



Idaho

Big Wood - 17040219 8 Digit Hydrologic Unit Profile

January
2006



Introduction

The Big Wood 8-Digit Hydrologic Unit Code (HUC) subbasin contains 957,520 acres. Approximately 61 percent of the subbasin is in Blaine County, 18 percent in Gooding County, 16 percent in Lincoln County and the remainder in Camas County. Twenty three percent of the basin is privately owned.

Sixty nine percent of the basin is in shrubland, rangeland, grass, pasture, or hayland. Eight percent is irrigated cropland and pasture, and the remainder in forest, water, wetlands, developed or barren.

Elevations range from about 2,700 feet in the southern portion to nearly 12,000 feet in the northern portion of the HUC.

Conservation assistance is provided by four Soil and Water Conservation Districts, and the Wood River Resource Conservation and Development office.

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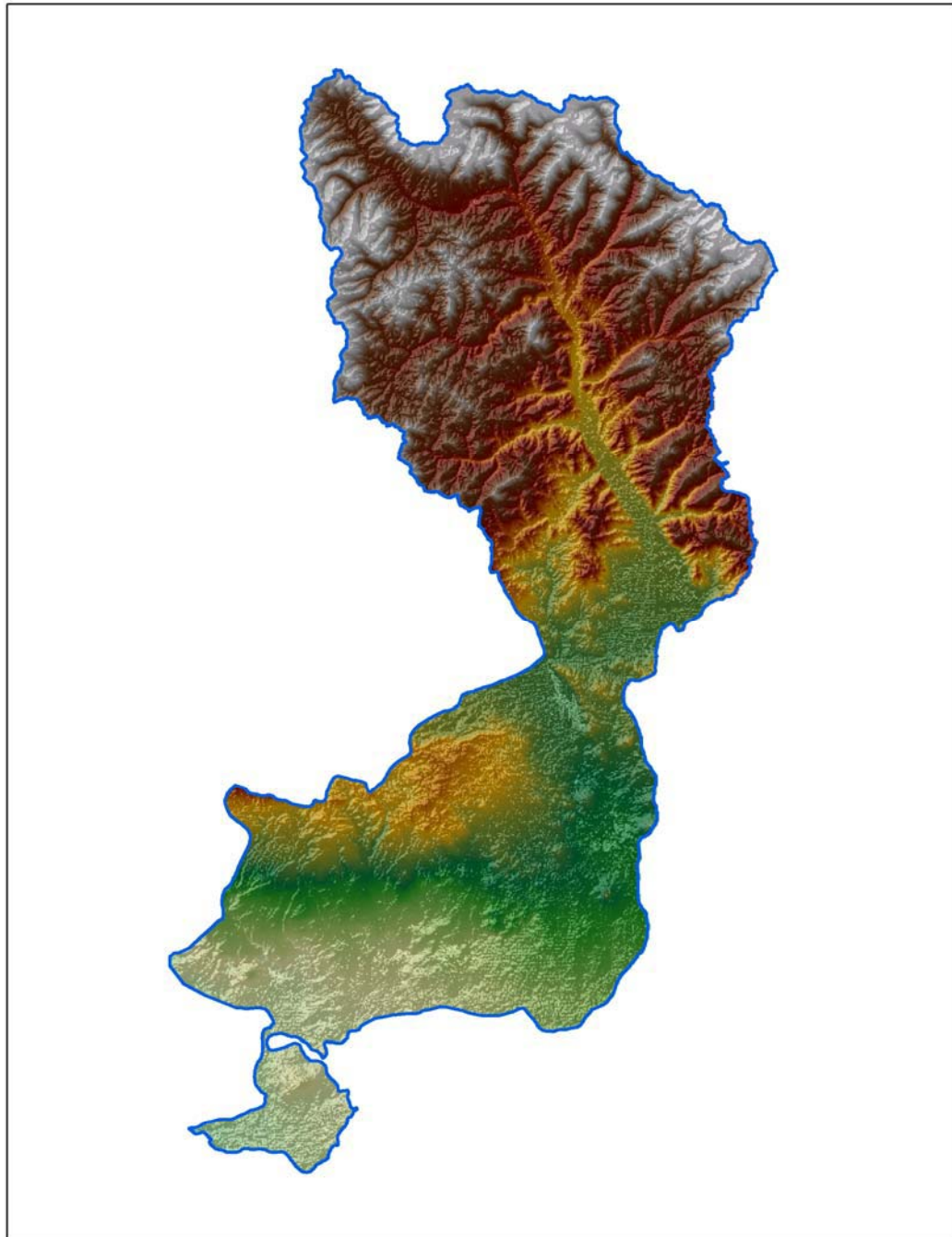
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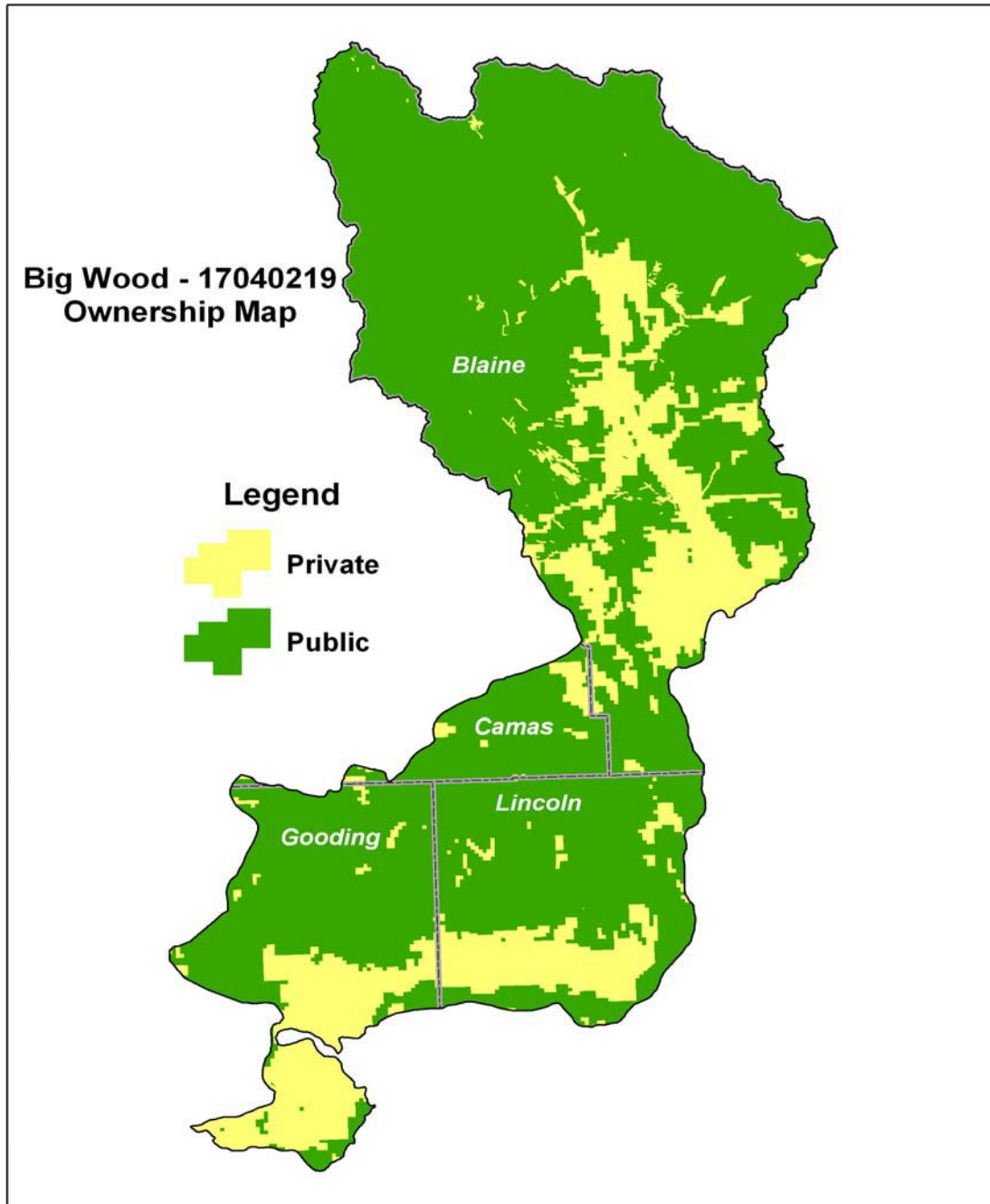
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Relief Map



