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Jarbidge Field Office Programmatic Shrub Planting

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BACKGROUND

The Bureau of Land Management (BLM) proposes to programmatically plant native shrubs throughout the Jarbidge Field Office. The proposed project area is located within the Jarbidge Field Office, which includes portions of Elko County, Nevada, and Elmore, Owyhee, and Twin Falls counties, Idaho (Figure 1). The Jarbidge Field Office manages about 1.4 million acres of public land. The majority of soils within the Jarbidge Field Office support a semi-arid shrub-covered landscape, also known as sagebrush-steppe. Sagebrush-steppe is dominated by several sagebrush (*Artemisia*) species and sub-species, but may also contain a variety of species including antelope bitterbrush (*Purshia tridentata*), winterfat (*Krascheninnikovia lanata*), shadscale (*Atriplex confertifolia*), or fourwing saltbush (*Atriplex canescens*). Alteration of the sagebrush-steppe by invasive, introduced plants such as cheatgrass (*Bromus tectorum*) has increased wildfire size and fire return intervals. Repeated wildfires have reduced shrub cover that provides habitat for BLM special status species and wildlife, including slickspot peppergrass (*Lepidium papilliferum*), greater sage-grouse (*Centrocercus urophasianus*), pygmy rabbit (*Brachylagus idahoensis*), migratory birds, and big game.

Nearly 1,000,000 acres of the Jarbidge Field Office have been impacted by large wildfires within the last 10 years. Native shrub cover in the Jarbidge Field Office has been substantially reduced by fire over the last few decades, most recently by four large fires: Clover (2005), Sailor Cap (2006), Murphy Complex (2007), and Long Butte (2010). Post-fire shrub seeding with appropriate species occurs following most fires as part of emergency stabilization and rehabilitation (ESR) treatments. However, seeding success is dependent on climatic conditions during germination and seedling stages, as well as continued post-seeding disturbance, including repeated fire.

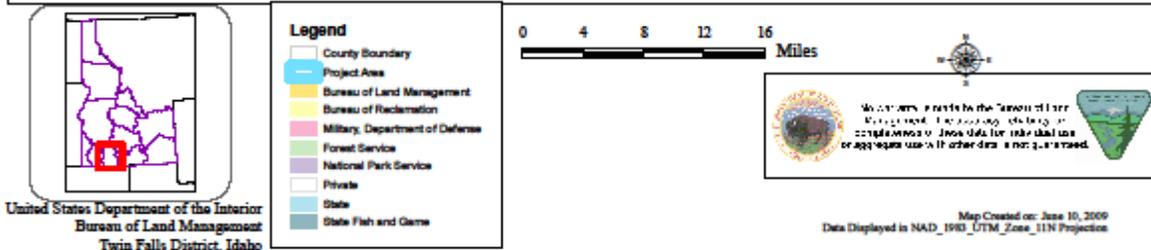
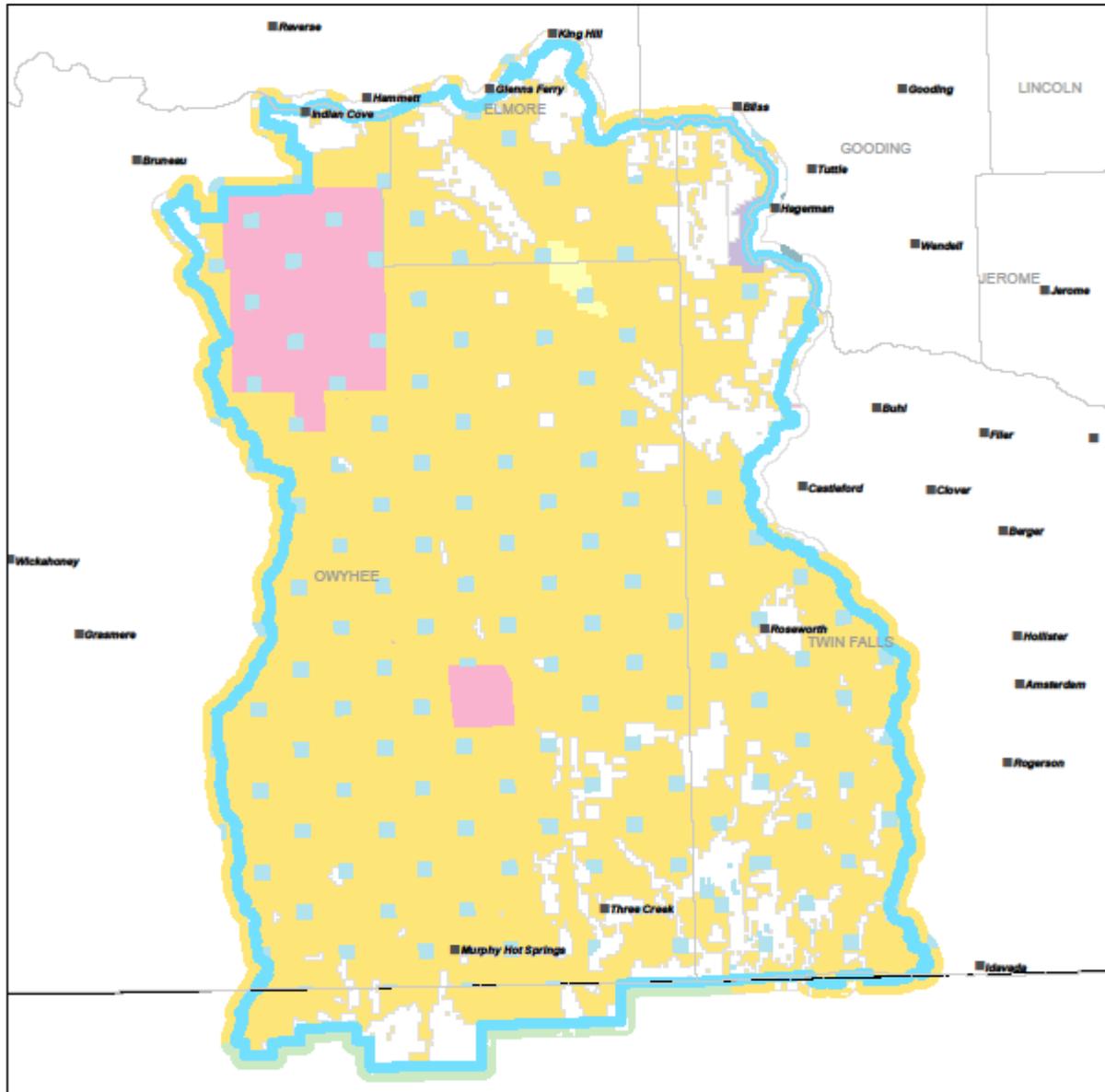
The change in vegetation also indicates a change in the Fire Regime Condition Class (FRCC). FRCC is a landscape-level fire risk assessment index that indicates the extent to which current conditions deviate from defined historical reference conditions pertaining to vegetation composition, fuel structure, and fire frequency. FRCC 1 indicates conditions that are within the range of historical variability. The Jarbidge Field Office currently is dominated by condition classes 2 and 3, which means that there has been moderate to high departure from historical conditions (Barrett et. al, 2010).

The extent of the impacts from wildfires varies by site, but many of the upland native communities, notably those dominated by sagebrush, have had 100% shrub mortality. About 48% of the Jarbidge Field Office is currently dominated by herbaceous vegetation (i.e. grasses and forbs) and lacks shrub cover. This vegetation change was cited by the U.S. Fish and Wildlife Service as a major factor in the listing of slickspot peppergrass as a threatened species (Federal Register Vol, 74, No. 194, October 8, 2009). In addition, vegetation communities in these areas do not meet the minimum shrub cover requirements for sage-grouse habitat. Research on sage-grouse habitat requirements shows that canopy cover greater than 15% is needed for breeding and brood-rearing and that sagebrush also provides essential cover and forage in late fall and winter (Braun et al., 1977; Connelly et al., 2000). In addition, about 35% of the field office is

identified as big game winter range. However, because of the lack of native shrubs, these areas are no longer providing adequate cover for wintering big game.

Figure 1. Proposed Project Area

Jarbridge Field Office Shrub Planting Project Area



PURPOSE AND NEED FOR ACTION

The purpose of the action is to re-establish native shrubs in areas of the Jarbidge Field Office that were historically occupied by shrub communities and are currently dominated by desirable herbaceous vegetation. The need for the action is the substantial loss of shrub communities due to frequent and large fires in the Jarbidge Field Office. Increased shrub cover would move vegetation in the Jarbidge Field Office towards the historical fire regime, improve ecosystem function, improve native shrub habitats for special status species and wildlife, and provide a future seed source to support natural dispersal.

DECISION TO BE MADE

The Jarbidge Field Manager will decide whether to approve programmatic shrub planting in the Jarbidge Field Office. If so, the Jarbidge Field Manager will decide what design features will be included in the decision and carried forward into planning for shrub planting projects.

CONFORMANCE WITH APPLICABLE LAND USE PLAN

All proposed actions discussed in this environmental assessment (EA) are applicable to the project area and are in conformance with the 1987 Jarbidge Resource Management Plan (RMP), which is available for review at the field office. The RMP is accompanied by a Final Environmental Impact Statement and Record of Decision.

Planting shrubs would further the following objectives and resource management guidelines identified in the Jarbidge RMP:

- Improve lands in poor ecological condition [see objectives for Multiple Use Areas (MUAs) 4-13, 15 and 16, pp. II-22 - II-59].
- Maintain existing vegetation improvements (see objectives for MUAs 4-7, 10-13, and 15, pp. II-22 – II-56).
- Manage all ecological sites on mule deer, pronghorn, elk, bighorn sheep and sage-grouse habitat currently in fair or poor ecological condition, for good ecological condition (p. II-83).
- Protect and enhance endangered, threatened, and sensitive species habitats in order to maintain or enhance existing and potential populations within the planning area (p. II-83).
- Allow no adverse habitat alteration within ¼ mile of any burrowing owl nest, ¾ mile of any ferruginous hawk, golden eagle or prairie falcon nest, or within 1 mile of bighorn sheep habitat (p. II-83).
- Manage all wildlife habitat within the resource area to provide a diversity of vegetation and habitats (p. II-83).
- Maintain the density of sagebrush canopy coverage at 20-30% within nesting habitats and at least 20% in wintering habitats for sage-grouse (p. II-84).

- Improve forage condition by establishing seedlings or plantings of bitterbrush, four-wing saltbush or other palatable shrub species on crucial winter range that presently has less than 30% palatable shrub composition by weight of the shrub component (p. II-84).
- Riparian and wetland habitat will have a high priority for protection and improvement in accordance with national policy (p. II-87)

RELATIONSHIP TO STATUTES, REGULATIONS OR OTHER PLANS

Section 7 of the Endangered Species Act (ESA) of 1973 outlines the procedures Federal interagency cooperation to conserve federally listed species and their designated habitats. Section 7(a) (2) of the ESA states that each Federal agency shall, in consultation with the Secretary, insure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of their habitats.

Slickspot peppergrass was listed as threatened under the ESA effective December 7, 2009 (Federal Register Vol, 74, No. 194, October 8, 2009). In addition, critical habitat for slickspot peppergrass was proposed May 10, 2011 (Federal Register Vol, 76, No. 90, May 10, 2011). The Final Rule for the listing of slickspot peppergrass identified destruction, modification, or curtailment of the species' habitat or range as a primary factor affecting the species. This included loss of sagebrush-steppe vegetation due to invasion of non-native annual grasses and modified wildfire regimes (FR 52027-52035). On August 26, 2009, Idaho BLM signed a Conservation Agreement with the Idaho Fish and Wildlife Office of the U.S Fish and Wildlife Service (Service). In this Conservation Agreement, BLM agreed to develop and implement activities that provide for the conservation and recovery of slickspot peppergrass. On September 16, 2009, BLM initiated consultation with the Service on existing land use plans. On November 30, 2009, the Service issued a Biological Opinion (BO) which further recommended implementation of conservation measures contained within the Conservation Agreement, which was attached as an appendix to the BO (U.S. Department of the Interior, 2009). Conservation measures that would be implemented in part through BLM actions proposed in this document include:

Table 1. Conservation Measures for Slickspot Peppergrass.

