

Long-billed Curlew

- Short-stature grass species would be used in long-billed curlew (*Numenius americanus*) habitat that is dominated by annual grasses.

c. SSS AQUATIC WILDLIFE

SSS aquatic wildlife includes the ESA listed and candidate species - bull trout (*Salvelinus confluentus*), Utah valvata snail (*Valvata utahensis*), Bliss Rapids snail (*Taylorconcha serpenticola*), Idaho springsnail (*Pyrgulopsis idahoensis*), Snake River physa snail (*Physa natricina*), Bruneau hot springsnail (*Pyrgulopsis bruneauensis*), Banbury Springs limpet (*Lanx* spp.), and Columbian spotted frog (*Rana luteiventris*) - and other species of concern such as redband trout (*Oncorhynchus mykiss gairdneri*) and northern leopard frog (*Rana pipiens*).

- Any treatment within riparian habitats adjacent to bull trout, Utah valvata snail, Bliss Rapids snail, Idaho springsnail, Bruneau hot springsnail, and Snake River physa snail that may likely adversely affect these species, including all instream work such as culvert or bridge repair or replacement would require additional site-specific ESA Section 7 consultation.
- Site-specific ESR project plans would use the January 2004 Version 2.1 interagency NFP consultation process and summary worksheets available on-line at www.or.blm.gov/fcp to verify that site-specific proposals would not adversely affect bull trout or proposed bull trout critical habitat. Any treatment that is likely to adversely affect bull trout or the proposed critical habitat would require site-specific ESA Section 7 conference following *A Framework to Assist in Making ESA Determinations of Effect for Individual or Grouped Action at the Bull Trout Subpopulation Watershed Scale* (USFWS 1998).
- ESR activities would be designed and implemented in a manner such that any impacts to aquatic SSS or bull trout proposed critical habitat due to disturbance or habitat modification, including decreased water quality, would be so small as to be not meaningfully measured, detected, or analyzed, or would be extremely unlikely to occur.
- Aerial seeding within or upstream of riparian habitats that contain SSS aquatic animals would be limited to seed mixtures with no added chemicals such as fertilizer.
- To re-establish or enhance existing riparian habitat for aquatic SSS species and proposed bull trout critical habitat, re-establish native riparian plant species such as sedges, rushes, cottonwood and willow by planting of cuttings or plugs.
- Fence construction would be designed and implemented in a manner such that impacts to water quality and riparian vegetation associated with livestock and/or wild horse use within or upstream of riparian habitats would be so small as to be not meaningfully measured, detected, or analyzed, or would be extremely unlikely to occur.
- Herbicide use would follow the riparian, wetland, and aquatic habitat guidelines in Table 1, below.

Table 1: Streamside, Wetland, and Riparian Habitat Herbicide Restrictions

Herbicide Application Method	Maximum Wind Speed	Riparian Area of Influence	Aquatic Level of Concern Category* for Authorized Herbicides
Aerial	5 mph	>0.5 mile from the Snake River and springs containing listed snail species ^a	Low and Moderate
Aerial	5 mph	>150 feet from outer edge of riparian areas associated with perennial water (includes both fishbearing or non-fishbearing streams) that contain or are upstream of reaches that contain aquatic SSS species ^b	Low and Moderate
Aerial	5 mph	>150 feet from outer edge of riparian areas for intermittent streams that are upstream of reaches containing SSS aquatic species ^b	Low and Moderate
All ground/broadcast spraying methods.	8 mph	>100 feet from livewater but within upland areas where ground based herbicide applications may influence riparian habitat	Low and Moderate
Wicking, dipping, painting, and injecting.	N/A	>100 feet from livewater but within upland areas where ground based herbicide applications may influence riparian habitat	Low and Moderate
No applications of Picloram would be authorized. No use of the surfactant R-900 would be authorized.	N/A	0 to 100 feet from livewater or shallow water tables	N/A
Ground/spot spraying, wicking, wiping, dipping, painting, injecting. No broadcast boom spraying. Selective spraying of target species only (e.g. spot treatment of individual plants).	8 mph	15 to 100 feet from livewater or shallow water tables or within riparian areas	Low

Table 1: Streamside, Wetland, and Riparian Habitat Herbicide Restrictions

Herbicide Application Method	Maximum Wind Speed	Riparian Area of Influence	Aquatic Level of Concern Category* for Authorized Herbicides
Backpack sprayer, hand sprayer, wicking, wiping, dipping, painting, and injecting. Selective spraying/treatment of target species only (e.g. spot treatment of individual plants).	5 mph	<15 feet from livewater or shallow water tables	Aquatic approved herbicides only. No use of surfactants would be authorized.

*Aquatic Level of Concern is a form of risk analysis used by the USFWS based on procedures developed by Environmental Protection Agency to identify a gradual “level of concern” scale, based on how close the Estimated Environmental Concentration value is to a level greater than 1/20 LC 50 risk criteria (i.e. pesticide concentration is 1/20 of the Lethal Concentration that causes mortality in 50% of the test organisms within a specific period of time).

^aCriteria consistent with 2004 Animal and Plant Health Inspection Service Pest Control Letter of Concurrence from Snake River Fish and Wildlife Office.

^bCriteria consistent with 2002 Biological Opinion for BLM Vale District Integrated Noxious Weed Management Program 2001-2010 from Oregon Fish and Wildlife Office.

d. RIPARIAN, WETLAND, AND AQUATIC HABITATS

Riparian and wetland habitats are those portions of a watershed required for maintaining hydrologic, geomorphic, and ecological processes that directly affect streams, stream processes, fish habitats, and where riparian, wetland, and aquatic dependent resources would receive primary emphasis.

- Limit the use of heavy equipment necessary to repair facilities (e.g. culverts and bridges) or where needed to implement rehabilitation treatments (e.g. gabion placement) in riparian, wetland, and aquatic habitats.
- Off road vehicle access would be limited to designated crossings or work areas during ESR treatments to minimize disturbance in riparian, wetland, and aquatic habitats.
- Non-target plant mortality related to ESR treatments would be monitored in riparian and wetland areas to determine what affect, if any the mortality has on riparian or wetland function.

e. SPECIAL MANAGEMENT AREAS

Areas of Critical Environmental Concern

- Areas of Critical Environmental Concern (ACEC) burned in wildland fire would be treated to protect the values for which the area was established and in conformance with specific management directions in the existing LUPs and Activity Plans.
- ESR treatments would: 1) maintain the suitability of proposed Wild and Scenic River segments for inclusion in the National Wild and Scenic River System, 2) protect and prevent irreparable damage to the important historic and cultural sites, and areas with high scenic values, and 3) protect fish and wildlife resources, or other natural systems or processes in

ACECs, Outstanding Natural Areas (ONAs), Research Natural Areas (RNAs), and the other Visual Resource Management (VRM) Class I viewsheds.

Wilderness Study Areas

- Emergency Stabilization in Wilderness Study Areas (WSAs) would be evaluated under the guidelines found in the Bureau's Interim Management Policy and Guidelines for Lands under Wilderness Review (IMP) H-8550-1, the Boise District Wilderness Interim Management Plan, and the Interagency Burned Area Emergency Stabilization and Rehabilitation Handbook. Emergency stabilization treatments required to stabilize soils and rehabilitate vegetation in the long term would be conducted in a manner that would not impair wilderness suitability. Treatments would utilize the minimum tool and methods designed to enhance or restore wilderness resources. Impacts from the equipment used for seeding must be the least intrusive necessary to obtain a successful seeding.
- Due to the emergency nature of stabilization treatments and the short time frames for ES Plan approval, 30 day public notification of proposals within WSAs would not be feasible. Direct contact with interested wilderness groups would be implemented immediately during or after an occurrence of a wildland fire incident and as soon as it is apparent that ES treatments would be required.
- Seeding and planting proposals within WSAs would utilize native species.
- Protection fences within WSAs would be strictly temporary in nature, and removed after vegetation has reestablished. The least damaging fence construction installation methods would be used to prevent new route construction and preserve visual resources.
- New road and new route networks would not be established, or would be disguised and restored to prevent further use.
- Cross-country travel would be minimized.

f. CULTURAL RESOURCES

- The use of heavy, surface disturbing equipment would be restricted in the Silver City, DeLamar, and Guffey Butte/Black Butte historic districts.
- The Kelton Road and Goodale's Cut-off (a variant of the Oregon Trail) would be treated in accordance with the *Oregon Trail Management Plan for the Boise District* (USDI BLM 1984) where appropriate.
- A 0.25 mile wide corridor would be maintained around either side of the Union Pacific (Oregon Short Line) Railroad in the Four Rivers Field Office for protection of cultural resource values.
- Alternatives to ground disturbing seeding methods would be considered and implemented in Special Management Areas (SMAs) following guidelines for historic trails and districts and in consideration of the goal to improve land health.
- Site areas within the burn area would be flagged for avoidance by surface disturbing activities and would receive vegetative treatments, including weed controls that are the same as the surrounding burn area except for application methods.
- VRM guidelines and specifications of the Oregon National Historic Trail (NHT) and other scenic values would be protected by design specifications that would allow ESR treatments to occur seamlessly across the landscape while maintaining the historic vegetation structure, wherever feasible.

- If treatments are necessary to stabilize soils, prevent noxious and invasive weed colonization and/or rehabilitate burned areas, surface disturbance treatments within the designated viewshed of 0.25 to 0.5 mile on both sides of the Oregon NHT including the main, north, and south alternate routes would be designed by a cultural resource specialist and approved by management in consultation with the Idaho SHPO.

3. MONITORING

The treated areas would be considered recovered and available for livestock and/or wild horse grazing when the following conditions have been met. Additional individual ESR plan objectives may be developed on a site by site basis depending on individual site specific needs.

1. The majority of desired herbaceous perennial plants are producing seed.
2. The plants must have developed root systems that are extensive enough to provide soil stabilization and prevent uprooting when grazed, especially when soils are moist.
3. The Individual ESR Plan objectives have been met.

All ESR plans would include treatment monitoring in order to: 1) determine if plan objectives were met, 2) establish the need for additional treatments, 3) Determine if grazing can be resumed, and 4) document monitoring results (USGAO 2003). Monitoring and evaluation of ESR treatments would be implemented to ensure that treatments are properly implemented, effective, and maintained. Monitoring methods may be qualitative or quantitative, and would be commensurate with the level of treatment complexity and extent. Monitoring and evaluation information would provide adaptive management feedback to improve future ESR treatment performance.