General Ownership





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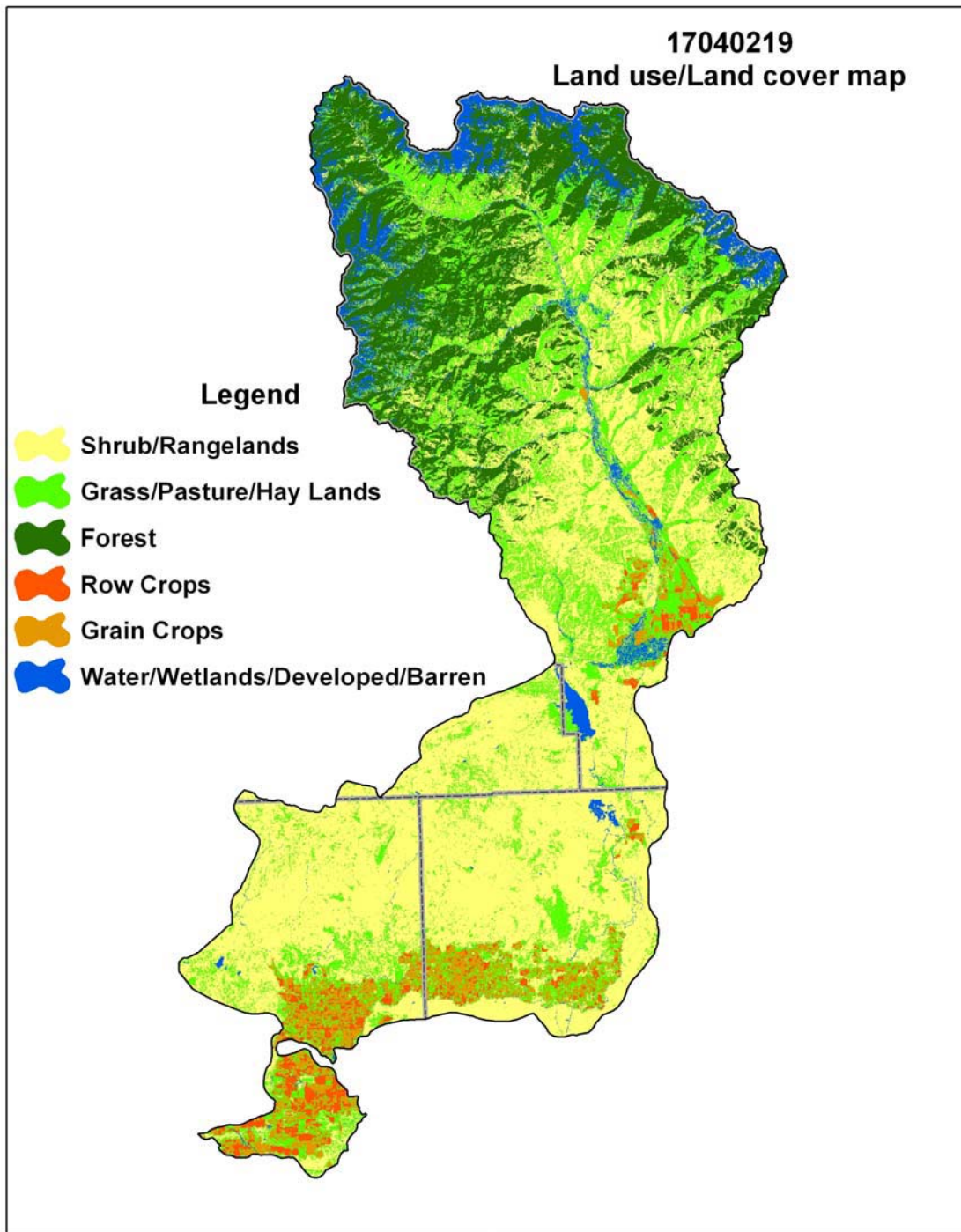
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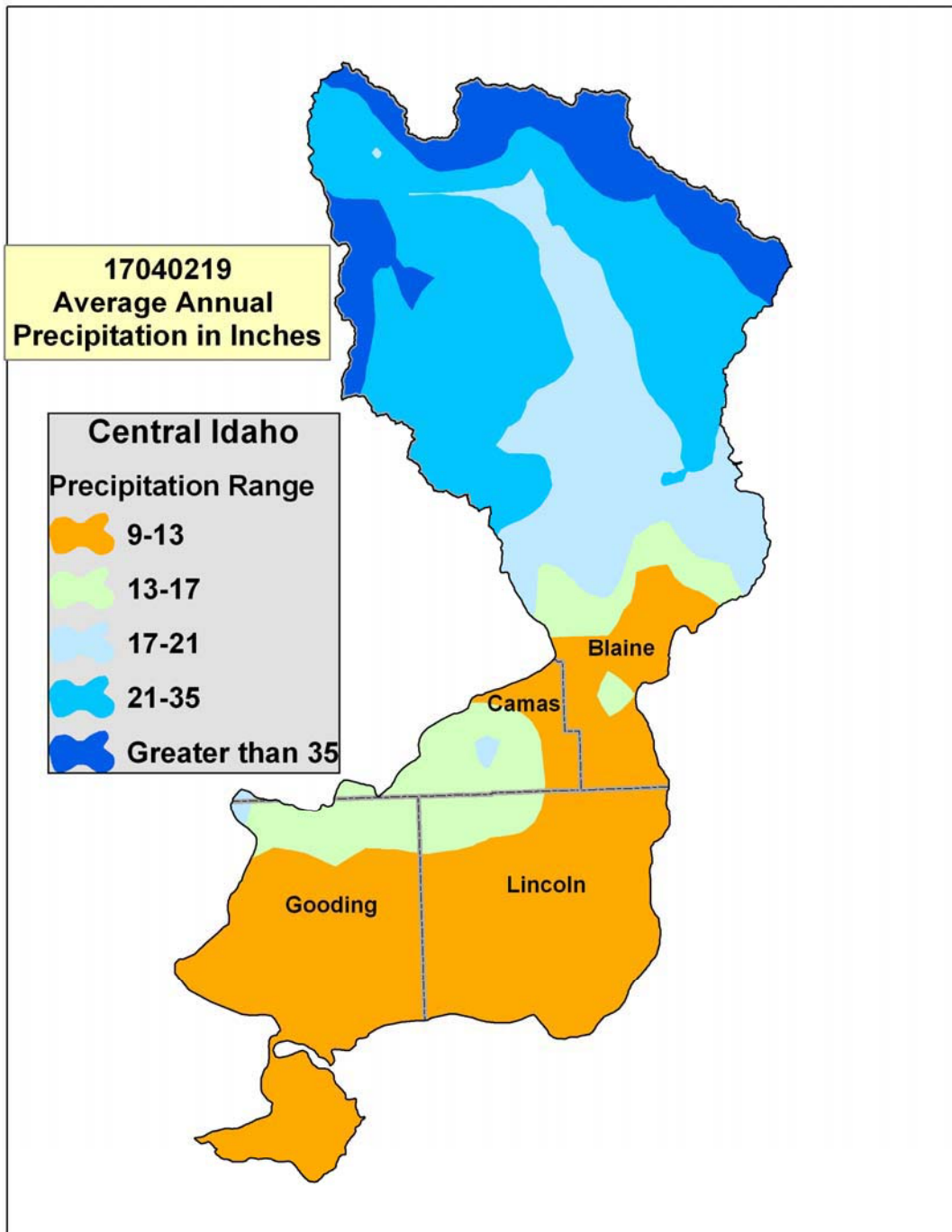
Physical Description

| Land Cover/ Land Use (NLCD) ^{/2} | Ownership - (2003 Draft BLM Surface Map Set) ^{/1} | | | | | | Totals | % of HUC |
|---|--|------------|----------------|----------------------|--------|-----------|----------------|-------------|
| | Public | | Private | | Tribal | | | |
| | Acres | % | Acres | % | | % | | |
| Forest | 174,660 | 18% | 4,600 | 1% | | -- | 179,260 | 19% |
| Grain Crops | | -- | 31,270 | 3% | | -- | 31,270 | 3% |
| Conservation Reserve Program (CRP) Land ^{/3} | | -- | 1,100 | <1% | | -- | | -- |
| Grass/Pasture/Hay Lands | 134,140 | 14% | 74,120 | 8% | | -- | 208,960 | 22% |
| Orchards/Vineyards/Berries | | -- | | -- | | -- | | -- |
| Row Crops | | -- | 24,310 | 3% | | -- | 24,310 | 3% |
| Shrub/Rangelands | 386,710 | 40% | 70,080 | 7% | | -- | 457,190 | 47% |
| Water/Wetlands/ Developed/Barren | 46,160 | 5% | 10,370 | 1% | | -- | 56,530 | 6% |
| Idaho HUC Totals | 741,670 | 77% | 215,850 | 23% | | -- | 957,520 | 100% |
| | | | | | | | | |
| Irrigated Lands ^{/4} | Type of Land | | ACRES | % of Irrigated Lands | | % of HUC | | |
| | Cultivated Cropland | | 44,700 | 64% | | 5% | | |
| | Non-Cultivated Cropland | | 8,900 | 13% | | 1% | | |
| | Pastureland | | 16,100 | 23% | | 2% | | |
| | Total Irrigated Lands | | 69,700 | 100% | | 8% | | |

Land Use/Land Cover

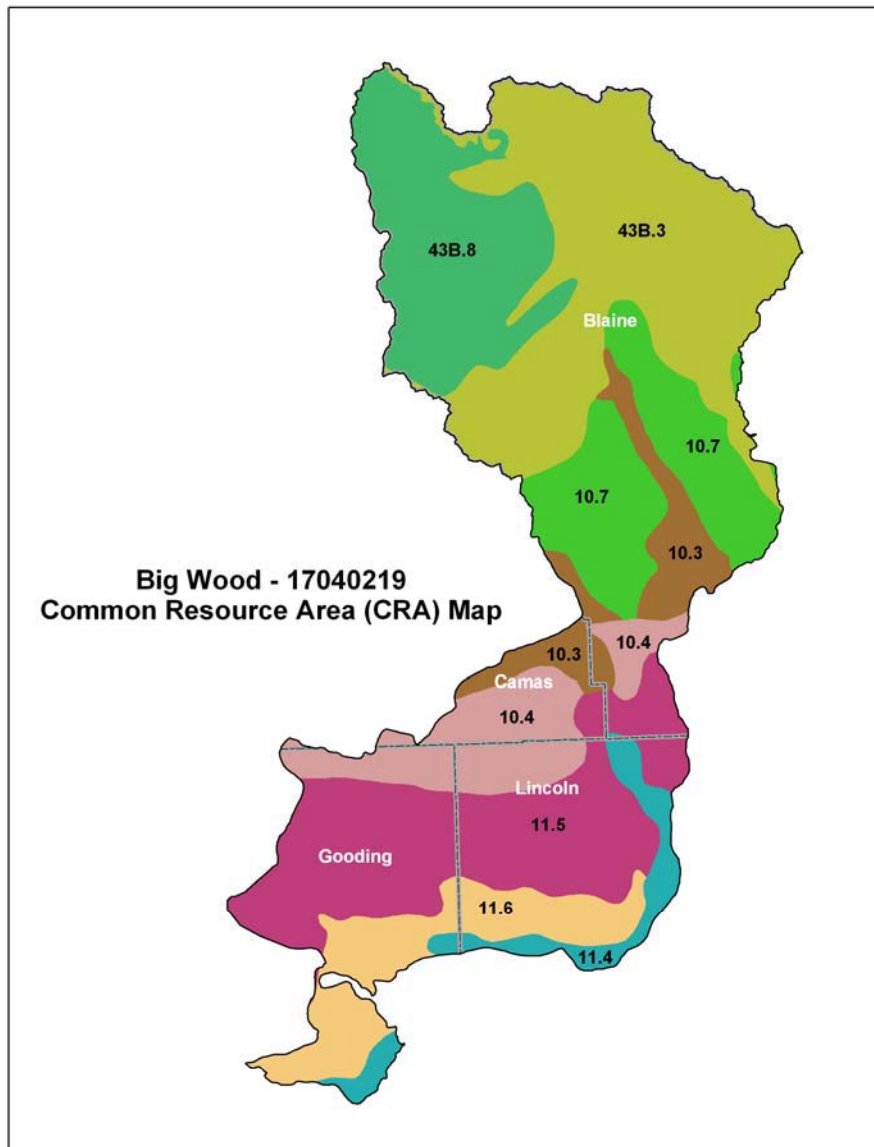


Average Annual Precipitation



Common Resource Area Map

CRA Map - areas with a majority are listed below - for descriptions of every class within the HUC, go to: http://ice.id.nrcs.usda.gov/technical/soils/cra_map_w_cnty.jpg





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10.3 Central Rocky and Blue Mountain Foothills - Camas Prairie: This unit consists of a cold, wet valley used for small grain and alfalfa farming, pasture, range, and wildlife refuge. It is flanked by the foothills of the Rocky Mountains to the north and the Bennett Hills to the south. These foothills trap mountain runoff. Resultant wet soils and flooding occur and are local and seasonal problems. Frigid mollisols are common and are colder than the soils of the lower Treasure Valley. Wet bottomlands support meadow grasses and sedges. Alluvial fans and terraces are covered by grasses and sagebrush.

