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4.1 INTRODUCTION

This chapter provides the scientific and analytic basis for a comparison of the alternatives. Considering the existing condition of the environment that would be affected by the Snake River Birds of Prey National Conservation Area (NCA) Resource Management Plan (RMP) (Chapter 2) and imposing the descriptions of the alternatives (Chapter 3), the types and magnitude of impacts were identified and quantified to the extent practicable for the purposes of this programmatic document. Regardless of resource or resource use, BLM is guided by the NCA Enabling Legislation (Appendix 1) and Planning Criteria (Appendix 2) and as such, these are not specifically outlined as assumptions.

4.1.1 Impact Analysis Descriptors

Impacts are defined as modifications to the environment that are brought about by a management action. This chapter describes the direction, extent, and duration of identified impacts. Impacts and effects are used synonymously in this chapter. Impacts can vary in significance from no change, or only slightly discernible change, to a full modification or elimination of the environmental condition.

Types of impacts

There are three types of effects:

- Direct effects are caused by the action and occur at the same time and place.
- Indirect effects are caused by the proposed action and are later in time or farther in distance, but are still reasonably foreseeable.
- Cumulative effects result from incremental impacts of actions when added to other past, present, and foreseeable future actions regardless of what person or agency (Federal or non-Federal) undertakes those actions.

Direct and indirect impacts are discussed in Section 4.2. Cumulative impacts are discussed in Section 4.3.

Direction of Impacts

Impacts can result in an increase or improvement of a resource or resource use (beneficial) or can result in a decrease or degradation or a resource or resource use (adverse).

Extent of Impacts

The extent of an impact is described in terms of how apparent it might be (magnitude) and how much of an area it might effect (scale).

Magnitude of Impacts

The magnitude of potential impacts are described in some sections as being high, moderate, low, or slight and are defined as follows:

- High Impacts could potentially cause significant change or stress to an environmental resource or use.
- Moderate Impacts could potentially cause some change or stress (ranging between significant and insignificant) to an environmental resource or use.
- Slight Impacts could potentially cause a discernible, but insignificant change or stress to an environmental resource or use
- Negligible Impact could potentially cause an indiscernible and insignificant change or stress to an environmental resource or use.

Scale of Impacts

For direct and indirect impacts, the extent of impact is usually described as either the local level or on a landscape-wide basis. The local level refers to the direct area of impact or a small portion of the NCA while landscape-wide refers to the majority of the affected resource in the NCA. Unless specifically identified, impacts would be at the local level.

For cumulative impacts, the area(s) in which a resource may be affected, the region of influence, may differ from the planning area or BLM decision area. The region of influence can vary by resource or resource use. Limits of the region of influence may be natural features (e.g., watershed), political boundaries (e.g., a county), or industry-accepted norms of the

resource (e.g., regional air quality, visual resource viewsheds, social and economic conditions). Examples appropriate to this RMP/EIS include: (1) the region of influence for the social and economic conditions analysis includes Ada, Canyon, Elmore, and Owyhee counties; and (2) raptor prey habitat that may support nesting and migrating raptors in the NCA (at least some of the time) includes Snake River plains from Oregon to at least Glenns Ferry (considering maximum foraging distances of any of the raptors in the NCA.

Duration of Impacts

Impacts can be temporary (short-term) or permanent, long lasting (long-term). In the case of this analysis, short-term impacts are defined as those changes to the environment during and following ground-disturbing activities that generally revert to pre-disturbance conditions at or within a few years after the disturbance has taken place. Long-term impacts are defined as those that substantially would remain beyond short-term ground-disturbing activities.

Impact Considerations

The impact assessment took into account the laws, regulations, policies, guidelines, and best management practices (BMP) or techniques that would generally apply to all future actions. In addition, it should be noted that no ground-disturbing activities would result directly from the approval of the RMP. Future ground-disturbing activities would require site- or project-specific environmental evaluation prior to final approval of the activities (36 CFR 228.107). Any measures to mitigate impacts identified at that time could be incorporated into the action. The impacts remaining after considering and incorporating the mitigation measures are considered residual, unavoidable impacts.

Because of the large volume of data, it is necessary to summarize the results to the extent appropriate for each resource. The descriptions of potential impacts focus on those resources that could be affected substantially or those identified by the public and/or agencies as issues regardless of the impact (e.g., biological resources, land use [e.g., recreation, military training], cultural resources). Potential impacts on those resources that would not be affected substantially, or were not identified as major issues (e.g., geology, paleontology), are presented in a general summary. Impacts on these resources would be minimal (low to moderate) with only slight differences between alternatives.

For purposes of comparison and analytic purposes only, acreage figures and other measurements used and referred to in this chapter are approximate. Similar to the description of the affected environment (Chapter 2), impacts are generally addressed for the entire planning area (all lands within the NCA regardless of jurisdiction or ownership); however, BLM only has authority to make decisions for public lands administered by BLM (BLM decision area) and not private or State lands.

4.1.2 Chapter Organization

The sections that follow this introduction address the potential impacts on each resource or resource use for each alternative. Each section includes the following components:

Summary

A brief comparison of the four alternatives to provide an indication of how the alternatives compare to one another in their ability to achieve objectives and desired future conditions (DFC).

Assumptions

Because the analyses are broad in nature and not all factors that influence how impacts may act on a resource are known, assumptions are made for analysis purposes and to provide a basis for comparison between the alternatives. In addition, because not all resources or resource uses react the same, definitions or timelines for short- and long-term impacts are identified in the assumptions for each resource or resource use.

How Activities Affect Resources or Resource Uses

In order to reduce redundancy and provide clarity, this section has been developed for the various resources and resource uses. This section is used to describe the manner in which a given activity affects a resource or resource use. This section also provides an overview of the direct and indirect impacts of the change agent on a resource and whether the impact is short-term or long-term. The following are examples of the types of impacts.

- Direct impact: Non-target plant may be killed by herbicide application.
- Indirect impact: Desirable plants may thrive when competitive weeds are removed through herbicide application.
- Short-term impact: Fire may remove vegetation required for animal forage in a given year.
- Long-term impact: Fire changes community dynamics by favoring weedy annual species.

Discussion of Impacts

Provides an analysis of the direction, extent, and duration at which the change agents operate for each alternative. The discussion of impacts works hand-in-hand with change agents and is not a reiteration of the change agents.

Conclusions by Alternative

Provides an overview on the degree to which the resource objectives and DFC for a resource would be met by the proposed management actions. This conclusion is not meant to be a comparison of the different alternatives.

4.2 DISCUSSION OF IMPACTS BY RESOURCE AND RESOURCE USE

4.2.1 Air Quality

Summary

Under all alternatives, the air quality objective would be met. There would be a slight short-term adverse impact on air quality associated with Idaho Army National Guard (IDARNG) and BLM activities. The potential exists for a negligible long-term localized adverse impact where IDARNG activities are routinely conducted and where restoration activities disturb the soil.

Assumptions

- The air resource program would be managed in the same general manner in all alternatives in accordance with, laws, regulations, and policies with the goal of meeting current standards.
- Short-term impact would be those that contribute to a decline in air quality only during the activity.
- Long-term impact would be a decline in air quality that does not improve to meet State standards within a few days of the activity that is contributing to the decline.
- In most cases, short-term impacts would be less than 30 days. In most cases, long-term impacts are those that continue for more than 30 days.

How Activities Affect Air Quality

Direct Impacts

Miscellaneous Surface Disturbing Activities

- There would be short-term impacts to air quality through dust and vehicle emissions. Dust impacts would have a greater potential to occur when soils are dry. The use of heavy equipment would result in soil disturbance. Adverse impacts to air quality would occur from increased dust until the disturbed areas are rehabilitated.

Smoke Producing Activities

- The use of prescribed fire and live-firing military activities would result in short term adverse impacts during and immediately following the activity. Burning under prescription would keep emission levels within State air quality standards

Indirect Impacts

Miscellaneous Surface Disturbing Activities

- Impacts on air quality would occur from dust emanating from areas where the protective cover (i.e., vegetation, biological

soil crusts) has been reduced or eliminated through repeated disturbances (i.e., military training, livestock, off-road vehicle (ORV) activity).
- Dust abatement procedures are utilized whenever practicable.
- The loss of vegetative cover associated with reducing or eliminating fuels (including the construction or maintenance of fuel breaks) and restoration activities could increase dust emissions in the short-term through wind erosion. These impacts would decrease in the long-term where desirable vegetation becomes established in treated areas.

Smoke Producing Activities

- Human-caused wildfires (i.e. recreation, IDARNG training) would have short-term adverse impacts to air quality. The mean size of military-activity related fires and the resulting smoke would not change over the long-term, or could be reduced during training periods due to the on-site presence of IDARNG fire suppression crews that would respond quickly to ignitions.

Discussion of Impacts by Alternative

Air Quality - Alternatives A, B, C, and D

Under all alternatives, adverse impacts on air resources would be slight to moderate and would only result immediately following ground disturbing activities. Short- to long-term impacts could occur in fuels treatment and restoration areas that need to be treated repeatedly until adequate vegetative cover is established. At any one time, impacts from any alternative would occur at the local level.

Conclusion – Air Quality: Alternatives A, B, C and D

Overall, there would be a slight short-term adverse impact on air quality associated with surface disturbing activities. The potential exists for negligible, localized, long-term adverse impacts where IDARNG activities are routinely conducted or where BLM restoration activities disturb the soil and site stabilization takes a number of years. Since the air resource program would be managed in accordance with laws, regulations, and policies, with the goal of meeting current standards, all alternatives would meet the program objectives. The air quality objective would be met.

4.2.2 Cultural and Tribal Resources

Summary

All four alternatives have identified adequate measures to protect and manage significant cultural resources; therefore the overall objectives for cultural and tribal resources would be met. However, with the increasing population in the area and associated demands for use of the NCA, there would be increased potential for damage to cultural resources in the future. The DFC would also be met under all four alternatives; however, under current management actions (Alternative A), the DFC would only be met to a minimal degree. In addition, restoration and fuels management levels under alternatives C and D could have moderate adverse impacts to cultural resources based on the potential number of acres affected. Actions would be taken to protect significant cultural resources and traditional cultural properties, as well as the Oregon Trail. Vegetation treatment projects identified in Alternatives C and D would have long- term benefits to traditional cultural properties.

Assumptions

- The level of protection provided cultural resources would continue to meet minimum legal and regulatory requirements.
- Population growth would increase activities that could potentially disturb cultural resources.
- Cultural sites would continue to be impacted by natural weathering and erosion.
- Qualitative information indicates areas where there is a higher probability that cultural resources would be present. Highly disturbed or recently developed areas would be less likely to include intact cultural resources.
- Short-term impacts would be related to traditional cultural properties only. There

would be disturbance in the area, which would not directly impact the traditional cultural property. Impacts to other cultural resources would be considered long-term because cultural resources do not have the ability to recover.

How Activities Affect Cultural and Tribal Resources

Direct Impacts

Idaho Army National Guard Activities

- Maneuver training could have long-term adverse impacts through the destruction of unidentified cultural resources.
- The IDARNG has an active cultural resource program involving monitoring, inventory, fencing and education to help reduce impacts to cultural sites. Repeatedly disturbed areas would be less likely to include intact cultural resources. Heavy off-road maneuver training has greater potential to adversely affect undocumented cultural sites than light off-road maneuver or maneuvers restricted to roads or trails.

Livestock Grazing Management Activities

- Livestock impact cultural resources through trampling and rubbing. Activities that concentrate livestock increase trampling impacts that could result in the long-term adverse impacts to cultural resources.

Recreation Management Activities

- Recreation can have long-term adverse impacts to cultural resources through disturbance and unauthorized collection or vandalism.
- Competing uses by large groups and/or religious or "new age" cultures may destroy sacred traditional cultural properties, which would result in long-term impacts (pers. com. Ted Howard).
- Cultural resource interpretation has the short- and long-term beneficial impact of informing the public about the importance and need to protect cultural resources. Conversely, if the education/interpretive programs highlight the locations of resources, they could be exploited or destroyed through looting or vandalism.
- Facility development could help divert use to areas having lower concentrations of cultural resources.

Surface Disturbing Activities (Land and Realty Actions, Minerals, and Transportation)

- Any surface disturbing activity may have long-term adverse impacts by disturbing or destroying cultural resources or by exposing them to vandalism.
- Routes in remote areas afford the greatest opportunity for vandalism. Because cultural resources may be easily accessible in some areas, route closures in areas with a high probability of cultural resources may provide protection from motorized vehicle damage or removal.

Vegetation – Fire Suppression Activities

- Fire management and suppression activities can involve major ground-disturbing activities that can directly affect cultural resources, especially by altering the spatial relationships of archaeological sites.

Vegetation – Fuels Management Activities

- Although cultural inventories would be performed prior to prescribed fires, sites that are not identified would be affected by the fire, modifying structures, features, and artifacts, which would result in short- and long-term adverse impacts. Organic materials and information that can be obtained from their study are especially vulnerable to heat damage, creating short-and long-term direct impacts.
- Fire can remove vegetation, exposing previously undiscovered resources, which would allow for their study and protection; however, sites exposed by fire or flagged for fire avoidance can also be susceptible to unauthorized collection and vandalism. The beneficial and adverse impacts would result in long-term direct impacts to the cultural resources.

Vegetation – Restoration Activities

- Restoration projects could have long-term impacts on cultural resources through surface disturbing activities. Drill seeding or other restoration activities may expose cultural resources to natural processes, such as degradation and erosion. The inadvertent movement of resources resulting from surface disturbing activities may destroy the scientific value of the resource by changing context.

Indirect Impacts

Idaho Army National Guard Activities

- Maneuver training could have long-term impacts to cultural resources through soil disturbance, soil compaction, altered surface water drainage, and erosion.

Livestock Grazing Management Activities

- Grazing plants that represent ethnobotanical resources would reduce their availability to Native Americans.

Recreation Management Activities

- Recreation can increase erosion processes through vegetative removal, soil compaction and altered surface water drainage. The erosion can expose, degrade, displace, cover, or change the context of resources over the long-term.

Special Designations

- Special Recreation Management Areas (SRMAs) and Areas of Critical Environmental Concern (ACECs) would have the beneficial impact of focusing management that may help protect cultural resources.

Surface Disturbing Activities (Land and Realty Actions, Minerals, and Transportation)

- Surface disturbing activities can increase erosion processes through vegetative removal, soil compaction and altered surface water drainage. The erosion can expose, degrade, displace, cover, or change the context of resources over the long-term.

Vegetation – Fire Suppression Activities

- Successful suppression activities would limit adverse impacts to cultural and historic resources.

Vegetation – Fuels Management Activities

- Fires may destroy traditional properties or values such as ethnobotanical plants as communities are converted from native perennial to exotic annuals.
- Surface disturbing activities may destroy the scientific value of the resource by changing the context.

Vegetation – Restoration Activities

- Successful restoration activities may have a long-term beneficial impact by providing vegetative cover for existing resources, protecting them from subsequent disturbance.

Visual Resource Management Activities

- VRM restrictions can protect cultural resources where they restrict surface disturbing activities.

Discussion of Impacts by Alternative

Cultural and Tribal Resources: Alternative A

Idaho Army National Guard Activities: Slight adverse long-term localized impacts to unidentified cultural resources could occur in non-shrub areas, which comprise about 35% of the OTA Maneuver Area. The IDARNG voluntary restriction of vehicle maneuver activities to non-shrub areas would moderately reduce training-related adverse impacts to unidentified cultural resources in shrub areas. IDARNG's requirement to manage cultural resources under the MOU plus environmental education and training restrictions imposed by the ICRMP and INRMP would reduce adverse impacts to cultural resources over the long-term.

Livestock Grazing Management Activities: Although slight livestock grazing impacts would continue at the landscape level, the in-

corporation of Standards and Guideline (S&G) requirements (Appendix 3) would slightly improve vegetative conditions and reduce adverse impacts over the long-term. Maintaining a minimum amount of residual vegetation in annual grass areas would reduce erosion processes that could affect cultural properties. Closures would remove adverse impacts from livestock. The 3,900 acres closed to livestock grazing would have benefits in areas that have a high probability of cultural resources.

Recreation Management Activities: Increased recreation use could not be accommodated by expanding existing recreational facilities which would result in potential moderate to high long-term adverse impacts by increasing landscape level dispersed recreation. Continuing to allow campfires across the landscape could result in wildfires that potentially adversely impact cultural resources.

Special Designations: The Guffey Butte-Black Butte (GB-BB) Archaeological District would continue to be managed as an ACEC, which would help focus attention on the need to protect cultural resources in this area. The GB-BB ACEC and the Oregon Trail SRMA would have moderate short- and long-term beneficial impacts by focusing management in areas that have a high potential for cultural resource values. The remaining four SRMAs do not focus on areas where the greatest recreation use is occurring, and have little benefit for protecting cultural resources.

Surface Disturbing Activities: Adverse impacts to cultural resources from mineral material sites or lands and realty actions should be minimal due to the requirement for clearances prior to surface disturbance, as well as special stipulations that are attached to authorizing documents. Avoidance areas should have slight beneficial long-term impacts by minimizing the number of surface disturbing realty actions in the area. Slight adverse impacts from the utility corridor could occur at the local level a ¼-mile wide area).

Transportation Management Activities: The 1,300-acre Halverson Bar area, which has a high probability of cultural values as a result of its proximity to water (Plew 2000), would be closed to motorized vehicle travel, eliminating highly adverse localized vehicle impacts. As a result of the closure, the area is used extensively by hikers and equestrians, which could result in slight localized long-term damage from trampling and unauthorized resource collection. There would be no areas open to recreational off-road travel, which results in highly beneficial long-term impacts by preventing the loss of native vegetation that is important to traditional cultural properties for religious and lifeway practices. The application of route designation criteria would provide a moderate level of protection for known cultural sites. This would slightly minimize adverse impacts from vehicle activity at the landscape level (431,200 acres).

Vegetation – Fire Suppression Activities: Minimizing fire size would benefit cultural resources at the landscape level, especially those located in shrub communities that have higher protection priority. The principal impact to cultural resources in annual grass communities would be the aggressive suppression tactics, rather than the fires themselves. These aggressive techniques would occur most often in areas adjacent to occupied slickspot peppergrass habitat, thus adversely affecting cultural resources located within those adjacent communities.

Vegetation – Fuels Management Activities: Limiting further loss of native shrub habitat to no more than 50,000 acres and restoring degraded habitat as opportunities allow would have localized long-term impacts to cultural resources due to surface disturbance. The 10,000 acres of fire breaks and fuels management projects would predominately affect cultural resources in Management Areas 1 and 2.

Vegetation – Restoration Activities: The 10,000 acres proposed for restoration would slightly impact cultural resources predominately in Management Areas 1 and 2. Moder-

ate long-term benefits to traditional cultural properties and lifeway values may result from the restoration of perennial communities.

Visual Resource Management Activities: About 32,000 acres are designated as Visual Resource Management (VRM) Zones I and II along the Snake River Canyon, is an area with the greatest probability of cultural resources. Managing surface disturbing activities in these localized areas would slightly minimize adverse impacts to cultural resources in the long-term. The remaining 452,000 acres have a lower concentration of cultural resources, and would not be provided protection by VRM classification alone.

Conclusion – Cultural & Tribal Resources: Alternative A

Special stipulations on land use authorizations, voluntary compliance, and land use restrictions (VRM classification, application of the route designation criteria, avoidance areas, etc.) would have moderate to high beneficial impacts in areas with a high probability of cultural resources. However, with the increasing population and associated demands for use of the NCA, as well as only two developed recreation facilities, there would be increased potential for moderate adverse impacts to cultural resources. The objective and DFC would be met.

Cultural and Tribal Resources: Alternative B

Idaho Army National Guard Activities: The adverse impacts to unidentified cultural resources in the Bravo Area would be moderately reduced by restricting vehicles to designated routes. In the Alpha, Charlie, and Delta areas, the impacts from maneuver training would be restricted to non-shrub areas and would be at the same level as those described in Alternative A. The 20,400-acre expansion area would absorb the maneuver activities displaced from the Bravo Area, thus moderate adverse impacts would occur to unknown cultural resources in the expansion area commensurate to those levels identified in the Alpha, Charlie, and Delta Areas. IDARNG's requirement to manage cultural resources under the MOU plus environmental education and training restrictions imposed by the ICRMP and INRMP would reduce adverse impacts to cultural resources over the long-term.

Livestock Grazing Management Activities: Impacts from livestock grazing would be as described in Alternative A, however, the area closed (Grazing Map 5) would be 7,300 acres, and would include the Kuna Butte area, which contains sensitive resources. Seasonal restriction of grazing on 1,300 acres at Halverson Bar would have the same impacts as described in Alternative A.

Recreation Management Activities: Additional recreation facilities (Recreation Map 3) would accommodate some of the future recreational demand; however, the demand along the river would not be met. Moderate adverse localized long-term impacts would result from recreational use would be the greatest areas along the Snake River, an area with the greatest number or probability of cultural sites. Restricting campfires would negligibly reduce potential wildfires and their adverse impacts to cultural resources on a landscape basis.

Special Designations: Impacts would be the same as discussed in Alternative A; however, protection would be expanded to protect more of the Snake River Canyon and the Oregon Trail (Recreation MAP 2). The SRMA covering the entire NCA would be eliminated with no impact to cultural resources because the designation provides no protection over and above the NCA-enabling legislation.