The methods used to monitor the treated area may include field observations, photographic plots, and cover transects utilizing the line-point intercept and density plot methods. Monitoring during the first post-fire growing season would consist of monitoring the success of annual vegetation control (herbicide) or establishment of first year seedlings (following a fall seeding). Chemical treatment monitoring would be primarily field observations and photographic plots of fall treatment areas to determine the level of success and/or the need for a second treatment the following spring. First year fall seedlings would be monitored primarily by field observations and photographic plots to determine germination success and/or the need for a retreatment.

Monitoring during the second growing season would focus on the success of seeding treatments. A third year of seeding success monitoring may be needed if the burn area was chemically treated, or if drought or other environmental factors may have contributed to plan objectives not being met. Monitoring guidelines would follow the interagency ESR guidelines listed below.

- Monitoring and evaluation to determine the effectiveness of treatments would be funded for up to three years following control of a fire. Funding beyond the first year of monitoring requires submission of annual accomplishment report(s) on success/failure of treatments.
- Monitoring needs, designs, and protocols would be developed in the incident-specific ESR plans.
- Effectiveness monitoring would be done to determine if the treatment was effective in meeting ESR Plan objectives.
- Recovery of both seeded and unseeded areas would be monitored on a yearly basis to determine when the availability of forage is adequate to resume livestock and/or wild horse

grazing. The burned areas would be considered recovered and available for grazing when key perennial, herbaceous plants are producing seed, root systems are established to anchor seeded plant species, and objectives outlined in individual ESR plans have been met.

- A summary of acreages and locations of site-specific actions associated with ESA listed, proposed, and candidate species and/or proposed or designated critical habitat would be submitted to the USFWS by March 1 of each year.
- In the event of an Emergency Stabilization treatment failure, an amended ES Plan that identifies the treatment failures and justifies the funding extension and additional funding needs would be required.

III. AFFECTED ENVIRONMENT

The following discussions focus on those aspects of the physical, biological, and human environments most likely to be affected by the proposed NFRP. These discussions are not intended to be a comprehensive catalog of the District’s resources. Resources that are unlikely to be affected by the proposed project are not described or are only briefly described in this section. Table 2 lists the critical elements that must be considered in accordance with specific executive orders.

Table 2: BLM Boise District Critical Element

Consideration of Critical Elements	N/A or Not Present	Applicable/ Present No Impact	Discussed In EA
Air Quality			X
Areas of Critical Environmental Concern			X
Cultural Resources			X
Environmental Justice (E.O. 12898)	X		
Farm Lands (prime or unique)	X		
Invasive, Non-native Species			X
Migratory Birds			X
Native American Religious Concerns			X
Threatened or Endangered Species			X
Wastes, Hazardous Substances or Solid Wastes			X
Water Quality			X
Floodplains			X
Wetland/Riparian Zones			X
Eligible Wild & Scenic Rivers			X
Wilderness			X

A. SOILS

Boise District soils are extremely diverse. This diversity is a result of parent material variability, slope, aspect, elevation, climate, and vegetative communities. The soils may be separated using three major physiographic regions: 1) Snake River Sediments, 2) Volcanic Plateaus, Hills, and Plains, and 3) Granitic Mountains and Foothills.

Snake River Sediments

Soils in these areas occur on nearly level to very steep, dissected sedimentary terraces. These soils formed in alluvium and residuum derived from sedimentary materials and mixed volcanics. They are moderately deep to very deep; well drained to excessively drained; have an aridic or aridic bordering xeric soil moisture regime; and a mesic soil temperature regime.

Volcanic Plateaus, Hills, and Plains

Soils in these areas occur on nearly level to hilly structural benches, tablelands, foothills, and mountains. The soils in the more hilly areas formed in residuum and slope alluvium derived from welded rhyolitic tuffs. The soils on the structural benches and tablelands formed in alluvium and residuum derived from basalt and welded rhyolitic tuff. These soils are shallow to moderately deep and well drained; have a xeric or xeric bordering aridic soil moisture regime; and a mesic or frigid soil temperature regime.

Granitic Mountains and Foothills

Soils in these areas occur on undulating to steep granitic foothills and mountains. These soils formed in residuum, colluvium, and alluvium derived mainly from intermediate intrusive rock. They are shallow to moderately deep; well drained to somewhat excessively drained; have a xeric soil moisture regime; and a mesic or frigid soil temperature regime. These soil types have low to very high erosion potential from wind and/or water depending on surface texture and slope. Soil erosion potential from wind is based on the Wind Erodibility Group. Soils rated from 1 to 4 have high wind erosion potential.

Soil erosion potential from water is based on the soil Erosion Susceptibility Factor (K) and slope. Soils with a K equal to or greater than 0.43 are classified as high water erosion potential. Soils that occur on slopes exceeding 30 percent are also classified with a high erosion potential. Other soils are rated on a combined factor of these two parameters. Erosion from water is the primary concern and occurs in the form of sheet, rill, and gully processes. These processes are most active on soils that occur in the Snake River Sediments and Granitic Mountains. Anthropomorphic accelerated erosion in these regions is predominantly related to historic and current livestock grazing, and off highway vehicle (OHV) use. The major impacts of livestock grazing have been from concentrated use, such as areas around water troughs, and trailing that is usually associated with water, salting areas, and fencelines. OHV use has resulted in trails and disturbance of hillslope soils. The most severe forms of erosion, rill, and gully formation have resulted from these actions.

B. WATER

Precipitation in the Boise District ranges from less than 8 inches along the Snake River Plain to greater than 20 inches in the Owyhee Mountain Range. The Boise District contains more than 1,200 miles of perennial streams. The major drainages include the Bruneau, Owyhee, South Fork Boise, and Payette rivers. All waters draining the Boise District eventually enter into the Snake River. Many streams begin as high gradient, high energy tributaries at elevations greater than 5,000 feet. Snowmelt runoff processes dominate stream flow hydrographs for waterways with the majority of their drainage areas higher than 5,000-foot elevation. Peak runoff generally occurs from March through May. High intensity, short duration rainstorms are common in summer and fall, coincident with the wildfire season, and often result in flash floods that are typified by high sediment loads.

The predominant water quality parameters related to the effects of fire are: 1) fine sediment deposition, 2) temperature increases due to solar heating when streamside canopy cover is removed, and 3) nutrient loading. Approximately 825 stream miles in the Boise District are listed on the State of Idaho's 303(d) list for sediment impairment; 185 stream miles are listed for temperature impairment; and 120 miles are listed for nutrient impairment (IDEQ 1998). These waters do not fully support their beneficial uses.

Idaho Department of Environmental Quality (IDEQ) has developed Total Maximum Daily Load (TMDL) allocations and TMDL Implementation Plans for most 303(d) listed waters in the District. The TMDL Implementation Plans prescribe Best Management Practices (BMPs) to address the water quality concerns (IDEQ 2003a; 2003b; 2000). Fire effects are not factored into the TMDL Implementation Plans as they are beyond the scope and intended application.

C. FLOODPLAINS/WETLANDS/RIPARIAN ZONES

The Boise District contains approximately 1,200 miles of stream associated riparian areas. Riparian assessments show that less than 60 percent of these areas are functioning properly. A riparian area is considered to be functioning properly when adequate vegetation, landform, or large woody debris are present to dissipate streamflow energy, filter sediment, capture bedload, build floodplains, detain floodwaters, recharge groundwater, and provide good quality fish and wildlife habitat. The District also contains approximately 1,500 individual seep or spring associated wetlands.

D. AIR

Under the Clean Air Act (as amended 1990) BLM-administered lands were given Class II air quality classification which allows for moderate deterioration associated with moderate, well-controlled industrial and population growth. Ada County and the area surrounding the Boise metropolitan area is a 10 micron particulate matter (PM10) and carbon monoxide (CO) maintenance area.

Strong winds may carry large amounts of dust and ash into the air after a fire occurs. On occasion, the dust and ash can cause reduced visibility, and drift into roads, ditches, and other low spots where it can hamper traffic and contribute to accidents. Water quality may also be affected. If the dust is blown into nearby communities, numerous complaints may occur.

E. VEGETATION

Appropriate monitoring of the potential effects of ESR treatments on native vegetation and species inventories would be conducted within an ESR project area. Where SSS plants are encountered, the area would be flagged and avoided, if at all practicable. Otherwise, potential impacts to SSS plants would be minimized by implementation of specific design features (Chapter 2) and BMPs.

1. GENERAL VEGETATION

The following common vegetation cover types in Table 3 are the habitats where wildland fire typically occurs, and ESR treatments are typically implemented on the Boise District.

Table 3: Boise District Vegetation Covertypes

Cover Type	Description
Low-Elevation Shrub-Steppe	Wyoming big sagebrush, basin big sagebrush, low sagebrush, bitterbrush, gray and green rabbitbrush with native grass and forb understory.
Perennial Grass	Seeded areas (native and exotic) and native grasslands (e.g. bluebunch wheatgrass, needlegrass, Idaho fescue). Perennial, native grassland is a seral stage of low and mid-elevation shrub-steppe.
Annual Grass	Primarily cheatgrass and medusahead wildrye. This is a dysfunctional, alternate stable state covertime that results from the disturbance of low and mid-elevation shrub steppe.
Mid-Elevation Shrub-Steppe	Mountain big sagebrush, low sagebrush, black sagebrush, and bitterbrush with native grass and forb understory.
Juniper	Western juniper and limber pine. Western juniper encroachment in sagebrush-steppe and riparian habitats.
Dry Conifer	Douglas-fir, limber pine, and ponderosa pine.
Aspen/Conifer	Includes healthy stands of aspen and stands of aspen as well as invading conifer.
Mountain Shrub	Serviceberry, ceanothus, snowberry, mountain mahogany, big-tooth maple, chokecherry, and antelope bitterbrush with a native grass and forb understory.
Wet/Cold Conifer	Lodgepole pine, sub-alpine fire, and Engelmann spruce.
Riparian Areas	Streamside and wetland areas of cottonwood and willow as well as graminoid (grass/sedge/rush) communities.
Salt Desert Shrub	<i>Atriplex</i> species (four-wing, shadscale), spiny hopsage, winterfat, and greasewood with a native grass, forb, and biological crust understory.

The 11 vegetation covertypes in Table 3 were aggregated from 51 vegetation covertypes originally classified by the GAP analysis program for southern Idaho (Scott *et al.* 1993; 2002). The GAP program is used to assess the conservation status of native vertebrate species, habitat loss, and natural land vegetation covertypes at a regional level in order to meet the needs of natural resources management agencies like the BLM. GAP uses Landsat Thematic Mapper satellite images to generate the digital maps from which land cover patterns are delineated. The minimum mapping unit is 30 square meters which is a landscape level resolution sufficient for regional-level planning. However, this resolution might not accurately represent actual Boise District acres on-the-ground.