Conservation Measures	BLM Implementation Actions
BLM will promote diversity, richness, and health of native plant communities to support pollinators and habitat for slickspot peppergrass (BO, pp. 71-72).	BLM will focus slickspot peppergrass and habitat conservation and restoration efforts in or adjacent to occupied habitat to encourage connectivity among populations through the following measures:
	<ul style="list-style-type: none"> a) Where slickspot peppergrass habitat exists, BLM will conserve remaining stands of sagebrush and native vegetation in making activity plan and project level decisions. b) Vegetation treatment projects undertaken in slickspot peppergrass habitat will be compatible with species habitat restoration objectives, as described in item (d) below. c) BLM will select and implement specific

Conservation Measures	BLM Implementation Actions
	<p>projects to restore slickspot peppergrass habitat in degraded areas as funding allows, such as planting shrubs and forbs and controlling weeds, within and adjacent to occupied habitat. Apply methods described in item (d) below.</p> <p>d) When conducting vegetation treatment projects, BLM will use seeding techniques that minimize soil disturbance such as no-till drills and rangeland drills equipped with depth bands, use native plant materials, and seed during restoration activities, and select native forbs that benefit slickspot peppergrass insect pollinators.</p>
<p>Restore wildlife habitat while promoting slickspot peppergrass conservation (BO, p. 73).</p>	<p>Any restoration efforts for wildlife within slickspot peppergrass habitat will be compatible with the species' habitat requirements.</p>

To comply with the ESA, a Biological Assessment (BA) was prepared to assess the potential direct, indirect and cumulative impacts of the Proposed Action described in this EA on ESA-listed species. Consultation was completed with a letter of concurrence from the Service on January 27, 2012 (Memorandum 01EIFW00-2012-I-0084). Design features to reduce or eliminate potential impacts to ESA-listed species are included in the Proposed Action. Impacts to listed species are discussed in the Special Status Species section of this EA. The BA, letter of concurrence, and other consultation documents are located in the project file and are available for viewing at the Jarbidge Field Office.

The Clean Water Act of 1977, as amended, provides for the protection, restoration, or improvement of water quality. This Act enables States to establish programs for regulating and managing nonpoint source pollution and directs Federal agencies to comply with State water quality laws. Various Executive Orders and DOI and BLM manuals also direct the BLM to maintain and improve water quality. The proposed shrub planting activities would be implemented in a manner which would not result in direct, indirect or cumulative impacts to water quality or quantity within the Jarbidge Field Office. The application of a 0.25-mile buffer between mechanical planting areas and surface water would be sufficient to ensure water resources are not degraded as a result of the Proposed Action. Since impacts to the quality or quantity of water resources are not expected, water quality and quantity will not be discussed further in this EA.

The Proposed Action complies with the Sikes Act of 1960 (amended in 1974) which allows federal land management agencies to cooperate with state wildlife agencies in the management of wildlife habitat on public lands.

The Proposed Action is consistent with Idaho's Standards for Rangeland Health by proposing to diversify plant community composition and structure. Specifically, the Proposed Action addresses Standards 1 (Watersheds), 2 (Riparian and Wetland Areas), 3 (Stream Channel/Floodplain), 4 (Native Plant Communities), 5 (Seedings), 7 (Water Quality), and 8 (Threatened and Endangered Plants and Animals). The Proposed Action directly addresses

conservation measures identified in the 2006 Conservation Plan for the Greater Sage-grouse in Idaho that recommend planting sagebrush as part of restoration or burned area rehabilitation treatments (pp. 4-19 through 4-20) and re-establishing sagebrush in seeded perennial grasslands (pp. 4-85 through 4-87). The Proposed Action is also consistent with current Bureau policy (Instruction Memorandum No. 2012-043) for enhancement and restoration of sage-grouse habitat, specifically:

- Coordinate, plan, design, and implement vegetation treatments (e.g. pinyon/juniper removal, fuels treatments, green stripping) and associated effectiveness monitoring between Resources, Fuels Management, Emergency Stabilization, and Burned Area Rehabilitation programs to:
 - Promote the maintenance of large intact sagebrush communities;
 - Limit the expansion or dominance of invasive species, including cheatgrass;
 - Maintain or improve soil site stability, hydrologic function, and biological integrity; and
 - Enhance the native plant community, including the native shrub reference state in the *State and Transition Model*, with appropriate shrub, grass, and forb composition identified in the applicable ecological site description (ESD) where available.
- Pursue a long-term objective to maintain resilient native plant communities. Choose native plant species outlined in the ESDs, where available, to revegetate sites (IM 2012-043, p. 3).

SCOPING, PUBLIC INVOLVEMENT, AND ISSUES

The BLM posted this project on the Idaho NEPA Register in March, 2008. Scoping letters were sent to 18 members of the interested public on April 5, 2010, to identify potential issues and develop alternatives. One comment was received via email on April 14, 2010, in response to scoping efforts. There was concern over lack of detailed information regarding where the shrubs would be planted, potential impacts of livestock grazing, and the spread of noxious weeds due to mechanical planting. These issues are addressed in design features of the Proposed Action and the effects analysis. Appropriate design features would be incorporated into each shrub planting project.

The project was introduced at the March 24, 2011 Wings and Roots Meeting between the Twin Falls District and the Shoshone-Paiute Tribes. Comments were received at the April 28, 2011 meeting. The Tribes supported the shrub planting proposal because it would restore native shrubs. Consultation was concluded on April 28, 2011.

PROPOSED ACTION AND ALTERNATIVES

PROPOSED ACTION

BLM proposes to plant native shrubs, including but not limited to subspecies of big sagebrush (*Artemisia tridentata*), low sagebrush (*Artemisia arbuscula*), black sagebrush (*Artemisia nova*), antelope bitterbrush, winterfat, shadscale, fourwing saltbush, and willows (*Salix* spp.). The

proposed project area includes all BLM-managed lands within the Jarbidge Field Office that lack sufficient shrub cover to meet special status species or wildlife habitat needs. This condition is dynamic and dependent on vegetation cover at the time of project planning. Planting would not occur in the Bruneau-Jarbidge Rivers Wilderness or designated corridors for the Jarbidge or Bruneau National Wild Rivers. Plantings would not occur in the Saylor Creek Wild Horse Herd Management Area.

Native shrubs would be planted within identified native and non-native perennial grassland areas where shrubs once occurred naturally, but have been eliminated by wildfire. Treatment sites would be prioritized based on current habitat conditions, the potential for native shrub stand establishment, and the proximity of potential planting sites to important special status species or wildlife areas. Areas such as big game winter range and habitats known or with potential to be occupied by special status species such as slickspot peppergrass, sage-grouse, and pygmy rabbits would be given the highest priority. Treatment areas could include locations where shrubs were seeded post-fire, but where the seeding treatment was marginally successful or unsuccessful. Shrubs could be planted into areas already containing shrubs to increase diversity or density.

Existing and historical vegetative conditions, data collected from vegetation mapping, and field surveys would be used to determine suitable native shrubs for each planting site. Only native shrubs or native shrub cultivars would be used. Stand-dominating shrubs would be prioritized for use, including, but not limited to, big sagebrush subspecies (Wyoming, *A. tridentata* ssp. *wyomingensis*; basin, *A. tridentata* ssp. *tridentata*; mountain, *A. tridentata* ssp. *vaseyana*), low sagebrush, black sagebrush, and antelope bitterbrush.

Shrub seedlings would be planted in clumps to mimic natural spread, creating islands within the project area. The shrub seedlings would be planted in the fall or spring, using tools such as a hand-held auger or planting bar. The disturbance associated with planting would consist of an area 2 to 3 inches in diameter. Vehicles would be restricted to existing roads or designated travel routes to minimize impacts to soils and vegetation.

Planting crews would avoid areas dominated by green rabbitbrush (*Chrysothamnus viscidiflorus*) or rubber rabbitbrush (*Ericameria nauseosa*) and invasive annual plants to reduce potential competition and increase seedling survival. Areas with known noxious weed populations would be avoided to prevent spread to unoccupied areas. Sites would be examined for the presence of noxious weeds prior to planting. Any noxious weeds discovered before or during planting or during post-project monitoring would be treated according to current protocols.

Mechanical methods could be used for planting seedlings in larger areas. A tractor-drawn mechanical tree planter would be used. The disturbance associated with planting would consist of a trench approximately 6-8 inches deep and 4-8 inches wide made by the planter. This trench would be filled in immediately following placement of the shrub seedlings by the packing wheel on the planter. Other disturbance would include crushing of existing vegetation by tractor tires. Impacts would be minimized by planting when soils are not saturated and in mid- to late fall when on-site native vegetation is mostly dormant. Use of mechanical planters would not occur within 0.25 mile of any riparian area.

All shrub planting areas would be located a minimum of 0.25 mile from livestock water and 50 feet from fence lines to reduce potential livestock trampling. Due to the distance of planting locations from livestock water and fences, livestock grazing would generally not be closed after planting. However, livestock management techniques, including herding and water or mineral supplement placement, could be used to reduce the potential for livestock trampling impacts to newly-planted seedlings. In addition, project planning would consider pasture rotation schedules to take advantage of scheduled rest or deferment periods. Coordination with permittees would occur during planning for individual planting projects. In areas where rest or deferment occurs, resumption of livestock grazing would ultimately depend on monitoring and meeting of resource management objectives

Riparian plantings could occur along stream reaches where woody vegetation is lacking. Riparian plantings would be implemented using woody riparian plants that are appropriate to the treatment site and would include but not be limited to: cottonwood (*Populus* sp.), aspen (*Populus tremuloides*), alder (*Alnus* sp.), red-osier dogwood (*Cornus sericea*), birch (*Betula* sp.), and various species of willow that are native to the Jarbidge Field Office. Riparian plantings would occur within Riparian Conservation Areas (RCAs) and be limited to relatively short stream reaches (approximately 100 meters long) and implemented using hand planting methods (i.e., shovels, digging bars). All habitat improvement projects in riparian-stream systems will be coordinated and/or reviewed by the Idaho Department of Fish and Game (RMP, p. II-88).

Approximately 25,000 – 50,000 shrubs would be planted annually. Individual project areas would range in size from about 100 to 5,000 acres. Shrubs would be planted in patches within defined project areas. In addition, BLM estimates that about 2,000 riparian shrubs or trees would be planted annually. Anticipated duration of planting activities would be approximately one to two weeks per project. Monitoring would occur annually for the first 5 years after planting, then every 5 years thereafter.

Implementation of the Proposed Action would be limited by funding and considered ongoing until a major change in resources or priorities indicate that the Proposed Action is no longer necessary. Site-specific effects would be disclosed for each planting proposal that falls within the scope of this programmatic analysis.

Design Features for Special Status Plants

Each proposed project would be evaluated for special status plants and their habitats, including slickspot peppergrass, to avoid damage or destruction of plants or disruption of habitat. Seedlings would not be planted in slickspots or within 100 feet of slickspot peppergrass long-term monitoring habitat and population integrity (HIP) monitoring transects. Planting activities would not occur during saturated soil conditions. Mechanical methods would not be used in slickspot peppergrass habitat to avoid disruption of slickspots. Conservation measures listed in Table 1 and design features listed here would be incorporated into all projects in slickspot peppergrass habitat (i.e. areas containing slickspots), occupied habitat (i.e. slickspots containing slickspot peppergrass plants), or proposed or designated critical habitat.