Surface Disturbing Activities: Adverse impacts from mineral material sites or lands and realty actions should be minimal due to the requirement for clearances prior to surface disturbance, as well as special stipulations that are attached to authorizing documents. The avoidance area (Lands Map 4) would provide slight beneficial long-term impacts by precluding large-scale utility developments that could impact the Oregon Trail. The two utility corri-

dors (Lands Map 2) would focus large-scale utility development within a confined area, thus limiting landscape impacts, but increasing localized impacts. The new utility corridor would focus large-scale utility development within a ¼ mile wide area approximately 62 miles long in an area with a low to moderate probability of cultural sites. Much of the area has been burned and the lifeway values (i.e., ethno-botanical plants) do not exist in the area. This corridor would result in slight to moderate localized long-term impacts associated with increased access and development along this corridor.

Transportation Management Activities: The benefits of vehicle closures would have the same long-term impacts as Alternative A; however, the closure would be expanded to cover an additional 4,800 acres around Guffey Butte, Wees Bar, and Cove Recreation site (Transportation Map 3). These areas are along the Snake River and have a high probability of occurrence of cultural resources. The remaining 426,400 acres would be limited to designated routes and the impacts would be the same as described in Alternative A.

Vegetation – Fire Suppression Activities: Impacts of fire suppression activities would be the same as described in Alternative A.

Vegetation – Fuels Management Activities: The 70,000 acres of fuels treatments, predominantly in Management Areas 1 and 2, would have slightly beneficial long-term impacts by further reducing the size and severity of fires. Limiting the loss of existing native shrub communities to no more than 30,000 acres would result in the loss of fewer shrub communities than in Alternative A. The 6 miles of new fuel breaks would have slight beneficial impacts to cultural resources by reducing the size and severity of fires and adverse impacts at a local scale.

Vegetation – Restoration Activities: The impacts of restoration would be the same as described in Alternative A, but would affect 50,000 acres in Management Areas 1 and 2.

Visual Resource Management Activities: The elimination of the 10,300 acres in VRM Class I and 21,400 acres in VRM Class II (VRM Map 2) would have moderate adverse long-term impacts by allowing more surface disturbing activities in an area with a high probability of cultural resources. VRM III and IV classifications would not provide protection for cultural resources and therefore would have no impact.

Conclusion – Cultural & Tribal Resources: Alternative B

Special stipulations on land use authorizations, voluntary compliance, application of SOPs and land use restrictions (VRM classification, application of the route designation criteria, avoidance areas, etc.) would have moderate to high beneficial impacts in areas with a high probability of cultural resources. Closures to livestock grazing or motorized vehicle use in the river corridor would provide moderate long-term benefits at the local level. There would be slight to moderate adverse impacts from surface disturbing activities, changes in recreation management and the low level of VRM protection at the landscape level. The avoidance area would provide moderate protection from major utility development; however, development within the utility corridor would result in moderate long-term localized adverse impacts. Vegetation treatments would provide slight short-term adverse impacts and slight to moderate long-term benefits to traditional cultural properties. The objective and DFC would be met.

Cultural and Tribal Resources: Alternative C

Idaho Army National Guard Activities: The adverse impacts to unidentified cultural resources in the Bravo Area would be moderately to highly reduced by restricting vehicles to three designated routes (IDARNG Map 4). Off-road maneuver and bivouac training in the Bravo Area would be moved to the Alpha, Charlie, and Delta areas, increasing the training days in these areas by 17-34%. This would slightly increase training related adverse im-

pacts in non-shrub areas outside the Bravo Area. The removal of 3,900 acres of slickspot peppergrass habitat from the OTA (IDARNG Map 4) would have no impact on cultural resources. IDARNG's requirement to manage cultural resources under the MOU plus environmental education and training restrictions imposed by the ICRMP and INRMP would reduce adverse impacts to cultural resources over the long-term.

Livestock Grazing Management Activities: Since there would be no livestock grazing, there would be no adverse impacts. Highly beneficial impacts would result from improved vegetation and watershed conditions, which would help stabilize and protect sites at the landscape level and could enhance TCPs.

Recreation Management Activities: The additional recreation facilities (Recreation Map 3) would accommodate more of the future recreational demand; however, impacts from recreational use would be the greatest in areas with the greatest number or probability of cultural sites. Restricting campfires would negligibly reduce potential wildfires and their impacts to cultural resources on a landscape basis.

Special Designations: Impacts would be the same as discussed in Alternative B.

Surface Disturbing Activities: Adverse impacts to cultural resources from mineral material sites or lands and realty actions should be minimal due to the requirement for clearances prior to surface disturbance, as well as special stipulations that are attached to authorizing documents. The avoidance area (Lands Map 5) would provide slight beneficial long-term impacts by precluding large-scale utility developments that could impact the Oregon Trail. The impacts from the existing utility corridor would be the same as identified in Alternative A. The new utility corridor (Lands Map 2) would slightly limit landscape-wide impacts, but would moderately increase localized adverse impacts. As a result of previous disturbance, the area has a moderate-low probability of cultural resources except near the Oregon Trail and along the eastern portion.

Transportation Management Activities: Impacts would be the same as discussed in Alternative A; however, the highly beneficial long-term impacts of the motorized vehicle closure would be expanded to cover 13,200 acres (Transportation Map 4). The remaining 419,600 acres would be limited to designated routes and the impacts would be the same as described in Alternative A.

Vegetation – Fire Suppression Activities: Impacts of fire suppression activities would be the same as described in Alternative A.

Vegetation – Fuels Management Activities: The 12 miles of new fuel breaks and 100,000 acres of fuels treatments throughout the NCA would have slight to moderate beneficial long-term impacts by further reducing the size and severity of fires. Limiting the loss of existing native shrub communities to no more than 15,000 acres would have moderate beneficial impacts to cultural resources by reducing the size and severity of fires and adverse impacts at a landscape scale.

Vegetation – Restoration Activities: Impacts would be the same as identified in Alternative A; however, restoration projects would cover approximately 130,000 acres (an increase of 120,000 acres over Alternative A). The 130,000 acres of restoration could have highly adverse short-term impacts on TCPs and lifeway values at the local level; however, the long-term impacts would be moderately beneficial at the landscape level.

Visual Resource Management Activities: Over 187,000 acres are designated as VRM Class II (VRM Map 3). Managing surface disturbing activities in these areas would slightly minimize impacts to cultural resources including the Oregon Trail in the long-term. The remaining approximately 297,000 acres have a lower concentration of cultural resources, and would not be provided protection by VRM classification alone.

Conclusion – Cultural & Tribal Resources: Alternative C

Special stipulations on land use authorizations, voluntary compliance, application of SOPs and land use restrictions (VRM classification, application of the route designation criteria, avoidance areas, etc.) would have moderate to high beneficial impacts in areas with a high probability of cultural resources. Closures to livestock grazing or motorized vehicle use in the river corridor would provide moderate long-term benefits at the local level. There would be a moderate level of adverse impacts from surface disturbing activities and changes in recreation management landscape-wide. The avoidance area would provide moderate protection from major utility development; however development within the utility corridor could have long-term moderate adverse impacts at the local level. Vegetation treatments would provide moderate short-term adverse impacts and moderate to high long-term benefits to traditional cultural properties. The objective and DFC would be met.

Cultural and Tribal Resources: Alternative D

Idaho Army National Guard Activities: The restriction of vehicle maneuver training in the 22,300-acre Bravo Area to designated routes would have the same impacts as Alternative B. The 4,100 acres of expanded maneuver training (IDARNG Map 5) could potentially have slight moderate adverse long-term impacts to unidentified cultural resources in that area. In addition, there could be an increased likelihood of slight impacts resulting from the displacement of training from the Bravo Area to other areas in the OTA. IDARNG's requirement to manage cultural resources under the MOU plus environmental education and training restrictions imposed by the ICRMP and INRMP would reduce adverse impacts to cultural resources over the long-term.

Livestock Grazing Management Activities: Impacts would be the same as described in Alternative A.

Recreation Management Activities: The impacts would be as described in Alternative C; however, the additional recreation site (Black Butte Boat Access) (Recreation Map 3) would occur in an area with a high potential for cultural values resulting in moderate adverse localized impacts.

Special Designations – ACEC and SRMA: The impacts of special designations would be the same as described in Alternative C for SRMAs. Because the withdrawal language of the NCA-enabling legislation is the same as in the ACEC designation, the loss of the GB-BB ACEC designation would lower the level of management emphasis but would not reduce any of the protection of cultural resources. The area would still be part of the archaeological district. There could be a slight long-term adverse impact from the lowered emphasis and public awareness of the cultural resources in that area.

Surface Disturbing Activities: Impacts would be the same as Alternative C. The impacts of the avoidance area and the existing utility corridor would also be the same as Alternative A.

Transportation Management Activities: The impacts would be the same as described in Alternative A, except an additional 3,200 acres (Transportation Map 5) along the river associated with Wees Bar would be closed. This is an area with important cultural resources including rock art. The additional closure would result in moderate localized beneficial impacts.

Vegetation – Fire Suppression Activities: Impacts would be the same as described in Alternative A.

Vegetation – Fuels Management Activities: Impacts would be the same as described in Alternative C.

Vegetation – Restoration Activities: The impacts would be the same as discussed in Alternative C.

Visual Resource Management Activities: The impacts would be the same as discussed in Alternative C.

Conclusion - Cultural & Tribal Resources: Alternative D

Special stipulations on land use authorizations, voluntary compliance, application of SOPs and land use restrictions (VRM classification, application of the route designation criteria, avoidance areas, etc.) would have moderate to high beneficial impacts in areas with a high probability of cultural resources. Closures to livestock grazing or motorized vehicle use in the river corridor would provide moderate long-term benefits at the local level. There would be a moderate level of adverse impacts from surface disturbing activities, and changes in recreation management and the low level of VRM protection landscape-wide. Vegetation treatments would provide moderate short-term adverse impacts and moderate to high long–term benefits to traditional cultural properties. The objective and DFC would be met.

4.2.3 Fish and Wildlife

Summary

Alternatives C and D propose the greatest amount of habitat restoration and vegetation treatments that could benefit fish and wildlife. Alternative C also has the most wildlife management projects and includes the elimination of grazing, which would result in the most progress of any alternative towards achieving the objectives and DFC for fish and wildlife in the NCA. Alternative D would make more progress than Alternatives A and B, and slightly less progress than Alternative C towards achieving long-term goals. A combination of upland and riparian restoration projects, teamed with increases in specific wildlife management projects would enable Alternative B to slightly surpass Alternative A towards meeting the objectives and DFC. Compared to the other alternatives, Alternative A would make the least amount of progress towards protecting, enhancing, and expanding fish and wildlife habitat.

Assumptions

- Noxious weed control activities would be in addition to those included as part of a proposed habitat restoration or fuels management project. Restoration and fuels management projects would incorporate noxious weed control activities that would continue as a part of the project(s) for three years. Thereafter, noxious weeds in those areas would be controlled as a part of the normal weed control program.
- Most management actions could have direct impact to wildlife by injuring, killing, or disturbing or displacing wildlife; however, these impacts would be negligible or insignificant across the landscape. Ground dwelling species would be most susceptible to direct impacts.
- BLM would conduct emergency stabilization and rehabilitation (ESR) efforts in the Orchard Training Area (OTA), but would not conduct habitat restoration projects because of potential conflicts or impacts to military training. IDARNG would primarily conduct rehabilitation efforts in the OTA in areas that would not be repeatedly disturbed by military training.
- For analysis purposes, IDARNG activities include: maneuver training, live fire activities, bivouac and dismount training.
- Based upon the rate of response to habitat restoration, short-term would be 5 years for riparian and open water species and 10 years for upland species. Long-term would be greater than 5 years and 10 years respectively.

How Activities Affect Fish and Wildlife Management

Direct Impacts

Fish and Wildlife Management Activities

- Wildlife projects that are species-specific provide short- and long-term beneficial impacts. For instance, guzzlers provide animals with additional surface water in water-limited areas to enhance or make available previously unavailable range. Nest boxes and platforms provide birds with additional nesting and roosting op-

portunities in areas that have limited available sites, and further provide a means of raising young in an environment less prone to predation. Projects may benefit species by providing a previously rare or nonexistent habitat component that makes their range more usable, such as food, water, shelter, and nesting and roosting areas.

Lands and Realty Activities

- Development of large transmission lines in a utility corridor could provide raptor nesting and perching habitat.

Transportation and Recreation Management Activities

- Recreational shooting restrictions would benefit Piute ground squirrels, black-tailed jackrabbits, Nuttall's cottontails, and various other wildlife species by eliminating a mortality factor.

Indirect Impacts

Fish and Wildlife Management Activities

- Actions that increase the population or range of a target species may adversely impact non-target species in the treatment area. Providing nest sites for target species of raptor would increase competition for prey, potentially displacing less competitive non-target predators. Actions that convert one habitat type to another (i.e., converting an upland area to a wetland area in TWMA, creating riparian woodlands) would displace species that depend on the habitat that is being converted. However, conversions that create habitats that are rare, or critical for a wide range of species, would benefit wildlife over the long-term. Over 80% of the wildlife species in the NCA may use riparian or wetland habitats for some portion of their life cycles (Thomas, *et al.* 1979 p2).

Idaho Army National Guard Activities

- Impacts of fires caused by military training activities are discussed in the Vegetation – Fire Suppression section below.
- Training activities can adversely impact wildlife habitat by mechanically disturbing soils and vegetation, reducing perennial plant density and increasing annual invasive exotic species. Although studies have shown that tracked vehicle training does not directly affect short-term survival of Piute ground squirrel populations (Van Horne and Sharpe, 1998), annual dominated communities would have less stable productivity and would be susceptible to wildfire over the short- and long-term (Yensen and Quinney 1992 p 269; Van Horne *et al* 1997 pp 304-305; Steenhof *et al* 2004 p 16) resulting in adverse impacts to ground squirrels (Yensen, *et al.* 1992). However, military related impacts may be reduced by actions taken by IDARNG under their environmental management programs (i.e., revegetation projects, restricted access, erosion control, training site monitoring, etc.)
- Excavation sites, hardened bivouac sites, improved roads or other actions that permanently remove vegetation would result in the long-term loss of habitat and displacement of wildlife.

Lands and Realty Activities

- Acquisition of private and State lands would prevent the potential long-term loss of habitat due to development.
- Consolidation of public land ownership could increase suitable and usable habitat and reduce fragmentation and edge effects. Most private lands in the area are cultivated; however, private lands near expanding population centers are susceptible to residential, commercial, or industrial development. Consolidation would reduce short- and long-term opportunities for offsite impacts from these types of development, such as increased motorized use, noxious weed invasion, chemical overspray, trash and debris, and human caused fires.
- Realigning the current NCA boundary would enhance habitat management in the short- and long-term by: (1) clearly identifying where the boundary exists and

(2) ensuring that areas that become a part of the NCA would receive additional habitat protection and enhancement under the NCA-enabling legislation, limiting soil and vegetation disturbing activities. Public land that is no longer in the NCA would be subject to current BLM regulations, which may not emphasize protection of raptors and their prey to the degree that the NCA designation does.

- Construction, operation and maintenance activities associated with land use authorizations for roads, powerlines, pipelines, etc. would have an adverse impact on wildlife through alteration, fragmentation, or destruction of habitat. Impacts from utility corridor development include long-term disturbance and displacement of soils and vegetation from construction and access roads, which results in additional public access into the area and further fragments wildlife habitat.
- The presence of large utility structures near the Snake River Canyon could enhance roosting and nesting opportunities for raptors; however, the greater density of transmission line wires in the area could pose adverse impacts from additional bird collisions with towers and guy wires (Jalkotzy 1997 pp 101-102).
- Avoidance areas would provide short- and long-term benefits for wildlife species by reducing surface disturbing authorizations.
- Water impoundments would cause short- and long-term adverse impacts to species that require free flowing water (i.e. sturgeon) by degrading and fragmenting habitat. Water temperatures would increase and dissolved oxygen levels would decrease in slack water areas. Impoundments could create physical barriers preventing genetic exchange between populations in free-flowing segments. Daily water level fluctuations could adversely affect species that depend on shallow water or shoreline habitats.

Livestock Grazing Management Activities

- Destruction of habitat (i.e., collapsing burrows, damaging or eliminating shrubs) would be greatest in areas of livestock concentration or when resources are most susceptible to damage (i.e., soils are saturated, shrubs are not present to provide protection for burrows).
- The trampling and defoliation of palatable species, would have short-term adverse impacts on upland vegetation by reducing plant populations and their ability to reproduce; thereby, limiting resources available to wildlife and the capacity of residual perennial communities to reestablish (Anderson and Holte 1981).
- Piute ground squirrels and other small mammals could be affected by competition for forage from livestock. Piute ground squirrels are significantly affected by lack of green herbaceous vegetation in late winter when they emerge. This effect would be exacerbated in drought years when squirrels may not produce young due to inadequate forage (Smith and Johnson 1985). Small mammal diversity has been found to decrease following grazing activities in grassland habitats due to a decline in plant species diversity (Hanley and Page 1981). An adverse correlation has been shown between grazing intensity and small mammal species diversity, which has been attributed to grazing-induced changes in the vegetation structure (Rosenzweig and Winakur 1969).
- Impacts to big game (pronghorn antelope and mule deer), such as vegetative alterations and forage competition, would have short and long-term adverse consequences. Evidence of adverse effects of grazing on pronghorn populations include reduced fawn production in modified and degraded habitat (Ellis 1970; Kindschy *et al.* 1982).
- Wildlife habitat can be impacted in the long-term by changes in soil structure that affect native vegetation. Soil compaction reduces water infiltration, restricts root depth, and limits seed germination (Hart *et al.* 1993). Mechanical impacts to soils and biologic crusts reduce soil stability and fixed nitrogen availability (Belnap 1995; Eldridge and Green 1994). Soil distur-

bance from hoof sheer and bedding create habitat for non-native invasive and noxious weeds species, which likely increase the overall competition between annuals and perennials for limited resources (water, nutrients, space, etc.) (Laycock and Conrad 1981).

- Grazing in riparian areas can result in habitat alterations from the removal of vegetation, trampling, and ground disturbance. This could have adverse impacts for wildlife associated with riparian and open water habitats. Livestock grazing and agriculture along the Snake River can affect specific surface water quality issues including elevated concentrations of sediments and nutrients, habitat degradation from sedimentation and streambank alteration, resulting in elevated temperatures and lower levels of dissolved oxygen (USFWS 1995, p 24).

Transportation and Recreation Management Activities

- Vehicle use restrictions and limiting the number of routes would provide short- and long-term beneficial impacts on wildlife habitat by reducing the disturbance of soils and vegetation, habitat fragmentation, the establishment and spread of noxious weeds, soil compaction, and the altering of vegetative community dynamics. A lack of motorized recreation-related noise and other human intrusions would have short- and long-term beneficial effects on nesting raptors, and other wildlife that inhabit the area.
- Development of recreation sites and roads would result in the loss of habitat in hardened areas with a potential increase in disturbance in the immediate vicinity. Conversely, the concentrated use of a hardened area could have a beneficial effect by reducing the impacts of dispersed recreation.
- Recreational shooting restrictions would benefit raptors by reducing competition for prey species and reducing potential firearm and other human disturbances within raptor for foraging areas.

Vegetation – Fire Suppression Activities

- During multiple fire starts, suppression priorities that emphasize life and property or a particular habitat type (i.e., special status plant (SSP) species) would benefit wildlife species that occur in those areas. Wildlife in lower priority areas could suffer greater mortality and habitat loss.
- Fire suppression efforts could result in short- or long-term localized impacts to wildlife, primarily by altering habitat. Successful suppression efforts have the potential to save large areas of intact shrub or other important habitats that benefit shrub obligate species (Knick and Rotenberry 2000).
- Where suppression efforts are unsuccessful, burned shrub communities would have reduced structural diversity over the short-term and would only recover that diversity over the long-term if ESR and restoration efforts resulted in the re-establishment of shrubs. The loss of forage, escape cover, and thermal cover would cause short-term adverse effects to wildlife. Aquatic species could be adversely affected over the short-term where burns result in increased sediment input into aquatic systems and decreased water quality.
- Grassland species would be adversely affected over the long-term in areas where annual grass-dominated communities burn repeatedly and convert to exotic annual forb (i.e., Russian thistle, mustard) dominated communities.

Vegetation – Fuels Management Activities

- The greatest immediate threat for raptors and associated prey is the conversion of remnant and restored sagebrush steppe habitat into near monocultures of exotic grasses, namely cheatgrass (Pyke 2000, p 43). Increased ignition and fire spread associated with annual grasslands pose a significant threat to wildlife and crucial upland habitat. Fuels treatments would lessen the potential for wildfire spreading

into native stands of vegetation over the short- and long-term. Fuels treatments could result in short-term loss of habitat. Treatments that convert annual grasslands into perennial grasslands could have beneficial long-term effects for many wildlife species.

- Constructing and maintaining fuel breaks would result in adverse impacts to small mammals through habitat destruction and by providing potential expansion corridors for noxious weeds. Reducing fuels through grading, plowing, or intensive grazing along fuel breaks would result in additional short- and long-term impacts through ground disturbance and noxious weed spread. Beneficial long-term impacts to wildlife would result from preventing fire spread and thereby precluding native habitat loss.

Vegetation – Noxious Weed Management Activities

- As native perennial plant communities continue to be degraded through the invasion of noxious weed species, essential prey habitat would be lost or increasingly fragmented, resulting in less stable prey numbers, and increased foraging effort by raptors (Smith and Johnson 1985; Kotler 1984; USDI 1996; Young *et al.* 1972).
- Control of noxious weeds would reduce competition with perennial plants for limited resources (water, nutrients, space, etc.). In the short-term, noxious weed control activities could adversely impact wildlife habitat by affecting non-target desirable perennial vegetation. In the long-term, reductions in weed density would improve the ecological condition of upland and riparian vegetative communities, which would improve wildlife habitat.