Low-Elevation Shrub-Steppe

The Low-Elevation Shrub-Steppe covertime is dominated by Wyoming big sagebrush (*Artemisia tridentata wyomingensis*) and basin big sagebrush (*Artemisia tridentata tridentata*). This covertime is found in areas with about 8 to 12 inches of average annual precipitation and warm soils. Low-Elevation Shrub-Steppe historically had long fire return intervals (60-100+ years). Much of the Low-Elevation Shrub-Steppe is comprised of degraded rangelands that have been invaded by annual, exotic vegetation. Basin big sagebrush occurs on deep and well-drained sandy soils. Wyoming big sagebrush occurs on finer-textured, shallow soils with limited water infiltration. Gray rabbitbrush (*Chrysothamnus nauseosus*) and green rabbitbrush (*Chrysothamnus viscidiflorus*) re-sprout

following disturbance, and may be a co-dominant in sagebrush communities that have been influenced by fire.

Understory vegetation associated with Low-Elevation Shrub-Steppe is dominated by perennial grasses and a variety of annual and perennial forbs. Dominant grasses include bluebunch wheatgrass (*Pseudoroegneria spicata*), western wheatgrass (*Pascopyrum smithii*), thickspike wheatgrass (*Elymus macrourus*), Thurber's needlegrass (*Achnatherum thurberianum*), Sandberg bluegrass (*Poa secunda*), bottlebrush squirreltail (*Elymus elymoides*), needle-and-thread grass (*Hesperostipa comata*), Indian ricegrass (*Achnatherum hymenoides*). Common forbs include long-leaf phlox (*Phlox longifolia*), Hood's phlox (*Phlox hoodii*), Hooker's balsamroot (*Balsamorhiza hookeri*), taper-tip hawkbeard (*Crepis acuminata*), fern-leaved desert-parsley (*Lomatium dissectum*), and woolly-pod milkvetch (*Astragalus purshii*). Low-Elevation Shrub-Steppe communities in good condition may support biological soil crusts in the interspaces. The composition of biological crusts is dependent on soil texture and chemistry, but is usually dominated by lichens, mosses, and cyanobacteria.

Perennial Grass

Historically, native Perennial Grass coverte type formed part of the seral mosaic of the sagebrush-steppe, although it is unclear how widespread they were across the landscape. Perennial Grass is considered an early to intermediate seral stage, and is comprised of native sites with Idaho fescue (*Festuca idahoensis*), bluebunch wheatgrass, western wheatgrass, thickspike wheatgrass, Thurber's needlegrass, Sandberg bluegrass, needle-and-thread grass, Great Basin wildrye (*Leymus cinereus*), and Indian ricegrass, as well as seedings of exotic and native perennial grass cultivars such as crested wheatgrass, Siberian wheatgrass (*Agropyron fragile*), Snake River wheatgrass (*Elymus wawawaiensis*), bluebunch wheatgrass, thickspike wheatgrass, and Great Basin wildrye. Perennial grasslands would eventually develop into diverse sagebrush-steppe habitat if undisturbed for 20 to 70 years, without further disturbance from wildland fires. Biological soil crusts with compositions similar to those found in low and mid-elevation shrub-steppe can occur in good condition perennial grasslands, depending on time since fire and seeding disturbance (Hilty *et al.* 2004).

Perennial grasslands dominated by crested wheatgrass or other non-native cultivars are stable communities that do not trend toward recovery to sagebrush-steppe habitat as quickly as native perennial grasslands. Crested wheatgrass has a loose crown and burns quickly, so is less susceptible to fire damage from heat transfer to the roots than other bunchgrasses. It is moderately flammable, produces a moderate amount of litter, is competitive, has an extensive range, and is a good resprouter. A mature stand of crested wheatgrass can help control annual grassland fires by acting as a fuel break, particularly in sagebrush-steppe habitats (Monsen 1994). Sagebrush re-establishment in crested wheatgrass stands is apparent in portions of the Boise District. On more suitable sites and in higher precipitation zones, sagebrush will typically reclaim exotic seedings in 20 or 30 years.

Annual Grass

The Annual Grass coverte type was not part of the District's historical vegetation. Cheatgrass and medusahead wildrye (*Taeniatherum caput-medusae*) form a dysfunctional, stable state coverte type in highly disturbed sagebrush-steppe (Laycock 1991). Once annual grasslands and their associated fire regime have become established, it is extremely difficult to regain a perennial dominated community.

The presence of cheatgrass and medusahead wildrye extends the time during which the community is susceptible to wildland fire ignitions because these species ripen earlier in the growing season than most native perennials. Both species are winter annuals that can germinate between autumn and spring when temperature and soil moisture conditions are suitable. Native grasses are dormant through winter, and germinate and grow later in the spring. This difference in phenology gives the exotic annuals a competitive edge over the native perennials.

The criteria for establishing when exotic annual grasses become an invasive or fire concern are not readily assigned. The BLM estimates about five percent cover as an invasive concern, and 15 to 20 percent as a fire/fuels concern (both percentages are relative to associated species). As previously noted, degraded sites are most susceptible to annual grass invasion after disturbance, and an abundance of exotic annual grasses in the understory enhances the likelihood of fire spread and conversion of sagebrush-steppe to annual grassland.

Mid-Elevation Shrub-Steppe

The Mid-Elevation Shrub-Steppe covertime occurs from about 5000 to 7500-foot elevation in precipitation zones that range from 12 to 20 inches annually. Mid-Elevation Shrub-Steppe occurs on cooler soils, and often has more intact native communities than the low elevation shrub type. Dominant shrubs are mountain big sagebrush (*Artemisia tridentata vaseyana*), gray rabbitbrush, green rabbitbrush, low sagebrush (*Artemisia arbuscula*), black sagebrush (*Artemisia nova*), and antelope bitterbrush (*Purshia tridentata*). Early low sagebrush (*Artemisia longiloba*) and silver sagebrush (*Artemisia cana*) dominate minor communities.

Mid-Elevation Shrub-Steppe is less vulnerable to conversion to annual grasslands than Low-Elevation Shrub-Steppe, however, exotic annual grasses can invade and dominate these communities, particularly drier/warmer and/or degraded sites. Juniper has invaded some mid-elevation shrub communities in the Owyhee Field Office as a result of fire suppression.

Perennial grasses such as Idaho fescue, bluebunch wheatgrass, prairie junegrass (*Koeleria cristata*), and Sandberg bluegrass dominate the understory of Mid-Elevation Shrub-Steppe. Perennial forbs are also important understory components of this type and may include arrowleaf balsamroot (*Balsamorhiza sagittata*), Indian paintbrush (*Castilleja* spp.), owl-clover (*Orthocarpus* spp.), beardtongue (*Penstemon* spp.), and buckwheat (*Eriogonum* spp.).

Biological soil crusts may be present in Mid-Elevation Shrub-Steppe on drier sites with a lower density of understory vegetation. Low sagebrush, black sagebrush, and early low sagebrush communities often have well-developed biological crusts that occupy the soil between the rocks and tends to be abundant on sites supporting these shrubs. These crusts tend to be dominated by a diversity of lichens and mosses. Areas with juniper encroachment often have a mat of twisted moss (*Tortula ruralis*) where there is no competition from herbaceous understory vegetation. Unlike many biological crust components, this moss is tolerant of shading and moisture from the juniper overstory.

Juniper Woodlands

The Juniper Woodlands coertype includes stands of western juniper (*Juniperus occidentalis*), as well as areas where juniper has encroached into riparian, mid-elevation shrub-steppe, and mountain shrub vegetation types. Western juniper stands occur in fire-safe habitats such as shallow soil, rocky areas and lava flows. It provides important habitat for a diversity of non-game birds, bats, deer, elk, and other wildlife.

Junipers primarily occur between 4,500 to 7,000-foot elevation on a wide variety of soils and in 10 to 15 inch precipitation zones. Western juniper is common in the southwestern portion of the Owyhee Field Office, and is primarily responsible for encroachment into sagebrush-steppe, mountain shrub, riparian, and aspen communities.

Biological soil crusts may be present in juniper depending on soil characteristic, precipitation, and density of the herbaceous understory. These crusts are dominated by lichens, mosses, and cyanobacteria. Areas with juniper encroachment often have a mat of twisted moss (*Tortula ruralis*) where there is no competition from herbaceous understory vegetation. This moss is tolerant of shading and moisture from the juniper overstory, unlike many other biological crust components.

Dry Conifer

The Dry Conifer coertype includes Douglas-fir (*Pseudotsuga menziesii*), lodgepole pine (*Pinus contorta*), and ponderosa pine (*Pinus ponderosa* var. *scopulorum*). All three of these conifer types provide valuable habitat for deer and elk, as well as numerous small mammals and breeding birds. Douglas-fir occurs between 6,000 to 8,000-foot elevations on variable soils in 20 to 30 inch precipitation zones. Douglas-fir stands often occur between ponderosa pine and spruce-fir communities, and as isolated patches on cool, north slopes.

Ponderosa pine occurs between about 5,000 to 7,600-foot elevation on a variety of soils in 15 to 30 inch precipitation zones. It occurs on warmer, drier sites compared to Douglas-fir. Interior ponderosa pine evolved under a regime of frequent surface fires and infrequent mixed severity and stand replacement fires, however, ecological changes that have occurred over the last century (e.g. logging overstory pines, climate change, and fire suppression) have created dense understory, closed canopy stands which provide high levels of ladder fuels. In the past, severe, stand replacing fires were an infrequent occurrence in interior ponderosa pine forests, however, they have now become more common (Arno and Harrington 1995).

Lodgepole pine is a pioneer species that grows in a wide range of ecological conditions from low to high elevations. High-intensity fire generally exposes mineral soil, opens serotinous cones, and releases seed onto favorable seedbeds which results in abundant and rapid seedling establishment (USDA Forest Service 2004).

Aspen/Conifer

The Aspen/Conifer coertype occurs between 5,500 to 8,000-foot elevations on a variety of soils, but is best supported in deep, moist, loamy soils in a range of precipitation zones (16 to 40 inches average annually). Aspens occur in pure stands or in association with various conifers such as Engelmann spruce, lodgepole pine, ponderosa pine, and Douglas-fir. Aspen also occur as inclusions in the mid-elevation shrub-steppe and mountain shrub vegetation types. Aspen communities can be

a climax stage or a seral stage to climax conifer communities. Although conifer invasion is a natural pattern in many aspen stands, long-term fire suppression has resulted in an increased representation and dominance by conifers in aspen stands, reducing the extent of aspen-dominated stands and increasing fire hazard.