10.4 Central Rocky and Blue Mountain Foothills - Semiarid Foothills: The shrub- and grass-covered foothill unit is higher and more rugged than nearby CRA units. A few perennial streams flow across the unit but are absent on the lacustrine deposits of the Unwooded Alkaline Foothills CRA. Shallow, clayey soils are common and often support medusahead, wild rye, cheatgrass, and scattered shrubs. Wildfire frequency is high. Land use is primarily livestock grazing and is distinct from the irrigated agriculture of the Treasure Valley.

10.7 Central Rocky and Blue Mountain Foothills - John Day - Clarno Moist Uplands: This unit consists of grass and shrub covered foothills in the rain shadow of high elevation mountains. The hills and benches are dry, treeless, and covered by shrubs and grasses. The vegetation mosaic is unlike open forests. Land use is mostly grazing.

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

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

11.6 Snake River Plains - Magic Valley: This unit is underlain by alluvium, loess, and basalt lava flows. The arid soils require irrigation to grow commercial crops. Many canals, reservoirs, and diversions supply water to pastureland, cropland, and residential, commercial, and industrial developments. Small grains, alfalfa, sugar beets, potatoes, and beans are grown. Livestock and dairy farms are common. Dams, irrigation diversions, pollution, and channel alteration have affected water quality. Over-irrigation has raised ground water levels and created artificial wetlands. Natural vegetation is mostly sagebrush and bunchgrass but low terraces have salt tolerant plants. Population density is greater than in adjacent rangeland-dominated units.

43B.3 Central Rocky Mountains - Dry, Partly Wooded Mountains: The Dry, Partly Wooded Mountains ecoregion is largely underlain by sedimentary and extrusive rocks; granitics are less common than in other parts of the Idaho Batholith. This region is in the rain shadow of high elevation mountains. A mosaic of shrubland, open Douglas-fir forest, and aspen occurs. Mining has affected water quality.

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

Physical Description - continued

| | | CFS | |
|--|--|--------------------|------------------|
| Irrigated Adjudicated Water Rights ^{/6)} | Surface Water | 4,912 | |
| | Groundwater | 623 | |
| | Total Irrigated Adjudicated Water Rights | 5,535 | |
| | | | ACRE-FEET |
| Stream Flow Data ^{/7} | USGS 13139500 Big Wood River at Hailey, 1971-2000 | Average Annual | 358,700 |
| | | March-July Average | 256,400 |
| | | Percent of Amount | 71% |
| | | MILES | PERCENT |
| Stream Data | Names Stream Miles (100K Hydro GIS Layer) ^{/23} | 1,070 | -- |
| | Total Stream Miles ^{/23} | 3,303 | |
| | Impaired (all pollutant categories) ^{/22} | 759 | 23 |
| | Anadromous Fish Presence (Streamnet) ^{/8} | 0 | -- |
| | Bull Trout Presence (Streamnet) ^{/8} | 0 | -- |
| | | ACRES | PERCENT |
| Land Cover/Use ^{/2} based on a 100 ft. stretch on both sides of all streams in the 100K Hydro Layer | Forest | 6,155 | 12% |
| | Grain Crops | 2,548 | 5% |
| | Grass/Pasture/Hay Lands | 15,101 | 29% |
| | Row Crops | 1,713 | 3% |
| | Shrub/Rangelands - Includes CRP Lands | 22,539 | 43% |
| | Water/Wetlands/Developed/Barren | 4,146 | 8% |
| | Total Acres of 100 ft stream buffers | 52,202 | 100% |
| Land Capability Class ^{/4} | I - slight limitations | 2,300 | 3% |
| | II - moderate limitations | 8,200 | 12% |
| | III - severe limitations | 30,500 | 44% |
| | IV - very severe limitations | 26,700 | 38% |
| | V - no erosion hazard, but other limitations | 300 | <1% |
| | VI - severe limitations, unsuited for cultivation, limited to pasture, range, forest | 1,900 | 3% |
| | VII - very severe limitations, unsuited for cultivation, limited to grazing, forest, wildlife | 0 | 0% |
| | VIII - misc areas have limitations, limited to recreation, wildlife, and water supply | 0 | 0% |
| | Total Crop & Pasture Lands | 69,900 | 100% |



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Physical Description - continued

| Confined Animal Feeding Operations – Dairies/Feedlots ^{15, 16} | | | | |
|---|--------|---------|-----------|---------|
| Operation Type | Number | 300-999 | 1000-4999 | >10,000 |
| Dairy | 31 | | | |
| Feedlots | 8 | 1 | 6 | 1 |

Resource Concerns

Pasture: Irrigated pasturelands in high elevation mountain valleys. Annual precipitation is 16-30 inches, and the growing season is 50-100 days. Soils vary from silt loams to gravelly sands, with slopes from 1 to 5 percent. Irrigation water is diverted from streams and distributed by earthen ditches. In the field, water is controlled and directed by ditch tarps on contour ditches and tailwater returns to perennial streams. Some fields have been leveled, smoothed or shaped to allow for irrigation. Plants are a mixture of introduced and native perennial forage species. Conventional tillage is used when rotating pasture and grain. The average rotation is ten years of pasture and two years of small grain. Commercial fertilizers are occasionally used, and soil testing is rarely done.

Hayland: Non-irrigated upland hay consists of introduced perennial grasses and legumes. One cutting is common. Renovations occur every 6-10 years. Soils vary from loams to silt loams with slopes ranging from three to 30 percent. Precipitation is 16 inches or greater.

Irrigated hayland utilizes surface irrigation and is conventionally tilled. Small grains and alfalfa hay are grown in rotation, with alfalfa typically maintained for four to six years. Grazing of crop aftermath may occur. Precipitation is 15 to 20 inches per year with a growing season ranging from 80 to 160 days. Typical soils are loamy sands or finer with slopes of zero to seven percent. Fertilizers and pesticides are applied. Nutrient, pest, and/or irrigation water management typically does not meet Idaho standards.

Surface Irrigated Crops: Conventionally tilled, surface irrigated cropland planted predominantly to row crops. Crops grown include: onions, sugar beets, potatoes, beans, silage corn, grain corn and winter wheat. Alfalfa may be included in the rotation and is typically maintained for three to four years. Fertilizers and pesticides are applied. Nutrient, pest, and/or irrigation water management typically does not meet Idaho standards. Precipitation is 12 inches or less and the growing season is approximately 120-160 days. Typical soils are sandy loam or finer, approximately 15 inches in depth with slopes from zero to seven percent.

Irrigation induced erosion can range from 2.2 tons per acre per year on the flatter slopes, up to 10 tons per acre per year on the steeper slopes. The sediment generated from surface irrigation on cropland is the major source of sediment in the streams within the watershed.



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Resource Concerns - continued

Sprinkler Irrigated Crops: Typical soils are loamy sands or finer. Growing season is approximately 120 to 160 days. Cropland is conventionally tilled and planted predominantly to row crops. A typical rotation is 67 percent low residue crops such as potatoes and sugar beets, and 33 percent high residue crops such as grain and alfalfa. Fertilizer and pesticide application management varies throughout the area. Precipitation is 12 inches or less and the irrigation water source is from canals and groundwater. Hand-lines, wheel-lines and pivots are commonly used to irrigate crops.

Rangeland: Riparian grazing units typically exhibit impacts to riparian vegetation and a loss of woody species. Riparian vegetation consists of grasses, sedges, rushes and a variety of woody species. Streams are primarily low gradient and depend on vegetation for stability. These areas are important habitat for a variety of fish and wildlife. Soils vary from gravelly to loamy. Elevation and precipitation vary widely throughout the area.

Upland rangeland vegetation consists of sagebrush and perennial grasses. Precipitation is six to 16 inches per year, most of which falls in winter and early spring outside the growing season. Topography varies from nearly level flats, up to benches and rolling hills. Soils are loamy to gravelly, usually shallow with some rock outcrops. Fencing is generally an existing practice. Frequent fires have eliminated vast areas of sagebrush. Cheatgrass and other invaders are dominant. Regeneration of native perennial vegetation is limited. Carrying capacities are limited by available water. Land is utilized by antelope and livestock during the winter and early spring.

Forests and Grazed Forests: The riparian forest consists of mixed conifers and deciduous trees. The associated understory is comprised of grasses and brush species with inclusions of wetter areas. Soils are silt loams and clay loams that are shallow to deep, and can have low to high rock fragment content. They range from somewhat poorly to well-drained. Average annual precipitation ranges from 18 to 35 inches. The forest landscape is characterized by level to nearly level landforms. Riparian grazing units typically exhibit impacts to riparian vegetation and a loss of woody species. Important wildlife species include elk, deer, moose, bear, raptors and songbirds.