Vegetation – Restoration Activities

- Restoration projects that change habitat from annual to perennial communities would help stabilize prey populations which would increase prey availability for golden eagles, prairie falcons, and other raptor species. Studies have shown that squirrels grow heavier and are more abundant in shrub and perennial grass habitats than in degraded habitats. As such, squirrels in shrub and perennial grass habitats are generally in better physical condition, produce more offspring, and have more stable populations than squirrels living in degraded habitat. Ground squirrel population numbers are less stable in areas dominated by exotic annuals than in shrub areas (Nydegger and Smith 1986; Yensen and Quinney 1992; Yensen *et al.* 1992).
- Conversion from annual to perennial shrub dominated communities would result in the long-term improvement of structural diversity. Shrub obligate species (i.e., Brewer's sparrow) that depend on shrubs for nesting or cover would benefit. Species that can tolerate disturbed or grassland communities (i.e., horned lark, western meadowlark) would not benefit to the same degree as shrub obligates.
- Restoration activities (including chemical treatment to reduce cheatgrass) that disturb soils and/or temporarily eliminate forage will cause at least short-term localized adverse impacts to raptor prey populations and potential short-term impacts to raptors that depend on them.
- Isolated islands of quality shrub and perennial grassland benefit a limited number of animals. Projects that patch together and connect quality habitat would result in highly beneficial impacts for wildlife. Large connected blocks of habitat would decrease edge effects and particularly benefit species with larger habitat area requirements. Restoration of shrubs would increase structural diversity and reduce habitat fragmentation benefiting sagebrush obligate species over the long-term (Knick and Rotenberry 1995). Beneficial long-term impacts could also be realized by increasing the number of habitat islands, resulting in the creation of a network of stepping-stones rather than a large continuous piece of unusable annual grassland monoculture. The largest potential beneficial response to increased hazardous fuels management projects would be from small

mammal populations, which form the base of the NCA food chain, indirectly resulting in beneficial impacts for raptors; however, all levels of wildlife would benefit from these management actions.

- Livestock use restrictions in areas subjected to vegetation treatments would have beneficial indirect impacts to wildlife by allowing desirable seeded vegetation to establish. This would also eliminate competition for forage between wildlife and livestock during the duration of the restriction.
- Replacing invasive trees with native trees along riparian corridors would increase the number, diversity, and density of insects, thereby increasing the number and diversity of native birds that feed on insects and the roosting and nesting sites for riparian-dependant birds, including raptors.
- Restoring wetland habitat would increase open-water habitat and potential nesting and resting locations for waterfowl and shorebirds and reduce wetland-dependant bird habitat in the short-term. Functioning wetlands would also benefit aquatic mammals, amphibians, insects, and other invertebrates in the long-term.

Discussion of Impacts by Alternative

Fish and Wildlife: Alternative A

Fish and Wildlife Management Activities: An average of four artificial nest sites would be constructed annually in areas where natural nesting sites are unavailable but could be utilized by a variety raptor species (e.g., osprey, red-tailed hawks, ferruginous hawks, Swainson's hawks, screech owls, and burrowing owls). Artificial nest sites would provide slight local beneficial impacts to raptor species. The construction of nine guzzlers would result in wildlife (small mammals, upland and big game) use of habitat that is unavailable due to lack of surface water. Fencing around guzzler sites would restrict livestock access and related damage, while preventing tumbleweed build-up at the water source. Although the amount of habitat improved at each of the water sites represents only a small local portion of the NCA, the potential long-term benefits to wildlife would be moderate.

Idaho Army National Guard Activities: Military maneuver training (including bivouac and administrative assembly areas) (IDARNG Map 2) in non-shrub areas would limit rehabilitation activities on approximately 35% of the Maneuver Area. This limitation would cause moderate adverse impacts in the OTA to upland wildlife over the short- and long-term. While remnant shrub communities and associated wildlife would moderately benefit from training restrictions in shrub areas, the restrictions would be voluntary and could change with future shifts in IDARNG conservation philosophy resulting in slight to moderate adverse impacts if training is expanded into shrub communities. The IDARNG continued use of the existing 5-acre excavation site would have no impacts on wildlife or their habitat. Fires would predominantly occur in the OTA Impact Area as a result of live firing activities. Fire intensity and size would be mitigated by fuels management and suppression activities.

Lands and Realty Activities: Approximately 19% of public lands in the NCA are within one-quarter mile of private or State lands. Land consolidations could benefit wildlife at the landscape level, but those that improve the effectiveness of vegetation treatments would benefit upland wildlife slightly at the local level because relatively few treatments are proposed. A 43,000-acre avoidance area (Lands Map 3) would have slight local benefits in the western portion of the NCA. Impacts from large-scale utility developments would be limited to the existing corridor (Lands Map 2), concentrating adverse impacts to a small, localized area.

Livestock Grazing Management Activities: Implementation of S&Gs (Appendix 3) at a landscape level would result in a slight reduction of livestock related impacts to upland dependent species and moderate benefits to riparian dependent species. Grazing restrictions to protect the Idaho springsnail and closures

(3,900 acres) along the Snake River (Grazing Map 4) would moderately benefit fish and riparian dependent wildlife at a landscape level and upland species at the local level. Maintaining a minimum amount of residual litter in annual grass areas would provide minimum food and cover for small mammals and other ground dwelling species at a landscape level.

Transportation and Recreation Management Activities: Approximately 1,600 acres would be closed to motorized vehicles (Transportation Map 2), which would provide moderate localized benefits for riparian and upland wildlife along approximately 8 miles on the north side of the Snake River including Halverson Bar. There would be slight to moderate benefits at the landscape level (431,200 acres) through the application of the route designation criteria.

Vegetation – Fire Suppression Activities: When suppression resources are limited, shrub communities outside of slickspot peppergrass management areas (Special Status Plants Map 2) could be lost to fires. The predicted loss of 50,000 acres of remnant shrub communities (approximately 34% of the remaining shrub communities in the NCA) would have moderate adverse affects on shrub obligate wildlife species at the landscape level. Grass and annual dominated communities (approximately 2/3 of the NCA) would have the lowest priority for suppression and could be subject to repeated fires which could have slight adverse affects on grassland associated species at the landscape level over the long-term.

Vegetation – Fuels Management Activities: Improving and maintaining fuel breaks and treating 10,000 acres (2% of the NCA) of annual grassland would result in slight adverse impacts in treated areas over the short-term and slight localized beneficial impacts to shrub obligate species in adjacent areas over the long-term.

Vegetation – Noxious Weeds Management Activities: Treating only 600 acres annually, with priority given to areas occupied with SSP species, would leave some weed-infested areas untreated thus resulting in an expansion of noxious weed infestations landscape-wide. Moderate benefits would occur at the local level for wildlife in areas near SSP species habitat.

Vegetation – Restoration Activities: The restoration of approximately 2% of the NCA, primarily in Management Areas 1 and 2 (Management Map 1), would result in a slight beneficial impact at the local level. Degraded habitat in the remainder of the NCA would adversely affect upland wildlife moderately to highly over the long-term. Maintaining or improving Proper Functioning Condition (PFC) would have slight benefits for fish and wildlife at the landscape level. Restored riparian areas would negligibly impact fish and wildlife at the local level (less than 1% of riparian habitat).

Conclusion - Fish & Wildlife: Alternative A

Riparian/Wetland/Open Water Species: Habitat restoration and areas closed to motorized vehicles would have slight to moderate localized benefits primarily for riparian species. Implementation of S&Gs would have moderate benefits at the landscape level for riparian and aquatic species. Overall, there would be slight improvement to riparian and wetland habitats.

Upland Species: Wildlife habitat enhancements and vegetation treatments would provide slight to moderate localized benefits over the long-term. Implementation of S&Gs and application of the route designation criteria would provide slight to moderate benefits at the landscape level. Loss of wildlife habitat due to limited vegetation treatments, IDARNG activities and fire would have moderate adverse impacts at the landscape scale. Overall, wildlife habitat would be lost because the rate of habitat treatments would not keep up with the rate of habitat loss.

The objective and DFC would be met for riparian, wetland and open water species. The

objective and DFC would not be met for upland wildlife because habitat loss would exceed restoration.

Fish and Wildlife: Alternative B

Fish and Wildlife Management Activities: Moderate beneficial impacts of providing artificial nest sites and water sources would occur at the local level as described in Alternative A. Construction of a 20-acre pond at TWMA would adversely impact upland species slightly and moderately benefit migrant shorebirds and waterfowl at the local level. Improvements in water quality would slightly benefit aquatic species at the local level in the Snake River over the long-term. Planting up to 100 acres of woodlands along the Snake River would highly benefit many wildlife species at a local level.

Idaho Army National Guard Activities: Restricting vehicle maneuver training to designated routes in the 22,300-acre Bravo Area would moderately benefit grassland associated species in the short-term and shrub obligates in the short- and long-term. Shrub obligate species would benefit moderately over the long-term by the mandatory avoidance of vehicle maneuver training in shrub stands in the Alpha, Charlie, and Delta areas; however, shrub stands in these areas would remain fragmented at a landscape level because of off-road training in grassland areas. With an additional 20,400 acre Maneuver Area, off-road maneuver training impacts would be spread over a larger area. The area has been previously impacted by wildfires and contains approximately 22% shrub communities. The shrub communities would remain fragmented and the degraded areas would not be available for restoration. Shrub obligate wildlife and Piute ground squirrels would be moderately adversely affected over the long-term because the area would remain in a degraded state. The new Maneuver Area would benefit slightly from additional IDARNG fire suppression capabilities. Slight adverse impacts from excavation sites would occur at the local level (3 sites totaling 105 acres).

Lands and Realty Activities: The effects of land purchases and exchanges on wildlife and their habitat would be the same as Alternative A; however, moderate benefits to upland wildlife from more extensive vegetation treatments would occur, predominately in Management Areas 1 and 2. A 105,000-acre avoidance area would have slight beneficial landscape-wide effects on wildlife and their habitat over the long-term. A utility corridor north of the Snake River Canyon would focus the construction of major utilities in a narrow area, which would result in slight to moderate beneficial and adverse impacts to raptors along the Snake River Canyon at the landscape level over the long-term.

Livestock Grazing Management Activities: Implementation of S&Gs (Appendix 3) and maintaining minimum levels of residual litter in annual grass pastures would have the same impacts as Alternative A. Grazing restrictions to protect the Idaho springsnail, seasonal restrictions and closures (8,600 acres) along the Snake River and on Kuna Butte would benefit fish and riparian dependent wildlife slightly to moderately at a landscape level and upland species at the local level over the long-term. Livestock grazing would be managed in Sandberg bluegrass areas to minimize competition with Piute ground squirrels. This could have short- and long-term moderate beneficial effects by reducing competition for green vegetation during ground squirrels' active periods.

Transportation and Recreation Management Activities: Closing approximately 6,400 acres to motorized vehicles would benefit riparian and upland species slightly to moderately at the local level along approximately 10 miles of one or both sides of the Snake River and C.J. Strike Reservoir. There would be slight to moderate long-term benefits at the landscape level (426,400 acres) through the application of the route designation criteria.

Vegetation – Fire Suppression Activities: Impacts would be the same as described in Alternative A.

Vegetation – Fuels Management Activities: Improving and maintaining fuel breaks and treating 70,000 acres (14% of the NCA) of annual grassland would result in slight adverse impacts in treated areas over the short-term and moderate beneficial landscape impacts to shrub obligate species in adjacent areas over the long-term.

Vegetation – Noxious Weeds Management Activities: Treating 2,500 acres annually, with priority given to areas with occupied SSP habitat, and secondarily to areas that have been restored would leave some weed-infested areas untreated in degraded habitats. In restored areas the likelihood of weed infestations would be reduced. With the increase in perennial communities there would be a corresponding reduction in potential for noxious weed infestations resulting in landscape-wide benefits over the long-term. The level of weed treatments could be sufficient to control noxious weeds in degraded areas over the long-term. Treating 20 miles of riparian and wetland areas would address all areas of the Snake River that are functioning at risk because of weeds and improve other areas that are currently in PFC. This would result in beneficial landscape-wide moderate benefits to riparian and wetland dependent species.

Vegetation – Restoration Activities: Restoration of approximately 10% of the NCA, primarily in Management Areas 1 and 2, would result in short-term moderate impacts to upland wildlife at the local level. Habitat in the remainder of the NCA would be moderately adversely impacted by the lack of restoration over the long-term. Maintaining PFC would have a slight benefit for fish and wildlife at the landscape level. Restored riparian areas would moderately benefit fish and wildlife at a landscape level (20% of riparian habitat).

Conclusion - Fish & Wildlife-Alternative B

Riparian/Wetland/Open Water Species: Areas closed to motorized vehicles would have moderate localized benefits primarily for riparian species. Intermediate levels of habitat restoration implementation of S&Gs would have moderate benefits at the landscape level for riparian and aquatic species. Overall, riparian and wetland habitats would improve.

Upland Species: Wildlife habitat enhancements, consolidation of ownership, and vehicle closures would provide slight to moderate localized benefits over the long-term. Vehicle restrictions, implementation of S&Gs, application of the route designation criteria and moderate levels of vegetation treatments would provide slight to moderate benefits at the landscape level. There would be large blocks of continuous shrub habitat in Management Areas 1 and 2 over the long-term. Soil disturbing activities including concentrated livestock use, utility development, IDARNG activities, and fire would have slight to moderate adverse impacts at the local level and in much of Management Area 3. The rate of habitat restoration would exceed the wildfire-related loss of remnant shrub habitat. Overall, wildlife habitat would be maintained or moderately improved.

The objective and DFC would be met.

Fish and Wildlife: Alternative C

Fish and Wildlife Management Activities: The impacts of providing artificial nest sites and water sources would be as described in Alternative A. The impacts of creating a 20-acre pond at TWMA and 100 acres of woodlands along the Snake River would be the same as described in Alternative B.

Idaho Army National Guard Activities: Restricting vehicle maneuver training to three designated routes in 18,400 acres of the Bravo Area would be highly beneficial to shrub obligate wildlife and Piute ground squirrels locally. The reduced level of disturbance would allow shrub communities to expand, reducing habitat fragmentation over the long-term. Impacts to shrub obligate species in the Alpha, Charlie, and Delta areas would be as described in Alternative B. However, increased levels of training transferred from the Bravo Area, would have slight to moderate local adverse impacts in the OTA. Grassland associated species would be moderately adversely affected

in the long-term at the local level by increased shrub cover in the Bravo Area. In the remainder of the OTA, greater disturbance levels would cause moderate short-and long-term adverse impacts to grassland associated species. The removal of 3,900 acres of occupied slickspot peppergrass habitat would not impact wildlife in this area. Impacts from the 5-acre excavation site would be as described in Alternative A.

Lands and Realty Activities: Because vegetation treatments would affect all degraded habitat in the NCA outside the OTA, land consolidations would be moderately beneficial to wildlife at the landscape level over the long-term. A 105,000-acre avoidance area would have slight long-term beneficial landscape-wide effects on wildlife and their habitat. The slight adverse and beneficial impacts to wildlife would occur at the local level. The small segments of a utility corridor within the NCA, south of the Snake River Canyon, would have fewer adverse impacts to raptors than the utility corridor north of the Snake River Canyon proposed in Alternative B. Raptors that nest in the Snake River Canyon primarily forage north of the canyon; therefore, there would be a reduced potential for collisions.

Livestock Grazing Management Activities: Removing livestock would result in greater short- and long-term benefits to upland wildlife at the landscape level and riparian wildlife at the local level than Alternatives A and B. Perennial dominated vegetation communities would show the greatest degree of improvement and wildlife occurring in those areas would be highly benefited over the long-term. Wildlife in disturbed communities would benefit slightly from a reduction in competition; however, fuels accumulation in areas where fuels treatments are not occurring could result in a slight potential for increased size or intensity of wildfires, adversely affecting wildlife at the local level over the short- and long-term.

Transportation and Recreation Management Activities: Closing approximately 13,200 acres to motorized vehicles along the Snake River Canyon would moderately benefit riparian species and upland species at the local level over the short- and long-term. Vehicle impacts would be eliminated on one or both sides of approximately 17 miles of river and reservoir shoreline. There would be slight to moderate benefits at the landscape level (419,600 acres) through the application of the route designation criteria.

Vegetation – Fire Suppression Activities: Impacts resulting from fire suppression would be the same as described in Alternative A.

Vegetation – Fuels Management Activities: Fuels treatments on degraded areas outside the OTA (100,000 acres) would result in slight localized adverse impacts to grassland species over the short-term. There would be highly beneficial long-term landscape impacts to shrub obligate and grassland species.

Vegetation – Noxious Weeds Management Activities: Treating 4,000 acres annually, with priority given to areas with occupied SSP habitat and restored areas, could allow some weed establishment in degraded areas over the short-term, but could effectively control weeds and be moderately beneficial to upland wildlife over the long-term as more degraded areas receive restoration or fuels treatments. As perennial species become established in treated areas, the likelihood of weed infestations would be reduced. With the increase in perennial communities there would be a corresponding reduction in potential for noxious weed infestations resulting in moderate to high landscape-wide benefits over the long-term. Treating 40 miles of riparian and wetland areas would address all areas of the Snake River that are functioning at risk because of weeds and improve other areas that are currently in PFC. This would be highly beneficial to riparian and wetland dependent species at the landscape level.

Vegetation – Restoration Activities: Restoring up to 130,000 acres (approximately 63% of all degraded areas outside the OTA) would be

highly beneficial to upland species at the landscape level over the long-term. Shrub obligate species, Piute ground squirrels, and associated predators would benefit the most over the long-term from more stable, contiguous shrub habitats. Maintaining PFC would have slight benefit for fish and wildlife at the landscape level over the long-term. Restored riparian areas would be highly beneficial to fish and riparian dependent wildlife at a landscape level (40% of riparian habitat).

Conclusion – Fish & Wildlife: Alternative C

Riparian/Wetland/Open Water Species: Areas closed to motorized vehicle use and developed recreation sites would have moderate long-term localized benefits primarily for riparian species. Substantial habitat restoration and removal of livestock would be moderately to highly beneficial at the landscape level for riparian and aquatic species. The majority of riparian areas would be treated resulting in large blocks of continuous riparian habitat. Overall, the impacts would be highly beneficial at the landscape level.

Upland Species: Wildlife habitat enhancements would provide slight localized benefits over the long-term. Substantial levels of vegetation treatments, motorized vehicle use restrictions, implementation of route designation criteria, and removal of livestock would be moderately to highly beneficial at the landscape level. All degraded upland habitats outside of the OTA would be treated, resulting in large blocks of continuous shrub habitat over the long-term. Utility development and fire would have slight to moderate adverse impacts to wildlife and their habitat at the local scale. IDARNG activities and removal of livestock from annual grasslands would have slight short-term adverse impacts at the landscape scale. Restoration would exceed the loss of habitat due to wildfire or weed infestations. Overall, the impacts would be highly beneficial at the landscape level.

The objective and the DFC would be met.

Fish and Wildlife: Alternative D

Fish and Wildlife Management Activities: The impacts of providing artificial nest sites and a water sources would be as described in Alternative A. The impacts of creating a 20-acre pond at TWMA and 100 acres of woodlands along the Snake River would be the same as described in Alternative B.

Idaho Army National Guard Activities: Restricting vehicle maneuver training in the 22,300 acre Bravo Area would have the same impacts as described in Alternative B. Impacts to grassland species in the Alpha, Charlie, and expanded Delta areas would be greater at the landscape level than in Alternative B. Shrub obligate species would benefit moderately by the mandatory avoidance of vehicle maneuver training in shrub stands in the Alpha, Charlie, and expanded Delta areas; however, shrub stands in these areas would remain fragmented at a landscape level because of continued off-road training in grassland areas. The proposed 4,100-acre expansion area has been previously impacted by wildfires and contains approximately 16% shrub communities. The shrub communities would remain fragmented and the area would not be available for restoration. Shrub obligate wildlife and Piute ground squirrels would be adversely affected moderately at the local level over the long-term because the area would remain in a degraded state. The new Maneuver Area would benefit slightly from additional IDARNG fire suppression capabilities. Slight beneficial impacts from excavation sites would occur at the local level (2 sites totaling 55 acres).

Lands and Realty Activities: The effects on wildlife from land consolidation would be the same as discussed in Alternative C. The impacts associated with avoidance areas and a utility corridor would be as described in Alternative A.

Livestock Grazing Management Activities: Implementation of S&Gs (Appendix 3) and maintaining minimum amounts of residual litter in annual grass pastures would have the same impacts as Alternative A. Grazing re-

strictions and closures (3,900 acres) along the Snake River and on Kuna Butte would moderately benefit fish and riparian dependent wildlife at a landscape level and upland species at the local level over the long-term. Impacts associated with managing livestock to minimize competition for forage with ground squirrels in Sandberg bluegrass areas would be the same as Alternative B.

Transportation and Recreation Management Activities: Closing approximately 4,400 acres to motorized vehicles along the Snake River Canyon would moderately benefit riparian and upland species at the local level along one or both sides of approximately 10 miles of river and reservoir shoreline over the long-term. There would be slight to moderate long-term benefits at the landscape level (428,400 acres) through the application of the route designation criteria.

Vegetation – Fire Suppression Activities: Impacts would be the same as described in Alternative A.

Vegetation – Fuels Management Activities: Treating fuels on 100,000 acres would have the same impacts as described in Alternative C.

Vegetation – Noxious Weeds Management Activities: Impacts resulting from the annual treatment of 4,000 acres of noxious weeds would be the same as Alternative C.

Vegetation – Restoration Activities: Restoring 130,000 acres of degraded small mammal habitat would have the same impacts as Alternative C. Impacts resulting from the restoration of 40 miles of riparian and wetland wildlife habitat would be the same as Alternative C.