Mountain Shrub

The Mountain Shrub coevertype occurs as a transition community between sagebrush-steppe and conifer types. Mountain Shrub is found at moderately high elevations, often in a mosaic with Douglas-fir and aspen communities, on sites that are more mesic than sagebrush-steppe (14 to 16 inch precipitation zones) but drier than aspen (18 to 24 inch precipitation zones). Mountain shrub is usually found on north and east slopes that tend to be cooler and moister than south and west aspects. Mountain Shrub is a highly diverse type containing chokecherry (*Prunus virginiana*), serviceberry (*Amelanchier alnifolia*), currant (*Ribes* spp.), mountain snowberry (*Symphoricarpos oreophilus*), and elderberry (*Sambucus racemosa*), often intermingled with mountain big sagebrush. Mountain mahogany (*Cercocarpus ledifolius*) occurs on rocky, often fire-resistant inclusions. The Mountain Shrub coevertype, with its high productivity and diverse herbaceous understory, provides important ecosystem biodiversity, wildlife habitat, and protective ground cover.

Mountain Shrub communities generally recover rapidly following wildland fire and are considered to be fire tolerant. All mountain shrubs re-sprout after fire except for mountain big sagebrush and mountain mahogany.

Sites dominated by antelope bitterbrush occur in the Low-elevation Shrub-steppe zone from 3,500 to 5,500-foot elevation. Bitterbrush is often intermingled with big sagebrush coevertypes, and occurs in open stands with an understory of bluebunch wheatgrass, Idaho fescue, Sandberg bluegrass, and needle-and-thread grass (*Hesperostipa comata comata*). Antelope bitterbrush is very susceptible to fire kill. It is considered a weak sprouter and is often killed by summer or fall fires. High fuel consumption increases mortality and therefore favors seedling establishment.

Wet/Cold Conifer

The Wet/Cold Conifer coevertype occurs at high elevations in the colder, more humid environment above the Douglas-fir community. Wet/Cold Conifer is mainly dominated by lodgepole pine. Other localized dominants include Engelmann spruce (*Picea engelmannii*) and sub-alpine fir (*Abies lasiocarpa*). At lower and mid-elevation sites, subalpine fir occupies areas that are too wet, too dry, or too low in nutrients for Engelmann spruce. At higher elevations it is not uncommon to find pure stands of Engelmann spruce. Spruce-fir communities occur above 7,000-foot elevation on shallow soils in 30 to 40 inch precipitation zones. Lodgepole pine communities occur above 6,000 feet on a variety of soils in 15 to 30 inch precipitation zones. Lodgepole pine is often regarded as an early seral stage for spruce-fir and Douglas-fir communities. The Wet/Cold Conifer type is uncommon in the Burley and Shoshone field offices, and is limited to small microsites.

Wetland and Riparian

The Riparian and Wetland coevertypes are areas of land directly influenced by permanent water or seasonably high water tables. These areas have vegetation, soil, and hydrologic features which reflect moist or saturated conditions. The dominant vegetation coevertypes in these communities are riparian deciduous trees, riverine riparian, riparian herbaceous, riparian shrubs, wet meadow, deep

marsh, and shallow marsh. Riparian areas and wetlands are of disproportional importance to wildlife, water quality, aquatic habitat, and watershed function, and have always been naturally limited in the arid and semi-arid West. Riparian areas generally can be identified by typical riparian vegetation such as cottonwoods (*Populus* spp.), willows (*Salix* spp.), sedges (*Carex* spp.), and rushes (*Juncus* spp.). Riparian areas and wetlands constitute only a fraction of the total land area, but they are the most productive in terms of plant and animal species. Riparian areas and wetlands can be found scattered throughout the District and occur at all elevations. Although riparian areas and wetlands can act as fuel breaks, they do not necessarily act as fire barriers. Studies suggest that historical fires regularly affected riparian areas (Olson 2000).

Salt Desert Shrub

The Salt Desert Shrub covertime is dominated by halophytes and succulent shrubs that are saline tolerant, including: four-wing saltbush (*Atriplex canescens*), shadscale (*A. confertifolia*), winterfat (*Krascheninnikovia lanata*), budsage (*Artemisia spinescens*), and greasewood (*Sarcobatus vermiculatus*). Common grasses include inland saltgrass (*Distichlis stricta*), alkali sacaton (*Sporobolus airoides*), Indian rice-grass (*Oryzopsis hymenoides*), and bottlebrush squirreltail (*Elymus elymoides*). Greasewood favors deeper soils with an accessible water table, as well as high pH and alkaline content. Biological soil crusts are common in good condition Salt Desert Shrub communities due to sparse vegetative cover, large interspaces, and fine-textured soils with high calcium carbonate or saline content at the surface. These crusts are primarily dominated by lichens and cyanobacteria.

Productivity in this type is relatively low, understory vegetation is naturally sparse, and fuels are generally light. The natural fire rotation in the Salt Desert Shrub type is very long, 100 years or more. At present, cheatgrass has invaded some Salt Desert Shrub but has not result in large scale changes in the fire ecology of this vegetation type.

Invasive Non-Native Plants

In addition to cheatgrass and medusahead wildrye invasions, vegetation resources are also threatened by a variety of noxious weeds listed by the State of Idaho. Species such as diffuse knapweed (*Centaurea diffusa*), Russian knapweed (*Acroptilon repens*), spotted knapweed (*Centaurea biebersteinii*), Canada thistle (*Cirsium arvense*), leafy spurge (*Euphorbia esula*), and rush skeletonweed (*Chondrilla juncea*) have exhibited a tendency to increase and expand following wildland fires. This is especially true in disturbed or degraded areas such as roads, trails, livestock developments, and annual vegetation types.

Noxious weeds that were previously unknown from a site are often discovered following a wildfire. This may be due to the fact that established noxious weeds re-grow quickly and are more easily seen after a fire removes the vegetation around them. The removal of other vegetation effectively reduces competition and allows noxious weeds to become established in areas where they were not previously found.

2. SPECIAL STATUS PLANTS

The SSS plants are the ESA listed, proposed and candidate species, and BLM sensitive species. Listed and proposed species may also have ESA designated or proposed critical habitat. The policy of the BLM is to conserve ESA listed, proposed, and candidate species, including their habitats, and to mitigate adverse impacts to sensitive species.

Idaho BLM and the Idaho Department of Fish and Game (IDFG) have jointly identified and published a list of all Idaho Special Status Species (SSS). The term SSS includes all ESA listed, proposed, and candidate species as well as BLM sensitive species that were identified in coordination with IDFG. The SSS list and MOU are contained within Instruction Memorandum (IM) ID-2003-057 and available at the Boise District, Idaho State Office of the BLM (ISO) and BLM website.

There are no ESA listed, proposed, or candidate plants in the project area, however, slickspot peppergrass has a Candidate Conservation Agreement in place which outlines BLM management prescriptions (GOSC *et al.* 2003). There are also 79 BLM sensitive vascular plant species and three non-vascular sensitive plant species that occur, or are expected to occur, in the project area.

a. SLICKSPOT PEPPERGRASS

Slickspot peppergrass, an annual or sometimes biennial forb is a BLM sensitive species managed by the Candidate Conservation Agreement. Flowering occurs May through June. This Idaho endemic occurs only in semi-arid sagebrush-steppe habitats between 2,200 and 5,400-foot elevation in southwestern Idaho, including the Snake River Plain, Owyhee Plateau, and adjacent foothills in southwestern Idaho (Ada, Canyon, Elmore, Gem, Owyhee and Payette counties) (USFWS 2003a; GOSC *et al.* 2003). Native species that co-occur with slickspot peppergrass include Wyoming big sagebrush, big sagebrush, bluebunch wheatgrass, Thurber's needlegrass, Sandberg bluegrass, and bottlebrush squirreltail. Non-native species that are frequently associated with slickspot peppergrass include cheatgrass, tumble mustard (*Sisymbrium altissimum*), bur buttercup (*Ranunculus* spp.), clasping pepperweed (*Lepidium perfoliatum*), and introduced, perennial grasses. Threats to this species include degradation of slickspot habitat and surrounding areas, trampling from livestock, and weed invasion.

Sixty-five percent of the known extant occurrences of slickspot peppergrass are on land managed by the BLM or the U.S. Air Force (USFWS 2003a). The plant typically grows in small, sparsely vegetated "slickspots" (i.e. mini-playas or nitric sites) within larger sagebrush habitat. The slickspots may be as small as a square foot, or as large as half a basketball court, and usually are surrounded by big sagebrush, native bunchgrasses, wildflowers, mosses, and lichens. These microsites are often lower than surrounding areas, have impermeable soil layers, and retain water longer than the surrounding soil. Population modeling indicates the importance of years with above average precipitation in restocking the slickspot peppergrass seedbank.

b. OTHER SENSITIVE PLANTS

Sensitive plants occur in a wide diversity of habitats and soils. The majority of BLM sensitive plant species in the project area occur in big sagebrush habitat. The Type 2 species that are rangewide/globally imperiled and commonly occur in the Boise District are discussed below.

Aase's Onion

Aase's onion (*Allium aasseae*) is a perennial forb that occurs on coarse, sandy soil; most commonly on steep southerly and westerly exposures. It is typically found on or near ridgetops in sagebrush-grass communities, often with pineland threeawn (*Aristida stricta*) and bitterbrush species, from approximately 2,600 to 4,900-foot elevations. Aase's onion is endemic to Idaho in the lower

foothills from Boise to Weiser in Ada, Boise, Gem, Payette, and Washington counties. Threats include urbanization, sand mining, off-road vehicles, invasion of annual weedy grasses, and other exotics. Flowering occurs in late February through April.

Packard's Milkvetch

Packard's milkvetch (*Astragalus cusickii* var. *packardiae*) is a perennial forb that occurs on sparsely vegetated, light colored soils, usually with Wyoming big sagebrush, at approximately 2,800-foot elevation. It is endemic to tributaries of Big and Little Willow creeks in Payette County, Idaho. Flowering occurs from May through July.

Mulford's Milkvetch

Mulford's milkvetch (*Astragalus mulfordiae*) is a perennial forb that occurs on typically south-facing, sandy slopes and ridges with needle-and-thread grass, Indian ricegrass, and bitterbrush species from approximately 2,100 to 2,800-foot elevations. It is found in the western part of the Snake River Plain in Ada, Owyhee, Payette, and Washington counties, Idaho. Threats include urbanization and grazing. It appears to be destroyed by grazing and is now found only in pristine sites. Flowering occurs in May through June.

Palmer Evening-Primrose

Palmer evening-primrose (*Camissonia palmeri*) is a low growing, tap-rooted annual or winter-annual. It occurs on dry, open, sandy places in the desert from the creosote bush (*Larrea tridentata*) zone up into the sagebrush-juniper zone. Typically it is found in Malheur County, Oregon. Flowering occurs in March through June.