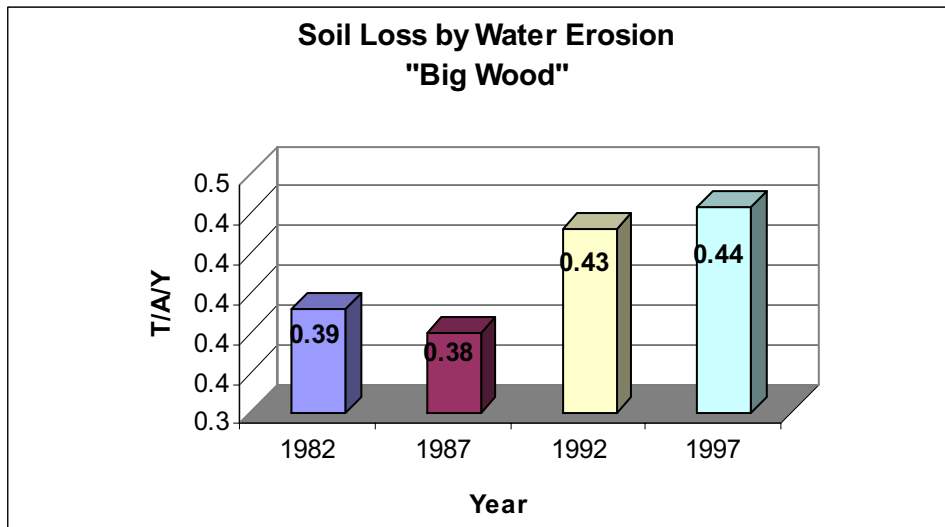
Ponderosa pine and dryer Douglas fir habitat types are found at elevation ranges from 1,800 to 4,000 feet on a variety of soil types. Annual precipitation is less than 25 inches with hot, dry summers. Slopes are less than 35 percent. The forest understory is dominated by ninebark/oceanspray and associated brush species. Grass and forb species are common. Livestock grazing occurs during the summer and early fall period, and overgrazing is common. Important wildlife species include elk, deer, moose, bear, raptors and songbirds.

Douglas fir, Grand fir, and wetter habitat types are found at elevations greater than 4,000 feet on a variety of soil types. Slopes are greater than 35 percent. Annual precipitation is greater than 25 inches, most of which falls in the winter and spring. Summers are warm and relatively dry. The forest understory is dominated by forbs and scattered grass species, with associated brush species such as snowberry, willow and alder. Livestock grazing occurs during the mid-summer and early fall period, and overgrazing is common. Livestock tend to concentrate along

Resource Concerns – continued

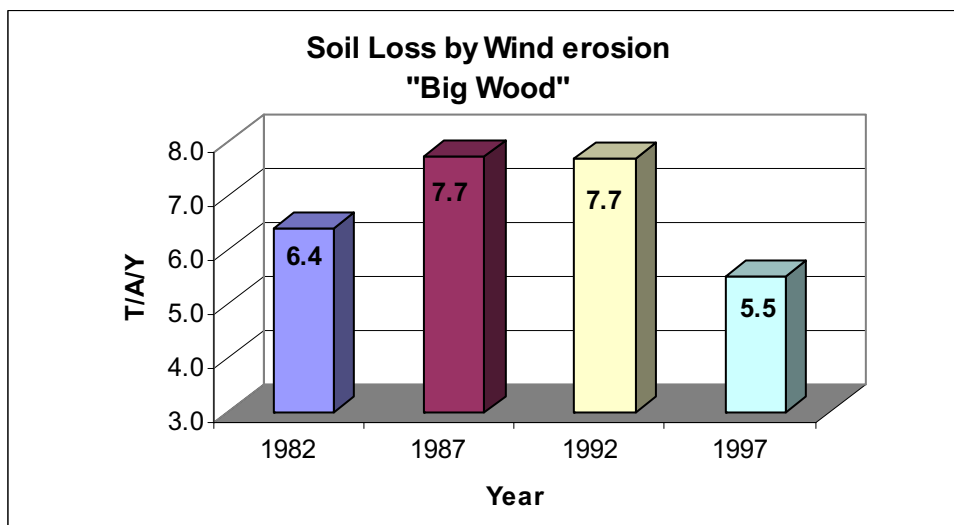
the road corridors and riparian areas. Important wildlife species include elk, deer, moose, bear, raptors and songbirds. Sheet and rill erosion by water on the sub-basin croplands, pasturelands and CRP have been essentially static since 1982. Sheet and rill erosion is not a major issue on cropland in this sub-basin. Susceptibility to sheet and rill erosion is low in this sub-basin because the natural precipitation is low and the cropland is relatively flat.

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



[/4](#)

Wind erosion on the sub-basin croplands and pasturelands has been reduced from about 6½ T/A/Y in 1982 to about 5½ T/A/Y in 1997.



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Resource Concerns – continued

Through NRCS programs many farmers and ranchers have applied conservation practices to reduce the effects of erosion by wind. As a result, wind erosion rates on cropland and pasture fell 15 percent between the years 1982 and 1997.

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

| Impacted Water Bodies ^{/22} | Stream Miles | Sediment | Nutrients | Bacteria | Temperature | Dissolved Oxygen | Flow Alteration | Habitat Alteration |
|---|--------------|----------|-----------|----------|-------------|------------------|-----------------|--------------------|
| Magic Reservoir | --- | X | | X | X | | | X |
| Big Wood River (SK007_05) | 29.0 | | | | X | | X | X |
| Big Wood River (SK002_06) | 62.5 | X | X | X | X | X | X | X |
| Big Wood River (SK004_05) | 39.5 | X | X | | X | | X | X |
| Big Wood River (SK018_04) | 13.1 | X | X | | X | | X | X |
| Black Canyon Creek (SK030_03) | 28.1 | X | X | | X | | X | |
| Black Canyon Creek (SK030_02) | 121.6 | X | X | | X | | | |
| Cove Creek (SK011_02) | 40.7 | X | X | | | | X | X |
| Croy Creek (entire) | 45.7 | X | X | | | | X | |
| Eagle Creek (entire) | 14.3 | X | X | | X | | X | |
| EF Wood River (entire) | 50.5 | X* | X* | | | | | |
| Greenhorn Creek (entire) | 33.7 | X | X | | X | | X | |
| Lake Creek (entire) | 7.0 | | X | | | | X | |
| Malad River (SK001_06) | 17.6 | X | X | X | | | | |
| Quigley Creek (entire) | 15.9 | X | X | | X | X | X | |
| Rock Creek (SK028_03) | 9.2 | X | X | X | X | | X | |
| Rock Creek (EF)(SK028_02) | 39.4 | X | X | | X | | X | X |
| Seamans Creek (entire) | 50.6 | X | X | | X | | X | X |
| Thorn Creek (entire) | 59.2 | X | X | | X | X | X | X |
| Warm Springs/Placer Creek (SK024_02,SK024_03) | 81.4 | | X | | | | | |
| TOTAL STREAM MILES: | 759 | | | | | | | |

* Big Wood River TMDL recommends removal from Integrated Report.

Shading indicates an EPA-approved TMDL. Magic Reservoir is considered “not assessed” in the 2002 Integrated Report.



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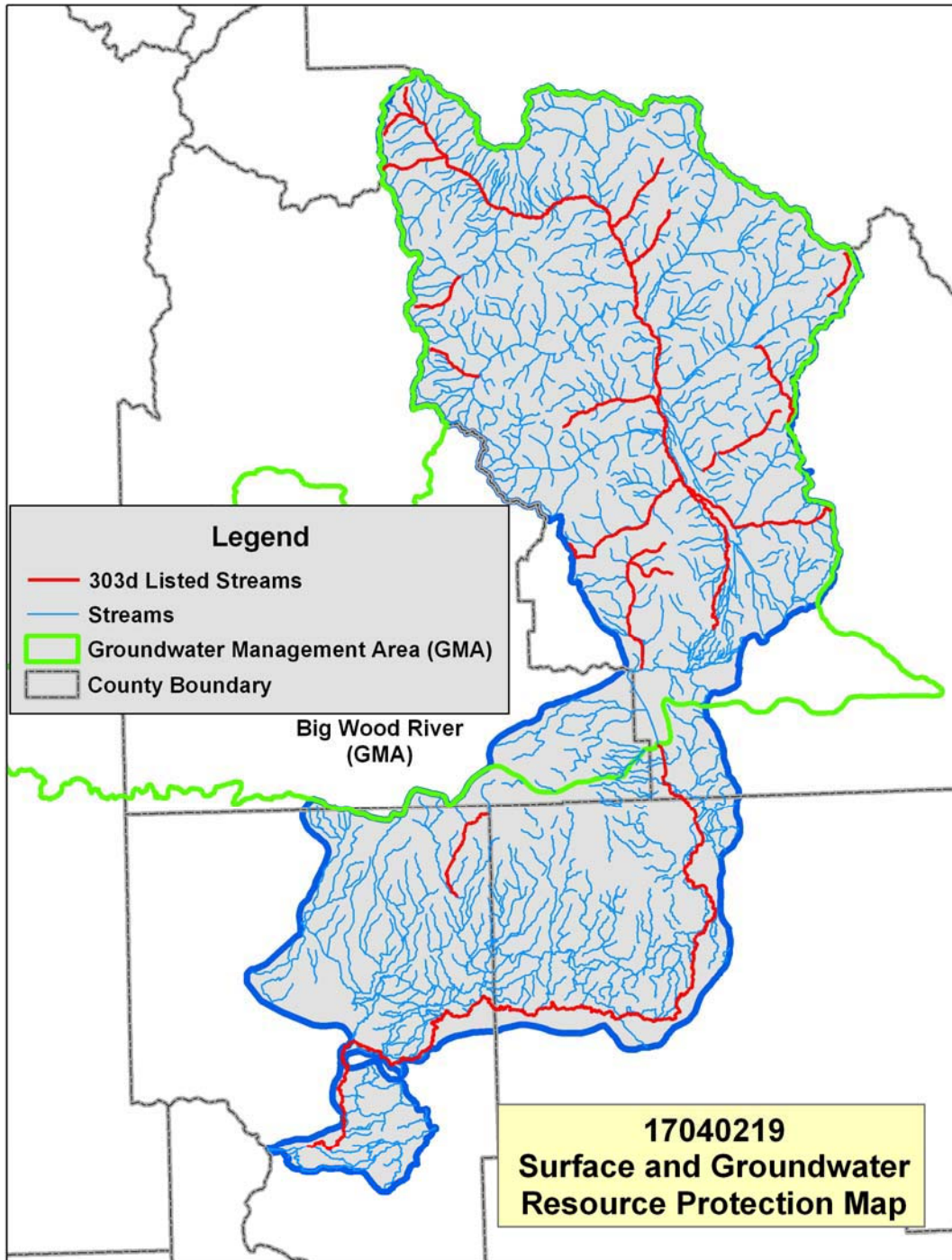
Resource Concerns – continued

Nutrients, sediment and temperature are the major pollutants which impact beneficial uses of surface waters in this watershed. Pollutant sources include activities related to timber harvest, grazing, and irrigated agricultural lands. The lack of adequate riparian vegetation contributes to non-support of beneficial uses. Flow alteration problems exist within the watershed.