Design Features for Special Status Animals and Wildlife

Seasonal wildlife restrictions would be applied as described in the 1987 Jarbidge Resource Management Plan (RMP, Table 1, p. II-85), Idaho Information Bulletin Number ID-2010-039 (Seasonal Wildlife Restriction and Procedures for Processing Requests for Exceptions on Public Lands in Idaho), or more current guidance. Wildlife restrictions are intended to protect animals from disturbance during important seasons, such as breeding, nesting, or wintering. Planting activities would avoid known or suspected breeding locations during spring. If it is necessary to complete treatments in spring, planting activities would not occur from 2 hours before sunset through 3 hours after sunrise within 1 mile of active sage-grouse or sharp-tailed grouse (*Tympanuchus phasianellus*) leks to minimize disturbance during the breeding period. Any unknown leks or nest sites encountered during treatment activities would be avoided, documented, and reported to Jarbidge Field Office BLM wildlife biologists. Raptor or other migratory bird nests identified prior to or during planting activities would be avoided by crews and equipment. Spring plantings would not occur in occupied habitat for the Columbia spotted frog (*Rana luteiventris*) to avoid displacement. Plantings would not occur in close proximity to areas used by special status bats, including cliffs, rocky outcrops, trees, abandoned buildings and mines. BLM would coordinate with local Idaho Department of Fish and Game biologists prior to conducting fall plantings to avoid sensitive time periods or locations where big game may be congregating prior to or during use of crucial winter ranges.

Design Features for Special Status Aquatic Species

Bull Trout (*Salvelinus confluentus*)

The majority of the designated critical habitat for bull trout for the Jarbidge Field Office (Bruneau River, Jarbidge River, portion of West Fork Jarbidge River) occurs in the Bruneau-Jarbidge Wilderness, where plantings would not occur. Designated critical habitat outside of the Bruneau-Jarbidge Wilderness where upland and riparian shrub plantings would occur include portions of the East Fork Jarbidge River, West Fork Jarbidge River, Dave Creek, and Deer Creek.

Riparian plantings along streams occupied by bull trout or in designated bull trout critical habitat would be subject to seasonal restrictions. During restricted periods, no instream activities such as walking in or fording the stream would be allowed and all hand planting activities would occur from the bank to protect trout during critical periods (USFWS, 2004). Restricted periods are:

- August 1 to November 1 to avoid disturbance during adult trout spawning and reproductive periods.
- November 1 to May 31 to avoid disturbance of incubating eggs and pre- and post-emergent bull trout fry.

Planting activities that would require instream activities or fording of bull trout occupied streams would be reviewed by the Twin Falls District Level 1 Team to determine if additional Section 7 consultation is required.

Redband Trout (*Oncorhynchus mykiss gairdneri*)

BLM sensitive redband trout are present in suitable stream habitats in the Jarbidge Watershed and in many of the perennial streams which drain the north and south slopes of the foothills to the Jarbidge Mountains (Salmon Falls Creek Watershed). Hand planting along streams containing redband trout would be subject to seasonal restrictions. During the restricted period,

no instream activities would be allowed and all hand planting activities would occur from the bank. The restricted period is May 1 to September 15 to avoid disturbance during spawning and egg incubation.

The seasonal planting restrictions for bull trout would be applied to streams where bull trout and redband trout coexist (Jarbidge Watershed and tributaries).

Bruneau Hot Springsnail (*Pyrgulopsis bruneauensis*)

No instream activities, such as walking in geothermal springs or in the lower Bruneau River near geothermal springs, would occur during riparian hand planting activities.

Bliss Rapids Snail (*Taylorconcha serpenticola*) and Snake River Physa Snail (*Physa natricina*)

No instream activities, such as walking in the Snake River or occupied spring habitats, would be allowed during riparian hand planting activities.

Design Features for Cultural and Historical Resources

Each proposed treatment area would be evaluated for potential effects to cultural resources in compliance with Section 106 of the National Historic Preservation Act and the statewide protocol agreement between Idaho BLM and the Idaho State Historic Preservation Officer. Site-specific analyses would be completed during project planning. Compliance with Section 106 would be completed prior to the initiation of each individual treatment. Archaeological, historic, and traditional cultural properties identified in the Section 106 process would be avoided during shrub planting operations. Any area where adverse effects are unavoidable would not be treated.

NO ACTION

Under this alternative, no action would be taken and shrub seedlings would not be planted.

ALTERNATIVES CONSIDERED BUT NOT ANALYZED IN DETAIL

Seeding of shrubs was considered as a method of establishment. Seeding would require reduction in cover and competition from existing vegetation, creating a need for additional treatment methods, including prescribed fire and possibly chemical treatment. This would not be consistent with the purpose of the action to re-establish shrubs in areas of the Jarbidge Field Office that were historically occupied by shrub communities and are currently dominated by desirable herbaceous plant communities.

AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

The following discussions focus on those aspects of the physical, biological, and human environments likely to be affected by the Proposed Action. These discussions are not intended to be a comprehensive catalog of the resources within the project area. Resources that are unlikely to be affected by the proposed planting activities are not described or are only briefly described

in this section. The project file displays the complete list of resources and supplemental authorities that were considered and the reasons why these resources were not analyzed further.

The No Action Alternative reflects the current situation within the project area and serves as the baseline for comparing the environmental effects of the Proposed Action.

UPLAND VEGETATION

The Jarbidge Field Office area was historically occupied by shrub-dominated vegetation including salt desert shrub, low- and mid-elevation sagebrush-steppe, and mountain shrub communities. About 70% of the field office area has been affected by fire and subsequent post-fire establishment of native or non-native perennial grasses and forbs, as well as invasive annual vegetation, resulting in a landscape dominated by herbaceous vegetation types (Table 2). While shrubs are often seeded as part of ESR treatments, size and scale of fires between 2005 and 2011 have reduced dominance of shrubs in the Jarbidge Field Office.

Table 2. Composition of the Jarbidge Field Office area by broad vegetation types (Source: BLM GIS data, 2011)

Vegetation Type	Percent of Jarbidge Field Office Area
Annual-dominated (cheatgrass and exotic annual forbs)	8%
Native grassland (dominated by native perennial grasses)	24%
Native shrubland (native shrub-dominated communities with native understories)	22%
Non-native perennial (seedings dominated by non-native perennial grasses and forbs)	16%
Non-native understory (native shrub areas with a non-native perennial understory)	5%
Unvegetated (canyon breaks, sand dunes)	1%
Recent burn (2010, 2011 fires)	22%
No data	2%

Alterations to native plant communities have caused changes in the natural fire ecology, species composition, and the dynamics of ecological succession across the Jarbidge Field Office. The landscape-scale composition of plant communities across the field office has become more homogenous and has shifted from a mosaic of shrub and herbaceous communities to continuous, grass-dominated areas. This has increased both the amount and continuity of fine fuels across the landscape.

No Action

Under the No Action Alternative, native upland shrubs would be expected to re-establish in disturbed areas through natural dispersal from remnant shrub patches or ESR seeding treatments. Re-establishment would depend on availability of seed sources as well as appropriate climatic conditions for seed germination and establishment. Since sagebrush seed lacks mechanisms for dispersal much more than 100 feet from a mother plant and typically within 3 feet of the canopy edge (Meyer, 1994; Welch, 2005), low density of seed sources would limit potential for dispersal

and establishment. Re-establishment of sagebrush through natural dispersal would require fire-free intervals of 50 years or more for shrub dominance (Bunting et al. 1987). Continued disturbance would maintain the field office area in a state dominated by herbaceous vegetation, and areas currently with an FRCC of 2 or 3 are not expected to move substantially towards FRCC 1 within the next 50 years.

Proposed Action

Hand-planting shrubs would result in small-scale soil disturbance and possibly removal of some on-site grasses or forbs due to creation of planting holes. Effects of hand planting are expected to be small in scale, localized, and negligible in duration. Use of a mechanical planter would create a larger disturbance due to trenching and crushing of vegetation by tractor tires, which could destroy or damage native grasses or forbs in linear, localized areas. Surface disturbance could result in encroachment of noxious weeds or invasive plants. These effects could be reduced by planting in areas lacking a seed source for noxious weeds or invasive plants and during periods when herbaceous plants are dormant and soils are not saturated. Effects would be larger in scale and longer in duration (1-2 years) compared to hand-planting. The effects of these disturbances would be offset by the direct effect of shrub establishment, thereby improving the structural and biological diversity of vegetation communities. Shrub patches planted using mechanical means would display a linear planting pattern for about 5 years following planting. This pattern would eventually dissolve due to recruitment of additional shrubs around mother-plants (Fleming, 2011). The Proposed Action is expected to decrease the amount of time needed to establish mature shrub patches from >50 years to about 10-20 years in localized areas and promote change in FRCC from condition classes 2 and 3 towards condition class 1 during that time period in small areas. Planting an average of 25,000-50,000 seedlings each year would restore shrubs on 25,000-50,000 acres or approximately 2% to 4% of the Jarbidge Field Office in a 10 year period.

Cumulative Impacts

Past, present, and reasonably foreseeable future events, land uses, or management activities such as wildfires, livestock grazing, wind energy development, transmission lines, roads, and fences have, and may continue to alter native shrub habitats in the Jarbidge Field Office. However, some other past, present, and future actions such as post-fire ESR projects, improved grazing management, and previous shrub planting efforts could off-set these effects. Cumulatively, the No Action Alternative would not likely change vegetation trends in the acreage and location of native shrub communities in the Jarbidge Field Office area beyond the scope of these actions. Implementing the Proposed Action is expected to be additive to other vegetation treatments or management actions to increase the acreage and connectivity of native shrub communities in localized areas at a rate greater than would occur under the No Action.

WETLANDS AND RIPARIAN AREAS

Riparian areas are vegetated zones along rivers and streams that provide a transition between aquatic and upland areas, as well as cover and food for wildlife and fish. These areas also provide water quality benefits by filtering out nutrients from runoff, maintaining stream temperature by providing shade, and controlling erosion. Riparian areas and wetlands are

generally associated with streams, rivers, and springs/seeps. In general, the area along streams where the woody and herbaceous plant communities are influenced by the presence of surface and sub-surface water can be generally referred to as the Riparian Conservation Area (RCA). Land uses within the RCA have the potential to influence riparian condition.

Proper Functioning Condition (PFC) assessments are broad-scale evaluations that use hydrology, vegetation, and soil erosion and deposition attributes and processes to qualitatively determine the condition of riparian and wetland areas (Prichard et al., 1998). From 2001 to 2007, PFC assessments were conducted on 225 miles of riparian areas on BLM-managed lands within the Jarbidge Field Office. The results of these assessments are summarized in Table 3.

Table 3. Riparian condition assessments for the Jarbidge Field Office.

Proper Functioning Condition Rating	Miles of Stream
Proper Functioning Condition	85
Functioning, at risk, with no apparent trend	47
Functioning, at risk, with a downward trend	30
Functioning, at risk, with an upward trend	51
Non-functioning	12
Total	225

In 2007, the Murphy Complex wildfires burned across portions of 21 rivers and streams. Overall, riparian areas are recovering from the wildfires at a natural rate. Riparian vegetation along some of the burned stream reaches where fire intensity was high, including Clover Creek, Deer Creek, and Three Creek, are estimated to take 10 years or more to fully recover to pre-burn condition.

No Action

There would be no impacts to riparian areas from shrub planting activities. Riparian vegetation in the burned areas would continue to recover over time as long as other land uses do not impede recovery. Full recovery of burned riparian vegetation under the No Action Alternative would be slower than what would be expected within the areas planted under the Proposed Action.

Proposed Action

The use of hand planting methods to restore riparian vegetation is expected to have minimal, if any, short-term impacts to riparian areas or riparian conditions within the RCA. By limiting the use of planting methods within riparian areas to use of hand tools and techniques, there would be minimal ground disturbance, no compaction of hydric soils, and no risk for hazardous materials to be spilled within the RCA where surface water could be contaminated. The introduction of new fines into the stream is not expected from using hand planting methods because ground disturbance from this activity is negligible. Any impacts would be short-term in nature and outweighed by the long-term benefits of improved vegetation within the RCA. Benefits to the RCA, such as improving streamside shading, increasing the presence of deep-rooted plants with a high capacity for stabilizing soil, and improving organic nutrient inputs to the stream (e.g. small woody debris, leaf litter) would occur in the future (10 to 20 years after treatment) and may or may not be measurable.

Since mechanical plantings would not be conducted within 0.25 mile of riparian areas, use of this method to plant upland shrubs is not expected to directly or indirectly affect RCA condition.

Cumulative Impacts

No cumulative impacts to riparian areas would occur from the No Action Alternative or Proposed Action.