Parry's Sedge

Parry's sedge (*Carex parryana* Dewey var. *brevisquama*) occurs on dry gumbo or gravelly soils in riparian/wetland areas. Also called "Indian Valley" sedge, it is endemic to the Indian Valley area of Adams County, Idaho and the Four Rivers Field Office. Flowering occurs from June through July.

Cusick's Pincushion

Cusick's pincushion (*Chaenactis cusickii*) is an annual forb that occurs in open places on volcanic ash soils, especially the Succor Creek Foundation, in the salt desert shrub and Wyoming big sagebrush/basin big sagebrush vegetation zones at elevations of 2,400 to 4,300 feet. It is endemic to Canyon and Owyhee counties, Idaho and Malheur County, Oregon. Threats include off-road vehicles and mining substrate to line irrigation ditches. Flowering occurs from April through June.

Idaho Hawksbeard

Idaho hawksbeard (*Crepis bakeri idahoensis*) is a perennial forb that occurs in dry, open places in the foothills and at moderate elevations in the mountains. It is known only from Nez Perce County, Idaho. Flowering takes place in May.

Packard's Buckwheat

Packard's buckwheat (*Eriogonum shockleyi* var. *packardiae*) is a perennial forb that occurs on oolitic limestone outcrops, sandy loess over basalt, and cobbled desert pavement over deep sandy-loam. Associated vegetation is sparse, but may include common horsebrush (*Tetradymia canescens*), winterfat, shadscale, Indian ricegrass, needle-and-thread, and langloisia (*Langloisia*

spp.). This species is endemic to southwest Idaho along the Snake River and a few tributaries in Ada and Owyhee counties. Flowering occurs from May through June.

Packard's Desert Parsley

Packard's desert parsley (*Lomatium packardiae*) is a perennial forb that occurs on volcanic ash, rhyolite, and rocky, clay soils in the sagebrush zone from approximately 3,000 to 4,300-foot elevations. It is found in Canyon and Owyhee counties, Idaho; Malheur and Lake counties, Oregon; and Washoe and Humboldt counties, Nevada. Flowering occurs from April through June.

Salmonflower Biscuitroot

Salmonflower biscuitroot (*Lomatium salmoniflorum*) is a perennial forb that occurs on steep, basalt cliff faces, ledges, and stabilized talus. It occurs on all aspects, but the community is always open with low cover of vascular plants, although north-facing populations usually have a high cover of mosses. Zonal vegetation of the surrounding canyons ranges from grassland, shrubland, and occasionally ponderosa pine woodlands in the lower canyon to grasslands, woodlands, and even coniferous forest dominated by western red cedar in the upper canyon. Populations are known from two isolated areas of the Clearwater River Subbasin, Idaho. Most of the habitat in Idaho occurs on private land, and the populations need to be better delineated. Only three populations occur on federally managed public lands in Idaho; two of them are managed by the BLM. Threats include road rights-of-way. Flowering occurs from March through April.

Smooth Stickleaf

Smooth stickleaf (*Mentzelia mollis*) is an annual forb that occurs on brown, green, or gray volcanic ash derived from the Succor Creek Formation. It is associated with Wyoming big sagebrush, yellow phacelia (*Phacelia lutea*), MacBride cleomella (*Cleomella macbrideana*), and Cusick's pincushion at approximately 3,600 to 4,600-foot elevations. Smooth stickleaf is found in Owyhee County, Idaho and Malheur County, Oregon. Flowering occurs from May through June.

Stalk-Leaved Monkey-Flower

Stalk-leaved monkey-flower (*Mimulus patulus*) is an annual forb generally growing on damp rock walls. It is known from the Four Rivers Field Office of the Boise District. Flowering occurs in late June to early July.

Least Phacelia

Least phacelia (*Phacelia minutissima*) is a small annual forb that occurs on vernal saturated/summer drying, sparsely vegetated, partially shaded to fully exposed areas of bare soil. It is found in mud banks in meadows; at perimeters of California false hellebore (*Veratrum californicum*), mule ears (*Wyethia amplexicaulis*), and/or aspen stands; in sagebrush swales; along streambed seasonal highwater lines; or around springs in flat to gently sloping areas. Least phacelia is found at elevations of approximately 5,900 to 6,900 feet. Threats include mineral exploration and development, livestock trampling, water developments and diversions, and competition with invasive weeds. Flowering occurs in April through July.

Malheur Princesplume

Malheur princesplume (*Stanleya confertiflora*) is an annual or biennial forb that occurs on dry plains on somewhat sparsely vegetated, clay soils at elevations of approximately 2,400 to 5,000 feet.

Found in Gooding, Owyhee, and Washington counties, Idaho and Harney and Malheur counties, Oregon. Flowering occurs from April through June.

Woven-Spore Lichen

Woven-spore lichen (*Texosporium sacti-jacobi*) occurs on well decomposed humus and flat or north-facing slopes on especially old clumps of Sandberg bluegrass in Wyoming big sagebrush/Thurber's needlegrass-bluebunch wheatgrass, at elevations of approximately 2,900 to 3,300 feet. It is found in Ada and Elmore counties, Idaho; Los Angeles, Santa Barbara, San Diego, and San Benito counties, California; Benton and Klickitat counties, Washington; and Jefferson and Wasco counties, Oregon. Fertile year-round.

Douglas' Clover

Douglas' clover (*Trifolium Douglasii*) is a perennial forb typically found in open ponderosa pine and Douglas-fir forests, in moist meadows, and along streams where moisture is abundant in spring and early summer. These sites are often very xeric (dry) late in the season. The historic range for this taxon was from Spokane County, Washington to Baker County, Oregon, and east to adjacent Idaho where it is currently known from Craig Mountain, Joseph Plains, and the Palouse Ranger District of the Clearwater National Forest. Threats include conversion to agricultural uses, livestock grazing, and invasion of exotic grass species.

Owyhee Clover

Owyhee clover (*Trifolium owyheense*) is a dwarf, xerophytic perennial forb which occurs on barren slopes, diatomaceous or yellow-green ash, and tuff soils in Wyoming big sagebrush-grasslands at approximate elevations of 4,300 to 5,200 feet. In Idaho, Owyhee clover is known only from the Succor Creek area. Flowering occurs from May through June. Threats include removal of required substrate for road construction material and off-road vehicles.

Plumed Clover

Plumed clover (*Trifolium plumosum*) is a perennial forb that inhabits prairie grasslands and meadows with bluebunch wheatgrass, Idaho fescue, and ponderosa pine at elevations of approximately 3,300 to 5,900 feet. Plumed clover is a regional endemic that is found in northeast Oregon, southeast Washington, and west-central Idaho. Threats include late spring fires and livestock grazing. Flowering occurs in June through July.

F. TERRESTRIAL WILDLIFE

1. GENERAL TERRESTRIAL WILDLIFE

a. PRONGHORN ANTELOPE

The Bruneau Planning Area of the Owyhee Field Office has the largest area of pronghorn antelope habitat in southwestern Idaho. There are also resident and overwintering populations of pronghorn antelope in other parts of the Owyhee, Four Rivers, and Jarbidge field offices.

Pronghorn antelope preferentially select forbs in the spring, summer, and fall (USDA Forest Service 2003). Pronghorn select the most succulent, high-protein browse or grasses available when forbs are scarce. In summer, pronghorn supplement their forb diet with browse and green grasses. Spring is the only time of year when grasses are heavily grazed, but grasses are also utilized during other

periods of green-up. The high protein content of early spring grasses may be particularly beneficial at a time when other forage is of low quality.

Salt desert shrubs, sagebrush, and other shrubs provide valuable overwintering habitat for pronghorn antelope (USDA Forest Service 2003). In winter, shrubs are high in protein relative to other forage and make up the majority of the pronghorn diet. Important winter browse for pronghorn in the Great Basin includes winterfat, *Brickellia* spp., sagebrush, rabbitbrush, and bitterbrush species. Pronghorn seek windswept areas and graze lichens when vegetation is mostly covered with snow.

b. MULE DEER AND ELK

Mule deer and elk occur in a wide variety of habitats throughout the Boise District, including all the major upland covertypes (USDI BLM 2004). Spring, summer, and fall habitat occurs at mid-to-higher elevations where deer forage on a variety of grasses, forbs, and some shrubs throughout the spring and early summer. Mule deer and elk gradually shift to a diet that is progressively higher in shrubs beginning in mid-to-late summer as herbaceous vegetation cures and becomes less palatable. Elk tend to consume a diet higher in grasses year-long, but also begin to consume more woody vegetation in the late summer and fall.

There is crucial mule deer and elk overwintering habitat in all Boise District field offices. The overwintering habitat generally occurs along the lower foothills and river breaks. Antelope bitterbrush, curl-leaf mountain mahogany, Saskatoon serviceberry (*Amelanchier alnifolia*), sagebrush, and other shrub species provide important forage and cover. Annual grasses and other early maturing grasses also provide important late winter forage.

c. MIGRATORY BIRDS

A diverse number of neotropical birds occupy all habitat types on a seasonal basis. Many of these species are on the BLM and IDFG SSS list. The Type 5 Watch list includes species that are not considered Idaho BLM sensitive species but current populations or habitat information suggests that these species may warrant sensitive species status in the future.

There is some short-grass habitat occupied by long-billed curlew in the Four Rivers Field Office that is designated as an ACEC for this species. Curlew nesting habitat also occurs in parts of the Owyhee and Jarbidge field offices. At lower elevations, these habitats generally consist of Wyoming big sagebrush and salt desert shrub habitats that have burned and are now dominated by invasive annual grasses, or seeded to crested wheatgrass. Curlews are also occasionally observed nesting at mid-elevations in recent burns, low sagebrush, and meadow complexes. Habitat for this species has actually increased over the last several decades along with the increased size and frequency of fires that has resulted in conversion of large areas of shrub-steppe to grasslands.

d. SAGEBRUSH OBLIGATE BIRDS

In addition to pygmy rabbits, Columbian sharp-tailed grouse, and greater sage-grouse (addressed in Section III, Special Status Wildlife), other sagebrush obligate species include sage sparrows (*Amphispiza belli*) and Brewer's sparrows (*Spizella breweri*) both Type 3 regional/state imperiled species; a diversity of other neotropical migrants; and other species including ground-nesters. The Wyoming big and basin big sagebrush covertype provides important habitat for these species.

e. OTHER TERRESTRIAL WILDLIFE

A large number of other species including a variety of mammalian predators; small mammals including bats, shrews, rodents, rabbits, and hares; waterfowl; non-native game birds including California quail (*Callipepla californica*), chukar (*Alectoris chukar*), gray partridge (*Perdix perdix*), and ringneck pheasant (*Phasianus colchicus*); and a variety of reptiles and amphibians also occur throughout the Boise District. A number of these are on the BLM and IDFG SSS list. Every vegetation community type within the District provides important year-long or seasonal habitat for some combination of these animals.