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

| Watershed Projects, Plans, Studies, and Assessments | |
|---|--|
| Federal/Other Plans and Studies ^{9, 10} | State Plans and Studies |
| Gooding Wind Erosion Study 1991 | |
| NWPCC Subbasin Plans and Assessments ²⁰ | IDEQ TMDLs ¹¹ |
| Middle Snake Subbasins Assessment (2004) | Big Wood River (1999) |
| | SCC TMDL Agricultural Implementation Plans ¹² |
| | Big Wood River (in progress) |
| | IDEQ 319 Projects ¹³ |
| | Hailey Big Wood River Improvement (2002) |

Surface and Groundwater Resource Protection





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Resource Concerns – continued

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

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

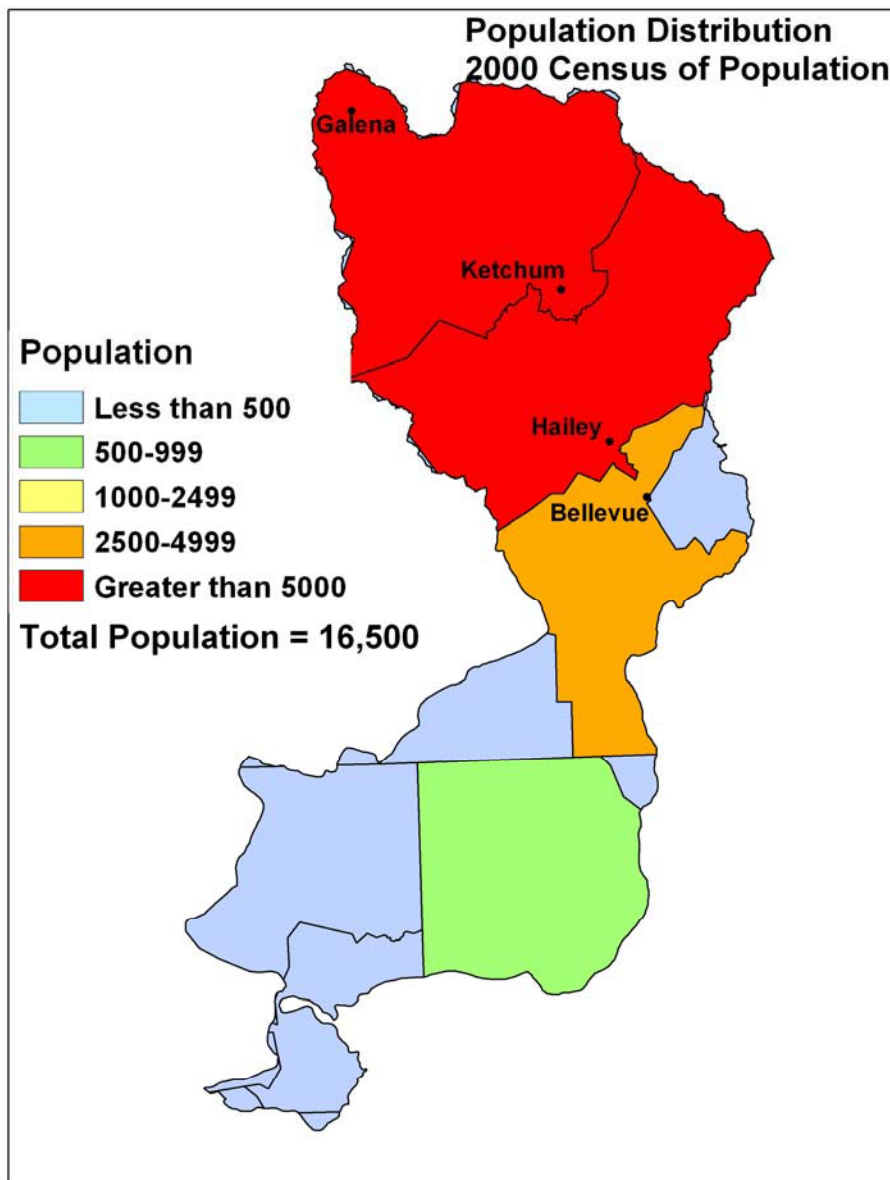
| FEDERALLY LISTED THREATENED AND ENDANGERED SPECIES ¹⁷ | |
|---|---|
| Threatened Species | Candidate Species |
| Mammals – Lynx Birds - Bald eagle Fish – None Invertebrates – None Plants – None | Fish – None Birds – Yellow-billed cuckoo PROPOSED SPECIES None |
| ESSENTIAL FISH HABITAT – None | |

Census and Social Data

Population: 16,500

Number of Farms: 390

| | 0-49 acres | 50-999 acres | 1000+ acres |
|------------------------|------------|--------------|-------------|
| Number of Farms | 189 | 169 | 32 |





Census and Social Data - continued

Sixty-three percent of farm operators are farmers by occupation. The remaining operators have off-farm jobs as their primary occupation. The majority of operators are male; women make up 13 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 680 acres. Agricultural land in the watershed is a mix of cropland, range, pasture and hayland. Landusers 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-one percent of the farms reported sales of less than \$50,000 per year.

| | Average size farm | Market Value of Production (Average Farm) | Government Payments (Average Farm) |
|--------|-------------------|---|------------------------------------|
| 1997 | 660 | \$181,900 | \$7,200 |
| 2002 | 680 | \$241,000 | \$13,100 |
| Change | 3.0% | 32.0% | 82.0% |

Economic Profile: This watershed is unique because of the Sun Valley Ski resort.

| | Watershed | Idaho | United States |
|-----------------------------|-----------|-----------|---------------|
| Population | 16,500 | | |
| Per Capita Personal Income | \$34,000 | \$24,500 | \$30,400 |
| Median Home Value | \$184,300 | \$106,600 | \$119,600 |
| Percent Unemployment | 4.3% | 5.4% | 5.8% |
| Percent Below Poverty Level | 9.1% | 11.7% | 12.1% |

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Progress/Status

| PRMS Data | FY99 | FY00 | FY01 | FY02 | FY03 | FY04 | FY05 | Avg /Year | Total |
|--|------|------|------|------|------|------|------|-----------|-------|
| Total Conservation Systems Planned Acres | 1940 | 1298 | 1309 | 1120 | 2838 | | | | |
| Total Conservation Systems Applied Acres | 1496 | 846 | 576 | 40 | 475 | | | | |
| Conservation Treatment | | | | | | | | | |
| Waste Management (number) | 1 | 0 | 4 | 0 | 5 | 0 | 0 | 1.4 | 10 |
| Riparian Forest Buffers (acres) | 0 | 26 | 0 | 21 | 4 | 0 | 0 | 7.3 | 51 |
| Erosion Control (acres) | 491 | 216 | 440 | 240 | 670 | | | 411.4 | 2057 |
| Irrigation Water Management (acres) | 523 | 422 | 440 | 1082 | 1590 | 779 | 317 | 736.1 | 5153 |
| Nutrient Management (acres) | 0 | 0 | 400 | 520 | 285 | 573 | 384 | 308.9 | 2162 |
| Pest Management (acres) | 0 | 0 | 0 | 3 | 0 | 292 | 447 | 106.0 | 742 |
| Prescribed Grazing (acres) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0 | 0 |
| Trees & Shrubs (acres) | 55 | 0 | 0 | 3 | 0 | 0 | 0 | 8.3 | 58 |
| Residue Management (acres) | 0 | 0 | 0 | 0 | 0 | 115 | 336 | 64.4 | 451 |
| Wildlife Habitat (acres) | 2 | 26 | 15 | 3 | 259 | 44 | 31 | 54.3 | 380 |
| Wetlands (acres) | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 2.3 | 16 |

*Progress in the last seven years has been focused on:

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

*Resource concerns that require ongoing attention:

- ~ erosion control
- ~ nutrient management
- ~ irrigation water management
- ~ prescribed grazing
- ~ riparian area improvement
- ~ water quality & water quantity

Lands Removed from Production through Farm Bill Programs

- Conservation Reserve Program (CRP): **1,100 acres**
- Wetland Reserve Program (WRP): **24 acres**

Footnotes/Bibliography

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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 Service 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 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. US Geological Survey Water Resources Data for Idaho; and Natural Resources Conservation Service Centralized Forecast System (CFS).
8. 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](http://www.pacificstatesmarinefisheries.com). 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/>
9. Natural Resource Conservation Service, Watershed Projects Planned and Authorized, <http://www.nrcs.usda.gov/programs/watershed>
10. Natural Resource Conservation Service, Watershed Plans, Studies and Assessments completed, http://www.nrcs.usda.gov/programs/watershed/Surveys_Plnq.html#Watershed%20Surveys%20and%20Plan

11. 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
12. Idaho Soil Conservation Commission (SCC), TMDL watershed implementation plans: agricultural com http://www.deq.state.id.us/water/data_reports/surface_water/nps/reports.cfm
<http://www.scc.state.id.us/PDF/Aq%Component%20Status%20Report%20-%202004.pdf>
13. 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
14. Idaho State Department of Agriculture (ISDA). Groundwater water quality regional projects.
<http://www.agri.state.idaho.us/Categories/Environment/water/gwReports.php>
15. (Dairy) Idaho Department of Water Resources:
http://www.idwr.state.id.us/gisdata/gis_data.htm
16. (Feedlot) Idaho State Department of Agriculture: <http://www.agri.state.id.us/> FOIA request.
17. 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/>
18. 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.
19. Surface and Groundwater Resource Protection Map
 - a. a. 303d Listed Streams designated by the Idaho Department of Environmental Quality (1998) and approved by the Environmental Protection Agency, Section 303d Clean Water Act
 - b. Groundwater Management Areas and Critical Groundwater Management Areas designated by the Idaho Department of Water Resources.
<http://www.idwr.idaho.gov/hydrologic/projects/gwma/>
 - c. 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
20. 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>
21. Idaho Department of Water Resources (IDWR). State Comprehensive Water Plans.
http://www.idwr.idaho.gov/waterboard/planning/Comp_Basin_Plans.htm
22. Idaho Department of Environmental Quality. 2002 Integrated Report.
http://www.deq.idaho.gov/water/data_reports/surface_water/monitoring/integrated_report.cfm
Idaho Department of Environmental Quality. 2002 Big Wood River Watershed Management Plan (TMDL) http://www.deq.idaho.gov/water/data_reports/surface_water/tmdls/big_wood_river/big_wood_river.cfm
23. National Hydrology Dataset (NHD). Developed by U.S. Geological Survey in cooperation with U.S. Environmental Protection Agency and other State and local partners. See <http://nhd.usgs.gov/>