Conclusion Fish & Wildlife – Alternative D

Riparian/Wetland/Open Water Species: Closures to motorized vehicles and developed recreation sites would have moderate local benefits primarily for riparian species. Substantial habitat restoration and changes in livestock management would be moderately to highly beneficial at the landscape level for riparian and aquatic species. The majority of riparian areas would be treated resulting in large blocks of continuous riparian habitat. Overall, the impacts would be highly beneficial at the landscape level.

Upland Species: Wildlife habitat enhancements would provide slight localized benefits over the long-term. Implementation of S&Gs and application of the route designation criteria would provide slight to moderate benefits at the landscape level. Vegetation treatments would be highly beneficial at the landscape level. All degraded upland habitats outside of the OTA would be treated resulting in large blocks of continuous shrub habitat over the long-term. The loss of wildlife habitat due to fire would have moderate adverse impacts at the local scale. Soil disturbing activities including concentrated livestock use, IDARNG activities, and fire would have slight to moderate long-term adverse impacts at the local level. Overall, impacts would be moderately to highly beneficial at the landscape level.

The objective and DFC would be met.

4.2.4 Geology

Geological resources would not be affected by any of the RMP alternatives. See Section 2.2.4 in Affected Environment Chapter 2.

4.2.5 Paleontology

Paleontological resources would not be affected by any of the RMP alternatives. See Section 2.2.5 in Affected Environment Chapter 2.

4.2.6 Special Status Species

Special status animal species include all Idaho Type 2 and Type 3 special status animal species found in the NCA (Appendix 4).

4.2.6.1 Special Status Animals

Special status animal species (SSA) are grouped in this section by their primary habitat associations. Habitats within are divided into

Upland, Riparian, and Open Water (including riverine) groups (Table 4.1). Upland habitats are characterized by sagebrush, salt desert shrub, and grasslands. The upland habitat group is broken into two subgroups (ground dwellers and highly mobile) that reflect individual species ability to cope with rapid ground disturbance (i.e. restoration, fuels management). Riparian habitats, as identified for this section, are characterized by saturated or wetted areas adjacent to water. Open Water habitats as identified by this section include the Snake River, CJ Strike Reservoir, and all ponds located in the NCA. These groups were created to provide a way of analyzing effects and impacts without repeating common statements for each individual species. Species may occur in more than one group; this is because that particular species is largely associated with multiple habitat types. Endangered and threatened species are analyzed individually (Idaho springsnail, bald eagle, and yellow-billed cuckoo). Under each individual threatened and endangered species, only the change agents that affect each species are analyzed. The conclusions by alternative for endangered and threatened animal species are included in the conclusions for SSAs.

Special Status Table 4.1. Special Status Animal Species Habitat Associations.

Upland Group	Riparian Group	Open Water Group
Ground Dwellers (GD)	Common Garter Snake Northern Leopard Frog Western Toad Woodhouse's Toad Bald Eagle Northern Goshawk Lewis' Woodpecker Yellow-billed Cuckoo Olive-sided Flycatcher Willow Flycatcher Spotted Bat	Idaho Springsnail Redband Trout White Sturgeon Northern Leopard Frog Western Toad Woodhouse's Toad American White Pelican Trumpeter Swan Black Tern
Longnose Snake Western Ground Snake Great Basin Collared Lizard (Mohave Black Collared Lizard) Pygmy Rabbit		
Highly Mobile		
Peregrine Falcon Prairie Falcon Sage-Grouse Ferruginous Hawk Loggerhead Shrike Sage Sparrow Brewer's Sparrow Spotted Bat		

Summary

Alternative C proposes the largest amount of habitat restoration, annual grassland conversion, and specific wildlife management projects; in combination with the elimination of grazing, it would make the most progress of any alternative toward achieving SSA objectives. Alternative D would make more progress than Alternatives A and B, and slightly less progress than Alternative C toward achieving the long-term goals for Idaho springsnails, bald eagles, yellow-billed cuckoos, and other SSAs in the NCA. A combination of upland and riparian restoration projects, teamed with increases in specific wildlife management projects would enable Alternative B to slightly surpass Alternative A in meeting the objectives for Idaho springsnails, bald eagles, yellow-billed cuckoos, and other SSAs in the NCA. Compared to the other alternatives, Alternative A would make the least amount of progress toward protecting, enhancing, and expanding Idaho springsnail, bald eagle, yellow-billed cuckoo, and other SSA habitat in the NCA.

Assumptions

- The Idaho S&Gs process would manage livestock in a manner that maintain viable populations of special status animal species.
- BLM would conduct ESR efforts in the OTA, but would not conduct habitat restoration projects because restored areas would not be protected from subsequent military training activities. IDARNG would conduct rehabilitation efforts in the OTA only in areas that would not be repeatedly disturbed by military training.
- IDARNG impacts in the OTA would be landscape-wide if they affect the majority of the OTA and localized if they affect only a portion of the OTA.
- For analysis purposes, IDARNG activities include: maneuver training, live fire activities, bivouac and dismount training.
- Short-term for upland species would be 10 years and for riparian and open water species would be 5 years. This is based upon the rate of response to habitat restoration.

How Activities Affect Special Status Animal Species

- How activities affect special status animal species would be the same as those identified in Fish and Wildlife Section 4.2.3.

Discussion of Impacts by Alternatives

Endangered Species - Idaho Springsnail: Alternative A

Fish and Wildlife Management Activities: Management actions that would improve water quality or reduce sedimentation or habitat fragmentation would benefit springsnails. No management actions are directed at the control or removal of the New Zealand mudsnail, a primary competitor of the springsnail. Flow regimes in the Snake River are regulated by other entities and will not be addressed here. Maintaining or improving the proper functioning condition (PFC) of riparian areas along the Snake River could benefit springsnails slightly at the landscape level.

Livestock Grazing Management Activities: Adverse impacts from livestock grazing could occur at the local level on up to 11 miles of the Snake River that are potentially accessible to livestock (6.744 miles of river and reservoir frontage in 10 allotments (USDI 2005a), 20 ft. (0.004 miles) in the Bruneau Arm Allotment (USDI 2004a), and up to 4.3 miles in the Con Shea Allotment). Lacking scientific evidence to the contrary, it is assumed that fewer livestock in areas along the Snake River and its tributaries will result in less soil disturbance, more residual standing litter, greater sediment capture, and reduced erosion and runoff. Direct benefits include reduced numbers of snails being crushed by livestock wading in and along the shoreline. Indirect benefits stem from fewer snails, eggs, and snail habitat being buried under or adversely affected by silt. We assume these benefits to be landscape-wide, since only about one-eighth of existing riparian areas are now available for livestock grazing.

Transportation and Recreation Management Activities: Through the application of the route designation criteria, there could be slightly beneficial localized impacts to springsnails over the long-term. A closure to motorized vehicles along approximately 4.5 miles on the north side of the Snake River would slightly benefit springsnails at the local level.

Vegetation – Fire Suppression Activities: Fire suppression priorities that focus on remnant shrub communities within or near the Snake River Canyon would slightly benefit Idaho springsnails at the landscape level. In contrast, if large non-shrub areas within or near the Snake River Canyon are allowed to burn in an effort to save shrub communities, Idaho springsnails would be moderately, adversely affected primarily at the local level. The majority of non-shrub areas in the canyon occur in an 18-mile segment on the south side of the river between Wild Horse Butte and Con Shea Basin. Protecting slickspot peppergrass communities would not benefit springsnails and could adversely impact them when their pro-

tection precludes the suppression of fires adjacent to the Snake River.

Vegetation – Restoration Activities: Riparian restoration projects could adversely affect springsnails slightly over the short-term and benefit them slightly over the long-term at the local level.

Endangered Species – Idaho Springsnail: Alternative B

Fish and Wildlife Management Activities: Construction of a 20-acre pond at TWMA could slightly adversely affect springsnails at the local level over the short-term and moderately benefit springsnails over the long-term by improving water quality.

Livestock Grazing Management Activities: Impacts would be the same as Alternative A.

Transportation and Recreation Management Activities: Application of the route designation criteria would have the same impacts as identified in Alternative A. Closures to motorized vehicles along approximately 5.2 miles on both sides of the Snake River near Wees Bar and Halverson Bar and about 1.5 miles along the south side of the C.J. Strike Reservoir would slightly benefit springsnails at the local level. Recommending 21.5 miles of the Snake River as eligible for protection under the W&SR Act, would if approved by Congress, protect springsnail habitat from impoundments resulting in moderate to highly beneficial impacts at the landscape-level over the long-term. Should the area not be designated the impacts would be the same as Alternative A.

Vegetation – Fire Suppression Activities: Impacts would be the same as Alternative A.

Vegetation – Restoration Activities: Restoring 20 miles of riparian habitat would primarily impact springsnails where the restoration occurs in free-flowing segments and could be slightly beneficial at the landscape level over the long-term.

Endangered Species – Idaho Springsnail: Alternative C

Fish and Wildlife Management Activities: Impacts resulting from the construction of a 20-acre pond at TWMA would be the same as Alternative B. Maintaining or improving the proper functioning condition of riparian areas would be the same as described in Alternative A.

Livestock Grazing Management Activities: Removal of livestock grazing would have moderate short- and long-term benefits to springsnails at the landscape level.

Transportation and Recreation Management Activities: Application of the route designation criteria would have the same impacts as identified in Alternative A. Closures to motorized vehicles along approximately 5.2 miles on both sides of the Snake River, 7.7 miles on the north side of the river, and 1 mile in the Bruneau Arm would benefit springsnails slightly at the local level over the long-term.

Vegetation – Fire Suppression Activities: Impacts would be the same as Alternative A.

Vegetation – Restoration Activities: Restoring 40 miles of riparian habitat would primarily impact springsnails slightly where the restoration occurs along free-flowing segments and would be slightly to moderately beneficial at the landscape level over the long-term.

Endangered Species – Idaho Springsnail: Alternative D

Fish and Wildlife Management Activities: Impacts resulting from the construction of a 20-acre pond at TWMA would be the same as Alternative B. Maintaining or improving the PFC of riparian areas would be the same as described in Alternative A.

Livestock Grazing Management Activities: Impacts would be the same as Alternative A.

Transportation and Recreation Management: Application of the route designation criteria would have the same impacts as identified in

Alternative A. Closures to motorized vehicles along approximately 5.2 miles on both sides of the Snake River and 1 mile in the Bruneau Arm would benefit springsnails slightly at the local level over the short-and long-term. The impacts of recommending 49 miles of the Snake River as not eligible for protection under the W&SR Act would be the same as described in Alternative A.

Vegetation – Fire Suppression Activities: Impacts would be the same as Alternative A.

Vegetation – Restoration Activities: Impacts resulting from 40 miles of riparian restoration would be the same as Alternative C.

Threatened Species – Bald Eagle
Alternative A

Vegetation – Restoration Activities: Restoring desirable trees to 1 mile of riparian habitat would slightly benefit eagles over the long-term at the local level. Maintaining or improving the PFC of riparian areas would slightly benefit bald eagle prey species at the landscape level over the long-term.

Threatened Species – Bald Eagle:
Alternative B

Vegetation – Restoration Activities: Restoring desirable trees to 20 miles of riparian habitat would moderately benefit eagles over the long-term at the landscape level. Maintaining or improving the functioning condition of riparian areas would affect eagles as described in Alternative A.

Threatened Species – Bald Eagle:
Alternative C

Vegetation – Restoration Activities: Restoring desirable trees to 40 miles of riparian habitat would highly beneficial to eagles over the long-term at the landscape level. Maintaining or improving the functioning condition of riparian areas would affect eagles as described in Alternative A.

Threatened Species – Bald Eagle:
Alternative D

Vegetation – Restoration Activities: Impacts of habitat restoration and maintaining or improving PFC would be the same as described in Alternative C.

Candidate Species – Yellow-billed Cuckoo:
Alternative A

Vegetation – Restoration Activities: Restoring 1 mile of riparian trees would provide slight local long-term benefits to yellow-billed cuckoos. Maintaining or improving the functioning condition of riparian areas would slightly benefit cuckoos landscape-wide over the long-term.

Candidate Species – Yellow-billed Cuckoo:
Alternative B

Fish and Wildlife Management Activities: Creating 100 acres of riparian woodlands would be slightly beneficial at the local level by providing nesting habitat for 2-10 pairs of yellow-billed cuckoos (Laymon 1998) over the long-term.

Vegetation – Restoration Activities: Restoring up to 20 miles of riparian woodlands would result in slight to moderate long-term benefits for migrating and dispersing yellow-billed cuckoos at the local level.

Candidate Species – Yellow-billed Cuckoo:
Alternative C

Fish and Wildlife Management Activities: Benefits from constructing 100 acres of woodlands would be the same as Alternative B.

Vegetation – Restoration Activities: Restoring up to 40 miles of riparian habitat would be the same as Alternative B, but at the landscape level. This level of restoration could also provide nesting habitat depending on the size of and connectivity between the areas being restored.

Candidate Species – Yellow-billed Cuckoo: Alternative D

Fish and Wildlife Management Activities: Benefits from constructing 100 acres of woodlands would be the same as Alternative B.

Vegetation – Restoration Activities: Benefits from restoring 40 miles of riparian and wetlands habitat would be the same as Alternative C.

Special Status Animal Species: Alternative A

Fish and Wildlife Management Activities: Maintaining or improving the PFC of riparian areas would slightly benefit SSA at the landscape level. Constructing an average of four artificial nest sites annually in areas where natural nesting sites are unavailable could result in moderate local benefits for ferruginous hawks and other SSAs over the short- and long-term. Providing water sources could slightly benefit upland SSA at the local level by providing access to habitat that is otherwise suitable, but seasonally unavailable due to a lack of surface water. Planting trees at these guzzler sites could provide slight long-term local benefits through perching and nest sites for raptors and other bird species.

Idaho Army National Guard Activities: Moderate adverse impacts of vehicle maneuver training would occur at the landscape level in non-shrub habitats (up to 35% of the OTA Maneuver Area) over the short- and long-term. Shrub habitats would be fragmented in the remainder of the OTA and would provide less desirable habitat for shrub obligate SSS (i.e., loggerhead shrike, sage sparrow, Brewer's sparrow) over the long-term. Changes in training priorities that result in further shrub loss or habitat degradation would have moderate adverse impacts to SSS in the long-term. Use of a 5-acre excavation site would have no additional impacts on SSA or their habitat.

Lands and Realty Activities: Consolidating public land ownership through purchase or exchange would allow BLM to acquire important habitat, which could reduce habitat fragmentation in the short- and long-term; however, it would not have direct impacts for any one specific SSA. Assuming that acquired land would be restored; there is the potential for creating suitable upland habitat, resulting in slight benefits over the long-term for some upland SSA at the local level. A 43,000-acre avoidance area would have slight beneficial long-term effects on upland SSA and their habitat at the local level. Continuation of the existing utility corridor would ensure that wildlife impacts from future large utility developments are restricted to a small, localized area.

Livestock Grazing Management Activities: Upland GD SSA could experience slight short-term adverse impacts from livestock mechanical damage, resulting in burrow destruction, which could lead to incidental mortality for western ground and longnose snakes. Effective management from the S&Gs process (Appendix 3) could result in slight to moderate long-term benefits across the landscape; however, SSS in areas of concentrated livestock use would suffer slight to moderate short- and long-term adverse impacts locally (watering and salting areas). Livestock utilization of herbaceous vegetation could have moderate adverse impacts to Piute ground squirrels through competition for available forage over the short- and long-term. Grazing restrictions and closures in grazing allotments along the Snake River would slightly benefit riparian and open water SSA (approximately 10.2 miles along one side of the Snake River and C.J. Strike Reservoir would be closed), especially western and Woodhouse's toads, northern leopard frogs, and common garter snakes, at the landscape level from undisturbed riparian vegetative communities. Slight adverse impacts could occur in local areas (up to approximately 11 miles) where livestock would have access to the river over the long-term.

Transportation and Recreation Management Activities: Elimination of motorized recreation-related noise, ground disturbance, and erosion would have short- and long-term moderately beneficial effects for prairie falcons,

peregrine falcons, western ground snakes, longnose snakes, and common garter snakes at the local level (4 miles of cliff habitat and 7.7 miles of riparian habitat). In addition, a lack of soil disturbance from motorized vehicles would reduce weed infestations, potentially reducing wildfire ignitions, and improving vegetation community structure, function, and condition, which would have a slight to moderate long-term beneficial effect on associated SSA habitat. Application of the route designation criteria in SSA habitats would moderately benefit SSA at the landscape level (431,200 acres) over the short-and long-term. Expansion of two recreation sites would not keep up with recreation use; therefore, impacts from dispersed recreation could increase slightly to moderately over the long-term primarily in riparian areas.

Vegetation – Fire Suppression Activities: Fire suppression priorities would moderately benefit shrub-obligate SSA at the landscape level. When suppression resources are limited, SSA would be adversely affected at the landscape level over the long-term when shrub communities outside of slickspot peppergrass management areas are lost to fires. Impacts to riparian dependent SSA would occur at the local level over the short-term because of the relatively rapid post-fire recovery of riparian areas.

Vegetation – Fuels Management Activities: Short-term adverse impacts for GD SSA such as habitat destruction could result from ground disturbing activities. Initially, fuels management projects would have slight short-term adverse impacts on upland SSA habitat at the local level. Over the long-term, once perennial vegetation establishes and more acres are treated, moderate beneficial impacts would occur at the local level in Management Areas 1 and 2. The majority of the NCA would remain in a degraded state dominated by annual grasses and susceptible to frequent wildland fires. Improving and/or maintaining existing fuel breaks (136 miles) and periodically reducing accumulated fuels along the breaks would result in slight, short-term local adverse impacts for upland SSA in the treated areas and moderate beneficial impacts for SSA in adjacent areas. Although the majority of fuel breaks are associated with disturbed vegetation communities, reduced fires in these areas could benefit the prey base of some SSA raptors at the landscape level.

Vegetation – Noxious Weeds Management Activities: Reducing localized degradation and fragmentation of native habitat would result in slight beneficial impacts for SSA in the short- and long-term. Occupied SSP species and riparian habitats would have priority for noxious weed treatment, which would leave the majority of the NCA susceptible to weed infestations, which would slightly adversely affect SSA at the landscape level.

Vegetation – Restoration Activities: Restoring shrubs and perennial grasslands would improve, increase, and stabilize available habitat for small mammals, thus resulting in more stable prey populations and more prey availability for special status raptor species. Slight adverse and beneficial short-term impacts on GD SSA would occur at the local level, primarily in Management Area 1 and to a limited degree in Management Area 2. Sage and Brewer's sparrows, as well as other upland SSA would realize moderate long-term benefits at the local level from enhanced shrub and nesting habitat. Special status snakes could moderately benefit from increased shrub habitat providing greater protection of burrows from livestock trampling and motorized vehicle disturbance over the long-term. Habitat in Management Area 3 and the majority of Management Area 2 would not be restored. Riparian habitat restoration would result in slight short-term adverse impacts and long-term moderate benefits to riparian and open water SSA at the local level (1% of riparian habitat). Maintaining or improving riparian functioning condition would slightly benefit riparian and open water SSA at the landscape-level over the short- and long-term. Restoring wetlands at the TWMA would result in moderate to high local level benefits over the long-term for SSA. Northern leopard frogs and western and

Woodhouse's toads would experience slight short-term adverse and moderate long-term beneficial impacts over the short- and long-term. Removing dense stands of decadent vegetation would result in moderate short- and long-term local benefits through an increase in open water and potential nesting and/or resting locations for American white pelicans, black terns, and trumpeter swans. Slight benefits would be realized by any SSA that forages over open-water at the TWMA.

Conclusion – Special Status Animal Species: Alternative A

Riparian/Wetland/Open Water Species: Fish and wildlife management actions and habitat restoration could have slight adverse local impacts over the short-term to SSA including Idaho springsnails; however, these actions and vehicle closures would have slight to moderate localized benefits over the long-term. Implementation of S&Gs could have slight to moderate benefits at the landscape level for riparian and aquatic species. Habitat for riparian and open water species would be maintained at the landscape level, but enhanced only at the local level.

Upland Species: Wildlife habitat enhancements, land consolidation, and vegetation treatments would provide slight to moderate localized benefits over the long-term. Implementation of S & G and application of the route designation criteria would provide slight to moderate benefits at the landscape level. IDARNG activities, a lack of adequate recreation facilities, the loss of SSA habitat due to limited vegetation treatments and fire would have slight to moderate adverse impacts at the landscape scale. The amount of upland habitat loss would exceed the amount of habitat maintained or enhanced.

The objective for SSAs and DFC for Fish and Wildlife would not be met because of the net loss of shrub habitat and limited riparian habitat restoration.

Special Status Animal Species: Alternative B

Fish and Wildlife Management Activities: The impacts of providing artificial nest sites and water sources would occur at the local level as described in Alternative A. Local SSA could experience slight short-term adverse impacts from the construction of a 20-acre pond at TWMA. Moderate short and long-term benefits would include increased open water access, nesting habitat, and shoreline foraging for American white pelicans, black terns, and trumpeter swans. Northern leopard frogs and western and Woodhouse's toads would experience slight short-term adverse and moderate long-term beneficial impacts over the short- and long-term. Planting woodlands along the Snake River would result in moderate benefits for SSA (i.e., olive-sided and willow flycatcher, Lewis' woodpecker, and northern goshawk) at a local scale, and slight benefits at a landscape level over the long-term. Maintaining or improving the PFC of riparian areas would affect SSA as described in Alternative A.