BLM SPECIAL STATUS SPECIES, INCLUDING THREATENED AND ENDANGERED SPECIES

Special status species include plants or animals listed or proposed for listing as endangered or threatened under the ESA (ESA, 14420-2010-SL-0081), candidates for listing as endangered or threatened under the ESA, and species designated by BLM State Directors in cooperation with State wildlife agencies (in this case, Idaho Department of Fish and Game) as sensitive. The BLM manages special status species under the policy contained in BLM Manual 6840 in addition to requirements set forth under ESA.

Special Status Plants

Special status plants in the Jarbidge Field Office can be rare due to associations with specific substrates, plant communities, or because human-related disturbance has reduced population numbers, available habitat, or degraded habitat condition. Native habitats for special status plants in the Jarbidge Field Office area are listed in Appendix A; however, special status plant populations can occur in habitats modified by fire or vegetation treatments. Population trends for most special status plants, with the exception of slickspot peppergrass, are largely unknown. However, the scale of vegetation modification in the Jarbidge Field Office has likely reduced habitat for those species that are indigenous to native shrub communities. This has been documented for slickspot peppergrass and was a primary reason for the 2009 decision to list the species as threatened under the ESA (FR 52027-52035). Loss of shrub cover has possibly had the indirect effect of facilitating expansion of harvester ant colonies (*Pogonomyrmex salinus*), which prey on slickspot peppergrass fruits and seeds and may contribute to local population declines (FR 52044; White and Robertson 2009).

No Action

Under the No Action Alternative, trends for special status plants are not expected to change. Habitat acreage for species that are indigenous to native shrub communities would continue to decline with potential declines in population numbers. This could contribute to expansion of harvester ant colonies and increased fruit and seed predation on localized slickspot peppergrass populations (FR 52044).

Proposed Action

The small-scale disturbance resulting from hand planting shrubs would be unlikely to disturb special status plants or their habitats. Pre-project evaluations would identify known populations and known or potential habitat. There is a remote chance of small-scale disturbance to special

status plants, habitats, or seed banks due to lack of detection, particularly for annual plants. Avoidance of planting in slickspots would eliminate habitat disruption for slickspot peppergrass due to planting hole creation. Limiting vehicle travel to existing roads or designated travel routes and not planting during saturated soil conditions would further reduce the potential for direct or indirect damage or destruction of special status plants or disruption of habitats by vehicles and planting activities.

Use of a mechanical planter would create a larger disturbance due to trenching and crushing of vegetation by tractor tires, and could result in damage or destruction of undetected special status plants, or disruption of habitat or seed banks in linear, localized areas. This effect would be avoided for slickspot peppergrass due to the prohibition on the use of mechanical planting equipment in slickspot peppergrass habitat. Surface disturbance could result in encroachment of noxious weeds or invasive plants, which could result in habitat degradation for special status plants. These effects would be reduced by planting in areas lacking a seed source for noxious weeds or invasive plants. Effects would be larger in scale and longer in duration (1-2 years) compared to hand-planting. The effects of these disturbances would be offset by the direct effect of shrub establishment, thereby improving the structural and biological diversity of vegetation communities and potentially improving and expanding habitat for special status plants over the long term. This would improve recovery potential for slickspot peppergrass through re-establishment of natural vegetation communities and could indirectly reduce the expansion of harvester ant colonies through establishment of woody vegetation.

Cumulative Impacts

Cumulative impacts for special status plants would be similar to those described for vegetation above. Past, present, and reasonably foreseeable future events, land uses, or activities such as wildfires, livestock grazing, wind energy development, transmission lines, roads, and fences have, and may continue to alter native shrub habitats and thus, habitats for special status plants in the Jarbidge Field Office area. Other past, present, and reasonable foreseeable future actions, including post-fire ESR, improved grazing management, and previous shrub planting efforts could off-set these effects. Cumulatively, the No Action Alternative would not alter population or habitat condition trends for special status plants in the Jarbidge Field Office area beyond the scope of these actions. However, implementing the Proposed Action is expected to be additive to other vegetation treatments or management actions to improve the condition of or expand special status plant habitats within the field office.

Special Status Animals

Special status animals that have potential to occur in or near treatment areas and be directly or indirectly affected by the Proposed Action are described in this section. Special status animals that are not likely to occur in or near treatment areas and be directly or indirectly affected by the Proposed Action are not included here. A summary table of all special status animals, their status, and habitats in the Jarbidge Field Office is presented in Appendix B.

No threatened and endangered terrestrial animals are known or suspected to occur on or in proximity to areas suitable for shrub restoration. Three candidate species, the Columbia spotted frog (*Rana luteiventris*), yellow-billed cuckoo (*Coccyzus americanus*), and greater sage-grouse,

occur in the Jarbidge Field Office. Columbia spotted frog and yellow-billed cuckoo are limited to specific riparian areas. The greater sage-grouse is present through most of the Jarbidge Field Office area, but primarily within the southern half.

Amphibians

Columbia spotted frogs historically occurred in several higher elevation (>6,000 feet) streams and stream segments of the Salmon Falls Creek drainage. Currently, only a single population of Columbia spotted frog is known to exist within the Jarbidge Field Office. This population occurs in a portion of Rocky Canyon Creek located in the southernmost region of the field office. Occupied habitat is confined to a series of actively maintained beaver ponds which support a variety of plants including willows, aspen, sedges, and rushes. Spotted frogs are occasionally noted in Bear Creek, Shack Creek, and Timber Canyon. These drainages lack still water habitat created by beaver ponds.

Birds

Greater sage-grouse require extensive stands of sagebrush and other shrubs to fulfill seasonal habitat needs and are susceptible to habitat loss and degradation (Connelly et al. 2000, Holloran 2005). Potential and known occupied sage-grouse habitat is found throughout most of the Jarbidge Field Office, with the largest populations in the southeast portion of the field office along Brown's Bench, extending west to the Diamond A Desert. Upland cover types commonly used by sage-grouse include areas dominated by low sagebrush, black sagebrush, Wyoming big sagebrush, mountain big sagebrush, mountain shrubs, and crested wheatgrass seedings. Recent wildfires have removed large areas of sagebrush, particularly Wyoming sagebrush, which is not a fire-tolerant species (Cox et al. 2009). Herbaceous riparian zones and wetlands provide important brood-rearing habitat, particularly for late brood-rearing activities. Some riparian zones in the Jarbidge Field Office are located in steep, rocky canyons, have dense woody vegetation, or are dominated by non-native vegetation, such as reed canarygrass. These areas have limited habitat value for sage-grouse. The high elevation sagebrush communities in the Jarbidge Foothills provide important late brood-rearing habitat for sage-grouse due to increased precipitation and vegetation diversity, including a greater number of perennial forb species. Sage-grouse are likely to be encountered in or near potential treatment areas.

Calliope hummingbirds (*Spizella breweri*) are most often observed in higher elevation foothills and mountainous terrain, where sufficient sources of nectar-producing plants such as paintbrushes (*Casilleja* spp.), penstemons (*Penstemon* spp.), and other plants with showy flowers are available. Habitat types used for foraging and feeding include native meadows, wooded canyons, riparian zones, and willow thickets. During migration periods, Calliope hummingbirds occupy lower elevation habitats, including sagebrush-steppe and desert shrub communities, when sufficient forbs or insects are available. Within the Jarbidge Field Office, distributions are unknown, but most often are observed in the Jarbidge Foothills and canyons of the Bruneau and Jarbidge rivers.

Willow flycatcher (*Empidonax traillii*) typically nests in proximity to riparian and short aspen communities. The willow flycatcher is often observed foraging in riparian communities, within or near willow-dominated communities. Locally willow flycatchers are found near low growth form aspen stands adjacent to springs, riparian zones, or the lee side of some ridges.

The distribution of Lewis' woodpecker (*Melanerpes lewis*) is restricted to aspen areas within the Jarbidge foothills. Locally, this species nests in cavities it excavates, usually in large aspen. Foraging habitat is more diverse and may include some short-distance ventures into sagebrush-steppe habitat, but is often within or near riparian corridors and aspen stands. While foraging, Lewis' woodpeckers opportunistically feed on a variety of insects, as well as fruits. Thus healthy and diverse plant communities help support the woodpecker's dietary needs. Lewis' woodpeckers are unlikely to occur in treatment areas, except for treatments conducted in or near riparian areas in the southernmost portions of the field office.

Prairie falcons (*Falco mexicanus*) are year-round residents in southern Idaho, and forage in sagebrush-steppe and grassland sites. Nest establishment may begin in March, followed by egg laying in April. Prairie falcons nest on cliffs or rocky outcrops, and would not likely nest within potential treatment sites. Prairie falcons are likely to forage in or near treatment areas.

Ferruginous hawks (*Buteo regalis*) nest in the Jarbidge Field Office, but migrate from the area in fall and winter. Ferruginous hawks nest and forage in a variety of habitats within the sagebrush-steppe, including grasslands. Nests can be located in trees, tall shrubs, rocky outcrops, or on the ground. Locally, the vast majority of successful ferruginous hawk nests are in isolated junipers and rarely on rock outcrops. Ferruginous hawks are less tolerant of human-related disturbance and activities than most other raptors. Ferruginous hawks return from winter migration earlier than other raptors, with nest territory establishment beginning as early as mid-March. Ferruginous hawk foraging or nesting habitats could occur in or near treatment areas.

Peregrine falcons (*Falco peregrinus*) nest in various habitats ranging from forested mountains to sagebrush-steppe, but are almost always found in proximity to riparian habitats, especially larger bodies of water. In the Jarbidge Field Office, peregrine falcons are currently known to nest and forage near Salmon Falls Creek Reservoir and the supporting watershed. The peregrine falcon is an uncommon species, but there is slight potential that the species could forage in or near treatment areas.

Columbian sharp-tailed grouse occupy sagebrush-steppe, mixed shrubland/grasslands, mountain shrub communities, and riparian areas. Sharp-tailed grouse were extirpated from the Jarbidge Field Office, and existing populations are the result of birds transplanted by the Idaho Department of Fish and Game. Sharp-tailed grouse display on leks in the spring, beginning in March and continuing through May. Most nesting activity begins in late April. Sharp-tailed grouse may occupy potential treatment areas, especially in the spring when females may move considerable distances to establish nests or move broods.

Loggerhead shrikes (*Lanius ludovicianus*) occupy sagebrush-steppe habitat for foraging and nesting. They are frequently observed perched on fence posts, wires, and tall shrubs, while foraging in or along the edges of shrub communities. Nests may occur near treatment areas within sagebrush, greasewood (*Sarcobatus vermiculatus*), and bitterbrush communities with tall shrubs, but would not be expected within grassland-dominated areas. Loggerhead shrikes may occur in or near potential treatment areas.

Sage sparrows (*Amphispiza belli*) are a sagebrush-obligate species, requiring sagebrush vegetation communities for the majority of their seasonal habitat requirements. The species is susceptible to declines resulting from large-scale wildfires which remove shrub communities. Nests are often found in living sagebrush. Sage sparrows may occur in or near potential treatment areas.

Brewer's sparrows (*Spizella breweri*) are sagebrush obligates, and require sagebrush communities for nesting and foraging activities. Brewer's sparrows usually return from winter migration in mid-March or early April. Nests are often found in living sagebrush, and this species is frequently observed in remnant sagebrush islands. Brewer's sparrow may occur in or near treatment areas, particularly locations near remaining shrub islands or unburned shrub stands.

Mammals

Pygmy rabbits typically prefer areas with tall, dense, structurally diverse sagebrush stands and deep soils (Heady et al. 2001). In the Jarbidge Field Office, they occupy unburned sagebrush habitats within low- to mid-elevation plains and foothills. Sagebrush is the primary food item for pygmy rabbits year-round, but in winter sagebrush can comprise up to 99% of their diet. Current pygmy rabbit distributions are scattered due to habitat loss and fragmentation from recent and historic wildfires. Known occupied areas include sagebrush stands on or near the Jarbidge foothills, Horse Butte, and near Roseworth. Historical distributions are largely unknown, but pygmy rabbits likely occurred in sagebrush-steppe communities in the central and northern portions of the Jarbidge Field Office. This species is unlikely to occur in potential treatment areas due to current lack of shrubs.