Big Wood HUC-17040219 Conservation Activities for Irrigated Pasture:

| Current Conditions | Total Acres | Riparian/ Wetland Potential |
|-----------------------------------|-------------|-----------------------------------|
| Total Surface Irrigated Pasture | 11,110 | 1,470 |
| Total Sprinkler Irrigated Pasture | 4,990 | 630 |
| Total Irrigated Pasture | 16,100 | 2,100 |
| Typical Management Unit/Ownership | 680 | 90 |
| Current Farm Bill participation | 15% | |

| Current Level of Treatment for Irrigated Pasture: | | | | | | | | | | | | |
|---|----------|----------|----------------------------|---------------------------|--------------------|---------------|--------------|----|------|----------------|------|-------|
| Irrigated Pasture | Quantity | | Costs | | Effects | | | | | Implementation | | |
| | Unit | Quantity | Additional Investment Cost | Annual O&M and Mngt. Cost | Water Conservation | Water Storage | Fish Habitat | WQ | EQIP | WHIP | CREP | Other |
| Practices | | | | | | | | | | | | |
| Surface Irrigation | Ac. | 11,110 | | | -3 | -/+ | -2 | -3 | | | | |
| Fence (382) | Ft. | 7,307 | \$0 | \$ 300 | | | | | | | | |
| Irrigation System Surface (443) | Ac. | - | \$0 | \$ - | | | | | X | | | |
| Irrigation Water Conveyance (430EE) | Ft. | 400 | \$0 | \$ 10 | | | | | X | | | |
| Irrigation Water Management (449) | Ac. | 318 | \$0 | \$ 2,400 | | | | | X | | | |
| Nutrient Management (590) | Ac. | 125 | \$0 | \$ 600 | | | | | X | | | |
| Pasture and Hayland Planting (512) | Ac. | 24 | \$0 | \$ 20 | | | | | X | | | |
| Prescribed Grazing (528) | Ac. | 24 | \$0 | \$ 100 | | | | | X | | | |
| Sprinkler Irrigation | Ac. | 4,990 | | | +2 | +1 | +1 | +1 | | | | |
| Fence (382) | Ft. | 3,282 | | \$ 100 | | | | | | | | |
| Irrigation System Sprinkler (442) | Ac. | 25 | \$0 | \$ 400 | | | | | X | | | |
| Irrigation Water Conveyance (430DD) | Ft. | 7,254 | \$0 | \$ 300 | | | | | X | | | |
| Irrigation Water Management (449) | Ac. | 197 | \$0 | \$ 1,500 | | | | | X | | | |
| Nutrient Management (590) | Ac. | 60 | \$0 | \$ 300 | | | | | X | | | |
| Pasture and Hayland Planting (512) | Ac. | 40 | \$0 | \$ 40 | | | | | X | | | |
| Prescribed Grazing (528) | Ac. | 40 | \$0 | \$ 200 | | | | | X | | | |

| Future Conditions | Total Acres |
|--------------------------------------|-------------|
| Total Surface Irrigated Pasture | 3,250 |
| Total Sprinkler Irrigated Pasture | 9,750 |
| Total Conversion to Riparian Pasture | 2,100 |
| RMS | 16,100 |

| Project Future Level of Treatment for Irrigated Pasture: | | | | | | | | | | | | | | | | |
|--|---|------|----------|----------------------------|---------------------------|--------------------|---------------|---------|----|----------------|------|------|-------|---|--|---|
| Irrigated Pasture | Practices | Unit | Quantity | Costs | | Effects | | | | Implementation | | | | | | |
| | | | | Additional Investment Cost | Annual O&M and Mngt. Cost | Water Conservation | Water Storage | Habitat | WQ | EIP | WHIP | CREP | Other | | | |
| | Surface Irrigation | Ac. | 3,250 | | | +/- | +/- | +/- | +1 | | | | | | | |
| | Fence (382) | Ft. | 53,630 | \$81,100 | \$1,600 | | | | | X | | | | | | X |
| | Irrigation System Surface (443) | Ac. | 3,250 | \$487,500 | \$14,600 | | | | | X | X | X | | | | X |
| | Irrigation Tailwater Recovery(447) | No. | 20 | \$302,000 | \$9,000 | | | | | X | | | | | | X |
| | Irrigation Water Conveyance (430HH) | Ft. | 107,250 | \$437,600 | \$4,400 | | | | | X | | | | | | X |
| | Irrigation Water Conveyance (430EE) | Ft. | 214,500 | \$850,000 | \$4,300 | | | | | X | | | | | | X |
| | Irrigation Water Management (449) | Ac. | 3,250 | \$66,000 | \$22,000 | | | | | X | | | | | | X |
| | Nutrient Management (590) | Ac. | 3,250 | \$46,900 | \$15,600 | | | | | X | | | | | | X |
| | Pasture & Hayland Planting (512) | Ac. | 1,300 | \$127,600 | \$1,300 | | | | | X | | | | | | X |
| | Pest Management (595) | Ac. | 3,250 | \$97,500 | \$32,500 | | | | | X | | | | | | X |
| | Prescribed Grazing (528) | Ac. | 3,250 | \$48,400 | \$16,100 | | | | | X | | | | | | X |
| | Structure for Water Control (587)-Fish Screen | No. | 20 | \$240,000 | \$2,400 | | | | | | | | X | X | | X |
| | Upland Wildlife Management (645) | Ac. | 490 | \$7,400 | \$2,500 | | | | | | | | X | | | X |
| | Watering Facility (614) | No. | 20 | \$20,000 | \$200 | | | | | | | | X | | | X |

| Sprinkler Irrigation | | Ac. | 9,750 | | | +3 | +3 | +2 | +3 | | | |
|---|------------|--------------|---------------------|------------------|--|----|----|----|----|---|---|---|
| Fence (382) | Ft. | 161,040 | \$276,100 | \$5,500 | | | | | | X | | X |
| Irrigation System Sprinkler (442) | Ac. | 9,750 | \$6,807,500 | \$136,200 | | | | | | X | | X |
| Irrigation Water Conveyance (430DD) | Ft. | 73,800 | \$493,800 | \$2,500 | | | | | | X | | X |
| Irrigation Water Management (449) | Ac. | 9,750 | \$214,900 | \$71,600 | | | | | | X | | X |
| Nutrient Management (590) | Ac. | 9,750 | \$145,400 | \$48,500 | | | | | | X | | X |
| Pasture & Hayland Planting (512) | Ac. | 3,900 | \$386,000 | \$3,900 | | | | | | X | | X |
| Pest Management (595) | Ac. | 9,750 | \$292,500 | \$97,500 | | | | | | X | | X |
| Prescribed Grazing (528) | Ac. | 9,750 | \$145,700 | \$48,600 | | | | | | X | | X |
| Structure for Water Control (587)-Fish Screen | No. | 60 | \$720,000 | \$7,200 | | | | | | X | X | X |
| Tree/Shrub Establishment (612) | Ac. | 30 | \$13,500 | \$100 | | | | | | | | |
| Upland Wildlife Management (645) | Ac. | 1,460 | \$21,900 | \$7,300 | | | | | | X | | X |
| Watering Facility (614) | No. | 60 | \$60,000 | \$600 | | | | | | X | | X |
| Riparian Pastures | Ac. | 2,100 | | | | +1 | +1 | +3 | +3 | | | |
| Use Exclusion (472) | Ac. | 105 | \$3,700 | \$100 | | | | | | X | X | X |
| Riparian Herbaceous Cover (390) | Ac. | 25 | \$1,300 | \$10 | | | | | | X | X | X |
| Riparian Forest Buffer (391) | Ac. | 3 | \$9,000 | \$100 | | | | | | X | | X |
| Pasture & Hayland Planting (512) | Ac. | 840 | \$84,000 | \$800 | | | | | | X | | X |
| Pest Management (595) | Ac. | 2,100 | \$63,000 | \$21,000 | | | | | | X | | X |
| Nutrient Management (590) | Ac. | 2,100 | \$31,500 | \$10,500 | | | | | | X | | X |
| Prescribed Grazing (528) | Ac. | 2,100 | \$31,500 | \$10,500 | | | | | | X | | X |
| Watering Facility (614) | No. | 13 | \$13,000 | \$100 | | | | | | X | X | X |
| Fence (382) | Ft. | 34,650 | \$60,600 | \$1,200 | | | | | | X | X | X |
| Streambank & Shoreline Prot (580) | Ft. | 22,260 | \$534,200 | \$53,400 | | | | | | X | | X |
| Upland Wildlife Management (645) | Ac. | 315 | \$4,700 | \$1,600 | | | | | | X | | X |
| Wetland Wildlife Management (644) | Ac. | 105 | \$1,600 | \$500 | | | | | | X | | X |
| Total RMS Costs | | | \$13,227,400 | \$655,810 | | | | | | | | |

Potential RMS Effects Summary for Irrigated Pasture

| Cost Items and Programs | Costs | O&M Costs |
|---|----------------------|------------|
| Non Farm Bill Programs (5 percent of total) | \$ 661,400 | \$ 32,800 |
| Potential Farm Bill Programs 95 percent of total | \$ 12,566,000 | 623,010 |
| Operator O&M and Management Cost | | \$ 655,810 |
| Annual Management Incentives (3 yrs - Incentive Payments) | \$ 1,218,900 | |
| Operator Investment (25% Cost Share) | \$ 2,836,800 | |
| Federal Costs (75% Cost Share) | \$ 8,510,300 | |
| Total RMS Costs | \$ 12,566,000 | |
| Estimated Level of Participation | 75% | |
| Total Acres in RMS System | 12,100 | |
| Total Acre Feet of Water Saved Annually | 20,910 | |
| Total Annual Forage Production Benefits (animal unit months) | 56,700 | |
| Improves riparian habitat for ESA endangered & threatened species | | |

