600	600					X			X
Prescribed Grazing (528)	Ac.	2,650	39,800	13,300					X			X
Riparian Forest Buffer (391)	Ac.	164	246,000	2,500					X			X

Conservation Activities for Irrigated Pasture – Continued

Projected Treatment Needs for Irrigated Pasture (Continued):												
	Quantity		Costs		Effects				Implementation			
Practices	Unit	Quantity	Investment Cost	Annual O&M and Mngt. Cost	Water Conservation	Water Storage	Habitat	WQ	EQIP	WHIP	CREP	Other
Riparian Pastures (Continued)	Ac.	2,650			+1	+1	+3	+3				
Riparian Herbaceous Cover (390)	Ac.	164	49,200	500					X			X
Streambank & Shoreline Prot (580)	Ft.	17,860	848,400	42,400					X	X	X	X
Stream Crossing (578)	No.	65	227,500	11,400					X			X
Tree/Shrub Establishment (612)	Ac.	82	38,500	400					X			X
Upland Wildlife Management (645)	Ac.	400	12,000	4,000					X			X
Use Exclusion (472)	Ac.	135	4,600	100					X	X	X	X
Watering Facility (614)	No.	33	28,700	300					X		X	X
Wetland Wildlife Management (644)	Ac.	270	8,100	2,700					X			X
Total RMS Costs			$ 19,384,400	$ 808,500								

Conservation Activities for Irrigated Pasture – Continued

RMS Cost Summary for Irrigated Pasture:		
Cost Items and Programs	Costs	O&M Costs
Non Farm Bill Programs	$ 969,200	$ 40,400
Potential Farm Bill Programs	$ 18,415,200	$768,100
Operator O&M and Management Cost		$808,500
Annual Management Incentives (3 yrs - Incentive Payments)	$ 1,462,700	
Operator Investment	$ 9,445,500	
Federal Costshare	$ 8,476,200	
Total RMS Farm Bill Costs	$ 19,384,400	
Estimated Level of Participation		60%
Total Acres in RMS System		13,300
Anticipated Cost at Estimated Level of Participation	$	11,630,600
Total Acre Feet of Water Saved Annually		18,870
Total Annual Forage Production Benefits (animal unit months)		59,700
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	37,090		3,340	37,090
Typical Management Unit/Ownership	540			
Current Farm Bill participation	15%			

Future Conditions	Rangeland /Pasture	Riparian	Total Acres
	33,750	3,340	37,090

Projected Treatment Needs for Grazed Rangeland, Dry Pasture and Forestland:

	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
Grazed Range, Dry Pasture & Forestland	Ac.	33,750			+3	+2	+3	+3					
Animal Trails and Walkways (575)	Ft.	279,840	$ 1,399,200	$ 14,000					X				X
Brush Management (314)	Ac.	11,140	557,000	5,600					X				X
Fence (382)	Ft.	554,400	1,203,000	24,100					X				X
Firebreak (394)	Ft.	139,920	279,800	5,600					X				X
Pasture & Hayland Planting (512)	Ac.	3,380	540,800	5,400					X				X
Pest Management (595)	Ac.	33,750	810,000	270,000					X				X
Pipeline (516)	Ft.	139,920	410,000	2,100					X				X
Pond (378)	No.	14	95,200	1,000					X				X
Prescribed Grazing (528)	Ac.	33,750	202,500	67,500					X				X
Range Planting (550)	Ac.	11,140	1,114,000	11,100					X				X

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

Projected Treatment Needs 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
Grazed Range, Dry Pasture & Forestland	Ac.	33,750			+3	+2	+3	+3					
Spring Development (574)	No.	25	60,000	300					X	X			X
Upland Wildlife Management (645)	Ac.	6,750	202,500	67,500					X	X			X
Watering Facility (614)	No.	50	43,500	400					X				X
Well (642)	No.	25	168,800	1,700					X				X
Range & Dry Pasture Riparian	Ac.	3,340			+3	+2	+3	+3					
Channel Bank Vegetation (322)	Ft.	11,910	24,400	500					X				X
Channel Stabilization (584)	Ft.	11,910	297,800	14,900					X				X
Fence (382)	Ft.	26,400	57,300	1,100					X	X	X		X
Pasture & Hayland Planting (512)	Ac.	330	52,800	500					X				X
Pest Management (595)	Ac.	3,340	80,200	26,700					X				X
Pipeline (516)	Ft.	55,400	162,300	800					X				X
Prescribed Grazing (528)	Ac.	3,340	20,000	6,700					X				X
Pumping Plant (533)	No.	15	43,200	400					X				X
Riparian Forest Buffer (391)	Ac.	140	210,000	2,100					X				X
Riparian Herbaceous Cover (390)	Ac.	140	42,000	400					X	X	X		X
Stream Crossing (578)	No.	420	1,470,000	73,500					X	X	X		X
Streambank & Shoreline Prot (580)	Ft.	29,770	1,414,100	70,700					X	X			X
Tree/Shrub Establishment (612)	Ac.	70	32,900	300					X				X
Upland Wildlife Management (645)	Ac.	660	19,800	6,600					X	X			X
Use Exclusion (472)	Ac.	165	5,600	200					X	X	X		X
Watering Facility (614)	No.	40	34,800	300					X		X		X
Wetland Wildlife Management (644)	Ac.	330	9,900	3,300					X		X		X
Total RMS Costs			$11,063,400	$ 685,300									

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

RMS Cost Summary for Grazed Rangeland, Pasture and Forestland:

Cost Items and Programs	Costs	O&M Costs
Non Farm Bill Programs	$ 553,200	$ 34,300
Potential Farm Bill Programs	$10,510,200	$ 651,000
Operator O&M and Management Cost		$ 685,300
Annual Management Incentives (3 yrs - Incentive Payments)	$ 1,344,900	
Operator Investment	$ 4,219,300	
Federal Costshare	$ 5,499,200	
Total RMS Farm Bill Costs	$11,063,400	
Estimated Level of Participation		35%
Total Acres in RMS System		11,800
Anticipated Cost at Estimated Level of Participation	$	3,872,200
Total Annual Forage Production Benefits (acre unit months)		1,900
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		