Piute ground squirrels (*Spermophilus mollis*) occur throughout most of the field office below 5,500 feet elevation in a variety of habitats ranging from sagebrush-steppe, mixed grasslands, edges of playas, and roadside ditches. Their diet is composed of green vegetation, native grasses, and grass seeds. Populations appear more stable in high quality sagebrush-steppe habitat versus grassland areas where food abundance can fluctuate dramatically from year to year (Van Horne et al. 1997, Yensen et al. 1992). Burrows can be found under shrubs or in the open. Hibernation lasts from approximately July – late February. Piute ground squirrels may be found in treatment areas given their wide distribution across the field office.

Spotted bats (*Euderma maculatum*) can occupy a variety of habitats up to approximately 8,200 feet elevation. Specific information regarding roost sites is not well known, but this species has been observed to roost in deep crevices near rocky cliffs. Spotted bats are generally solitary, but may congregate during winter hibernation in small clusters. Spotted bats have been observed to forage over riparian areas or within dry, coniferous forests, with diets mainly composed primarily of moths and other nocturnal insects. Abundance and population trends are largely unknown. Spotted bats have been confirmed in canyons associated with the Bruneau and Jarbidge rivers as well as Clover and Salmon Falls creeks. This species is known to travel several miles from daytime canyon roost areas to foraging sites. Because spotted bats are active at night, the potential for spotted bats to occupy or forage in treatment areas during daylight periods is unlikely.

Townsend's big eared bat (*Corynorhinus townsendii*) is usually observed in locations where rocky canyons with caves, lava tubes, or mines are available for roosting. Lava tubes and mines are uncommon in the field office. Males and females occupy separate roosting sites, but females and pups roost together in maternity colonies that can reach 1,200 individuals. Human activities which disturb maternity colonies are a major threat to this species. The potential for Townsend's big eared bats to occupy or forage in treatment areas during daylight periods is unlikely.

California myotis (*Myotis californicus*) is one of the smallest bats in North America, and is most prevalent in desert scrub habitat, although populations are known to occupy oak and ponderosa pine forests. Roosts are typically in tree snags and cavities, under loose tree bark, cliff crevices, caves, mines, and abandoned buildings or other human structures. California myotis have been documented in the Bruneau and Jarbidge river canyons. The potential for California myotis bats to occupy or forage in treatment areas during daylight periods is unlikely.

Kit fox (*Vulpes macrotis*) inhabits a variety of desert habitats including xeric shrublands, grasslands, and pinyon-juniper woodlands in the southwestern United States (Meaney et al 2006). Exact distributions are unknown, largely because the species is small, wary of human contact, primarily nocturnal, and not often surveyed. Kit foxes have been reported within the past 5 years on the Juniper Butte Air Force training range, located in the west-central part of the Jarbidge Field Office. Suitable habitat is available within or near potential treatment areas in the western half of the Jarbidge Field Office.

No Action

Under the No Action Alternative, areas where upland shrub and riparian habitats have been removed by wildfire would continue to lack shrub cover until natural re-vegetation occurs. In some post-burn locations, natural shrub regeneration at any effective and biologically meaningful rate would not occur. Several special status animals use or require upland shrub habitats for some or all life stages. Consequently, habitat conditions for these species would remain limited in areas dominated by grassland communities. Sagebrush obligates such as sage-grouse, Brewer's sparrow, sage sparrow, and pygmy rabbit would likely continue to experience declines in herbaceous-dominated habitats where sagebrush and other upland shrubs are no longer available. Similarly, riparian areas provide crucial habitat for several resident and migratory special status animals. Riparian zones are susceptible to bank erosion and head-cutting following removal of woody vegetation. Under the No Action Alternative, some riparian shrubs could be lost as stream conditions continue to degrade and water tables lower. Columbia spotted frog are particularly vulnerable to riparian loss and could become extirpated from the field office without restoration of former habitat.

Proposed Action

In the short-term (1-5 years), planting treatments would not reduce habitat use or values for species currently using potential treatment sites. Benefits to sagebrush obligates and specialists would likely remain limited until shrubs mature, reproduce, and ultimately influence cover and food resources for each treatment site. Species which use mainly grassland communities, including kit fox, Piute ground squirrel, Columbian sharp-tailed grouse, and to a lesser extent,

prairie falcons, would likely be unaffected and continue to utilize treatment areas, as these species also extensively use sagebrush habitats. For Columbian sharp-tailed grouse, riparian zones which contain stands of willow and other shrubs are a limiting habitat that is critical for winter survival. Restoring riparian shrubs would increase food sources, provide cover and structure used for nesting and rearing of young, stabilize sites from erosion, and increase survival.

Over the long-term (5-100+ years), planting treatments would increase shrub cover in some upland and riparian communities. Mature upland shrub communities have greater vegetation cover and tend to enhance food availability due to increased diversity of flora and fauna, as well as micro-site and landscape-scale habitats. Restored riparian habitats where willow and other woody species are planted would be less susceptible to erosion and have higher cover and food values. Establishment rates would be site specific, and highly variable in some instances. Special status animals rely on or can use upland and riparian woody species for some or all seasonal habitat requirements. Consequently, restoring habitats to pre-burn conditions would promote the return and sustainability of special status animals across the field office.

Under the Proposed Action, shrub plantings would help stabilize habitat conditions and restore shrubs and a seed source back into some areas where they were lost following wildfires. Direct effects from the Proposed Action could include small potential for inadvertent injury or mortality from vehicles, planting equipment, or personnel. Direct harm or destruction of underground burrows should be rare and would not affect population trends.

Direct and indirect effects related to special status animals include some short-term and short-distance displacement or avoidance in the proximity of treatment areas. Displacement times and distances vary by species and individual tolerances, but should all be temporary and short-range. Special status animals would likely reoccupy treatment areas soon after projects are complete. Changes to habitat composition and function could require years or decades, depending on project location and number and type of shrubs planted. However, as shrub cover increases in treated areas, use by special status animals is expected to increase if sufficient source populations remain in proximity to treatment sites.

Impacts to special status animals would vary seasonally. In the event that early spring planting activities inadvertently result in a lost nest attempt, sufficient time would remain for re-nesting to occur in May and June for most species. Planting activities conducted in the fall season pose less of a threat to special status birds because most will have migrated from the field office.

Overall, the Proposed Action would result in habitat improvements for all special status birds. In upland sites, the gradual return of large blocks of shrub habitat would enable species to potentially re-occupy some of their former range. Sagebrush obligates like sage-grouse, sage sparrows, and Brewer's sparrows would have additional habitat for nesting and rearing of young, and populations would be at less risk if future wildfires remove shrub communities.

Columbia spotted frogs enter hibernation by October of each year, thus would have a low risk of being impacted by fall planting activities. Indirectly, riparian restoration efforts would benefit these and other amphibians through stabilized and improved riparian conditions. One limiting

factor for the Columbia spotted frog is a lack of beaver ponds, which provide relatively stable still-water habitat from spring through summer. Increased abundance of woody plants along suitable streams would help promote use by beavers, thus potentially creating new or expanded habitat for amphibians.

Monitoring of known occupied pygmy rabbit sites at 6 months and 3 years following the 2007 Murphy Complex wildfires documented the lack of persistence of this species in grassland habitats (BLM, unpublished monitoring data). Therefore, pygmy rabbits would not be expected to occur in proposed treatment areas dominated by grassland communities. Long-term effects of the Proposed Action could include increased sagebrush patch size and continuity. This could expand potential habitat for pygmy rabbits.

Planting projects could result in short-term displacement of kit foxes. However, abundant suitable habitat is available for dispersal and temporary shelter. No destruction of dens or alteration of prey bases would occur, thus kit foxes would be expected to reoccupy sites following project completion. Indirectly, kit foxes would benefit from increased shrub cover and patch size due to expected increases in prey associated with large blocks of sagebrush-steppe habitat.

There would be negligible potential for direct impacts to special status bats because of their nocturnal activity patterns, and limited use of potential treatment areas. Greater shrub cover and diversity in foraging areas could enhance insect populations and thus increase bat food sources.

Cumulative Impacts

Past, present, and reasonably foreseeable future events or actions such as wildfires, livestock grazing, wind energy development, transmission lines, roads, and fences have, and will likely continue to alter shrubland habitats in the Jarbidge Field Office. The Proposed Action would help reduce habitat fragmentation resulting from those activities by reintroducing shrubs into areas where they formerly occurred as a major vegetation component. Shrub restoration would supplement natural regeneration processes and previous habitat restoration efforts including post-fire ESR seedings. Cumulatively, this would reduce wildlife dependency on remaining unburned shrub habitats, which could degrade over time from higher utilization as a result of recent large-scale habitat loss. Wildfires in particular have removed large acreages of shrubland habitats over a short time period within the Jarbidge Field Office. Future wildfires are likely to remove some remaining shrub habitats and seed sources, further impeding natural recovery across the field office. Restoration of native plants is essential if sagebrush ecosystems are to recover and minimize impacts of future fires (Baker, 2011).

Special Status Aquatic Species

A list of special status aquatic species occurring in the Jarbidge Field Office is presented in Appendix C. The Jarbidge River watershed contains migratory, or fluvial, Columbia River Basin bull trout and six local populations of resident bull trout that occupy the Jarbidge River and its tributaries. On BLM-administered land, bull trout are present in the East Fork of the Jarbidge River, West Fork of the Jarbidge River, Buck Creek, Deer Creek, and Dave Creek. Dave Creek, a western tributary to the East Fork of the Jarbidge River, contains a local population of resident

(non-migratory) bull trout and may provide spawning and rearing habitat for fluvial bull trout. This local population of bull trout could be a significant factor in future bull trout recovery efforts because of its suitability for spawning and connectivity to other bull trout streams in the Jarbidge River Watershed.

On January 14, 2010, the Service designated critical habitat for Jarbidge River bull trout (FR Vol. 75, No. 9, pages 2270-2431). On BLM-administered land, the designated critical habitat for bull trout included the Bruneau River from the slackwater of C.J. Strike Dam upstream to the confluence of the Jarbidge River, Jarbidge River, East Fork of the Jarbidge River, Dave Creek, the West Fork of the Jarbidge River, and Deer Creek. The designation as critical habitat emphasizes the importance of these streams in sustaining bull trout populations within the Jarbidge River watershed.

In 2002, BLM completed stream habitat surveys on Dave Creek, the Jarbidge River and its East Fork, Buck Creek, and Deer Creek. These surveys were completed on stream sections that had not been previously surveyed and were representative of larger stream reaches with similar habitat characteristics such as gradient, width, and depth. The results of these stream surveys determined that bank stability was approximately 82 %, large woody debris was approximately 47 pieces per mile, and there were approximately 128 pools per mile. The only instream habitat indicator that did not meet general habitat requirements for bull trout were instream fines which for all sites sampled exceeded the recommended percent fines of <20% for properly functioning bull trout habitat.

The 2007 Murphy Complex wildfires burned riparian areas in the Jarbidge River below the confluence with its East Fork and in portions of Columbet, Dorsey, and Cougar Creeks. Approximately 50 miles of stream habitat were affected by wildland fire. Fire severity within the riparian areas was low along the Jarbidge River and moderate to high in Columbet, Dorsey, and Cougar Creeks. Fire severity in the upland areas adjacent to these streams was also moderate to high. The riparian woody vegetation for these burned stream reaches consisted of mature willow and aspen; some woody vegetation mortality occurred. In areas with low fire severity, the willow and aspen have re-sprouted and are recovering from the fire.

Redband trout, a subspecies of rainbow trout, are a BLM sensitive species. Redband trout are broadly distributed throughout rivers and streams within the southern portion of the Jarbidge Field Office. Redband trout are present in the Bruneau River and its tributaries, including the Jarbidge River. They are found in the headwater tributaries to Clover Creek but are not present in lower Clover Creek due to reduced or the absence of perennial stream flows. Salmon Falls Creek and several of its tributaries which drain the Jarbidge Foothills also contain redband trout. Many of the headwater tributaries to Salmon Falls Creek run dry before reaching their downstream confluence with other tributaries, resulting in redband trout populations that are locally isolated at certain times of the year.