Big Wood HUC-17040219 Conservation Activities for Irrigated Cropland/Hayland:

| Current Conditions | Total Acres |
|--|-------------|
| Total Irrigated Cropland/Hayland | 55,580 |
| Typical Management Unit/Ownership | 680 |
| Total Surface Irrigated Cropland/Hayland | 28,900 |
| Typical Sprinkler Irrigated Cropland/Hayland | 26,680 |
| 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 | EQUIP | WHIP | CREP | Other |
| Practices | | | | | | | | | | | | |
| Surface Irrigation | Ac. | 28,900 | \$0 | \$ 200 | -3 | -/+ | -2 | -3 | X | | | |
| Irrigation System Surface (443) | Ac. | 40 | \$0 | \$ - | | | | | X | | | |
| Irrigation Water Conveyance (430EE) | Ft. | 400 | \$0 | \$ - | | | | | X | | | |
| Pest Management (595) | Ac. | 292 | \$0 | \$ 2,900 | | | | | X | | | |
| Nutrient Management (590) | Ac. | 1032 | \$0 | \$ 5,200 | | | | | X | | | |
| Irrigation Water Management (449) | Ac. | 2298 | \$0 | \$ 17,200 | | | | | X | | | |
| Structure for Water Control (587) | Ac. | 1 | \$0 | \$ - | | | | | X | | | |
| Sprinkler Irrigation | Ac. | 4,990 | | | +1 | +/- | +1 | +3 | | | | |
| Irrigation System Sprinkler (442) | Ac. | 5,228 | \$0 | \$ 73,200 | | | | | X | | | |
| Irrigation Water Conveyance (430DD) | Ft. | 7,754 | \$0 | \$ 300 | | | | | X | | | |
| Pest Management (595) | Ac. | 696 | \$0 | \$ 7,000 | | | | | X | | | |
| Nutrient Management (590) | Ac. | 1256 | \$0 | \$ 6,300 | | | | | X | | | |
| Irrigation Water Management (449) | Ac. | 3133 | \$0 | \$ 23,500 | | | | | X | | | |
| Structure for Water Control (587) | Ac. | 1 | \$0 | \$ - | | | | | X | | | |

| Future Conditions | | Total Acres |
|--|--|-------------|
| Total Surface Irrigated Cropland/Hayland | | 13,890 |
| Total Sprinkler Irrigated Cropland/Hayland | | 41,690 |
| Total Acres | | 55,580 |

| 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 | FOP | WHIP | CRFP | Other |
| Surface Irrigation | Ac. | 13,890 | | | +2 | +1 | +2 | | | | | |
| Anionic Polyacrylamide, (PAM) (450) | Ac. | 13,890 | \$ 625,100 | \$ 208,400 | | | | | X | | | X |
| Irrigation System, Surface (443) | Ac. | 13,890 | \$ 2,077,500 | \$ 62,300 | | | | | X | | | X |
| Irrig. Tailwater Recovery (447) | No. | 85 | \$ 1,283,500 | \$ 38,500 | | | | | X | | | X |
| Irrigation Water Conveyance (430 EE) | Ft. | 916,740 | \$ 3,637,900 | \$ 18,200 | | | | | X | X | | X |
| Irrigation Water Management (449) | Ac. | 13,890 | \$ 260,800 | \$ 58,000 | | | | | X | | | X |
| Land Leveling/Smoothing (466 & 464) | Ac. | 3,480 | \$ 696,000 | \$ 20,900 | | | | | X | | | X |
| Nutrient Management (590) | Ac. | 13,890 | \$ 192,900 | \$ 64,300 | | | | | X | | | X |
| Pasture & Hayland Planting (512) | Ac. | 5,560 | \$ 556,000 | \$ 5,600 | | | | | X | | X | X |
| Pest Management (595) | Ac. | 13,890 | \$ 407,900 | \$ 136,000 | | | | | X | | | X |
| Sediment Basin (350) | No. | 90 | \$ 247,500 | \$ 7,400 | | | | | X | | | X |
| Residue Mngt, Mulch Till (329B) | Ac. | 13,890 | \$ 625,100 | \$ 208,400 | | | | | X | | | X |
| Structure for Water Control (587) -Fish Screen | No. | 175 | \$ 210,000 | \$ 2,100 | | | | | X | | | X |
| Upland Wildlife Habitat Management (645) | Ac. | 2,080 | \$ 31,200 | \$ 10,400 | | | | | X | | | X |
| Windbreak/Shelterbelt Establishment (380) | Ft. | 229,190 | \$ 1,164,300 | \$ 11,600 | | | | | X | | | X |

Project Future Level of Treatment for Irrigated Cropland/Hayland Continued:

| Irrigated Cropland/Hayland | Quantity | | Costs | | | Effects | | | | Implementation | | |
|--|----------|----------|----------------------------|---------------------------|--------------------|---------------|---------|----|------|----------------|------|-------|
| | Unit | Quantity | Additional Investment Cost | Annual O&M and Mngt. Cost | Water Conservation | Water Storage | Habitat | WQ | EQIP | WHIP | CREP | Other |
| Sprinkler Irrigation | Ac. | 41,690 | | | +3 | +2 | +2 | +3 | | | | |
| Cover Crop (340) | Ac. | 12,500 | \$ 625,000 | \$ 6,300 | | | | | X | | | X |
| Irrigation System, Sprinkler (442) | Ac. | 41,690 | \$25,523,400 | \$ 510,500 | | | | | X | | | X |
| Irrigation Water Conveyance (430DD) | Ft. | 230,780 | \$ 1,654,900 | \$ 8,300 | | | | | X | | | X |
| Irrigation Water Management (449) | Ac. | 41,690 | \$ 867,500 | \$ 289,200 | | | | | X | | | X |
| Nutrient Management (590) | Ac. | 41,690 | \$ 606,500 | \$ 202,200 | | | | | X | | | X |
| Pasture & Hayland Planting (512) | Ac. | 16,670 | \$ 1,667,000 | \$ 16,700 | | | | | X | | X | X |
| Pest Management (595) | Ac. | 41,690 | \$ 1,229,800 | \$ 409,900 | | | | | X | | | X |
| Residue Mngt, Mulch Till (329B) | Ac. | 41,690 | \$ 1,876,100 | \$ 625,400 | | | | | X | | | X |
| Structure for Water Control (587) -Fish Screen | No. | 260 | \$ 312,000 | \$ 3,100 | | | | | X | | | X |
| Upland Wildlife Habitat Management (645) | Ac. | 6,250 | \$ 93,800 | \$ 31,300 | | | | | X | | | X |
| Windbreak/Shelterbelt Establishment (380) | Ft. | 687,890 | \$ 3,494,500 | \$ 34,900 | | | | | X | | | X |
| Total RMS Costs | | | \$49,966,200 | \$2,989,900 | | | | | | | | |

Potential RMS Effects Summary for Irrigated Cropland/Hayland

| Cost Items and Programs | Costs | O&M Costs |
|---|---------------------|--------------------|
| Non Farm Bill Programs (5 percent of total) | \$ 2,498,300 | \$ 149,500 |
| Potential Farm Bill Programs 95 percent of total | \$47,467,900 | \$2,840,400 |
| Operator O&M and Management Cost | | \$2,989,900 |
| Annual Management Incentives (3 yrs - Incentive Payments) | \$ 4,940,600 | |
| Operator Investment (25% Cost Share) | \$10,631,800 | |
| Federal Costs (75% Cost Share) | \$31,895,500 | |
| Total RMS Costs | \$47,467,900 | \$2,989,900 |
| Estimated Level of Participation | | 75% |
| Total Acres in RMS System | | 41,700 |
| Total Acre Feet of Water Saved Annually | | 41,165 |
| Increases infiltration and storage of water in soil profile | | |
| Participating landowners will be in compliance with TMDLs | | |
| Improves habitat for ESA endangered & threatened species | | |

Big Wood HUC-17040219 Conservation Activities for Grazed Dry Pasture and Rangeland:

| Current Conditions | Grazed | Ungrazed | Riparian/Wetland/Potential | Total Acres |
|---------------------------------------|--------|----------|----------------------------|-------------|
| Total Private Dry Pasture & Rangeland | 96,075 | 19,215 | 12,810 | 128,100 |
| Typical Range Management Unit | 4,000 | | | |
| Current Farm Bill participation | 15% | | | |

Current Level of Treatment for Grazed Dry Pasture and Rangelands:

| Grazed Dry Pasture and Rangeland | Quantity | | Costs | | Effects | | | | Implementation | | | | |
|----------------------------------|----------|----------|-----------------|---------------------------|--------------------|---------------|---------|-----|----------------|------|-----|------|-------|
| | Unit | Quantity | Investment Cost | Annual O&M and Mngt. Cost | Water Conservation | Water Storage | Habitat | WQ | EQP | WHIP | WRP | CRFP | Other |
| Practices | | | | | | | | | | | | | |
| Without prescribed grazing | Ac. | 19,215 | | | +/- | -1 | -3 | -3 | | | | | |
| Pond (378) | No. | 2 | \$0 | \$ 100 | | | | | X | | | | |
| Watering Facility (614) | No. | 1 | \$0 | - | | | | | X | | | | |
| Fence (382) | Ft. | 2,132 | \$0 | \$ 100 | | | | | X | | | | |
| With prescribed grazing | Ac. | 96,075 | \$0 | | +/- | +/- | +/- | +/- | | | | | |
| Prescribed Grazing (528) | Ac. | 475 | \$0 | \$ 2,400 | | | | | X | | | | |
| Pond (378) | No. | 4 | \$0 | \$ 200 | | | | | X | | | | |
| Watering Facility (614) | No. | 1 | \$0 | - | | | | | X | | | | |
| Pipeline (516) | Ft. | 135 | \$0 | - | | | | | X | | | | |
| Range planting (550) | Ac. | 60 | \$0 | \$ 100 | | | | | X | | | | |
| Fence (382) | Ft. | 13,000 | \$0 | \$ 500 | | | | | X | | | | |

| Future Conditions | | Rangeland/Pasture | Riparian | Total Acres |
|-----------------------------------|---------|-------------------|----------|-------------|
| Private Dry Pasture and Rangeland | 115,290 | 12,810 | 128,100 | |