2. SPECIAL STATUS TERRESTRIAL WILDLIFE

BLM SSS are the ESA listed, proposed and candidate species, and BLM sensitive species. Listed and proposed species may also have ESA designated or proposed critical habitat. The policy of the BLM is to conserve ESA listed, candidate, and proposed threatened and endangered species and their habitats, and to mitigate adverse impacts to SSS. The ESA listed and candidate species are listed by Boise District field office in Table 4. Status designations include: experimental/non-essential (XN), endangered (E), threatened (T), and candidate (C). There are no species proposed for federal listing on the District.

Table 4: ESA Listed and Candidate Species

ESA Listed and Candidate Species		ESA Status	Field Offices			
Scientific Name	Common Name		FRFO	OFO	NCA	JFO
<i>Canis lupus</i>	Gray Wolf	XN	X			
<i>Spermophilus brunneus brunneus</i>	Northern Idaho Ground Squirrel	T	X			
<i>Spermophilus brunneus endemicus</i>	Southern Idaho Ground Squirrel	C	X			
<i>Lynx canadensis</i>	Canada Lynx	T	X			
<i>Haliaeetus leucocephalus</i>	Bald Eagle	T	X	X	X	X
<i>Coccyzus americanus</i>	Yellow-Billed Cuckoo	C	X	X	X	X
<i>Rana luteiventris</i> (Great Basin population only)	Columbian Spotted Frog	C		X		X
<i>Salvelinus confluentus</i>	Bull Trout	T	X			X
<i>Valvata utahensis</i>	Utah Valvata Snail	E				X
<i>Taylorconcha serpenticola</i>	Bliss Rapids Snail	T	X			X
<i>Pyrgulopsis idahoensis</i>	Idaho Springsnail	E	X	X	X	X
<i>Physa natricina</i>	Snake River Physa Snail	E	X			X
<i>Lanx</i> spp.	Banbury Springs Limpet	E				X
<i>Pyrgulopsis bruneauensis</i>	Bruneau Hot Springsnail	E		X		X
<i>Salvelinus confluentus</i>	Proposed Critical Habitat for Bull Trout	PCH	X			X

a. TYPE 1 FEDERALLY THREATENED, ENDANGERED, AND CANDIDATE SPECIES

Gray Wolf (XN)

The gray wolf is known to occur only in the Four Rivers Field Office and is a re-introduced experimental/non-essential population (ESA Section 10j) currently managed by the USFWS. Historically, wolves utilized a broad spectrum of habitats including grasslands, sagebrush-steppes, coniferous and mixed forests, and alpine areas. Habitats used by wolves typically have an abundance of natural prey.

Northern Idaho Ground Squirrel (T)

Northern Idaho ground squirrel is an ESA threatened species known to exist only in Adams and Valley counties of western Idaho that are included in the Four Rivers Field Office (USFWS 2003b). No occupied sites are known to occur on BLM lands; the historic range of the species contains lands administered by BLM. The entire range of the subspecies is about 20 by 61 miles, and as of 2002, 34 of 40 known population sites were occupied. The population was estimated to be 450 to 500 individuals. The northern Idaho ground squirrel emerges in late March or early April, and remains active above ground until July or early August (USFWS 2003b).

The northern Idaho ground squirrel occurs in shallow, dry, rocky meadows that are usually associated with deeper, well-drained soils and surrounded by ponderosa pine and Douglas-fir forests at elevations of about 3,000 to 5,400 feet. Potentially suitable habitat is ponderosa pine/shrub-steppe in association with south-facing slopes of less than 30 percent, at elevations below 6,000 feet. Diet consists of forbs, grasses, and seeds, as well as green vegetation. Populations of the northern Idaho ground squirrel are primarily threatened by habitat loss due to forest encroachment into former suitable meadows which results in habitat fragmentation, eliminates dispersal corridors, and confines populations into small, isolated habitat islands.

Southern Idaho Ground Squirrel (C)

Southern Idaho ground squirrel is an ESA candidate species. The southern Idaho subspecies occurs in an area about 48 by 113 miles that extends from Emmett, Idaho northwest to Weiser, Idaho and the surrounding areas of Squaw Butte, Midvale Hill, and Henley Basin in Gem, Payette, and Washington counties, including the Four Rivers Field Office. Their range is bounded on the south by the Payette River, on the west by the Snake River, and on the northeast by lava flows with little soil development. Their habitat is typified by rolling hills, basins, and flats composed of lake and fluvial sediments at elevations between 2,200 to 3,200 feet. The range of the southern Idaho subspecies formally extended as far north as Goodrich, Idaho in Adams County, however, recent studies have shown a severe decline in the number of occupied population sites in the northern part of their range.

The southern Idaho ground squirrel spends much of its time underground, and a high quality diet of green vegetation and seeds is required to store enough fat to survive long months of torpor (a form of hibernation). Adults emerge from seasonal torpor in late January or early February, depending on elevation and microhabitat conditions.

Canada Lynx (T)

The Canada lynx is an ESA threatened species and the only potential habitat is in the northern Four Rivers Field Office. Approximately 420 acres of suitable lynx habitat have been identified on lands administered by the Four Rivers Field Office, all of which are located within a WSA. There is an additional estimated 580 acres of suitable lynx habitat within the boundaries of the Four Rivers Field Office that is administered by the Cottonwood Field Office of the BLM Upper Columbia-Salmon Clearwater District. All ESR activities would follow the interim guidance of the Lynx Conservation Assessment and Strategy (Ruediger *et al.* 2000) until such time that RMPs are amended to include new conservation measures to guide activities that may potentially affect Canada lynx.

Bald Eagle (T)

The bald eagle is an ESA threatened species that winters primarily along the Snake River, the South Fork of the Boise River, and has occasionally been observed wintering along the Owyhee River, Jordan Creek, and other drainages within the Boise District. Some nesting occurs along the Payette and Boise rivers. One bald eagle nest site has been documented on BLM administered lands along the Payette River within the Four Rivers Field Office area. Nests are generally constructed in conifers or cottonwood trees within close proximity to rivers or other waterbodies that support adequate food supplies including fish, waterfowl, and a variety of other birds, small mammals, and big game carrion.

Yellow-Billed Cuckoo (C)

The yellow-billed cuckoo is a candidate for ESA listing. The yellow-billed cuckoo is a summer resident of California, Oregon, Washington, Arizona, Colorado, Montana, Idaho, Nevada, Wyoming, New Mexico, Texas, Utah, British Columbia and Mexico. The cuckoo winter range is northern South America, south to northern Argentina.

The species is considered a rare and local summer resident in Idaho, with 64 recorded observations for the State. Historical records and recent surveys indicate the species is most abundant in southeastern Idaho, particularly along the Snake River corridor. A total of eight historic observations of the species are known for the portion of Idaho that includes the Boise District. Most historic sites in southwestern Idaho do not currently contain suitable habitat for nesting yellow-billed cuckoo. Southwestern Idaho surveys conducted in 2003 in habitat that appeared suitable did not yield any yellow-billed cuckoo observations (TREC, Inc. 2003).

Dense understory foliage appears to be an important factor in nest site selection, and cottonwood trees are important foraging habitat. The principal threat in the summer range of the species is the loss of riparian habitat, which has always been naturally limited in the western United States (USFWS 2003c). Available breeding habitats for yellow-billed cuckoos have also been substantially reduced in area and quality by groundwater pumping and the replacement of native riparian habitats by invasive non-native plants, particularly tamarisk/saltcedar (*Tamarix ramosissima*) in the southwestern United States, and to a lesser degree in southern Idaho.

b. TYPE 2 RANGEWIDE/GLOBALLY IMPERILED SPECIES

Greater Sage-grouse

Greater sage-grouse is a Type 2 BLM sensitive species that is rangewide/globally imperiled and currently undergoing a full status review by the USFWS. The status review will determine whether the greater sage-grouse warrants ESA listing as a threatened or endangered species. Extant greater sage-grouse populations are distributed from north-central Oregon, southern Idaho, and southern Alberta and Saskatchewan, south to eastern California, and into extreme western North and South Dakota. Isolated populations also occur in eastern Washington.

Sage-grouse are obligate residents of the sagebrush ecosystem, and usually inhabit sagebrush-grassland or juniper-sagebrush-grassland communities (WSSGC 1982; WSSGC 1974). Sage-grouse occur throughout the range of big sagebrush, except on the periphery of big sagebrush distribution or in areas where it has been eliminated. Successful nesting and brood-rearing are dependent upon the presence of diverse perennial grasses and key forbs that provide cover and forage.

The breeding and nesting period of greater sage-grouse on the Boise District is from the last week in February through the first week in June. The breeding leks are usually small open areas of 0.1 to 10.0 acres, but may be as large as 100 acres (WSSGC 1982; 1974).

Pygmy Rabbit

The pygmy rabbit is a Type 2 BLM sensitive species that occurs throughout the Great Basin. The population status is poorly understood. The pygmy rabbit is a sagebrush obligate and preferred habitat is relatively taller, thicker big sagebrush stands with deep soils. Observations of pygmy rabbits and ongoing surveys being conducted by BLM biologists and others have revealed that this species is widely but sparsely distributed in Owyhee County. The only recently recorded occurrence of a pygmy rabbit on BLM land in the Jarbidge Field Office was at Grassy Hills. The pygmy rabbit is very likely extirpated from the Birds of Prey National Conservation Area (NCA) and all portions of the Snake River Plain except the northeastern fringe. There are no Conservation Data Center (CDC) pygmy rabbit occurrence records in Boise County. One recent record exists from Payette County, however, it is very likely that they also occur in portions of Elmore, Ada, Boise, Washington and Gem counties.

c. TYPE 3 REGIONAL/STATE IMPERILED SPECIES

Columbian Sharp-tailed Grouse

The Columbian sharp-tailed grouse is a Type 3 BLM sensitive species that is regionally/state imperiled. The Columbian sharp-tailed grouse is one of seven recognized subspecies of sharp-tailed grouse that have been described in North America. Historically, Columbian sharp-tailed grouse range extended westward from the continental divide in Montana, Idaho, Wyoming, and Colorado to northeastern California and eastern Oregon and Washington, southward to northern Nevada and central Utah, and northward through central and extreme southeastern British Columbia. In the Boise District, the majority of Columbian sharp-tailed grouse and their habitat occur in Indian Valley and on the Hixon Columbian Sharp-tailed Grouse Wildlife Habitat Area, both in the Four Rivers Field Office.