In 2006, the BLM completed approximately 49 miles of stream habitat survey on 14 streams containing redband trout. Based on these surveys, the stream habitat conditions consisted of 15 miles of stream (31%) that was properly functioning for redband trout, 19 miles of stream (37%) that was functioning in a reduced condition, and 15 miles of stream (31%) that was functioning

in an unacceptable condition for redband trout. A majority of the streams in this condition have substantially reduced flows or are dewatered under legal water rights during a portion of the year.

The Murphy Complex wildfires burned riparian areas in five of the redband streams surveyed in 2006; approximately 6 miles of stream habitat were affected by the wildfires. The streams that burned include: Rocky Canyon (1.2 mi.), Bear Creek (0.6 mi.), Deer Creek (2.0 mi.), Lower Three Creek (0.7 mi.), Middle Three Creek (0.3 mi.), and Timber Canyon (1.4 mi.). In the areas where wildfires burned through the riparian area, the effects were localized and limited to short sections of streams. Fire intensity within the riparian areas was generally low to moderate, with few areas experiencing high fire intensity. Prior to the fire, riparian woody vegetation primarily consisted of mature willow, aspen, and cottonwood. In areas with low fire intensity, the willow and aspen have re-sprouted and are recovering. In areas with high fire intensity, some vegetation mortality has been observed. The upland areas within many of the watersheds containing redband trout experienced moderate to high burn intensity. Delayed effects to riparian areas from upslope erosion have been observed, but overall post-fire recovery efforts have successfully restored herbaceous vegetative cover across the 2007 burn area.

The geothermal springs associated with the lower Bruneau River contains the ESA-listed Bruneau hot springsnail (*Pyrgulopsis bruneauensis*). The Snake River contains three ESA-listed aquatic snails, three BLM sensitive aquatic snails, and two BLM sensitive fish (Appendix C). The primary factors affecting these species include hydroelectric flow alteration and reductions in water quality and quantity.

No Action

There would be no impacts to aquatic species, including bull trout and their designated critical habitat or redband trout or their habitat under the No Action Alternative. Riparian vegetation in the burned areas would continue to recover over time as long as other land uses did not impede riparian vegetation recovery. Full recovery of instream habitat conditions and burned riparian vegetation under the No Action Alternative would be slower than what would be expected within the areas planted under the Proposed Action.

Proposed Action

Planting activities to restore riparian vegetation along bull trout occupied streams would be subject to seasonal restrictions during which all activities would be conducted from the streambank with hand tools and no walking within the stream or fording streams with motorized vehicles would be allowed. The planting methodologies would not disturb streambed materials or have the potential to inadvertently harm or kill individual bull trout that may be present within the project area. The potential for direct impacts to bull trout would be avoided due to the prohibition on instream activities during critical periods and the requirement for Level 1 Team review on proposed instream activities outside of critical periods. Potential indirect impacts to bull trout would be limited to temporary displacement of individuals from the planting site. The result of these impacts to individual bull trout would be negligible and below levels that could be meaningfully measured or analyzed. The impacts to designated critical bull trout habitat from

hand planting riparian shrubs along the streambank are also expected to be negligible and not measureable.

Planting activities to restore riparian vegetation could have localized short-term impacts to redband trout if the occupied streams are forded by vehicles used to access project sites or where crews enter the stream channel. Potential for these impacts to occur would be reduced by implementation of project design features that limit instream activities during critical periods. Impacts to redband trout would primarily be associated with temporary displacement of individual fish from the planting site and disturbance of instream fines. The introduction of new fines into the stream is not expected from using hand planting methods. Although redband trout could be locally affected, the anticipated impacts are minor, short-term, and are not expected to be measurable over time.

Planting to restore riparian vegetation could have long-term benefits to bull trout and their designated critical habitat and redband trout habitat by improving streamside shading and thermal insulation, increasing the presence of deep-rooted plants with a high capacity for stabilizing soil, and improving organic nutrient inputs to the stream (e. g. small woody debris, leaf litter). These benefits would primarily occur in the future (10 to 20 years after treatment) as plants reach maturity and may or may not be measurable.

Since mechanical plantings would not be conducted within 0.25 miles of riparian areas they would not have the potential to directly or indirectly affect bull trout individuals or their designated critical habitat, or redband trout individuals or habitat.

Planting projects using mechanical or hand planting methods would not be conducted in a manner that has the potential to directly or indirectly impact the habitats used by the Bruneau hot springsnail. For these same reasons, potential impacts to ESA-listed and sensitive aquatic species occurring in the Snake River are unlikely.

Cumulative Impacts

No cumulative impacts to special status aquatic species would occur from the No Action or Proposed Action.

MIGRATORY BIRDS

Migratory birds lacking special status designation are numerous in the Jarbidge Field Office and include raptors, woodpeckers, and a variety of songbirds (e.g. hummingbirds, swallows, wrens, grosbeaks, thrushes, towhees, sparrows, and warblers). These birds utilize upland and riparian shrub communities for breeding and migratory stopovers. Shrubs provide food in the form of buds, flowers, fruits, and insects, as well as woody material used for nests. Wildfires have reduced shrub patch size and continuity, thus creating landscape-level gaps in habitats important for breeding and migration for shrub-dependent birds. Some migratory birds prefer grassland communities, including Savannah sparrow (*Passerculus sandwichensis*), lark sparrow (*Chondestes grammacus*), short-eared owl (*Asio flammeus*), long-billed curlew (*Numenius*

americanus), burrowing owl (*Athene cunicularia*), western meadowlark (*Sturnella neglecta*), and horned lark (*Eremophila alpestris*).

No Action

Under the No Action Alternative, restoration of shrub communities would be largely dependent upon natural dispersal and regeneration. Because of repeated fires, some areas within the field office have lost shrub seed sources and would remain as grassland vegetation communities. Birds which prefer grassland communities would continue to occupy these areas of the field office. Migratory birds which rely on shrub habitats for breeding, nesting, rearing of young, and foraging, would continue to be limited to existing shrub communities.

Proposed Action

Under the Proposed Action, impacts to migratory birds would occur primarily during nesting periods. Planting activities conducted in April or later would have a greater potential to disrupt establishment of nest territories, physically damage nests, or indirectly cause nest abandonment. Project design features relative to critical nesting periods should reduce or eliminate potential for impacts to nesting raptors. In the event planting activities result in nesting failure early in the season, sufficient time would remain for re-nesting to occur in May and June.

The majority of migratory birds in the Jarbidge Field Office would benefit from restored shrub-dominated habitats, which would result in long-term increases in nesting cover and structure and prey numbers. Restored shrubs in riparian habitats would provide important breeding and foraging cover. Migratory birds which utilize upland grassland habitats (including but not limited to Savannah sparrow, lark sparrow, long-billed curlew, and short-eared owl) would experience habitat reduction in the long term as treated areas transition toward shrub-dominated communities. Numbers of horned lark, western meadowlark, mourning dove (*Zenaida macroura*), and burrowing owl are not expected to shift substantially because they readily use shrub as well as grassland habitats. Habitat acreage and continuity for birds that primarily use shrub-dominated areas would increase in the long-term. The transition from grassland to shrubland would be gradual and occur over several years to decades. During that time, large amounts of suitable grassland habitat would be available to support migratory birds with broad affinities.

Cumulative Impacts

Cumulative impacts to migratory birds would be similar to those described for special status birds.

GENERAL WILDLIFE

Most wildlife species in the Jarbidge Field Office do not have special status and are referred to here as “general” wildlife. Given the large number of taxa included in this category, analyses will focus on three main groups (big game, small and medium-sized mammals, and herptiles, i.e. amphibians and reptiles). These groupings are intended to capture the majority of priority

management species, or species which have the greatest potential to be affected by the Proposed Action. Birds lacking special status are addressed in the Migratory Birds section.

Big Game

Big game species which occur on or near areas suitable for shrub plantings include elk (*Cervus canadensis*), mule deer (*Odocoileus hemionus*), and pronghorn antelope (*Antilocapra americana*). For the purposes of this analysis, big game seasonal ranges are classified as either summer or winter, because distinct transitional ranges are limited and migration routes are not known to occur in the field office.

Elk summer and winter ranges occur primarily in the southern half of the field office, including the Diamond A Desert and the plateaus between the Jarbidge River and Salmon Falls Creek canyons. The majority of summer range is generally associated with woodland and riparian habitats at higher elevation sites along the Idaho and Nevada borders. Riparian zones which contain shrubs provide important cover and forage, especially when elk return from winter ranges in the spring. Winter range is generally below 6,500 feet elevation, and occurs in areas of mixed sagebrush and grassland communities and riparian zones.

Mule deer are more widely distributed than elk, and utilize riparian, canyon, woodland, and shrub habitats throughout the field office. In most areas, mule deer are scattered from early summer through fall. Any portion of the field office is considered potential summer mule deer range. The majority of mule deer habitat occurs in the southern two-thirds of the Jarbidge Field Office, in areas where varied topography and intact sagebrush, mountain shrub, and aspen communities remain. During the past 20 years, habitat conversions, noxious and invasive weed expansion, and large wildfires have removed or decreased habitat quality and availability throughout much of the field office. Habitat loss and degradation has been the most severe following recent large-scale wildfires, which converted thousands of acres of sagebrush-steppe and mountain shrub to grassland communities. Much of this conversion occurred in mule deer summer and winter range. Continued loss of shrub habitats, such as Wyoming big sagebrush, bitterbrush, and mountain mahogany, is considered a major threat to mule deer populations throughout western states, including Idaho (Cox et al., 2009). Unlike elk, mule deer often fare poorly in grasslands that remain following wildfires, because these habitats do not contain sufficient cover and browse. Shrub-dominated riparian habitats are essential to survival and reproduction of southern Idaho mule deer herds. Riparian shrubs provide critical nutrients, especially in stressful periods of winter and spring, when many other food sources become scarce or lack sufficient nutrition.

Pronghorn antelope currently occupy a variety of native and exotic rangelands in the Jarbidge Field Office, but prefer expansive stands of sagebrush-steppe when it is available. Locally, pronghorn are found in grassland habitats and shrublands with shorter sagebrush. Generally, pronghorn avoid areas with sagebrush taller than about 30 inches. Pronghorn rely upon sagebrush for a majority of life stage requirements. Sagebrush can be a limiting factor in pronghorn fitness and survival. In winter, sagebrush can comprise up to 80% of the pronghorn diet. In the Jarbidge Field Office, population numbers have been declining since 1992 following a harsh winter which led to a 30 to 50 percent decline in the population. Subsequent habitat loss and fragmentation from wildfires have continued to hinder population recovery. The most

limited habitat types appear to be winter range and spring/summer fawning areas (Racheal, 2009). Winter habitat is varied, but is generally limited to the central and southern portions of the Jarbidge Field Office up to 6,000 feet in elevation.

Small and Medium-Sized Mammals

Inventory data collected by BLM in 2006 and after the 2007 wildfires indicated that small mammal diversity and abundance were higher in shrub-dominated trap sites compared to recently burned or non-native grassland sites (Klott et al., 2007). Deer mice (*Peromyscus maniculatus*) were the most abundant species trapped in all habitats. Based on the inventory data and other ancillary observations, small mammals likely to occupy potential treatment areas include deer mouse, montane vole (*Microtus montanus*), Great Basin pocket mouse (*Perognathus parvus*), western harvest mouse (*Reithrodontomys megalotis*), and Ord's kangaroo rat (*Dipodomys ordii*). Species likely to be encountered in or near remaining shrub islands or in unburned areas of the field office include black-tailed jackrabbit (*Lepus californicus*), mountain cottontail (*Sylvilagus nuttallii*), least chipmunk (*Tamias minimus*), vagrant shrew (*Sorex vagrans*), sagebrush vole (*Lemmiscus curtatus*), and long-tailed weasel (*Mustela frenata*). Mammals likely to occur in riparian areas include deer mouse, western jumping mouse (*Zapus princeps*), long-tailed vole (*Microtus longicaudus*), meadow vole (*Microtus pennsylvanicus*), muskrat (*Ondatra zibethicus*), and American beaver (*Castor canadensis*). All of these species prefer a variety of riparian conditions which contain a mixture of moist soils, wetland grasses and forbs, and woody vegetation.