Idaho Army National Guard Activities: Restricting vehicle maneuver training to designated routes in the 22,300 acre Bravo Area would benefit shrub obligate SSA moderately in 26% of the OTA. Shrub communities in the Bravo Area could naturally expand in the long-term. Shrub obligate species would benefit moderately at the local level by the mandatory avoidance of vehicle maneuver training in shrub stands including the 20,400-acre expansion area. However, habitat fragmentation caused by off-road training in grassland areas would result in slight to moderate adverse long-term impacts to shrub obligate species. The expansion area has been previously impacted by wildfires and contains approximately 22% shrub communities. Grassland areas in designated off-road maneuver training areas would be adversely impacted in the short-and long-term.

Lands and Realty Activities: Because vegetation treatments would affect a majority of degraded habitats outside the OTA in Manage-

ment Areas 1 and 2, land consolidations would moderately benefit wildlife over the long-term at the landscape level. A 105,000-acre avoidance area would slightly benefit SSA at the landscape level. The reduced probability of major transmission line development would slightly benefit riparian, open water, and cliff nesting species in the Snake River Canyon over the short-and long-term. A utility corridor north of the Snake River Canyon would focus the construction of major utility facilities, which would provide additional nesting, perching, and hunting platforms for ferruginous hawks. Increased collisions with transmission lines would be a potential slight adverse consequence at the landscape level. Impacts from pipelines would be slight adverse short-term and localized during construction and maintenance activities.

Livestock Grazing Management Activities: Grazing restrictions and closures on 8,600 acres would moderately benefit riparian and open water SSA at the landscape level (approximately 14.6 miles along one side of the Snake River and C.J Strike Reservoir) and upland SSA at the local level along the Snake River and in the Kuna Butte area over the long-term. Slight short- and long-term adverse impacts could occur in local areas (up to approximately 11 miles) where livestock would have access to the river. Managing livestock use in Sandberg bluegrass areas to minimize competition with Piute ground squirrels would moderately benefit prairie falcons and other upland SSA at the local level over the short- and long-term. Upland livestock grazing in the remainder of the NCA would have the same impacts as described in Alternative A.

Transportation and Recreation Management Activities: Elimination of motorized recreation-related impacts would be as described in Alternative A; however, impacts from vehicles would be eliminated on both sides of the Snake River for up to 5.7 miles of riparian habitat and 15.1 miles of cliff habitat and on one side of the river for 3.5 miles of riparian habitat and 4.3 miles of cliff habitat. Through the application of the route designation criteria, buffers that reduce or eliminate vehicle use in SSA habitats would moderately benefit SSA at the landscape level (426,400 acres) over the long-term. Development of the Initial Point and Three Pole recreation sites would impact upland SSA moderately at the local level. As in Alternative A, the level of recreation development would not be expected to meet recreation demand; therefore, impacts from dispersed recreation could increase slightly to moderately over the long-term primarily in riparian areas at the landscape level.

Vegetation – Fire Suppression Activities: Impacts would be the same as described in Alternative A.

Vegetation – Fuels Management Activities: Slight short-term adverse impacts to upland SSA would occur primarily at the local level; however, because 42% of disturbed habitat outside the OTA in Management Areas 1 and 2 (or 24% of all disturbed areas in the NCA) would be treated, moderate long-term beneficial impacts would occur at the landscape level. The greatest potential beneficial response to increased hazardous fuels management projects would be from small mammal populations, which form the base of the NCA food chain, resulting in moderate long-term beneficial impacts for special status raptors in the form of more available prey. SSA habitat in Management Area 3 would be vulnerable to repeated wildland fires because of the limited amount of fuels treatments. Maintaining 136 miles of existing fuel breaks, and constructing eight additional miles would have the same impacts as Alternative A; however, new construction areas could have slight short-term adverse impacts for GD SSA. Impacts from loss of habitat would occur at the local level and moderate benefits from reduced acres burned could occur at the landscape level.

Vegetation – Noxious Weeds Management Activities: Upland SSA in Management Areas 1 and 2 would moderately benefit from weeds treatments; however, potential increases of weeds in untreated areas could slightly to moderately adversely affect upland SSA over

the long-term primarily in Management Area 3. Treating 20 miles of riparian and wetland areas would address all areas of the Snake River that are functioning at risk because of weeds and improve other areas that are currently in PFC. This would result in moderate long-term landscape-wide benefits to riparian and open water SSA.

Vegetation – Restoration Activities: Restoring degraded habitats (50,000 acres) outside the OTA primarily in Management Areas 1 and 2 (17% of all degraded areas in the NCA) would adversely impact upland SSA slightly at the local level over the short-term and moderately beneficial at the landscape level over the long-term. Restoration activities in Management Area 3 would be limited and as such, SSA would be adversely impacted over the long-term. Riparian habitat restoration would result in slight short-term adverse impacts and moderate long-term benefits to riparian and open water SSA at the landscape level (20% of riparian habitat). Maintaining or improving riparian functioning condition would have the same impacts as described in Alternative A. Restoring 80 acres of wetlands at the TWMA would have the same impacts as described in Alternative A.

Conclusion – Special Status Animal Species: Alternative B

Riparian/Wetland/Open Water Species: Fish and wildlife management actions could have slight adverse local impacts over the short-term to SSA including Idaho springsnails, but these actions and vehicle closures would have slight to moderate local or landscape level benefits for Idaho springsnails, bald eagles, and yellow-billed cuckoos over the long-term. Implementation of S & G and vegetation treatments would have slight to moderate benefits at the landscape level for riparian and aquatic species. Overall, SSA habitat would be maintained or moderately improved.

Upland Species: Wildlife habitat enhancements, restrictions on IDARNG activities in shrub habitats, grazing closures, and recreation developments would provide slight to moderate localized benefits over the long-term. Land consolidation, implementation of S & G and application of the route designation criteria would provide slight to moderate benefits at the landscape level. Vegetation treatments could have slight to moderate localized adverse impacts over the short-term, but would have moderate benefits at the landscape level over the long-term. IDARNG off-road maneuver training, a lack of adequate recreation facilities, and the loss of SSA habitat due to fire and noxious weeds would have slight to moderate adverse impacts at the landscape scale. Overall, impacts would be slight to moderately adverse at the landscape level primarily in Management Area 3 and in the OTA over the long-term.

The objective for SSA and DFC for Fish and Wildlife would be met for riparian, wetland and open water species but only partially met for upland species because upland habitat improvements would only slightly exceed habitat loss.

Special Status Animal Species: Alternative C

Fish and Wildlife Management Activities: The impacts of maintaining or improving riparian functioning condition and providing artificial nest sites and water sources would be as described in Alternative A. The impacts of creating a 20-acre pond at TWMA and 100 acres of woodlands along the Snake River would be the same as described in Alternative B.

Idaho Army National Guard Activities: Restricting vehicle maneuver training to three designated routes in 18,400 acres of the Bravo Area would highly benefit upland SSA, especially shrub obligate species. Shrub communities in the Bravo Area would have an opportunity to naturally expand in the long-term. Shrub obligate species in the Alpha, Charlie, and Delta areas would benefit moderately at the local level from mandatory avoidance of vehicle maneuver training in shrub stands. However, increased levels of training (transferred from the Bravo Area), lack of restoration, and continued fragmentation of shrub

communities would have moderate adverse long-term impacts to upland SSA within the OTA. The removal of 3,900 acres of occupied slickspot peppergrass habitat would reduce IDARNG environmental protection and initial attack fire response in that area; however, any reductions in protection and fire suppression response would be compensated for by increased BLM management and response, which identifies slickspot peppergrass habitat as a high priority for protection. There would be no impacts to SSA in this area. Impacts from the 5-acre excavation site would be as described in Alternative A.

Lands and Realty Activities: Because vegetation treatments would affect all degraded habitat in the NCA outside the OTA, land consolidations would highly benefit SSA over the long-term at the landscape level. A 163,600-acre avoidance area would benefit SSA slightly at the landscape level over the long-term. The reduced probability of major transmission line development would slightly benefit riparian, open water, and cliff nesting species in the Snake River Canyon. A utility corridor south of the Snake River Canyon, and primarily outside of the NCA, would provide additional nesting, perching, and hunting platforms for ferruginous hawks and would have less adverse impacts on SSA than the corridor proposed in Alternative B. Prairie falcons primarily forage north of the Snake River Canyon; therefore, there would be a lower potential for collisions compared to Alternative B. Impacts from pipelines would be adverse short-term and localized during construction and maintenance activities.

Livestock Grazing Management Activities: There would be no livestock grazing, and therefore no grazing-related impacts to SSA. A lack of grazing would result in a general improvement in shrub/bunchgrass habitat condition and quality over the long-term, which would be highly beneficial for SSA. A lack of grazing would also allow hazardous fuels to accumulate, which could result in larger and more intense wildfires that have locally significant impacts on SSA and their habitat. Extensive vegetation treatments would compensate for some of the effects of increased fuels over the long-term. Reducing fuels along fuel breaks through grading, plowing, intensive grazing, or other means would reduce fire intensity, rate of fire spread, and associated habitat loss.

Transportation and Recreation Management Activities: Elimination of motorized recreation-related impacts would have moderate landscape-wide long-term benefits for prairie falcons as well as upland SSA that inhabit the Snake River Canyon and riparian and open water. Impacts from vehicles would be eliminated on both sides of the Snake River for up to 5.7 miles of riparian habitat and 15.1 miles of cliff habitat and on one side of the river for 10.2 miles of riparian habitat and 37.3 miles of cliff habitat. Through the application of route designation criteria, buffers that reduce or eliminate vehicle use in special status animal habitats would moderately benefit SSA at the landscape level (419,600 acres) over the long-term. Development of four recreation sites would moderately impact upland, riparian, and open water SSA at the local level. The level of recreation development would meet much of the recreation demand; therefore, impacts from dispersed recreation could decrease moderately over the long-term at the landscape level.

Vegetation – Fire Suppression Activities: Impacts resulting from fire suppression would be the same as described in Alternative A.

Vegetation – Fuels Management Activities: Slight short-term adverse impacts to upland SSA would occur primarily at the local level; however, because up to 48% of disturbed habitat outside the OTA (or 35% of all disturbed areas in the NCA) would be treated, long-term impacts would be highly beneficial at the landscape level. Fuel break maintenance and construction would have the same impacts as Alternative B, except that four additional miles would be constructed.

Vegetation – Noxious Weeds Management Activities: Upland SSA could be slightly to moderately adversely affected by local increases in weeds (primarily in Management Area 3) over the short-term where areas are not treated because of priorities to treat SSP habitat and restored areas. Upland SSA would moderately to highly benefit at the landscape level over the long-term as perennial vegetation becomes established in restored and fuels treatment areas. Treating 40 miles of riparian and wetland areas would address all areas of the Snake River that are functioning at risk because of weeds and improve other areas that are currently in PFC. This would be highly beneficial to riparian and open water SSA at the landscape level.

Vegetation – Restoration Activities: Restoring up to 68% of degraded habitats outside the OTA (or 45% of all degraded areas in the NCA) would slightly impact upland SSA at the local level over the short-term and would be highly beneficial at the landscape level over the long-term (as described in Alternative A). In combination with fuels treatments, habitat restoration would affect all degraded habitats outside the OTA resulting in short- and long-term beneficial impacts to upland SSA habitat. Riparian habitat restoration would result in slight, short-term adverse impacts and long-term benefits to riparian and open water SSA at the landscape level (40% of riparian habitat). At the landscape level, maintaining or improving riparian functioning condition would moderately benefit riparian and open water SSAs. Restoring 80 acres of wetlands at the TWMA would have the same impacts as described in Alternative A.

Conclusion Special Status Animal Species: Alternative C

Riparian/Wetland/Open Water Species: Fish and wildlife management actions could have slight adverse local impacts over the short-term to SSA including Idaho springsnails, but these actions and vehicle closures would have slight to moderate local or landscape level benefits for Idaho springsnails, bald eagles, and yellow-billed cuckoos over the long-term.

Vegetation treatments and removal of livestock would be moderately to highly beneficial at the landscape level for riparian and aquatic species. Overall, the impacts would be highly beneficial at the landscape level.

Upland Species: Wildlife habitat enhancements and recreation developments would result in slight to moderate localized benefits and restrictions on IDARNG activities in shrub habitats would be moderately or highly beneficial for remnant shrub stands over the long-term. Land consolidation and application of the route designation criteria would provide slight to moderate benefits at the landscape level. Removal of livestock would be highly beneficial to SSA in perennial communities and slightly beneficial to SSA in annual communities over the long-term. Vegetation treatments could have slight to moderate localized adverse impacts over the short-term, but would be highly beneficial at the landscape level over the long-term. IDARNG off-road maneuver activities and the loss of SSA habitat due to fire would have slight to moderate adverse impacts at the landscape and local levels respectively. However, the overall impacts would be highly beneficial at the landscape level over the long-term.

The objective for SSA and DFC for Fish and Wildlife would be met for riparian, wetland, open water and some upland species. The objective and DFC would not be met for shrub dependent species in non-shrub areas in the OTA and fuels treatment areas outside the OTA that would not be restored.

Specials Status Animal Species: Alternative D

Fish and Wildlife Management Activities: The impacts of maintaining or improving riparian functioning condition and providing artificial nest sites and water sources would be as described in Alternative A. The impacts of creating a 20-acre pond at TWMA and 100 acres of woodlands along the Snake River would be the same as described in Alternative B.

Idaho Army National Guard Activities: Restricting vehicle maneuver training in the 22,300 acre Bravo Area would have the same impacts as described in Alternative B. Transferring 1,000 TDs from the Bravo Area to the Alpha, Charlie, and expanded Delta areas would affect SSA in these areas as described in Alternative C. Increased off-road maneuver training would adversely affect SSA species moderately at the local level in the 4,100 acre expansion area. Remnant shrub communities (16% of the area) would remain fragmented and the degraded areas would not be available for restoration. Grassland areas within the OTA would be moderately to highly adversely impacted in the short-and long-term by off-road maneuver training. Slight impacts from excavation sites would occur at the local level (2 sites totaling 55 acres) over the short- and long-term.

Lands and Realty Activities: The effects from avoidance areas and utility corridors would be the same as described in Alternative A. The effects of land consolidation would be as described in Alternative C.

Livestock Grazing Management Activities: Impacts of grazing restrictions and closures along the Snake River would be as described in Alternative A. Benefits associated with managing Sandberg bluegrass areas would be the same as Alternative B. Upland livestock grazing in the remainder of the NCA would have the same impacts as described in Alternative A.

Transportation and Recreation Management Activities: Elimination of motorized recreation-related impacts would have moderate local benefits over the short- and long-term for prairie falcons and other upland SSA that inhabit the Snake River Canyon and riparian and open water SSA. Impacts from vehicles would be eliminated on both sides of the Snake River for up to 5.7 miles of riparian habitat and 9.5 miles of cliff habitat and on one side of the river for 3.5 miles of riparian habitat and 4.3 miles of cliff habitat. Through the application of route designation criteria, buffers that reduce or eliminate vehicle use in SSA habitats would moderately benefit SSA at the landscape level (428,400 acres) over the long-term. Development of the Black Butte boat access could increase boater recreation disturbance resulting in slight impacts to riparian and open water SSA at the landscape level on up to 19.3 miles of the Snake River. The level of recreation development would meet much of the recreation demand; therefore, adverse impacts from dispersed recreation could moderately decrease over the long-term at the landscape level.

Vegetation – Fire Suppression Activities: Impacts would be the same as described in Alternative A.

Vegetation – Fuels Management Activities: Impacts from fuels treatments on 100,000 acres would be the same as described in Alternative C. Fuel break maintenance and construction would have the same impacts as Alternative B, except that four additional miles would be constructed.

Vegetation – Noxious Weeds Management Activities: Impacts from the treatment of 4,000 acres of noxious weeds would be the same as described in Alternative C.

Vegetation – Restoration Activities: Restoring 130,000 acres of degraded small mammal habitat would have the same impacts as described in Alternative C. Restoring 80 acres of wetlands at the TWMA would have the same impacts as described in Alternative A. Impacts from the restoration of 40 miles of riparian and wetland habitat would be the same as described in Alternative C.

Conclusion– Specials Status Animal Species: Alternative D

Riparian/Wetland/Open Water Species: Fish and wildlife management actions could have slight adverse local impacts over the short-term to SSA including Idaho springsnails. Fish and Wildlife management actions and vehicle closures would have slight to moderate local or landscape level benefits for SSAs including

bald eagles and yellow-billed cuckoos over the long-term. Implementation of S & G and vegetation treatments would have slight to moderate benefits at the landscape level for riparian and aquatic species. Overall, the impacts would be highly beneficial at the landscape level.

Upland Species: Wildlife habitat enhancements, restrictions on IDARNG activities in shrub habitats, grazing closures, and recreation developments would provide slight to moderate localized benefits over the long-term. Land consolidation and implementation of S & G and application of the route designation criteria would provide slight to moderate benefits at the landscape level. Vegetation treatments could have slight to moderate localized adverse impacts over the short-term, but would be highly beneficial at the landscape level over the long-term. IDARNG off-road maneuver activities and the loss of SSA habitat due to fire would have slight to moderate adverse impacts at the landscape and local levels respectively. Overall, the impacts would be moderate to highly beneficial at the landscape level.

The objective for SSA and DFC for Fish and Wildlife would be met for riparian, wetland, open water and some upland species. The objective and DFC would not be met for shrub dependent species in non-shrub areas in the OTA and fuels treatment areas outside the OTA that would not be restored.

4.2.6.2 Special Status Plants

Summary

Implementing a variety of management actions (i.e. military training restrictions, acquisition of important habitat, implementation of Idaho S&Gs (Appendix 3), reducing or eliminating surface disturbing activities) would help minimize human impacts to SSP species and contribute to their long-term viability; therefore the objectives would be met under all four alternatives. However, the DFC would only be met under Alternatives B, C, and D. The DFC would not be met under Alternative A, because impacts from human uses (i.e. dispersed recreation) would continue to adversely affect individual populations. In addition, the levels of fuels management, habitat restoration, and weeds treatments would not reverse the trend of shrub loss in the NCA. Individual populations would remain isolated and at greater risk for extirpation. The loss of shrub communities and increases in invasive and noxious weed species would result in losses of SSPs and their habitat at the local and possibly landscape levels. Management actions under Alternatives B, C, and D could potentially reverse the current trend of shrub loss and reduce human impacts; therefore these alternatives would likely contribute to the long-term viability of the species and meet the DFC.

Assumptions

- Noxious weed control in restored areas would be considered part of the restoration project for the first three years and would then be part of the overall noxious weeds program.
- Slickspot peppergrass populations would have the highest priority for weed treatment.
- 50% of ESR treatments would require additional restoration work.
- BLM would not conduct habitat restoration projects in the OTA.
- IDARNG would conduct rehabilitation efforts in the OTA only in areas that would not be repeatedly disturbed by military training. Burned areas within the Impact Area would not be rehabilitated because unexploded ordnance is a significant safety hazard and the area has a high probability of repeated fires.
- For analysis purposes, IDARNG activities include: maneuver training, live-fire activities, bivouac and dismount training.
- Short-term impacts would be up to 10 years based on the amount of time it takes to establish perennial species in a desert environment. Long-term impacts are greater than 10 years.

How Activities Affect Special Status Plants

- The impacts of management actions on SSP species are often the same as for upland vegetation; however, impacts that reduce or eliminate plants or populations could directly impact the long-term viability of populations and species (Rosentreter 1992). Impacts that are specific to SSPs are discussed below.

Direct Impacts

Idaho Army National Guard Activities

- Known populations of SSPs and suitable habitat in shrub communities would be protected from direct impacts over the long-term by restrictions on maneuver training, bivouacs, and other ground disturbing activities.

Lands and Realty Activities

- An emphasis on retaining and acquiring lands with SSP habitat would directly benefit populations over the long-term.

Livestock Grazing Management Activities

- Grazing related activities have been identified as a threat to eight of the SSP species that occur in the NCA (Appendix 9).

Recreation Management Activities

- Reducing the number of human-caused fires by restricting campfires would benefit SSPs and suitable habitat over the short- and long-term. Management actions that attract and increase recreational use in an area (i.e., facilities development) could adversely affect SSPs in adjacent areas by increasing the opportunity for impacts from trampling and fires starts.

Slickspot Peppergrass Candidate Conservation Agreement (CCA) Activities

- The agreement includes conservation measures related to fire management, recreation, invasive non-native plant species, land use authorizations and land exchanges, livestock trampling, and military training. Implementation of the CCA would minimize or mitigate impacts to slickspot peppergrass from these activities over the short- and long-term.

Surface Disturbing Activities

- The short-term direct impacts of surface disturbing activities (i.e., IDARNG maneuver training, recreation, ORV, rights-of-way) include crushing and destroying plants. These impacts can limit the ability of SSPs to reestablish by reducing their numbers and reproductive capability (USDI 1996). Significant short-term losses of individual plants could jeopardize the long-term viability of isolated populations (Jules 1998).
- Management actions that create buffers around SSP populations from surface disturbing activities (i.e. grazing exclosures, route designation, vehicle closures, recreation permit requirements, restrictions on mineral material sites) would reduce or eliminate the potential for short-term direct impacts and increase the long-term viability of populations.

Transportation Management Activities

- Off-road vehicle use has been identified as a threat to 16 SSP species (Appendix 9 ~~8~~). Implementing a ¼-mile buffer around occupied habitats would eliminate impacts over the short- and long-term.

Vegetation – Fire Suppression Activities

- Limiting 90% of wildfires in slickspot peppergrass management areas to less than 100 acres would benefit the majority of occupied and suitable slickspot peppergrass habitat over the short- and long-term. Outside of designated slickspot peppergrass management areas, the goal of limiting 90% of wildfires to less than 200 acres, with an emphasis on protecting shrub communities, would benefit other SSP populations that occur in shrub communities over the short- and long-term. The presence of resource advisors during wildfires would help limit impacts on known occurrences. SSPs could be adversely affected when areas outside

slickspot peppergrass management areas burn because of inadequate suppression resources.