Project Future Level of Treatment for Grazed Dry Pasture and Rangelands:

| Practices | Quantity | | Costs | | | Effects | | | | Implementation | | | |
|---|------------|----------------|---------------------|---------------------------|--------------------|---------------|---------|-----------|------|----------------|-----|-----|-------|
| | Unit | Quantity | Investment Cost | Annual O&M and Mngt. Cost | Water Conservation | Water Storage | Habitat | WQ | EQIP | WHIP | WRP | CRP | Other |
| Dry Pasture and Rangeland | Ac. | 115,290 | | | +3 | | | | | | | | |
| Fence (382) | Ft. | 1,902,285 | \$ 1,875,800 | \$ 37,500 | | | | | X | | | | X |
| Firebreak (394) | Ft. | 475,570 | \$ 917,900 | \$ 183,600 | | | | | X | | | | X |
| Pest Management (595) | Ac. | 115,290 | \$ 3,458,700 | \$ 1,152,900 | | | | | X | | | | X |
| Pipeline (516) | Ft. | 1,902,280 | \$ 5,135,800 | \$ 102,700 | | | | | X | | | | X |
| Pond (378) | No. | 46 | \$ 200,000 | \$ 2,000 | | | | | X | | | | X |
| Prescribed Grazing (528) | Ac. | 115,290 | \$ 1,722,200 | \$ 574,100 | | | | | X | | | | X |
| Range Planting (550) | Ac. | 38,050 | \$ 3,419,100 | \$ 34,200 | | | | | X | | | | X |
| Spring Development (574) | No. | 180 | \$ 423,000 | \$ 2,100 | | | | | X | X | | | X |
| Upland Wildlife Management (645) | Ac. | 17,290 | \$ 259,400 | \$ 86,500 | | | | | X | X | | | X |
| Watering Facility (614) | No. | 720 | \$ 718,000 | \$ 14,400 | | | | | X | | | | X |
| Dry Pasture and Rangeland Riparian | Ac. | 12,810 | | | +3 | | | +3 | | | | | |
| Channel Bank Vegetation (322) | Ac. | 120 | \$ 600,000 | \$ 12,000 | | | | | X | | | | X |
| Channel Stabilization (584) | Ft. | 17,250 | \$ 310,500 | \$ 6,200 | | | | | X | | | | X |
| Fence (382) | Ft. | 211,365 | \$ 369,900 | \$ 7,400 | | | | | X | X | | | X |
| Pest Management (595) | Ac. | 12,810 | \$ 384,300 | \$ 128,100 | | | | | X | | | | X |
| Pipeline (516) | Ft. | 211,360 | \$ 570,700 | \$ 11,400 | | | | | X | | | | X |
| Prescribed Grazing (528) | Ac. | 12,810 | \$ 192,200 | \$ 64,100 | | | | | X | | | | X |
| Pumping Plant (533) | No. | 40 | \$ 114,000 | \$ 2,300 | | | | | X | | | | X |
| Riparian Forest Buffer (391) | Ac. | 120 | \$ 360,000 | \$ 3,600 | | | | | X | | | | X |
| Riparian Herbaceous Cover (390) | Ac. | 120 | \$ 6,000 | \$ 100 | | | | | X | X | | | X |
| Streambank & Shoreline Prot (580) | Ft. | 172,510 | \$ 4,140,200 | \$ 414,000 | | | | | X | X | | | X |
| Tree/Shrub Establishment (612) | Ac. | 200 | \$ 90,000 | \$ 900 | | | | | X | | | | X |
| Upland Wildlife Management (645) | Ac. | 1,920 | \$ 28,800 | \$ 9,600 | | | | | X | X | | | X |
| Use Exclusion (472) | Ac. | 640 | \$ 22,400 | \$ 700 | | | | | X | X | | | X |
| Watering Facility (614) | No. | 80 | \$ 80,000 | \$ 1,600 | | | | | X | | X | | X |
| Total RMS Costs | | | \$25,398,900 | \$ 2,852,000 | | | | | | | | | |

| Potential RMS Effects Summary for Private Grazed Dry Pasture and Rangeland | | |
|---|---------------------|---------------------|
| Cost Items and Programs | Costs | O&M Costs |
| Non Farm Bill Programs (5 percent of total) | \$ 1,269,900 | \$ 142,600 |
| Potential Farm Bill Programs 95 percent of total | \$24,129,000 | \$ 2,709,400 |
| Operator O&M and Management Cost | | \$ 2,852,000 |
| Annual Management Incentives (3 yrs - Incentive Payments) | \$ 6,045,600 | |
| Operator Investment (25% Cost Share) | \$ 4,520,900 | |
| Federal Costs (75% Cost Share) | 13,562,500 | |
| Total RMS Costs | \$24,129,000 | \$ 2,852,000 |
| Estimated Level of Participation | | 75% |
| Total Acres in RMS System | | 96,100 |
| Total Annual Forage Production Benefits (acre unit months) | | 19,100 |
| 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 | | |

Big Wood HUC-17040219 Conservation Activities for Forestlands:

| Current Conditions | Grazed | Ungrazed | Total Acres |
|---------------------------------|--------|----------|-------------|
| Total Private Forestlands | 3,680 | 920 | 4,600 |
| Typical Forest Management Unit | | | |
| Current Farm Bill participation | 5% | | |

| Current Level of Treatment for Forestland: | | | | | | | | | | | | | | |
|---|----------|----------|-----------------|---------------------------|--|--------------------|---------------|---------|-----|----------------|------|-----|------|-------|
| Forestlands | Quantity | | Costs | | | Effects | | | | Implementation | | | | |
| | Unit | Quantity | Investment Cost | Annual O&M and Mngt. Cost | | Water Conservation | Water Storage | Habitat | WQ | EQIP | WHIP | WRP | CRFP | Other |
| Practices | | | | | | | | | | | | | | |
| Forestland (Grazed) | Ac. | 3,680 | | | | +/- | +/- | +/- | +/- | | | | | |
| Forestland (Ungrazed) | Ac. | 920 | | | | +/- | +/- | +/- | +/- | | | | | |
| Tree and Shrub Establishment (612) | Ac. | 3 | \$ 1,350 | \$ - | | | | | | X | | | | |

| Future Conditions | Total Acres |
|-------------------|-------------|
| Forest land | 4,600 |

Project Future Level of Treatment for Grazed Forestlands:

| Forestlands | Quantity | | Costs | | Effects | | | | Implementation | | | | |
|-----------------------------------|------------|--------------|--------------------|---------------------------|--------------------|---------------|-----------|-----------|----------------|------|-----|------|-------|
| | Unit | Quantity | Investment Cost | Annual O&M and Mngt. Cost | Water Conservation | Water Storage | Habitat | WQ | EQP | WHIP | WRP | CRFP | Other |
| Practices | Ac. | 4,600 | | | +2 | +2 | +3 | +3 | | | | | |
| Forestland | | | | | | | | | X | | | | X |
| Access Road (560) | Ft. | 151,800 | \$2,125,200 | \$ 318,800 | | | | | X | | | | X |
| Animal Trails and Walkways (575) | Ft. | 28,520 | \$ 142,600 | \$ 7,100 | | | | | X | | | | X |
| Critical Area Planting (342) | Ac. | 460 | \$ 218,500 | \$ 6,600 | | | | | X | | | | X |
| Fence (382) | Ft. | 239,200 | \$ 418,600 | \$ 8,400 | | | | | X | | | | X |
| Firebreak (394) | Ft. | 18,975 | \$ 36,600 | \$ 7,300 | | | | | X | | | | X |
| Forest Site Preparation (490) | Ac. | 1,380 | \$ 345,000 | \$ - | | | | | X | | | | X |
| Forest Stand Improvement (666) | Ac. | 1,150 | \$ 517,500 | \$ 2,600 | | | | | X | | | | X |
| Forest Trails and Landings (655) | Ac. | 46 | \$ 43,700 | \$ 200 | | | | | X | | | | X |
| Pest Management (595) | Ac. | 4,600 | \$ 138,000 | \$ 46,000 | | | | | X | | | | X |
| Pipeline (516) | Ft. | 97,800 | \$ 534,100 | \$ 10,700 | | | | | X | | | | X |
| Prescribed Grazing (528) | Ac. | 4,600 | \$ 69,000 | \$ 23,000 | | | | | X | | | | X |
| Riparian Forest Buffer (391) | Ac. | 200 | \$600,000 | \$6,000 | | | | | X | | | | X |
| Spring Development (574) | No. | 12 | \$ 28,200 | \$ 140 | | | | | X | X | | | X |
| Stream Habitat Improvement (395) | Ac. | 95 | \$1,700,500 | \$ 34,010 | | | | | X | | | | X |
| Streambank&Shoreline Protec (580) | Ft. | 5,565 | \$133,600 | \$13,400 | | | | | X | | | | X |
| Tree/Shrub Establishment (612) | Ac. | 320 | \$ 142,700 | \$ 1,400.00 | | | | | X | | | | X |
| Upland Wildlife Management (645) | Ac. | 920 | \$ 13,800 | \$ 4,600 | | | | | X | X | | | X |
| Watering Facility (614) | No. | 30 | \$ 30,000 | \$ 300 | | | | | X | | | | X |
| Total RMS Costs | | | \$7,237,600 | \$ 490,550 | | | | | | | | | |

| Potential RMS Effects Summary for Private Grazed Forestlands | | | |
|---|--------------------|----------------------|--|
| Cost Items and Programs | Costs | O&M Costs | |
| Non Farm Bill Programs (5 percent of total) | \$ 361,900 | \$ 24,500 | |
| Potential Farm Bill Programs 95 percent of total | \$6,875,700 | \$466,050 | |
| Operator O&M and Management Cost | | \$490,550 | |
| Annual Management Incentives (3 yrs - Incentive Payments) | \$ 220,800 | | |
| Operator Investment (25% Cost Share) | \$1,663,700 | | |
| Federal Costs (75% Cost Share) | \$4,991,200 | | |
| Total RMS Costs | \$6,875,700 | \$490,550 | |
| Estimated Level of Participation | 75% | | |
| Total Acres in RMS System | 3,450 | | |
| Total Annual Forage Production Benefits | 2,300 | | |
| Improves infiltration and storage of water in soil profile | | | |
| Improves upland wildlife habitat for elk, deer, antelope and other species | | | |
| Improves water quality by reducing erosion and sediment delivery to streams | | | |