Some small terrestrial mammals are only seasonally active, and enter into aestivation or hibernation in underground dens, beginning in the mid-summer (June-July), continuing until spring (March-April) of the following year. Exact dates vary by species, seasonal weather conditions, and elevation. A few small mammals are active year round, including deer mice and voles. Small mammals serve as an important prey base for many medium-sized predators, including raptors, coyotes (*Canis latrans*), American badgers (*Taxidea taxus*), bobcats (*Lynx rufus*), and striped skunks (*Mephitis mephitis*). Medium-sized mammalian predators forage in grassland vegetation communities, but often are found within or near shrub habitats which provide important cover for resting, foraging, denning, and rearing of young. Predators are active year-round, and typically have increased ranges during the winter as prey availability decreases.

Flying mammals include several non-special status bats which are resident to or migrate through the Jarbidge Field Office in spring and fall. These include the western small-footed myotis (*Myotis ciliolabrum*), little brown bat (*Myotis lucifugus*), big brown bat (*Eptesicus fuscus*), long-legged myotis (*Myotis volans*), Yuma myotis (*Myotis yumanensis*), pallid bat (*Antrozous pallidus*), hoary bat (*Lasiurus cinereus*), silver-haired bat (*Lasionycteris noctivagans*), and western pipistrelle (*Pipistrellus hesperus*). Bats use various habitats for foraging, including grasslands, but are more often observed in or near canyons and riparian habitats, where insects are more abundant. Use of potential treatment areas by bats is likely limited to feeding activities from evening to early morning. During daylight periods bats roost in habitats which provide shade and moderate temperatures such as rocky canyons, lava tubes, and caves. Aspen provides a limited amount of forest habitat used by some species.

Reptiles

Although several non-special status reptile species are found in the Jarbidge Field Office, only a limited number of them are known or suspected to occupy primarily upland grassland habitats suitable for shrub planting treatments. These include western gopher snake (*Pituophis catenifer*), western rattlesnake (*Crotalus viridis*), racer (*Coluber constrictor*), western whiptail (*Cnemidophorus tigris*), and horned lizards (*Phrynosoma platyrhinos*). Reptiles which occur in riparian habitats include the western terrestrial garter snake (*Thamnophis elegans*) and western skink (*Eumeces skiltonianus*). Reptiles generally become inactive and move underground to hibernate, beginning in October and emerging in April.

Amphibians

Amphibians, such as chorus frogs (*Pseudacris maculate*), spadefoot toads (*Scaphiopus intermontanus*), and bull frogs (*Rana catesbeiana*), occupy portions of the field office, but are generally restricted to riparian or wetland habitats. Use of potential riparian treatment sites by amphibians could occur.

No Action

Under the No Action Alternative, the rate of natural shrub regeneration would vary by location, and depend upon a numerous site-specific biotic and abiotic factors. In some portions of the Jarbidge Field Office, large expanses of grasslands have a limited number of shrub islands to function as a seed source for recolonizing burned areas. In these areas, natural establishment of shrubs would require multiple decades, barring any future disturbances, such as wildfires. Consequently, general wildlife in the Jarbidge Field Office that are dependent upon shrub communities for some or all of their seasonal habitat requirements would remain limited to remaining upland or riparian shrub-dominated areas. If shrub islands are too far apart, some local populations of sagebrush-obligate species could be extirpated (Hanser and Huntly, 2006). Riparian shrubs provide important food and shelter during all seasons. Big game readily use wooded riparian areas throughout the year for varying life stage habitat needs. In some burned riparian areas, stream degradation may start or continue due to lack of bank stabilization by woody species. Burned stream reaches can be more susceptible to invasion by non-native species or experience accelerated erosion which lowers water tables and can reduce or eliminate existing riparian shrubs. In some upland and riparian locations, wildlife would continue to have limited or no suitable habitat capable of supporting a return to formerly occupied areas.

Proposed Action

Direct impacts to general wildlife could include some inadvertent injury or mortality from contact with personnel, vehicles, and equipment used during planting activities. The potential for impacts of this type to occur are primarily limited to small mammals and herptiles, which are less capable of detecting and avoiding impacts compared to big game and other larger, more mobile species. However, during early spring and late fall planting periods, most small mammals and herptiles would be inactive or capable of escaping to underground dens or burrows. Although personnel, vehicles, and equipment could damage some burrow entrances and tunnels, entrapment is expected to be rare. Additionally, any mortality to small mammals would not affect local population levels, given the high reproductive rates of these species.

Planting activities could result in short-distance and temporary displacement of animals away from project locations. Animals living in burrows are not expected to be displaced. The exact distances wildlife would potentially move is difficult to predict, but generally would be no further than necessary to evade noise and visual disturbances associated with planting activities. In most instances, wildlife would be expected to re-occupy treatment areas within a few hours to a few days after planting activities cease. Big game species may tend to displace longer and further in the fall because of the additive effects of hunting. Coordination with Idaho Department of Fish and Game to avoid sensitive locations during fall would reduce potential displacement impacts.

Implementing the Proposed Action is expected to improve habitat conditions for general wildlife including all big game and most small mammals and reptiles. Shrub plantings would augment the natural recovery process of shrub recruitment across the field office. Consequently, shrub restoration would help reduce habitat fragmentation and increase valuable food and cover components. Riparian corridors which contain shrub communities of willow, aspen, and other woody riparian species provide important fall and winter browse, year-long escape and loafing cover, and support genetic connectivity across large areas. Upland and riparian shrub restoration would create travel corridors between disconnected habitat patches. This could increase wildlife dispersal, particularly for small mammals, by providing cover and food sources. Connectivity of habitats is expected to increase over time as shrubs establish, become reproductive, and expand into adjoining areas.

Cumulative Impacts

Cumulative impacts to general wildlife would be similar to those described for special status animals.

LIVESTOCK GRAZING

BLM-managed lands in the Jarbidge Field Office are divided into 93 livestock grazing allotments with about 70 permit holders (permittees). About 96% of the permitted use is for cattle grazing; sheep (4%) and horse (<1%) use occurs to a lesser degree. Livestock grazing use occurs within the planning area year long. Generally, the lower elevations in the northern third of the field office are grazed in fall, winter, and spring; the middle third in spring, summer, and fall; and the highest elevation areas in the southern third are grazed primarily in summer and fall. Forage availability can be influenced by a number of factors, including acres available for livestock grazing, vegetation type, seasons of use, prescribed use levels, and the type and placement of infrastructure. Vegetation changes due to fire and subsequent dominance of large areas by herbaceous vegetation have changed forage abundance and distribution in recent years.

No Action

The No Action alternative would result in no direct or indirect impacts to livestock grazing and grazing would continue as permitted.

Proposed Action

Restoring and maintaining biologically and structurally diverse shrub communities would improve the overall rangeland health and maintain relatively constant forage production across the field office. The Proposed Action would have no short-term direct effects to livestock grazing. Activities associated with shrub planting would occur in a relative short time period, resulting in minimal disruption to livestock that may be present. Disturbance associated with planting would create minimal loss or alteration of existing vegetation and soils and so would have a negligible effect on the availability of forage. The Proposed Action would not affect acres available to livestock grazing, but over the long-term could modify plant community composition from grass to shrub-dominated within treated areas, potentially influencing management and infrastructure as these changes occur.

The Proposed Action is expected to decrease the amount of time needed to establish mature shrub patches from >50 years to about 10-20 years in localized areas and promote change in FRCC from condition classes 2 and 3 towards condition class 1 during that time period. Establishing a fire regime more representative of historical conditions would increase long-term (>10 years) benefits to livestock grazing by lengthening fire-return intervals and reducing wildfire size. Less frequent burning of native and non-native perennial communities would decrease the opportunity for the introduction and spread of noxious weeds and invasive annual grasses that occurs through loss of perennial plants and biological soil crusts. Maintaining healthy perennial vegetation and limiting the opportunity for the introduction and spread of annual grasses would help maintain a more consistent and predictable forage base for livestock grazing.

Establishment of shrubs in perennial grasslands would improve water and nutrient cycling by trapping and retaining falling and drifting snow, thereby increasing available water for infiltration. There would be short- (<10 years) and long-term improvements to water and nutrient cycling, potentially increasing forage production and availability.

In the long-term, forage availability for livestock grazing could decrease in treated areas. As shrub dominance within treated areas increases, competition with the herbaceous understory would increase, subsequently decreasing herbaceous plant abundance. Improved habitat conditions for sagebrush obligate and special status species could result in occupation of treated areas. This could result in site-specific constraints regarding seasons-of-use, allowable use levels, and placement of infrastructure related to livestock management and affect the seasonal or permanent availability of forage in treatment areas.

The introduction of shrubs palatable to livestock into areas currently void of these species could result in short- and long-term restrictions to use of treated areas to protect new seedlings and insure the establishment and longevity of the treatment. The effects of these restrictions would be limited spatially to the treated areas or pastures in which the treatment occurs. Site-specific shrub planting projects would be small relative to the field office area and designed to avoid or minimize conflicts with livestock grazing.

Cumulative Impacts

Past actions and natural events such as wildfires have converted many shrub communities in the Jarbidge Field Office to perennial grasslands and/or areas dominated by noxious weeds and invasive plants. Ongoing and reasonably foreseeable future actions, such as post-fire ESR projects, noxious weed treatments, fuels reduction treatments, and grazing management are expected to offset some of the effects by stabilizing the forage supply.

Cumulatively, the No Action Alternative combined with these effects is expected to continue to provide forage for livestock. Vegetation trends for forage production are likely to remain similar to recent trends. Shrublands have been converted to grasslands as a result of large wildfires; in some areas the conversion of perennial communities to annual grasslands has reduced the stability of the forage supply.

Cumulatively, the Proposed Action, combined with these effects, is expected to increase the number and size of shrub communities in the Jarbidge Field Office. As native and native-like vegetation communities, including shrub communities, increase over time the amount of forage available for livestock may decrease because shrublands provide less forage than grasslands. However, restoring native plant communities would result in vegetation communities that would provide more stable forage and which are less susceptible to introduction and spread of noxious weeds and invasive plants.

CULTURAL AND HISTORICAL RESOURCES

Cultural resources in the field office are typical of south central Idaho and north central Nevada in terms of cultural themes, and site types, density, and distribution across the landscape. For approximately 12,000 years human use revolved around hunting, gathering, and fishing pursuits with short-term adjustments and long-term adaptations to climatic changes. Since the 1880s cattle, horse, and sheep ranching and farming have been the dominant cultural themes. Native human populations in the area include the Northern Shoshone, Bannock, and Northern Paiute Tribes. Tribal members, now concentrated at the Duck Valley and Fort Hall Reservations, retain an abiding interest in the natural and cultural resources of the region. Sage-grouse, and by extension, sagebrush, are of particular importance to the tribes.

No Action

The No Action Alternative would result in no adverse direct or indirect impacts to cultural resources, but would also eliminate the beneficial effects of habitat restoration for tribally important wildlife and plant species.

Proposed Action

The Proposed Action should have no adverse direct or indirect effects to important archaeological, historic, or traditional cultural properties. Cultural resources susceptible to adverse impacts from ground-disturbing actions would be identified and avoided during shrub planting operations.

The Proposed Action should have beneficial effects to tribal interests by improving habitat for wildlife species of importance to the tribes.

Cumulative Impacts

There would be no cumulative effects to cultural resources from implementing the Proposed Action.

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Name	Title	Responsibilities and Document Sections
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Jim Klott	Wildlife Biologist	Special Status Animals, Migratory Birds, Wildlife
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Jeff Ross	Archeologist	Cultural and Historic Resources
Katherine Farrell	Planning and Environmental Coordinator	NEPA Compliance

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APPENDIX A

Special status plants and their native habitats occurring or with potential to occur in the Jarbidge Field Office area.