Vegetation – Restoration Activities

- Restoration efforts that disturb the ground (i.e. drill seeding) or remove vegetation (i.e. prescribed burning, chemical application) could impact isolated islands of suitable or occupied SSP habitat that occur within areas being restored. SSP species that occur in soils that have a high erosion potential would be most susceptible to impacts. SSP populations could also be impacted in areas where vegetation removal actions expand beyond the area targeted for restoration.

Indirect Impacts

Idaho Army National Guard Activities

- Areas subject to military maneuver activity could be dominated by annual and perennial grasses, which are more susceptible to fire.

Lands and Realty Activities

- SSP populations that would be included in the NCA by a boundary change could benefit over the long-term by an increased emphasis on habitat restoration. Conversely, populations that would no longer be in the NCA could be adversely impacted in areas where habitat restoration is a lower priority.

Livestock Grazing Management Activities

- All SSP species could be affected by grazing activities that affect vegetation (i.e., soil disturbance or compaction, increase of invasive species). Management actions that reduce or eliminate these impacts (i.e. closing areas to grazing, resting areas to allow recovery and/or seedling establishment, implementing Idaho S&Gs, and leaving minimum amounts of residual litter in annual grass pastures) would help maintain or enhance SSP populations. Exclosures that specifically protect plant populations would have long-term benefits at the population level, but would have limited affect at the species or landscape level.

Recreation Management Activities

- Management actions that reduce recreation use in an area (i.e., recreation facilities that reduce dispersed use) would benefit SSPs in areas where recreation use decreases by reducing impacts to plants and their habitats.

Slickspot Peppergrass Candidate Conservation Agreement (CCA) Activities

- Populations of other SSP species in slickspot peppergrass management areas would also benefit over the long-term.

Surface Disturbing Activities

- Invasive and noxious weeds that become established in disturbed areas may spread into adjacent occupied SSP habitat resulting in increased competition for resources over the short- and long-term. Adequate buffers would reduce competition from invasive and noxious weeds that become established in disturbed areas.
- The resulting long-term impacts of surface disturbance include increased fire frequency as a result of the introduction of invasive annual grasses; increased erosion and reduced water infiltration; limited seed germination; and reduced soil stability and fixed nitrogen availability resulting from the loss of biological soil crusts (Belnap 1995). These impacts would adversely impact occupied SSP habitat and the ability for plants to expand in suitable habitat that is affected.
- Management actions that increase surface disturbing uses near SSP habitat (i.e. establishment of new recreation sites) would increase the potential for the short- and long-term impacts described above.
- Repeatedly disturbed areas would not recover over the short- or long-term resulting in fragmented habitats. Because isolated populations of SSPs have a lower probability of surviving over the long-

term (Jules 1998, Harrison *et al.* 2000), disturbed areas would limit the potential for populations to expand and could serve as barriers to genetic transfer between populations. Disturbed areas dominated by cheatgrass would be more susceptible to wildfire, which could threaten occupied and suitable habitat over the short- and long-term.

Transportation Management Activities

- Continued impacts to suitable habitats (i.e., fragmentation, introduction of noxious weeds, fire starts) could affect long-term population viability by reducing the potential for a population to expand. Buffers from occupied habitats would help reduce the potential for impacts from motorized vehicle use. A reduction in duplicate routes would reduce habitat fragmentation and provide better connectivity within and between individual plant populations.

Vegetation – Fire Suppression Activities

- Limiting the disturbance caused by wildfire would reduce the potential for noxious and invasive weeds to become established or increase in occupied and suitable habitats over the short- and long-term. SSPs in the remaining areas would be at greatest risk from impacts caused by wildfire over the short- and long-term. A reduction in wildfires that helps restore or make progress toward the natural fire regime would benefit SSP populations over the long-term.

Vegetation – Fuels Management Activities

- While efforts would be made to avoid known occurrences of SSPs in fuels treatment areas, suitable habitat could be adversely affected over the short-term within fuels treatments. Larger contiguous stands of suitable and occupied habitat would benefit over the short- and long-term from fuels treatments. By increasing the time between disturbance events and increasing the availability of limited resources for perennial communities (i.e., moisture and nutrients), structural and functional components (vegetation, soil, nutrient cycling, hydrology, etc.) could be preserved in residual perennial communities and potentially reestablished in altered sites that no longer retain critical components necessary for SSPs (Gebhardt *et al.* 1987). The long-term result would be more suitable habitat for SSPs that would be more resilient and resistant to disturbance and competition.

Vegetation – Noxious Weeds Management Activities

- Competition with invasive species, such as noxious weeds, has been identified as a threat to at least seven of the SSS known to occur in the NCA (Appendix 9~~–8~~). By giving priority to treating areas adjacent to SSP populations, the reduction or elimination of competition from noxious weeds would help ensure the long-term viability of those populations.
- IDARNG policy to wash training vehicles that are brought in from outside the Treasure Valley area would benefit slickspot peppergrass and other SSS that occur in the OTA by limiting the potential for introducing noxious weeds.

Vegetation – Restoration Activities

- Competition from seeded species could adversely affect short- and long-term survival of SSS (USDI 2000a, p 137).
- Restored areas would benefit adjacent suitable or occupied habitats by reducing the potential for the spread of fire (where continuous fuels are reduced or eliminated) over the short-term and by creating buffers where the interval between fires is greater over the long-term. Healthy communities surrounding SSP populations would reduce the potential for the establishment and spread of invasive non-native species into occupied and suitable habitats. Restored areas could potentially provide suitable habitat for SSP species over the long-term as competition from invasive non-native species is eliminated and desirable functional and structural components are restored. As larger areas

are restored, the potential for connectivity between individual SSS populations increases resulting in a long-term improvement in population and species viability.

Discussion of Impacts by Alternative

Proposed Species – Slickspot Peppergrass: Alternative A

Idaho Army National Guard Activities: Occupied slickspot peppergrass habitat would moderately benefit from restrictions on military training at the local level over the short- and long-term. IDARNG would continue to protect slickspot peppergrass habitat. Because vegetation treatments would be limited in the Impact Area, due to safety concerns, suitable slickspot peppergrass habitat in the Impact Area would be at risk over the long-term due to fires and invasive weeds. Suitable habitat in the remainder of the OTA would be fragmented and could decrease if changes in training priorities result in a loss of shrub communities. Local populations would remain isolated and at risk for extirpation.

Lands and Realty Activities: Consolidating land ownership (as described in Upland Vegetation Section 4.2.8) could benefit slickspot peppergrass populations and suitable habitat slightly at the local level over the long-term.

Livestock Grazing Management Activities: Implementation of S&Gs (Appendix 3) would moderately benefit occupied slickspot peppergrass habitat and suitable habitat slightly at the landscape level over the long-term.

Recreation Management Activities: Unmanaged dispersed recreation could result in slight adverse impacts to local populations over the short- and long-term.

Slickspot Peppergrass CCA Activities: Implementing the protective measures identified in the CCA would moderately benefit slickspot peppergrass populations over the long-term at the landscape level.

Surface Disturbing Activities: Impacts to suitable habitat from surface disturbing activities could restrict expansion of slickspot peppergrass populations over the long-term. Actions that limit or eliminate surface disturbing activities around occupied habitat would moderately reduce adverse impacts at the local level over the long-term. Isolated populations would be protected, but long-term species viability would not be enhanced because connectivity between populations would not be improved.

Transportation Activities: Application of the route designation criteria would slightly to moderately benefit slickspot peppergrass at the local and landscape levels over the short- and long-term. There are no known slickspot peppergrass populations or habitat in areas closed to motorized vehicle use.

Vegetation – Fire Suppression Activities: Fire suppression priorities would be moderately beneficial to slickspot peppergrass at the landscape level over the long-term.

Vegetation – Fuels Management Activities: Fuel breaks would be moderately beneficial to populations at the landscape level over the long-term. Fuels treatments could moderately benefit occupied and suitable habitat in Management Area 1. Lack of fuels treatments in Management Areas 2 and 3 would moderately adversely impact occupied and suitable habitat over the short- and long-term. It is anticipated that there would be a loss of 50,000 acres of remnant shrub communities, which could have a moderately adverse affect on occupied and suitable habitat at the landscape level over the long-term.

Vegetation – Noxious Weeds Management Activities: Weeds treatments would be moderately to highly beneficial to occupied habitat but would likely be inadequate for suitable habitat having moderate adverse impacts to suitable habitat over the long-term.

Vegetation – Restoration Activities: Restoration efforts could slightly benefit populations at the local level in Management Area 1 over the long-term. However, most occupied habitat is not adjacent (<1/4 mile) to remnant

shrub stands and would not benefit from restoration. Connectivity between isolated populations could be minimally enhanced at the local level over the long-term. Lack of restoration in Management Areas 2 and 3 would moderately adversely impact occupied and suitable habitat over the long-term.

Conclusion – Proposed Species – Slickspot Peppergrass : Alternative A

Land consolidations, restrictions on surface disturbing activities, and vegetation treatments would provide slight to moderate localized benefits over the long-term. At the landscape level, implementation of the CCA would be moderately beneficial, and giving fire suppression priority to slickspot peppergrass management areas and constructing and maintaining fuel breaks would be moderately to highly beneficial over the long-term at the landscape level. Vegetation treatments could have slight adverse localized impacts to suitable habitat in the short-term and would have slight to moderate long-term benefits at the local level. A lack of adequate recreation facilities could have slightly adverse localized impacts. IDARNG training could have slight to moderate adverse impacts in the OTA. Overall, populations could benefit moderately but species viability would not be ensured. The objective and the specific SSP DFC identified for Upland Vegetation (Section 4.2.8) would not be met because populations would remain isolated.

Proposed Species – Slickspot Peppergrass: Alternative B

Idaho Army National Guard Activities: A mandatory restriction of vehicle maneuver training to designated routes in the Bravo Area and to non-shrub areas in the remainder of the OTA would ensure long-term protection to occupied and suitable habitat. Habitat fragmentation could be reduced in the Bravo Area, however occupied and suitable habitat would likely be fragmented and at risk from fire. Suitable habitat in non-shrub areas outside the Bravo Area would be moderately, adversely impacted over the short- and long-term at the local level. Maneuver training in designated off-road areas would cause moderate adverse impacts in suitable habitat. Use of the expansion area would preclude the opportunity for restoration.

Lands and Realty Activities: Land consolidation could slightly benefit slickspot populations and suitable habitat in Management Area 1 and would provide slight local benefits for suitable habitat and some isolated populations in Management Area 2 over the long-term.

Livestock Grazing Management Activities: Implementation of S&Gs (Appendix 3) would have the same impacts as described in Alternative A. One known metapopulation of slickspot peppergrass could moderately benefit over the long-term from the closure to livestock grazing in the Kuna Butte area. Reducing or eliminating livestock use during the growing season in Sandberg bluegrass dominated communities would moderately benefit slickspot peppergrass populations that occur in these areas at the local and potentially landscape level landscape-wide.

Recreation Management Activities: The development of the Initial Point site would occur within 1/2 mile of occupied and suitable habitat. Increased recreation use associated with the site would slightly affect slickspot peppergrass adversely at the local population level (rather than the metapopulation level) over the short- and long-term. No known populations or suitable habitat occur within two miles of the Three Pole site.

Slickspot Peppergrass CCA Activities: The impacts of implementing the CCA would be as described in Alternative A.

Surface Disturbing Activities: The impacts of surface disturbing activities, other than utility developments, would be as described in Alternative A. Two known populations of slickspot peppergrass and suitable habitat occur within 1/2 mile of the proposed utility corridor. Although the goal would be to avoid or mitigate impacts, utility construction and maintenance

activities could have a slight adverse impact on occupied and suitable habitat at the local level in the short-term.

Transportation Activities: Impacts of applying the route designation criteria would be the same as described in Alternative A.

Vegetation – Fire Suppression Activities: The impacts of fire suppression would be as described in the Alternative A.

Vegetation – Fuels Management Activities: Improving and maintaining fuel breaks and treating 70,000 acres (14% of the NCA) of annual grassland could result in moderate to high localized adverse impacts to suitable habitat in the short-term, but would have moderately beneficial landscape impacts over the long-term in Management Areas 1 and 2. Untreated areas in Management Area 3 would remain at risk from fire. It is anticipated that there would be a loss of 30,000 acres of remnant shrub communities to fire, which could have a highly adverse affect on occupied and suitable habitat at the local level over the long-term.

Vegetation – Noxious Weeds Management Activities: Weeds treatments would be moderately to highly beneficial to occupied and suitable habitat in Management Areas 1 and 2 over the long-term. Weed treatments would moderately benefit occupied habitat, but would be inadequate for suitable habitat in Management Area 3.

Vegetation – Restoration Activities: Re-establishing shrubs is the primary restoration goal in the northwest portion of Management Area 1; therefore, short-term adverse impacts to slickspot peppergrass populations should be slight and long-term benefits from increased connectivity would be moderate. More intensive restoration efforts in the eastern portion of Management Area 2 could cause moderate adverse effects in the short-term and moderate long-term benefits. Lack of restoration in Management Area 3 would have the same impacts as described in Alternative A.

Conclusion - Proposed Species – Slickspot Peppergrass – Alternative B

Land consolidation, restrictions on surface disturbing activities and livestock grazing in Sandberg bluegrass areas, and development of a recreation site would provide slight to moderate localized benefits over the long-term. At the landscape level, implementation of the CCA would be moderately beneficial at the short- and long-term. Giving fire suppression priority to slickspot peppergrass management areas and constructing and maintaining fuel breaks would be moderately to highly beneficial at the landscape level. Vegetation treatments could have slight adverse localized impacts in the short-term to suitable habitat and would have moderate long-term benefits at the landscape level. Utility development and increased recreational use around Initial Point could have slight adverse localized impacts over the short- and long-term. IDARNG training could have slight adverse impacts in the local level OTA over the short-and long-term. The objective and specific SSP DFC under Upland Vegetation would be met in the western portion of Management Area 1 and the eastern portion of Management Area 2, but would largely be unmet in the remainder of the NCA. The limited degree of vegetation treatments would only slightly exceed the amount of habitat loss.

Proposed Species – Slickspot Peppergrass: Alternative C

Idaho Army National Guard Activities: Restricting vehicle maneuver training to three graveled roads in 18,400 acres of the Bravo Area would benefit two known populations and the largest block of relatively intact, high quality suitable habitat to a greater extent than Alternative B. Shrub communities in the Bravo Area would have the greatest opportunity to expand over the long-term, reducing fragmentation of suitable habitat and providing greater connectivity between metapopulations of peppergrass. More intensive training levels would cause greater impacts to suitable habitat in the Alpha, Charlie, and Delta areas than described in Alternative B. Removing

3,900 acres from the OTA would have no impacts on slickspot peppergrass. Although IDARNG environmental protection in that area would be reduced, any reductions in protection would be compensated for by increased BLM management because of the high priority placed on SSP habitat.

Lands and Realty Activities: There would be slight landscape-wide benefits from consolidating ownership. The boundary realignment in the eastern portion of the NCA would result in increased protection for a metapopulation.

Livestock Grazing Management Activities: Removing grazing from the NCA would moderately benefit slickspot peppergrass at the landscape level for the short- and long-term. Extensive vegetation treatments would compensate for any lost benefits from livestock grazing. Using livestock to reduce fuel loads could have moderate short- and long-term adverse impacts to several populations that occur in treated areas. These impacts would occur at the local level and the treatments would indirectly benefit slickspot peppergrass in other areas.

Recreation Management Activities: Impacts associated with the Initial Point site would be as described in Alternative B. No known populations or suitable habitat occur within two miles of the other proposed sites.

Slickspot Peppergrass CCA Activities: Implementation of the CCA would have the same impacts as described in Alternative A.

Surface Disturbing Activities: The impacts of surface disturbing activities, other than utility developments, would be as described in Alternative A. Utility development could adversely affect suitable habitat slightly at the local level.

Transportation Management Activities: Impacts of applying the route designation criteria would be the same as described in Alternative A.

Vegetation – Fire Suppression Activities: The impacts of fire suppression would be as described in the Alternative A.

Vegetation – Fuels Management Activities: Hazardous fuels treatments (100,000 acres) and fuel breaks could have slight adverse impact on occupied and suitable habitat at the local level and would be highly beneficial to slickspot peppergrass at the landscape level in all Management Areas 1 and 2. It is anticipated that there would still be a loss of 15,000 acres of remnant shrub communities, which could have moderate adverse impacts on occupied and suitable habitat at the local level over the long-term.

Vegetation – Noxious Weeds Management Activities Weed treatments would moderately benefit occupied and suitable habitat at the landscape level over the long-term.

Vegetation – Restoration Activities: Because of the proposed scale of treatments, potential short-term adverse impacts to suitable and occupied slickspot peppergrass habitat in restored areas would be greatest in this alternative. Suitable and occupied habitats in remnant shrub communities would receive a greater degree of protection from fires and invasive species than Alternatives A and B over the short- and long-term. Increased connectivity between peppergrass populations would occur at the local and landscape scales.

Conclusion – Proposed Species – Slickspot Peppergrass: Alternative C

Restrictions on surface disturbing activities and development of recreation sites would provide slight to moderate localized benefits over the long-term. At the landscape level, implementation of the CCA and changes in vehicle management would be moderately beneficial and consolidating ownership, removing livestock, giving fire suppression priority to slickspot peppergrass management areas, and constructing and maintaining fuel breaks would be moderately or highly beneficial at the landscape level. Vegetation treatments would have slight adverse localized im-

pacts to suitable habitat in the short-term and would be highly beneficial at the landscape level over the long-term. Utility development and increased recreational use around Initial Point could have slightly adverse localized impacts over the long-term. Restrictions on IDARNG training would be moderately to highly beneficial at the local level, but increased training levels in non-shrub areas could have slight to moderate adverse impacts in the local level of the OTA over the short- and long-term. The objective would be met. The specific SSP DFC under Upland Vegetation (Section 4.2.8.) would be met except for suitable habitat in non-shrub areas of the OTA where surface disturbing activities would occur.

Proposed Species – Slickspot Peppergrass: Alternative D

Idaho Army National Guard Activities: The impacts of restrictions on off-road vehicle maneuver training in the Bravo Area and impacts to suitable habitat in shrub areas in the remainder of the OTA would be as described in Alternative B. Suitable habitat in non-shrub areas could be moderately adversely affected at the local level where training would be more concentrated than Alternative B. The majority of the expansion area is suitable habitat and would be moderately, adversely affected by training activities over the long-term. The opportunity for restoration in the area would be precluded and the area would be susceptible to the adverse effects of wildfire over the long-term.

Lands and Realty Activities: The benefits to slickspot peppergrass caused by consolidating land ownership would be as described in Alternative C. The proposed change to the NCA boundary would not affect slickspot peppergrass.

Livestock Grazing Management Activities: Impacts of implementing S&Gs (Appendix 3) would be as described in Alternative A. Impacts associated with modifying use in Sandberg bluegrass dominated areas would be as described in Alternative B. The classification of the Kuna Butte area for intermittent grazing could have slight adverse impacts over the long-term to occupied and suitable habitat.

Recreation Management Activities: Impacts from recreation management would be as described in Alternative C.

Slickspot Peppergrass CCA Activities: Implementation of the CCA would have the same impacts as described in Alternative A.

Surface Disturbing Activities: The impacts of surface disturbing activities would be as described in Alternative A.

Transportation Management Activities: Impacts of designating routes and closures would be the same as described in Alternative A.

Vegetation – Fire Suppression Activities: Fire suppression priorities would have the same impacts as described in Alternative A.

Vegetation – Fuels Management Activities: Impacts associated with fuels management would be the same as described in Alternative C.

Vegetation – Noxious Weeds Management Activities: The impacts from weeds management activities would be the same as described in Alternative C.

Vegetation – Restoration Activities: Impacts from habitat restoration projects would be the same as those described in Alternative C.

Conclusion – Proposed Species – Slickspot Peppergrass: Alternative D

Restrictions on surface disturbing activities and development of recreation sites would provide slight to moderate localized benefits over the long-term, but increased recreational use around Initial Point could have slightly adverse localized impacts. At the landscape level, implementation of the CCA would be moderately beneficial and consolidating ownership, giving fire suppression priority to peppergrass management areas and construct-

ing and maintaining fuel breaks would be moderately to highly beneficial over the short- and long-term. Vegetation treatments could have slight adverse localized impacts to suitable habitat in the short-term and would be highly beneficial at the landscape level over the long-term. Restrictions on IDARNG training would be moderately beneficial at the local level, but other military training activities could have slight adverse impacts in the local level of the OTA over the short- and long-term. The objective would be met. The specific SSP DFC for Upland Vegetation (Section 4.2.8.) would be met except for suitable habitat in non-shrub areas of the OTA where surface disturbing activities would occur.

Special Status Plant Species: Alternative A

Idaho Army National Guard Activities: SSP populations in remnant shrub communities could be maintained in the OTA. Avoidance of shrub communities and known SSP populations would help maintain known occurrences. Shrub communities would remain fragmented over the long-term because of continued disturbance and limited rehabilitation efforts. A change in IDARNG training could result in the loss of suitable habitat over the long-term.

Lands and Realty Activities: Consolidating land ownership would benefit SSPs at the local (population) level, primarily in Management Area 1. Acquisition of occupied or suitable SSP habitat would be slightly beneficial to SSP populations at the local level over the long-term.

Livestock Grazing Management Activities: Implementation of S&Gs (Appendix 3) would slightly to moderately benefit SSPs at the landscape (species) level over the long-term. Grazing closures would moderately benefit populations of Snake River milkvetch, shining flat sedge, and suitable habitat for other species at the local level over the long-term; however, increased accumulations of fuels in closed areas could create a slight adverse effect.