Columbian sharp-tailed grouse rely on a variety of good quality, native habitats within the sagebrush-bunchgrass, meadow-steppe, mountain shrub, and riparian zones of the northwestern United States. Various upland habitats, with a component of dense riparian or mountain shrub habitat that provides escape cover are important to the subspecies from spring to fall. Suitable wintering habitat consists largely of deciduous trees and shrubs, and is thought to be a key element to healthy Columbian sharp-tailed grouse populations.

Spring-to-fall home range sizes of Columbian sharp-tailed grouse are relatively small, generally less than 1.2 square miles, and the areas used are usually within a couple of miles of a lek. Females typically nest and rear their broods within 1 mile of an active lek, although nesting more than 1.9 miles from a lek has been recorded. Seasonal movements to wintering areas from breeding grounds are typically less than miles, although movements of up to 12.4 miles have been recorded.

California Bighorn Sheep

The California bighorn sheep is a Type 3 BLM sensitive species that was reintroduced to the Owyhee Field Office during the 1960s. California bighorn sheep inhabit the Owyhee River,

Bruneau River, Jarbidge River, and Jack's Creek canyon complexes as well as several other smaller canyon habitats in the northern Owyhee Field Office. In 1983, the Owyhee River Bighorn Sheep Habitat Area/ACEC (141,796 acres) was designated in the Owyhee Field Office to protect and enhance habitat for bighorn sheep; maintain or improve the habitat to at least a good range condition class; and protect and maintain the scenic and natural values in the area.

Raptors

A variety of SSS birds of prey (raptors) can be found throughout the Boise District, including the Type 3 regionally/state imperiled northern goshawk (*Accipiter gentilis*), peregrine falcon (*Falco peregrinus anatum*), prairie falcon (*Falco mexicanus*), flammulated owl (*Otus flammeolus*), and ferruginous hawk (*Buteo regalis*). Both prairie falcon and ferruginous hawk occur within the NCA which has the densest concentration of nesting raptors in North America. The towering cliffs, countless ledges, cracks, and crevices in the NCA provide ideal habitat for these and other nesting raptors. The greatest threat to raptors within the NCA and lower elevation sagebrush-steppe habitats throughout the District is the loss of native shrubs from wildfires and the subsequent invasion of noxious and invasive weeds that have adversely impacted prey populations. Primary raptor prey species, Piute ground squirrels (*Spermophilus townsendii*), black-tailed jackrabbits (*Lepus californicus*), kangaroo rats (*Microdipodops* spp.), and deer mice (*Peromyscus maniculatus*) are closely tied to shrub-dominated vegetation. For example, the preferred diet of Piute ground squirrels is Sandberg bluegrass, winterfat, and sagebrush. A variety of snakes also prey on these rodents, and the snakes are also an important raptor prey species. Plant communities altered by wildfire, soil erosion, and exotic plant invasions are not able to support the density of certain prey species needed to sustain raptor populations.

G. AQUATIC WILDLIFE

1. GENERAL AQUATIC WILDLIFE

a. COLDWATER FISHES

Indigenous, coldwater fishes include bull trout, redband trout (*Oncorhynchus mykiss gairdneri*), mountain whitefish (*Prosopium williamsoni*), sculpins (*Cottus* spp.), white sturgeon (*Acipenser transmontanus*), and others. White sturgeon is an important game fish that is found in the Snake River upstream to Shoshone Falls. Introduced, hatchery rainbow trout (*O. m. irideus*) have been stocked by IDFG in some perennial streams throughout the planning area and can hybridize with native redband trout. Non-native Lahontan cutthroat trout (*O. clarki henshawi*) have been stocked in reservoirs in the upper Bruneau and upper Owyhee basins. Non-native brook trout (*Salvelinus fontinalis*) are found in a few streams on the District and will hybridize with native bull trout. These exotic species prey on and compete with native trout for habitat and other resources.

The Snake River Riparian Area is a 51 mile long corridor from Indian Cove on the west end to the confluence of Salmon Falls Creek on the east end. The northern boundary is the Union Pacific Railroad Line and the southern boundary is near the 3,000-foot elevation contour line on the bluff near Salmon Falls Creek, and near the 2,700-foot contour line at Indian Cove. This area is the best habitat above Hell's Canyon Dam for white sturgeon and other coldwater fishes.

b. WARMWATER FISHES

Many reservoirs as well as the Snake, Boise, Payette, and Owyhee Rivers, and the lower reaches of other drainages have populations of native and exotic, warmwater tolerant fishes. Native species include redbside shiner (*Richardsonius balteatus*), largescale suckers (*Catostomus macrocheilus*), bridgelip suckers (*Catostomus columbianus*), and northern pikeminnow (*Ptychocheilus oregonensis*). Introduced species include smallmouth and largemouth bass (*Micropterus dolomieu* and *M. salmoides*), crappie (*Pomoxis nigromaculatus*), channel catfish (*Ictalurus punctatus*), and others.

2. SPECIAL STATUS AQUATIC WILDLIFE

a. TYPE 1 FEDERALLY THREATENED, ENDANGERED, AND CANDIDATE SPECIES

The bull trout is the only ESA listed fish in the Boise District. There are six ESA listed snails in the Boise District: 1) the Utah valvata snail (E), 2) the Bliss Rapids snail (T), 3) the Idaho Springsnail (E), 4) the Snake River physa snail (E), 5) the Bruneau hot springsnail (E), and 6) the Banbury Springs limpet (E) (57 FR 59244). Four of the six listed snails occur in the Snake River (USFWS 1995). The Great Basin population of the Columbian spotted frog that occurs on the Boise District is candidate for listing.

Bull Trout (T and PCH)

The bull trout was ESA listed as threatened in 1999 (64 FR 58910). There are populations of bull trout in streams managed by the Four Rivers and Jarbidge field offices. The USFWS is currently drafting recovery plans for the Salmon River and Southwest Idaho Bull Trout Recovery Units and proposed bull trout critical habitat in the Four Rivers Field Office.

Current bull trout distribution in the Jarbidge Field Office includes resident populations in the East Fork and West Fork Jarbidge rivers, and their major tributary streams including Jack, Deer, Pine, Dave, Slide, Fall, and Cougar creeks. Bull trout seasonally inhabit the Jarbidge River downstream of the confluence of the East and West Forks to the Bruneau River from October through late June.

The draft recovery plan for the Jarbidge River Bull Trout Recovery Unit was released for public review on July 1, 2004. In the June 2004, the USFWS proposed to designate critical habitat for the Jarbidge River population of bull trout [Federal Register, June 25, 2004 (69 FR 35768)]. USFWS is currently preparing a bull trout Biological Opinion for on-going BLM activities in the Jarbidge Recovery Unit that would be applicable to ESR activities.

Utah Valvata Snail (E)

The Utah Valvata snail was listed as endangered in 1992. The snail lives in deep pools adjacent to rapids or in perennial flowing waters associated with large spring complexes and generally avoids areas with heavy currents or rapids. This species is found in muddy habitats and feeds on submerged vegetation, plant debris, and microscopic prey such as diatoms. It is typically absent from gravel bottomed rivers and springs. At present, the snail occurs in the middle Snake River from C. J. Strike Reservoir on the Boise District, upstream to American Falls.

Bliss Rapids Snail (T)

The Bliss Rapids snail was listed as threatened in 1992. Known river populations only occur in spring-influenced habitat near the edge of mainstream rapids. The Bliss Rapids snail occurs on

cobble-boulder substratum in the mainstem Snake River, and in some spring habitats in the Hagerman Valley. Populations of Bliss Rapids snails are found in a few isolated colonies in the mainstem of the Snake River from King Hill (river mile 545) to Banbury Springs (river mile 589) in Idaho. It commonly grazes on a diet of diatoms and plant debris at night along mud and rocky surfaces.

Snake River Physa Snail (E)

The Snake River physa snail was listed as endangered in 1992. The Snake River physa occurs only in the free-flowing sections of the Snake River from Grandview to the confluence with the Malad River.

Idaho Springsnail (E)

The Idaho springsnail was listed as endangered in 1992. At present, this snail has discontinuous populations in permanent, flowing sections of the mainstem Snake River from the Weiser area upstream to the King Hill area.

Banbury Springs Limpet (Lanx) (E)

The Banbury Springs limpet was listed as endangered in 1992. The limpet has only been found in spring-run habitats with well-oxygenated, clear, cold water on boulder or cobble substratum, with relatively swift currents. At present, the limpet is known to occur in large, relatively undisturbed spring habitats on the north side of the Snake River, approximately five river miles upstream and five river miles downstream of the confluence of the Snake River and Salmon Falls Creek at Banbury Springs, Box Canyon Springs, and Thousand Springs.

Bruneau Hot Springsnail (E)

The Bruneau hot springsnail was ESA listed as endangered in 1998. The Bruneau hot springsnail has been found in flowing geothermal springs and seeps in a narrow elevation range of approximately 2,600 to 2,700 feet (USFWS 2002). The species currently survives in approximately 89 of 155 small, flowing geothermal springs and seeps along an approximately 5 mile reach of the Bruneau River and its tributary, Hot Creek in southwestern Idaho. The *Bruneau Hot Springsnail Recovery Plan* (USFWS 2002) identifies reduction and/or elimination of their geothermal spring habitat as a result of agricultural-related groundwater withdrawal and pumping as the principal threat to survival.

Columbian Spotted Frog (C)

The Great Basin population of the Columbian spotted frog is a candidate for ESA listing. Extensive surveys throughout southern Idaho since 1993 have led to increases in the number of known spotted frog sites, and Columbian spotted frogs appear to be widely but sparsely distributed throughout southwestern Idaho, mainly in Owyhee County (USFWS 2003d). They generally occur at mid- to higher elevations in low gradient streams that contain numerous oxbows and pools, and in lakes and ponds in close proximity to suitable stream habitats. Springs also provide important overwinter hibernacula.

b. TYPE 2 RANGEWIDE/GLOBALLY IMPERILED SPECIES

Redband Trout

Native, inland Columbian Basin redband trout is a Type 2 BLM sensitive species that is experiencing significant declines throughout its range. Inland redband trout are adapted to extremely harsh environments with extremes of temperature and flow, and hatchery rainbow may not be effective competitors and predators in these environments (Behnke 1992).

Redband trout inhabit most perennial streams in the Boise, Payette, Jarbidge, Bruneau, and Owyhee River subbasins, in addition to perennial tributary streams to the Snake River (BLM and IDFG unpub. data). IDFG and BLM have documented most redband trout populations on the District and some populations show low levels of hybridization with stocked, hatchery rainbow trout.