Common Name	Scientific Name	Habitat(s)	2010 Status
Annual/Biennial Forbs			
Alkali cleomella	<i>Cleomella plocasperma</i>	Salt desert shrub	Type 3
Desert pincushion	<i>Chaenactis stevioides</i>	Salt desert shrub Low-elevation sagebrush-steppe	Type 4
Least phacelia	<i>Phacelia minutissima</i>	Aspen, meadows	Type 3, NV
Rigid threadbush	<i>Nemacladus rigidus</i>	Salt desert shrub Low-elevation sagebrush-steppe	Type 4
Slickspot peppergrass	<i>Lepidium papilliferum</i>	Low-elevation sagebrush-steppe	Threatened
Spreading gilia	<i>Ipomopsis polycladon</i> [syn. <i>Gilia polycladon</i>]	Salt desert shrub Low-elevation sagebrush-steppe Mid-elevation sagebrush-steppe	Type 3
White eatonella	<i>Eatonella nivea</i>	Salt desert shrub Low-elevation sagebrush-steppe	Type 4
White-margin waxplant	<i>Glyptopleura marginata</i>	Salt desert shrub	Type 4
Perennial Forbs			
American wood sage	<i>Teucrium canadense</i> var. <i>occidentale</i>	Riparian, meadows	Type 3
Broadleaf fleabane	<i>Erigeron latus</i>	Low-elevation sagebrush-steppe Mid-elevation sagebrush-steppe	Type NV
Bruneau River phlox	<i>Linanthus glabrum</i> [syn. <i>Leptodactylon glabrum</i>]	Rhyolitic canyon walls	Type 3, NV
Calcareous buckwheat	<i>Eriogonum ochrocephalum</i> var. <i>calcareum</i>	Salt desert shrub	Type 3
Chatterbox orchid	<i>Epipactis gigantea</i>	Riparian, meadows, wetlands, hot springs	Type 3
Cusick's primrose ^A	<i>Primula cusickiana</i> var. <i>cusickiana</i>	Mid-elevation sagebrush-steppe	Type 5, NV
Davis peppergrass	<i>Lepidium davisii</i>	Large hard-bottomed playas within low-elevation sagebrush-steppe and salt desert shrub	Type 3, NV
Four-wing milkvetch	<i>Astragalus tetraapterus</i>	Low-elevation sagebrush-steppe	Type 3
Greeley's wavewing	<i>Cymopterus acaulis</i> var. <i>greeleyorum</i>	Salt desert shrub Low-elevation sagebrush-steppe	Type 3
Janish penstemon	<i>Penstemon janishiae</i>	Salt desert shrub Low-elevation sagebrush-steppe	Type 3
Lewis buckwheat	<i>Eriogonum lewisii</i>	Mid-elevation sagebrush-steppe	Type NV
Matted cowpie buckwheat	<i>Eriogonum shockleyi</i> [syn. <i>Eriogonum shockleyi</i> var. <i>shockleyi</i>]	Salt desert shrub Low-elevation sagebrush-steppe	Type 3
Newberry's milkvetch	<i>Astragalus newberryi</i> var. <i>castoreus</i>	Salt desert shrub Low-elevation sagebrush-steppe	Type 4
Owyhee milkvetch	<i>Astragalus yoder-williamsii</i>	Mid-elevation sagebrush-steppe	Type 3, NV
Packard's cowpie buckwheat	<i>Eriogonum shockleyi</i> [syn. <i>Eriogonum shockleyi</i> var. <i>packardiae</i>]	Salt desert shrub Low-elevation sagebrush-steppe	Type 3
Spine-node milkvetch	<i>Peteria thompsoniae</i>	Salt desert shrub Low-elevation sagebrush-steppe	Type 4

Common Name	Scientific Name	Habitat(s)	2010 Status
Two-headed onion	<i>Allium anceps</i>	Mid-elevation sagebrush-steppe	Type 3
Non-Vascular Plants			
Earth lichen	<i>Catapyrenium congestum</i>	Salt desert shrub	Type 4
Woven-spore lichen	<i>Texosporium sancti-jacobi</i>	Low-elevation sagebrush-steppe	Type 2
<p>^A Plants with Type 5 status are Watch species for Idaho. This is not a protective designation under BLM policy; however, Idaho Type 5 plants that are sensitive in Nevada are listed.</p>			

APPENDIX B

Special status animals and their habitats occurring or with potential to occur in the Jarbidge Field Office area.

Common Name	Scientific Name	Status	Range, Habitats Used, Relative Occurrence	Potential for Occurrence
Mammals				
California Myotis	<i>Myotis californicus</i>	Type 4	Nocturnally active; forages and roosts in low elevation (<1,800 m) scrub desert, grasslands, woodlands, and often near water; roosts in rock crevices, trees, buildings, and mines. Common in canyons.	Unlikely
Fringed Myotis	<i>Myotis thysanodes</i>	Type 3	Nocturnally active; Inhabits woodlands such as mountain mahogany and mature ponderosa pine forests, and some sagebrush habitats; often observed in canyons, ravines and steep rocky terrain. Rare.	Unlikely
Kit Fox	<i>(Vulpes velox)</i>	Type 4	Flat shrub-grass communities; some occurrence in sand dune habitats with greasewood, sagebrush. Uncommon.	Likely
Piute Ground Squirrel	<i>Spermophilus mollis</i>	Type 3	Occupy a variety of habitats including shrub-steppe, grasslands, and playas. Populations more stable in high quality shrub-steppe habitat. Common.	Likely
Pygmy Rabbit	<i>Brachylagus idahoensis</i>	Type 2	Large, tall stands of sagebrush-steppe with high cover values; loose, deep soils. Limited distribution. Uncommon.	Likely
Spotted Bat	<i>Euderma maculatum</i>	Type 3	Nocturnally active; forage over uplands including grasslands; roosts in cliffs, canyons, rock crevices. Uncommon in canyons.	Unlikely

Common Name	Scientific Name	Status	Range, Habitats Used, Relative Occurrence	Potential for Occurrence
Townsend's Big-eared Bat	<i>Corynorhinus townsendii</i>	Type 3	Nocturnally active; variety of habitats from sagebrush-steppe to coniferous forest; roosts in lava tubes, trees, mines and caves. Rare.	Unlikely
Wyoming Ground Squirrel	<i>(Spermophilus elegans nevadensis)</i>	Type 4	Grassland and sagebrush, usually inhabits mesic and productive soils such as montane meadows and valley bottoms. Wyoming ground squirrels are not known to occur within the field office, but suitable habitat exists. Rare, No confirmed detections.	Unlikely
Birds				
American White Pelican	<i>Pelecanus erythrorhynchos</i>	Type 2	In Idaho the species is found on large inland reservoirs and, including the Snake River. Typically nests in colonies on islands. Common near Snake River.	Unlikely
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Type 2	Nests and forages along river corridors and reservoirs. Uncommon in winter in Snake River Canyon.	Unlikely
Black-throated Sparrow	<i>Amphispiza bilineata</i>	Type 4	Sagebrush, bitterbrush, and greasewood communities; forages in sagebrush-steppe and open areas. Uncommon.	Unlikely
Brewer's Sparrow	<i>(Spizella breweri)</i>	Type 3	Prefers sagebrush and quality shrub-steppe habitat; sometimes other desert shrubland species. Common.	Likely

Common Name	Scientific Name	Status	Range, Habitats Used, Relative Occurrence	Potential for Occurrence
Calliope Hummingbird	<i>Stellula calliope</i>	Type 3	Found in higher elevation foothills and mountainous canyons, meadows, and streams in southern Idaho. During migrations, species will occupy lower elevation riparian or semi-riparian habitats in desert and sagebrush-steppe communities. Uncommon.	Likely
Columbian Sharp-tailed Grouse (<i>columbianus</i>)	<i>Tympanuchus phasianellus</i>	Type 3	Sagebrush/grasslands, mountain shrublands in foothills; mountain shrubs and brushy riparian sites in winter. Uncommon.	Likely
Ferruginous Hawk	<i>Buteo regalis</i>	Type 3	Shrub-steppe, grasslands, rocky outcrops, juniper woodlands and draws, Uncommon.	Likely
Greater Sage-grouse	(<i>Centrocercus urophasianus</i>)	Candidate, Type 1	Prefer sagebrush-dominated rangelands with mixed grass/herbaceous understory, mountain foothill, meadows, springs, seeps. Uncommon in suitable habitat.	Likely
Lewis' Woodpecker	<i>Melanerpes lewis</i>	Type 3	Nests in tree cavities located in mature aspen or conifer stands, usually near riparian zones or adjoining uplands. Forages for insects, and fruits, in or near riparian areas and aspen stands. Common in suitable habitat	Likely
Loggerhead Shrike	<i>Lanius ludovicianus</i>	Type 3	Sagebrush, bitterbrush, and greasewood communities; forages in sagebrush-steppe and open areas. Common.	Likely

Common Name	Scientific Name	Status	Range, Habitats Used, Relative Occurrence	Potential for Occurrence
Northern Goshawk	<i>Accipiter gentilis</i>	Type 3	Nest and forages primarily in coniferous and aspen dominated forests, often in mountainous settings. Rare.	Unlikely
Peregrine Falcon	<i>Falco peregrinus</i>	Type 3	A relatively uncommon species. Breeding territories often in close proximity to water bodies. Forages over a variety of terrain and habitat types associated with sagebrush-steppe, interior deserts, forested mountains, and open water. Rare.	Unlikely
Prairie Falcon	<i>Falco mexicanus</i>	Type 3	Mountain shrubland steppe, grasslands, often nests on cliffs. Common near canyons.	Likely
Sage Sparrow	<i>Amphispiza belli</i>	Type 3	Sagebrush and saltbush deserts, mixed shrub/grasslands, often seen near small springs or seeps in arid deserts. Common.	Likely
White-faced Ibis	<i>Plegadis chihi</i>	Type 4	Nests on ground, shrubs, or low trees near water bodies or inundated meadows or playas. Forages on invertebrates, fishes, and amphibians found near shallow water sources. Uncommon, Observed during migration.	Unlikely
Willow Flycatcher	<i>Empidonax traillii extimus</i>	Type 3	Often observed foraging along riparian corridors, in willow thickets, brushland areas, and open woodlands. Uncommon.	Likely

Common Name	Scientific Name	Status	Range, Habitats Used, Relative Occurrence	Potential for Occurrence
Amphibians				
Columbia Spotted Frog (Great Basin Distinct Population Segment)	<i>Rana luteiventris</i>	Candidate, Type 1	Ephemeral and perennial riparian sites including springs, seeps, stream riparian zones, and meadows. Current distributions limited to Salmon Falls drainage. Uncommon, limited distribution.	Likely
Northern Leopard Frog	<i>Rana pipiens</i>	Type 2	Ephemeral and perennial riparian sites including springs, seeps, stream riparian zones, and meadows. No current (last 15 years) detections.	Unlikely

Common = Usually present in suitable habitat
 Uncommon = Occasionally present in suitable habitat
 Rare = Occurrence in area rare and sporadic

APPENDIX C

Special status aquatic species in the Jarbidge Field Office.

Species	Species Distribution	No Effect	May Affect	Cumulative Effects	Consultation Required
ESA-listed Species					
Bliss Rapids Snail <i>Taylorconcha serpenticola</i>	Present		X ⁺	None	Yes
Bruneau Hot Springsnail <i>Pyrgulopsis bruneauensis</i>	Present		X ⁺	None	Yes
Jarbidge River Bull Trout <i>Salvelinus confluentus</i>	Present		X ⁺	None	Yes
Snake River Physa Snail <i>Physa natricina</i>	Present		X ⁺	None	Yes
BLM Sensitive Species					
Redband Trout <i>Oncorhynchus mykiss gairdeneri</i>	Present		X ⁺	None	No
California floater <i>Anodonta californiensis</i>	Present	X		None	No
Columbia pebblesnail <i>Fluminicola columbianus</i>	Present	X		None	No
Short-face lanx <i>Fisherola nuttalli</i>	Present	X		None	No
Shoshone Sculpin <i>Cottus greenei</i>	Present	X		None	No
Utah valvata snail <i>Valvata utahensis</i>	Present	X		None	No
White Sturgeon <i>Acipenser transmontanus</i>	Present	X		None	No

(+) Determination for riparian planting includes beneficial effects to habitats containing aquatic species.