Recreation Management Activities: Because no new sites would be developed, there would be slight adverse impacts at the local level over the long-term. Dispersed recreation could have slight adverse impacts to local populations over the long-term.

Slickspot Peppergrass CCA Activities: Implementation of the CCA would slightly benefit SSPs (other than slickspot peppergrass) at the local level over the long-term.

Surface Disturbing Activities: Actions that limit or eliminate surface disturbing activities around SSP species populations would slightly to moderately benefit occupied habitat at the local level over the short-and long-term; however, suitable habitat could be slightly adversely affected. Isolated populations would be protected, but long-term species viability would not be enhanced because connectivity between populations would not be improved. The impacts of most of the actions would be evident primarily at the local level; however, actions that cover large areas would result in beneficial impacts at the landscape level over the long-term.

Transportation Management Activities: The closure of 1,600 acres to motorized vehicles would have moderate benefits local SSP populations including shining flat sedge (suitable habitat), Snake River milkvetch (1 occurrence) and American wood sage (1 occurrence). Application of the route designation criteria and the resulting reduction in habitat fragmentation would have moderate benefits for SSP species at the local and landscape levels over the long-term.

Vegetation – Fire Suppression Activities: Minimizing fire size outside of slickspot peppergrass management areas would have moderate benefits for SSPs at the local level; however, because the majority of population occurrences are adjacent to or surrounded by disturbed areas, suppression priorities could have slight to moderate adverse impacts at the local and landscape levels over the short- and long-term.

Vegetation – Fuels Management Activities: Fuels treatments (3% of the area that needs to be treated) would reduce the loss of SSP habitat from wildfire in local portions of Management Areas 1 and 2. Area 3 would be the lowest priority for hazardous fuels treatments and fuel break construction; therefore, there would be no noticeable improvement in fire frequency, size, or severity, and as such, the 47 known SSP populations (representing nine species) and associated habitat in Area 3 could be further degraded over the long- term. The creation of additional habitat in which SSP may reestablish would be slight because a relatively small area across the landscape would be treated. Similarly, progression toward a restored historic fire regime in treated and adjacent areas, as well as expansion of protected areas would be slight.

Vegetation – Noxious Weeds Management Activities: An emphasis of treating weeds in riparian areas would provide moderate local benefits for shining flat sedge over the long-term. Populations that occur in or immediately adjacent to degraded habitat, especially those in Management Areas 2 and 3 (approximately 81 known populations representing 13 species), would be most susceptible to noxious weed infestations over the long-term. The proposed level of weeds treatments in uplands would not be adequate to control noxious weeds in SSP habitats over the long-term.

Vegetation – Restoration Activities: Because of the narrow focus of restoration efforts, potential short-term adverse impacts would be slight and relatively few known populations of SSPs (up to nine species primarily in the northwest portion of the NCA) could benefit moderately at the local level over the long-term. Connectivity between isolated SSP populations would be slightly beneficial at the local level over the long-term.

Conclusion – Special Status Plant Species: Alternative A

Individually restrictions on IDARNG training, land consolidation, grazing closures, restrictions on surface disturbing activities, implementation of the slickspot peppergrass CCA, and areas closed to motorized vehicles would provide slight to moderate localized benefits over the long-term. Vegetation treatments could have slight adverse localized impacts in the short-term, but would have slight to moderate long-term benefits at the local level. At the landscape level, improvements in vegetation condition would not exceed the loss of SSP populations to fire and weed infestations. Implementation of S&Gs and application of vehicle route designation criteria would provide slight to moderate short and long-term benefits at the landscape level. Fire suppression priorities could moderately benefit SSPs in shrub communities but could adversely affect SSPs in annual communities slightly at the landscape level. IDARNG activities would have slight to moderate short- and long-term adverse impacts across the OTA. The objective and DFC would not be met.

Special Status Plant Species: Alternative B

Idaho Army National Guard Activities: Restricting off-road vehicle maneuver training to designated routes in the Bravo Area and to non-shrub areas in the remainder of the OTA would provide slight long-term landscape level protection to occupied SSP habitat. However, the impacts of habitat fragmentation would be as discussed in Alternative A. There would be slight to moderate adverse impacts to 10 known populations of SSP in the proposed expansion area including Davis' peppergrass (8 populations), Snake River milkvetch, and white eatonella over the short- and long-term.

Lands and Realty Activities: Land consolidation could benefit SSPs moderately at the local level, primarily in Management Areas 1 and 2. A 105,000-acre avoidance area would have slight beneficial impacts on SSPs by limiting ground disturbance over the long-term. A utility corridor would have slight to moderate adverse impacts at the local and possibly at the landscape level.

Livestock Grazing Management Activities: Habitat for shining flat sedge and upland spe-

cies (including known occurrences of Packard's buckwheat and American wood sage) would moderately benefit over the long-term from the closure or seasonal restriction of livestock grazing along the Snake River. Reducing or removing livestock use during the growing season in Sandberg bluegrass dominated communities would slightly to moderately benefit SSP species (primarily slickspot peppergrass) at the local and potentially landscape level over the long-term. Impacts from implementing S&Gs (Appendix 3) would be as described in Alternative A.

Recreation Management Activities: Development and use of the Three Pole site could slightly adversely affect occupied Snake River milkvetch habitat at the local level over the short- and long-term. Suitable habitat for other species could be slightly adversely affected at the local level over the long-term. Impacts from dispersed recreation would be as described in Alternative A.

Slickspot Peppergrass CCA Activities: The impacts of implementing the CCA would be as described in Alternative A.

Surface Disturbing Activities: The impacts of surface disturbing activities, except utility development, would be as described in Alternative A. Occupied and suitable habitat for at least six SSPs occurs within 1/2 mile of the proposed utility corridor. Construction and maintenance within the corridor could slightly impact populations, primarily at the local level, but because of the extent of the corridor, could also occur at the landscape level over the long-term.

Transportation Management Activities: Closure of 6,400 acres to motorized vehicles could benefit more SSP populations (five populations representing three species) than Alternative A, but benefits would still be moderate and would occur at the local level over the long-term. Impacts from the application of route designation criteria would the same as described in Alternative A.

Vegetation – Fire Suppression Activities: The impacts of fire suppression would be as described in the Alternative A.

Vegetation – Fuels Management Activities: Improving and maintaining fuel breaks and treating 70,000 acres (14% of the NCA) of annual grassland would result in slight adverse impacts in treated areas over the short-term and slight to moderate beneficial landscape impacts to SSPs in adjacent areas over the long-term primarily in Management Areas 1 and 2. Impacts in Management Area 3 would be the same as described in Alternative A.

Vegetation – Noxious Weeds Management Activities: The majority of Management Areas 1 and 2 would be treated and would have the same impacts as described in Alternative A; however, they would occur at a greater scale. Although SSP habitat would be a priority for weeds treatments, the increase in acres restored could increase the potential for weeds in the short-term. Management Area 3 would remain largely untreated, potentially moderately adversely impacting up to 47 known populations over the long-term.

Vegetation – Restoration Activities: With increased restoration efforts, the potential for short-term adverse localized impacts to isolated occupied and suitable habitats would be greater than Alternative A and could affect a wider range of species. Because restored areas around existing shrub communities would be larger, suitable and occupied habitats would receive greater short- and long-term protection from fires and invasive species than in Alternative A. With the long-term net gain in shrub acreage, some suitable habitat could be created. Opportunities for improving connectivity between SSP populations would increase with moderate long-term benefits occurring primarily at the local scale.

Conclusion – Special Status Plant Species: Alternative B

Areas closed to motorized vehicles and/or grazing, implementation of the slickspot pep-

pergrass CCA, and restrictions on IDARNG training and other surface disturbing activities would provide slight to moderate localized benefits over the long-term. Vegetation treatments could have slight adverse localized impacts in the short-term, but would have moderate long-term benefits at the landscape level. Fire suppression priorities could moderately benefit SSPs in shrub communities but could adversely affect SSPs in annual communities slightly at the landscape level over the long-term. Changes in livestock grazing, recreation, and vehicle management, and consolidating ownership would provide slight to moderate landscape-wide long-term benefits.

Surface disturbing activities including development of recreation sites could have slight to moderate short-term localized adverse impacts. IDARNG activities, utility development, and limited recreation facilities and weeds treatments would have slight to moderate long-term adverse impacts at the landscape scale. The objective and specific SSP DFC under Upland Vegetation would be met in those portions of Management Areas 1 and 2 affected by vegetation treatments. In the remainder of the NCA the objectives and DFC would be unmet.

Special Status Plant Species: Alternative C

Idaho Army National Guard Activities: Restricting off-road vehicle maneuver training in the Bravo Area would provide slight localized long-term benefits to SSPs. Impacts to SSP populations (desert pincushion and Davis' peppergrass) in the remainder of the OTA could be slightly greater than Alternative B because of more concentrated training in other Maneuver Areas. There would be no impacts from removing 3,900 acres from the OTA. Although IDARNG environmental protection would be reduced in that area, any reductions in protection would be compensated for by increased BLM management, which prioritizes SSP habitat.

Lands and Realty Activities: Consolidating land ownership could be moderately beneficial to SSPs at the local level over the long-term. Seven known populations and metapopulations representing six species would be included in the proposed boundary realignment and would be slightly benefited over the long-term. Twenty known populations and metapopulations representing nine species would no longer be in the NCA and could be slightly adversely impacted over the long-term.

Livestock Grazing Management Activities: Removing permitted grazing from the NCA would be moderately beneficial in perennial communities and slightly beneficial in annual communities at the landscape level for the short- and long-term. Extensive fuels and restoration treatments would compensate for any lost benefits of livestock grazing. Using livestock to reduce fuel loads would slightly affect suitable habitat at the local level over the short-term.

Recreation Management Activities: Impacts associated with the Initial Point and Three Pole sites would be as described in Alternative B. No known SSP populations occur within two miles of the proposed Celebration Park Annex and Guffey Butte sites. Suitable habitat could be slightly impacted from increased use of these sites over the long-term.

Slickspot Peppergrass CCA Activities: The impacts of implementing the CCA would be as described in Alternative A.

Surface Disturbing Activities: The impacts of surface disturbing activities, except utility developments, would be as described in Alternative A. Eight known populations and metapopulations (six species) of SSPs would occur within 0.5 miles of the utility corridor. Construction and maintenance within the corridor could slightly, adversely impact occupied and suitable habitat over the short- and long-term. Impacts would occur primarily at the local level, but because of the extent of the corridor, could also occur at the landscape level.

Transportation Management Activities: The proposed closure of 13,200 acres to motorized

vehicles would provide slight long-term localized benefits to more SSP populations (11 known occurrences representing five species) than the other alternatives. Impacts of the application of the route designation criteria would the same as described in Alternative A.

Vegetation – Fire Suppression Activities: The impacts of fire suppression would be as described in the Alternative A.

Vegetation – Fuels Management Activities: Hazardous fuels treatments and fuel breaks would be moderately beneficial to SSPs at the landscape level over the long-term. The anticipated loss of 15,000 acres of remnant shrub communities could moderately adversely affect habitat at the local level over the long-term.

Vegetation – Noxious Weeds Management Activities: This alternative maximizes the acreage affected by vegetation treatments, which could increase the potential for weeds in the short-term; however, the level of weeds treatments should provide adequate protection at the local and landscape levels over the short- and long-term. Long-term improvements in rangeland and SSP habitat condition resulting from vegetation treatments would increase resistance to weed infestations, ultimately reducing the overall area susceptible to infestation.

Vegetation – Restoration Activities: With increased restoration efforts, the potential for short-term adverse impacts to isolated occupied and suitable habitats would be greater than Alternative A or B, and could affect a wider range of species. Because restored areas around existing shrub communities would be larger, suitable and occupied habitats would receive greater short- and long-term protection from fires and invasive species than in Alternative A or B. With the long-term net gain in shrub acreage, some suitable habitat could be created. Opportunities for improving connectivity between SSP populations would increase with moderate benefits occurring at the landscape scale over the long-term.

Conclusion – Special Status Plant Species: Alternative C

Individually, areas closed to motorized vehicles, implementation of the slickspot peppergrass CCA, consolidating ownership, an increased number of recreation sites, and restrictions on IDARNG training and surface disturbing activities would provide slight to moderate localized benefits over the long-term. Vegetation treatments could have slight ad-verse localized impacts in the short-term, but would be highly beneficial over the long-term at the landscape level. Fire suppression priorities could moderately benefit SSPs in shrub communities but could adversely affect SSPs in annual communities slightly at the landscape level. Application of the route designation criteria would provide slight to moderate long-term benefits at the landscape level. Removal of livestock would be highly beneficial to SSP associated with perennial communities and slightly beneficial to SSP associated with annual communities over the long-term at the landscape level. Surface disturbing activities including development of recreation sites and utilities could have slight to moderate localized adverse impacts over the short-term. IDARNG activities would have slight to moderate long-term adverse impacts in the OTA. The objective and specific DFC under Upland Vegetation would be met outside the OTA. Within the OTA the objective and DFC would not be met because of the potential for fires from live-fire training in the Impact Area; however, suppression efforts by the IDARNG would provide some degree of protection. Off-road maneuver training in non-shrub areas would maintain existing habitat fragmentation.

Special Status Plant Species: Alternative D

Idaho Army National Guard Activities: The impacts of restrictions on off-road maneuver training and other training activities in the Bravo Area would be the same as described in Alternative B. Impacts to occupied habitat in the Alpha, Charlie, expanded Delta, and Impact Areas would be as described in Alternative B. Increased training levels outside the Bravo Area could cause slight to moderate

long-term adverse impacts to suitable habitat at the landscape level. There is one known population of Snake River milkvetch in the proposed expansion area. Populations of Davis' peppergrass occur in the vicinity of the area. While known populations would be protected from maneuver training, the expansion would preclude the opportunity for restoration of suitable habitat and the area would be susceptible to fire over the long-term at the local level. A Snake River milkvetch population would be isolated and at risk for localized extirpation over the long-term.

Lands and Realty Activities: The benefits to SSPs caused by consolidating land ownership would be as described in Alternative C.

Livestock Grazing Management Activities: Impacts associated with closures and implementing S&Gs (Appendix 3) would be the same as Alternative A. Impacts associated with modifying use in Sandberg bluegrass dominated areas would be as described in Alternative B.

Recreation Management Activities: No known occupied SSP populations occur within two miles of the proposed Black Butte site. Suitable habitat could be slightly impacted over the long-term from increased use associated with this site. Impacts from development of the remaining sites would be the same as described in Alternative C.

Slickspot Peppergrass CCA Activities: The impacts of implementing the CCA would be as described in Alternative A.

Surface Disturbing Activities: The impacts of surface disturbing activities would be as described in Alternative A.

Transportation Management Activities: The proposed closure of 4,400 acres to motorized vehicles would potentially benefit more SSP populations (five populations representing four species) than Alternative A, but would still be at the local scale. Application of the route designation criteria would the same as described in Alternative A.

Vegetation - Fire Suppression Activities: The impacts of fire suppression would be as described in the Alternative A.

Vegetation - Fuels Management Activities: The impacts of fuels management would be as described in the Alternative C.

Vegetation – Noxious Weeds Management Activities: The impacts from weeds management activities would be the same as described in Alternative C.

Vegetation – Restoration Activities: Impacts from habitat restoration projects would be the same as those described in Alternative C.

Conclusion – Special Status Plant Species: Alternative D

Individually, areas closed to motorized vehicle use and livestock grazing and restrictions on IDARNG training and surface disturbing activities, would provide slight to moderate localized benefits over the long-term. Vegetation treatments could have slight adverse localized impacts in the short-term, but would be highly beneficial over the long-term at the landscape level. Fire suppression priorities could moderately benefit SSPs in shrub communities but could adversely affect SSPs in annual communities slightly at the landscape level. Consolidating ownership, increased recreation facilities, implementation of S&Gs and application of route designation criteria would provide slight to moderate long-term benefits at the landscape level. Surface disturbing activities including development of recreation sites could have slight to moderate short-term localized adverse impacts. IDARNG activities would have slight to moderate adverse long-term impacts in the OTA. The objective and specific DFC under Upland Vegetation would be met outside the OTA. Within the OTA the objective and DFC would not be met because of the potential for fires from live-fire training in the Impact Area; however, suppression efforts by the IDARNG would provide some

degree of protection. Off-road maneuver training in non-shrub areas would maintain existing habitat fragmentation.

4.2.7 Soil Resources

Summary

Alternative C has no grazing, the most restrictions of IDARNG training, and extensive vegetation treatments and all have beneficial long-term impacts. Alternative D has the same level of vegetation treatments as C and but has a greater area provided for IDARNG training and therefore has an increase in the adverse impacts to soils. Alternatives A and B have the greatest loss of shrubs with the least amount of restoration. These two alternatives provide for the greatest amount of motorized recreational use and the lease amount of area closed to livestock grazing and as such have the greatest impacts to soils over the long-term.

Assumptions

- Restoration projects would eventually be successful on 100% of the acres affected. This is for analysis purposes only and may not reflect the actual success rate.
- Some post fire stabilization efforts would be converted to restoration efforts after the first year, depending on resource objectives.
- Restoration and hazardous fuels reduction actions would use prescribed fire on up to 50% of the planned acres over the long-term.
- Fire rehabilitation treatments and fuels management projects would be successful. If not successful, rehabilitation projects would become restoration projects after three years. This is for analysis purposes only and may not reflect actual success rate.
- Declines in watershed health would be primarily related to species compositional changes (transition to less desirable species) and loss of soil by erosion due mainly to loss of vegetation caused by wildfire and climatic factors.
- Short-term impact would cause damage that is restored without additional intervention, in most cases this would be 3 years or less. Long-term impacts would require intervention in order to be corrected.

How Activities Affect Soil Resources

Direct Impacts

Idaho Army National Guard

- Adverse ground-disturbing impacts result from weapons firing and explosive activities in the OTA Impact Area. These impacts are in an area that would not be rehabilitated because the activities are ongoing resulting in short- and long-term localized impacts. However, those areas not directly impacted by firing could benefit from rehabilitation efforts over the long-term.
- Repeated wheel and track vehicles passes over the same area can destroy vegetation (most off-road training takes place in non-shrub areas) and could degrade soil stability (turn the soil structure into a flour-like consistency), these action increase the potential for wind erosion and compact the subsoil layers (Grantham, *et al*. 2001, pp 711-716) resulting in long-term moderate to severe adverse impacts. Restricting vehicle maneuver activities to established roads would reduce or eliminate these impacts.

Lands and Realty Activities

- Activities that take place in rights-of-ways, including activities in utility corridors, would result in various degrees of disturbance to the soil resource depending on the actions involved. These are projected to be a slight long-term adverse impact associated with access and maintenance activities. Short-term, moderate site-specific impacts would be expected during the construction of utility lines and pipelines, but would be subject to approved Best Management Practices (BMPs) and rehabilitation after the disturbance that would mitigate any long-term adverse impacts. Avoidance areas would prevent major rights-of-ways and the re-

sulting adverse impacts to the soil resource.

Livestock Grazing Activities

- Livestock grazing can cause localized soil compaction and decrease soil stability resulting in changed soils structure. Areas where livestock use is concentrated (i.e., livestock water projects) would result in long-term highly adverse localized impacts. Where these projects improve the distribution of livestock use and aid in protecting special areas there may be long-term overall benefits.

Surface Disturbing Activities

- Any new or ongoing surface disturbing activity that contributes to soil disturbance and vegetative degradation could adversely affect soils and biological crusts, increasing the potential for erosion and loss of site productivity (Nef *et al.* 2004, pp 87-95) resulting in short- and long-term impacts.
- Mineral development activities are restricted to existing sites and as such, the impacts associated with this activity are through the expansion of these sites and would occur over the long-term.

Transportation Activities

- Motorized vehicle use can have long-term adverse impacts to soils through direct disturbance causing soil compaction, altered surface drainage, which would increase erosion and loss of vegetative cover resulting in an increase in wind erosion. Closing areas to cross country travel and limiting the number of routes would have short- and long-term beneficial impacts by reducing the disturbance to soils and biological crusts and protective vegetative cover and reducing soil compaction and altered surface run-off patterns.
- Limiting vehicle use to designated routes would provide short- and long-term landscape wide benefits by reducing soil disturbance that is a reuse.

Vegetation - Fire Suppression Activities

- The magnitude of impacts from wildfire on soils would be adverse depending on the number of acres burned, fire severity, pre-fire conditions, soil type, suppression activities, and post-fire management actions. Impacts would be largely due to loss of vegetative cover resulting in accelerated erosion and loss of site productivity. In many cases as a result of surface disturbance from fires and fire suppression activities, invasive and noxious weeds could become established and spread. Associated impacts would include soil surface and biological crust mechanical disturbance.

Vegetation – Fuels Management Activities

- To reduce fuels, the construction of fuel breaks and other surface disturbing activities such as grazing would result in short-term localized adverse impacts to soils by exposing them to wind and water erosion. Fuels treatments that lessen the potential for wildfire spreading into native stands of perennial vegetation would have the beneficial landscape impact of protecting soil stability and structure.

Vegetation – Restoration Activities

- Where restoration efforts are successful, these lands would contribute a moderate to highly beneficial long-term impact to soils from improved site stability, hydrologic function and site productivity.
- Restoration efforts that disturb ground (i.e., drill seeding) or remove vegetation would have short-term adverse impact to soils by increasing the susceptibility of the soils to erosion through increased surface run-off and exposing soils to wind erosion resulting from the loss of vegetative cover.

Indirect Impacts

Lands and Realty Activities

- Utility corridors have the long-term beneficial impact of concentrating major utility actions in one area, rather than spread out across the landscape. This could result in

turning a potentially landscape-wide adverse impact to a localized impact.