Northern Leopard Frog

The northern leopard frog (*Rana pipiens*) is a Type 2 BLM sensitive species that was once commercially collected in large numbers for biology classes. The leopard frog lives in marshes, wet meadows, riparian areas and wet, open woodlands. They breed in ponds or lake edges with fairly dense aquatic and emergent vegetation and attach their eggs to submerged vegetation. Juveniles and adults live in aquatic vegetation in ponds and in adjacent grass, sedges, and woody riparian vegetation. Within the Boise District northern leopard frogs are known to occur along the Snake and lower Bruneau River corridors.

H. RECREATION

The Boise District is close to several large population centers and is a high use recreation area. The District provides numerous and varied recreational opportunities including nature study, bird watching, natural and cultural resources sightseeing, horseback riding, hiking, hunting, biking, camping, fishing, water sports, and rock hounding, as well as motorized vehicle use.

From March through June, sightseeing, bird watching, and nature study associated with raptor nesting and foraging attracts local, national, and international visitors to the NCA. The western end of the Snake River Canyon within the NCA is managed as the *Snake River Birds of Prey Special Recreation Management Area* that provides a variety of recreational opportunities classified as roaded, natural, semi-primitive motorized, or non-motorized. Other special recreational areas are included in the section below on Special Management Areas (SMAs).

I. SPECIAL MANAGEMENT AREAS

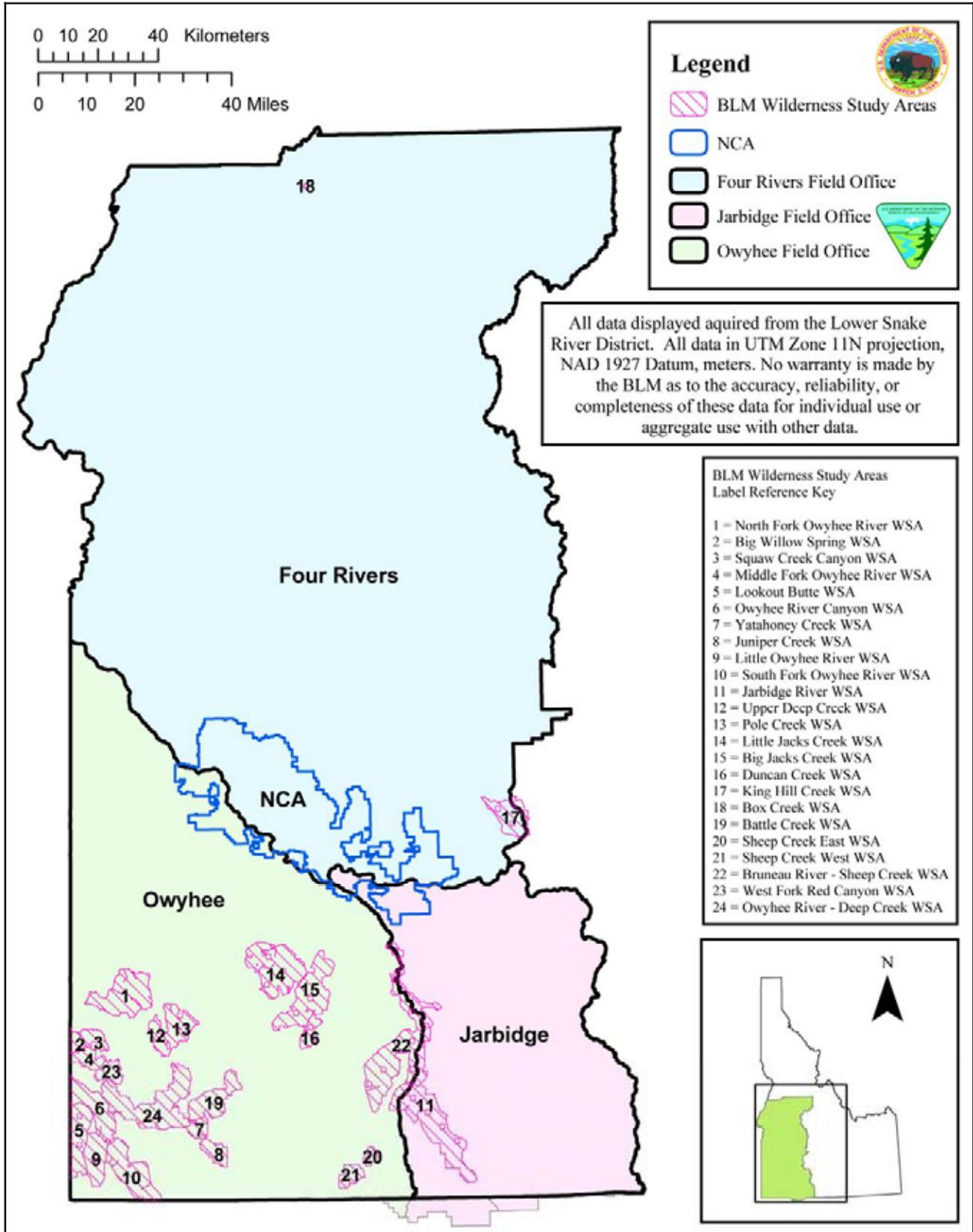
1. WILDERNESS STUDY AREAS

The Boise District WSAs are listed by field office in Table 5 and shown in Figure 2. WSAs must be managed in a manner so as not to impair their suitability for preservation and designation as Wilderness. ESR treatments in WSAs would be developed and evaluated under the guidelines found in the BLM *Interim Management Policy and Guidelines for Lands under Wilderness Review* (IMP) H-8550-1 and the *Interagency Burned Area ESR Handbook* Version 2.0 (2002).

Table 5: Wilderness Study Areas

Field Office	FRFO	OFO	NCA	JFO
Jarbidge	X			
King Hill Creek	X			
Box Creek	X			
North Fork Owyhee River		X		
Big Willow Spring		X		
Squaw Creek Canyon		X		
Middle Fork Owyhee River		X		
Lookout Butte		X		
Owyhee River Canyon		X		
Yatahoney Creek		X		
Juniper Creek		X		
Little Owyhee River		X		
South Fork Owyhee River		X		
Upper Deep Creek		X		
Battle Creek		X		
West Fork Red Canyon		X		
Owyhee River - Deep Creek		X		
Jarbidge River		X		X
Pole Creek		X		
Little Jacks Creek		X		
Big Jacks Creek		X		
Duncan Creek		X		
Sheep Creek East		X		
Sheep Creek West		X		
Bruneau River – Sheep Creek		X		X

Figure 2: Boise District Wilderness Study Areas



2. WILD AND SCENIC RIVERS

Federal land management agencies are responsible for evaluating certain rivers to determine suitability for inclusion in the National Wild and Scenic Rivers System. The agencies provide protection by preparing recommendations for suitable rivers to be designated and by taking immediate action to protect them. In the interim, the rivers are treated as though they were components of the National System until acted upon by Congress, and must be managed in a manner so as not to impair their suitability for inclusion in the National Wild and Scenic River System. Potential Boise District wild, scenic, and recreational river designations are listed in Table 6 by field office.

Table 6: Potential Wild, Scenic, or Recreational Rivers

Field Office	FRFO	OFO	NCA	JFO
Jarbridge River		X		X
Bruneau River	X	X		
West Fork of the Bruneau River		X		
Sheep Creek		X		
Owyhee River		X		
Upper North Fork Owyhee River		X		
Lower North Fork Owyhee River		X		
South Fork Owyhee River		X		
East Fork Owyhee River		X		
Nickel Creek		X		
Deep Creek		X		
Current Creek		X		

3. OTHER SPECIAL MANAGEMENT AREAS

Areas of Critical Environmental Concern

ACECs are areas where special management attention is required to: 1) protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes, 2) protect human life and safety from natural hazards, 3) preserve natural processes that dominate the landscape for the primary purpose of research and education. Some ACECs are also referred to as RNAs and ONAs. A complete list of Boise District ACECs is included in Table 7 and shown in Figure 3.

Table 7: Special Management Areas

Areas of Critical Environmental Concern	Field Office	Reason for Designation
Long-Billed Curlew Habitat	FRFO	Critical LB Curlew Nesting Habitat
Columbian Sharped-tailed Grouse	FRFO	Critical CST Grouse Habitat
Sand Hollow	FRFO	Aase's Onion
Willow Creek	FRFO	Aase's Onion
Cartwright Canyon	FRFO	Aase's Onion
Woods Gulch	FRFO	Aase's Onion
Sand-capped Knob	FRFO	Aase's Onion
Hulls Gulch	FRFO	Aase's Onion
Boise Front	FRFO	Watershed, Wildlife, Recreation
Guffey Butte/Black Butte	FRFO OFO NCA	Archeological, Cultural Resources
Jump Creek	OFO	Riparian Vegetation, Watershed
Bruneau/Jarbidge River	JFO	Bighorn Sheep, Cultural Resources
Triplet Butte	JFO	Plant Communities, Cultural Resources; Bighorn Sheep, Scenic Value
Owyhee River Bighorn Sheep	OFO	Bighorn Sheep Habitat
The Tules (within the Bighorn Sheep ACEC)	OFO	Plant Communities
Cottonwood Creek	OFO	Riparian Vegetation
Salmon Falls Creek Canyon	JFO	Pristine and Scenic Natural Features
Sand Point	JFO	Paleontologic, Geologic, and Cultural Resources
McBride Creek	OFO	Special Status Plants
Squaw Creek	OFO	Plant Communities
Coal Mine Basin	OFO	Special Status Plants, Paleontological
Sommer Camp Butte	OFO	Plant Communities
Cinnabar Mountain	OFO	Plant Communities
Mud Flat Oolite	OFO	Rare Plants, Fossils
Pleasant Valley Table	OFO	Plant Communities
The Badlands	OFO	Special Status Plants
Summer Creek	FRFO	Plant Communities
Lost Basin Grassland	FRFO	Plant Communities
Goodrich Creek	FRFO	Plant Communities
Buckwheat Flats	FRFO	Plant Communities
Rebecca Sand Hill	FRFO	Special Status Plants
Boulder Creek	OFO	Scenic and Wildlife Values
North Fork Juniper	OFO	Watershed and Riparian Values
Other Special Management Areas		
C. J. Strike Reservoir	FRFO	Waterfowl, ESA Listed Snails
Grand View Duck Pond	FRFO	Waterfowl, Riparian, Wetland
Stork Island	FRFO	Heron Rookery
U.S. Highway 68 & Swan Falls Road	FRFO	Scenic Quality Travel Influence Zone