Livestock Grazing Activities

- Livestock management practices that change vegetative composition from deep rooted perennials to shallow rooted plants could contribute to a loss of below ground biomass and reduction in the amount of plant litter (Hutchings and Stewart 1953; Cook and Child 1971, Pechanec and Stewart 1949; Laycock and Conrad 1981 and Holechek *et al.* 2001). Shallow rooted plants have less ability to hold soil; therefore, watershed protection would be reduced and erosion increased.

Surface Disturbing Activities

- On sites where the amount of plant litter, biological soil crusts, or below ground biomass is reduced, the potential for accelerated soil erosion is increased, and the likelihood of loss in site productivity would be great, resulting in short- and long-term adverse impacts. Surface disturbing activities such as recreation developments, fire suppression, off road vehicle use, and livestock trampling can damage or destroy biological soil crusts (Belnap *et al.* 2001). Intensity, timing, frequency, and duration of disturbances can affect the severity of the impacts.

Vegetation – Restoration Activities

- Restoration activities that change an annual grass community to a perennial shrub community would have the long-term beneficial impact of improving soil stability and structure.

Discussion of Impacts by Alternative

Soil Resources: Alternative A

General Activities: Current levels of impacts to the soil resource would continue with moderate long-term localized adverse impact. The adverse impacts would be due, in large part, to the continuing decrease in rangeland health attributed to wildland fire, invasive species spread, and climatic factors. Livestock grazing is also a contributing factor on a landscape basis.

Idaho Army National Guard Activities: Military training activities in the OTA would have a slight to moderate adverse impact to soils on a landscape wide basis and a moderate to high adverse impact on a local scale. Where repeated ground disturbing activities occur, mainly associated with off-road maneuver training, the results would be long-term damage to soil structure and compaction and localized adverse impacts to soils due to wind erosion in areas receiving repeated use. The voluntary avoidance of heavy maneuvering in most shrub communities would limit the soil related impacts to areas that have generally been impacted by fire or previous maneuver activities. Hardening administrative sites that are used repeatedly would minimize erosion and protect surrounding vegetation. Excavation training would have a high, localized long-term adverse impact.

Livestock Grazing Management Activities: Changes in livestock grazing management could reduce livestock trampling and vegetative degradation. This could have a slight long-term beneficial impact on soils and general rangeland health in perennial communities. Areas where invasive annual species dominate would be more susceptible to soil degradation. Leaving minimum amounts of residual litter in annual grass pastures would provide slight to moderate long-term localized watershed protection; however, during drought conditions when the productivity of annuals is reduced, loss of soils could occur. Excluding livestock grazing would have moderate long-term benefits at the local level.

Lands and Realty Activities: Maintaining the existing utility corridor would have negligible very localized long-term adverse impacts as a result of roads and maintenance activities. The existing avoidance area would provide some long-term protection for soils from surface disturbance in a localized area.

Surface Disturbing Activities: Disturbance from recreation use, fire suppression activities, mineral material sites and other surface disturbing activities would result in moderate short- and long-term adverse impacts at the local and landscape levels. Livestock grazing would result in slight localized adverse impacts around range improvements in the short- and long-term.

Transportation Management Activities: Vehicle travel would be managed according to motorized vehicle area designations. Limiting motorized vehicle use to existing and designated routes would have moderate short- and long-term landscape-wide beneficial impacts. Closing areas to motorized vehicle use on 1,600 acres would have high short- and long-term localized beneficial impacts.

Vegetation – Fire Suppression Activities: The aggressive suppression tactics associate with the objective of keeping fires to 100 acres or less in slickspot peppergrass and other sensitive plant habitat and 200 acres or less throughout the rest of the NCA would result in slight to moderate short-term adverse localized impacts.

Vegetation – Fuels Management Activities: The loss of 50,000 acres of remnant shrub vegetation would have moderate long-term localized adverse impacts. Maintaining the existing fuels breaks would have a slight to moderate adverse impact on soils resulting from the loss of vegetation.

Vegetation – Restoration Activities: The 10,000 acres of restoration would impact soils predominantly in Management Areas 1 and 2 and would cause slight to moderate short-term adverse impacts to the soil resource in the form of surface disturbance during site preparation and mechanical seeding. This could result in some soil loss and disturbance to biological crusts. Slight to moderate long-term benefits would be realized where these efforts successfully improve the vegetative community and soil stability. The relatively small area proposed for restoration would not result in landscape wide benefits and would not offset impacts from the loss of 50,000 acres of remnant vegetation.

Conclusion – Soil Resources: Alternative A

The combined effects of livestock grazing, spread of invasive species, and wildland fire would have slight to moderate short- and long-term adverse impacts at the landscape level. At the local level, military maneuver activities and surface disturbing activities (including recreation) would result in slight to moderate long-term adverse impacts. The objectives would not be met. No DFCS were identified.

Soil Resources: Alternative B

Idaho Army National Guard Activities: Restricting off-road vehicle maneuver training to designated routes in 22,300 acre Bravo Area would have moderate, localized long-term benefits. Off-road maneuver training in the 20,400-acre expansion area would have moderate to high adverse long-term localized impacts due to increased erosion and soil compaction. The mandatory avoidance of maneuvering in shrub communities would limit the soil related impacts to areas that have generally been impacted by fire or previous maneuver activities. Military excavation training would be authorized on three sites (105 acres) of annual grass habitat and would cause high, long-term adverse localized impacts.

Livestock Grazing Management Activities: Impacts from livestock grazing management would be the same as those identified in Alternative A; except for the additional 3,400 acres that would be closed to grazing, and the 1,300 acres where grazing would be seasonally restricted. Areas closed to grazing would provide additional soil protection. There would be negligible improvement in the expanded closure area because most of this area has only been grazed twice in the past 25 years and the remaining closures are small, having only slight localized long-term beneficial impact.

Lands and Realty Activities: An additional utility corridor located in the center of the NCA could cause moderate to high short-term site-specific adverse impacts during the construction phase, however, these would be subject to approved BMPs and rehabilitation after the disturbance that would prevent impacts from becoming long-term. Periodic maintenance activities could cause slight short-term localized adverse impacts. The impacts from avoidance areas would be the same as in Alternative A, but would cover an addition of 63,000 acres resulting in short- and long-term beneficial impacts to soils by protecting the area from major right-of-way (ROW) actions.

Surface Disturbing Activities: Impacts from surface disturbing would the same as described under Alternative A.

Transportation Management Activities: The approximately 6,400 acres closed to motorized vehicle use along the Snake River Canyon, includes the 1,600 acres closed under Alternative A. Impacts would be the same as those discussed in Alternative A, except the impacts would extend over the larger area. Limiting motorized use would have moderate short- and long-term localized beneficial impacts. Closing areas to motorized use would have high short- and long-term beneficial impacts as described in Alternative A; however; the additional 4,800 acres closed to motorized use would cause greater short- and long-term localized beneficial impacts.

Vegetation – Fire Suppression Activities: The impacts from fire suppression would be the same as described in Alternative A.

Vegetation – Fuels Management Activities: The 70,000 acres of fuels treatments would have slight to moderate beneficial long-term impacts by reducing the size and severity of fires. These fuels projects would predominantly be in Management Areas 1 and 2. The change in vegetative communities from an annual grass community to a perennial community would have moderate long-term benefits at the local level on the 70,000 acres treated. Limiting the loss of remnant shrub communities to 30,000 acres would have slight to moderate beneficial long-term localized impacts.

Vegetation – Restoration Activities: Restoration would be the same as Alternative A; however, an additional 40,000 acres converted to a desired plant communities would result in a greater and long-term benefit to the soil resource (improved site stability and productivity) mostly in Management Areas 1 and 2. The short-term adverse impacts that would occur during the actual restoration would continue to be slight because the total of 50,000 acres would not take place at one time but would be spread over approximately 20 years.

Conclusion – Soil Resources: Alternative B

Vegetation treatments would result in slight to moderate adverse local impacts over the short-term and moderate long-term benefits landscape-wide. The combined effects of livestock grazing, spread of invasive species, and wildland fire would have slight to moderate long-term adverse impacts at the landscape level. Military off-road maneuver training and surface disturbing activities would have moderate long-term localized adverse impacts. Restricting military maneuver activities would have highly beneficial localized impacts in shrub communities. The objective would be met in the majority of Management Areas 1 and 2 but not in the remainder of the NCA because areas dominated by annuals would be susceptible to soil erosion. No DFCs were identified.

Soil Resources: Alternative C

Idaho Army National Guard Activities: Restricting off-road vehicle maneuver military training activities on 22,300 acres in the Bravo Area of the OTA (IDARNG Map 4) would moderately benefit soils at the local level over the long-term. Soil disturbance from mechanical actions due to wheeled and tracked vehicles would not occur and fire starts could be reduced. There would be slight increased adverse impacts throughout the remainder of the OTA non-shrub areas relative to Alternative B

as a result of spreading the maneuver training lost from the Bravo Area to the remainder of the OTA. Military excavation training would have the same impact to soils and biological crusts as discussed under Alternative A.

Lands and Realty Activities: An additional utility corridor located south of the Snake River Canyon would cause moderate to high short-term site-specific adverse impacts during construction, however, these would be subject to approved BMPs and rehabilitation after the disturbance that would mitigate any long-term affect. An addition of 121,000 acres to the current avoidance area would have greater short- and long-term beneficial impact to soils as discussed under Alternative B.

Livestock Grazing Management Activities: Eliminating livestock grazing would result in moderate to high long-term beneficial landscape-wide impacts (including expansion of biological crusts) and includes elimination of physical disturbance to the soils from trampling and improvement of vegetative soil cover (Yeo 2005, pp 91-101).

Surface Disturbing Activities: Disturbance from recreation use, fire suppression activities, mineral material sites and other surface disturbing activities would result in moderate short- and long-term adverse impacts at the local and landscape levels. Elimination of livestock grazing would result in moderate long-term localized beneficial impacts.

Transportation Management Activities: Limiting motorized vehicle use would have moderate short- and long-term beneficial impacts. Closing areas to motorized vehicle use would have high short- and long-term beneficial impacts as described in Alternative A; however; the additional 13,200 acres closed to motorized vehicle use would cause greater short- and long-term beneficial impacts to the soils.

Vegetation – Fire Suppression Activities: Impacts would be the same as described in Alternative A.

Vegetation – Fuels Management Activities: The conversion of annual grassland to perennial vegetation would have the same impacts as described in Alternative B; however the impacts would occur over an additional 30,000 acres.

Vegetation – Restoration Activities: Up to 130,000 acres (63% of all degraded areas outside of the OTA) would be restored resulting in slight short-term adverse impacts. The extent of these short-term impacts would be the result of the size of the projects under restoration but would generally be localized. When restoration efforts are successful, these lands would contribute a moderate to high beneficial long-term impact to the resource from improved site stability and productivity on a landscape wide basis.

Conclusion – Soil Resources: Alternative C

Vegetation treatments would result in slight to moderate adverse local impacts over the short-term and highly beneficial long-term landscape-wide impacts. The combined effects of surface disturbing activities and wildland fire would have slight adverse impacts at the local level. Military off-road maneuver training would have moderate long-term localized adverse impacts. Restricting military maneuver activities would have highly beneficial localized impacts in shrub communities. The objectives would be met except for designated off-road Maneuver Areas of the OTA. No DFCs were identified.

Soil Resources: Alternative D

Idaho Army National Guard Activities: Restricting off-road training activities in the Bravo Area would have the same impacts as described in Alternative B. Soil disturbance from mechanical actions due to wheeled and tracked vehicles would be increased throughout the remainder of the OTA (including an additional 4,100 acres) as a result of transferring Bravo Area off-road maneuver training to these areas resulting in slight to moderate localized long-term adverse impacts. Military excavation training would have the same im-

pact to soils and biological crust as discussed under Alternative B, but would occur on only 55 acres.

Lands and Realty Activities: Impacts from the utility corridor would be the same as described in Alternative A. Rights-of-ways would result in varying degrees of disturbance to the soil resource; these are projected to be a slight long-term adverse impact at the local level.

The impacts from the avoidance area would be the same as Alternative A.

Livestock Grazing Management Activities: Impacts would be the same as described in Alternative A.

Surface Disturbing Activities: Surface disturbing activities would be the same as identified in Alternative B; however, short-term adverse impacts associated with vegetative treatments would be moderate to high at the local level. Long-term beneficial impacts from vegetation treatments would be moderate to high at the landscape level. Impacts due to mineral activity would the same as described under Alternative A.

Transportation Management Activities: Limiting 428,400 acres of motorized vehicle use would have moderate landscape-wide short- and long-term beneficial impacts. Closing 4,400 acres to motorized vehicle use would have high, localized short- and long-term beneficial impact for the same reason as described in Alternative A.

Fire – Suppression Activities: Impacts would be the same as described in Alternative A.

Vegetation – Fuels Management Activities: Impacts would be the same as described in Alternative C.

Vegetation – Restoration Activities: Impacts would be the same as described in Alternative C.

Conclusion – Soil Resources: Alternative D

Vegetation treatments would result in slight to moderate adverse local impacts over the short-term and highly beneficial long-term landscape-wide impacts. The combined effects of livestock grazing, and wildland fire would have slight to moderate long-term adverse impacts at the landscape level. Military off-road maneuver training and surface disturbing activities would have slight to moderate long-term localized adverse impacts. Restricting military maneuver activities would have moderate to high localized short- and long-term beneficial impacts. The objectives would be met except for designated off-road Maneuver Areas of the OTA. No DFCs were identified.

4.2.8 Upland Vegetation

Summary

Based on potential loss of remnant perennial communities and limited vegetation treatments (restoration, fire and fuels management, noxious weed treatments, etc.), Alternative A would not meet the objectives or the DFC. Alternative B provides for moderate amounts of vegetation treatments and meets objectives in the majority of Management Areas 1 and 2, but not in 80,000 acres of the OTA or in the remainder of the NCA. Vegetation treatments and other management actions in Alternatives C and D sufficiently protect existing perennial communities and restore large areas of degraded habitat outside the OTA; therefore, they would meet the objectives and DFC over the long-term. However, Alternative C would do this at a greater rate than Alternative D based on the elimination of livestock grazing. Under all alternatives, continued military training activities in 80,000 non-shrub acres in the OTA used for live-fire activities and off-road maneuver training would preclude the opportunity for BLM to restore the habitat, and as such, are incompatible with the NCA-enabling legislation, and would not meet the DFC.

Assumptions

- Noxious weed control in restored areas would be considered part of the restoration

project for the first three years and would then be part of the overall noxious weeds program.
- 50% of ESR treatments would require additional restoration work.
- BLM would not conduct habitat restoration projects in portions of the OTA affected by continued live firing and off-road vehicle maneuver training.
- IDARNG would conduct rehabilitation efforts in the OTA only in areas that would not be repeatedly disturbed by live firing, potential unexploded ordnance, or off-road maneuver training.
- Short-term impacts would be up to 10 years based on the amount of time it takes to establish perennial species in a desert environment. Long-term impacts are greater than 10 years.

How Activities Affect Upland Vegetation Resources

Direct Impacts

Idaho Army National Guard Activities

- Tank, artillery, and small arms live-fire training has the potential to cause short- and long-term impacts to vegetation by increasing the probability of fire starts. Where fires occur or spread into shrub communities, perennial shrubs would be reduced and annual species may increase. In addition, repeated fires can have long-term adverse impacts on perennial grasses (Young and Evans 1978, Whisenant 1990). IDARNG fire fighters would be on site when training occurs and would respond rapidly to fires, which could limit the size of most fires caused by training activities.
- Heavy maneuver training (tanks) would impact vegetation and biological soil crusts on a short- and long-term basis. Maneuver training can adversely effect woody vegetation through the mechanical breaking of plants. The extensive root system of perennial grasses allows them to withstand some degree of mechanical damage, but repeated passes by vehicles would reduce their vigor or eliminate them. Light maneuver training (i.e., wheeled vehicle and foot traffic) would impact vegetation in the same manner as heavy maneuver training, although to a lesser degree (Cadwell *et al.* 1998, p 35). Rotating training locations based on monitoring would reduce the irreversible long-term impacts). Military related impacts may be reduced by actions taken by IDARNG under their environmental management programs (i.e., revegetation projects, restricted access, erosion control, training site monitoring, etc.)
- Construction and use of target areas, excavation sites, range towers, and hardened bivouac sites and administrative assembly areas (IDARNG Map 1) would have short- and long-term, localized adverse impacts to vegetation. Disturbance adapted species would dominate or vegetation would be completely eliminated.
- Temporary bivouac sites could cause short-term loss or reduction of vegetation.

Lands and Realty Activities

- Consolidating public land ownership through purchase or exchange would allow BLM to acquire and protect important habitat in the short-term.

Livestock Grazing Management Activities

- Livestock grazing impacts on perennial plants are a function of timing, intensity, season, and duration of livestock use. The potential for livestock to adversely affect plants can be greatest when consistent heavy spring use occurs during the critical growth period of forage species. Trampling, over utilization, and defoliation of palatable species, would have short-term adverse impacts on upland vegetation by reducing their vigor, abundance, and reproductive ability; thereby, limiting the capacity of residual perennial communities to reestablish (Blaisdell and Pechanec 1949; Balph and Malechek 1985; Alzerreca-Angelo *et al.* 1998; and Jones 2000). Livestock grazing may benefit exotic species that are better adapted to grazing at the expense of native species (i.e.,

Sandberg bluegrass) which exhibit reduced growth and reproduction when grazed, resulting in a transition from native perennial species to exotic annual species over the long-term (Kimball and Schiffman 2003).

- Annual grasses are better adapted for livestock grazing, and thus, livestock grazing impacts to annual grasses are less than the impacts to perennial grasses (Kimball and Schiffman 2003). While annual grasslands have altered structural and functional components compared to perennial communities, in years with average or above average precipitation they produce adequate litter to protect soil structure, hydrologic function, and energy flow components of the site. Livestock grazing in the spring can reduce biomass which may reduce wildfire potential; however, grazing that reduces litter to inadequate levels could adversely affect site productivity by reducing annual vegetation to levels that would no longer meet the minimum requirements of the site.

Recreation Management Activities

- Between 1980 and 2004, human-caused fires were responsible for 70% of fire ignitions that burned 30% of the NCA. A change in campfire regulations could help reduce one component of human-caused fires that accounted for 4% of fire starts and 10% of the acres burned between 1980 and 2004.
- Vegetation would be eliminated to create hardened facilities. Increased recreational use adjacent to facilities could eliminate vegetation over the long-term.

Surface Disturbing Activities

- The short- and long-term impacts of surface disturbing activities (i.e. recreation, off-road vehicle use, rights-of-way, and communication facilities) include crushing and destroying plants. Repeated localized impacts can limit the ability of desirable plants to reestablish by reducing their numbers and reproductive capability, thereby facilitating the establishment of undesirable plants, such as noxious or invasive species.

Transportation Management Activities

- Motorized vehicle use impacts vegetation in the short-term by crushing and shearing plants. Repeated disturbances over the long-term eliminate vegetation in the immediate tracks.

Vegetation – Fire Suppression Activities

- Depending on the type of tactics used, short-term effects of fire suppression activities would be adverse in the case of large burnout operations, or ground disturbing activities such as dozer use. Dozers destroy or damage upland vegetation and large burnout operations could remove existing shrub communities and prevent or delay long-term recruitment and expansion of these communities. However, the use of dozers and burnout operations could potentially save larger areas of upland vegetation from burning.
- The effectiveness of fire suppression capability could be minimized in years when average to above-average precipitation results in heavy accumulations of hazardous fuels, and when summer storms cause multiple lightning strikes. Cheatgrass dominated areas would be susceptible to frequent fires over the long-term and larger burns could be expected during extreme conditions.

Vegetation – Fuels Management Activities

- Treatment activities, including maintenance of fuel breaks, could result in the short- and long-term loss of desirable remnant perennial vegetation through the repeated use of herbicides, prescribed fire, and ground disturbing activities. In treated areas, reduced competition and disturbance would increase the potential for the establishment and spread of noxious weeds over the short-term. Seeding treated areas with aggressive, adapted non-native species could impact desirable perennial vegetation by out-competing or displacing desirable plant communities (Monsen *et*

al. 2004). Seeding with non-natives could have short- and long-term benefits by stabilizing soils and providing an intermediate state between a disturbed community and the desired plant community (Monsen *et al.* 2004).

Vegetation – Noxious Weeds Management Activities

- Noxious weed control activities, including chemical and mechanical treatments, could impact off-site and non-target species, including desirable perennial vegetation, in the short-term.
- Communities occupied by noxious weeds are more likely to become colonized by increasingly dense patches of noxious weeds following disturbance events. These patches are a source for noxious weeds to spread into adjacent areas.

Vegetation – Research Areas

- Experimental vegetation treatments in research areas could cause adverse impacts to desirable perennial vegetation over the short-term. Disturbed areas are generally more susceptible to invasive and noxious weeds over the short-term. In successfully restored areas, perennial vegetation and a historic fire regime would be established.

Vegetation – Restoration Activities

- The degree of habitat degradation and the specific methods used to accomplish restoration are the primary factors influencing short-term impacts of restoration to upland vegetation. Restoration activities that supplement existing desirable vegetation (i.e., re-establishing shrubs in perennial grass dominated communities) may employ methods such as aerial seeding that would have no direct impact to existing vegetation in the short-term, unless the project area(s) are impacted through soil-disturbing mechanical seedbed preparation. Areas that require more complete restoration (i.e., converting a cheatgrass dominated site to a perennial vegetation community) would use a wider range of methods with a greater opportunity for short-term impacts to vegetation (Monsen *et al.* 2004). Prescribed burning or chemical applications could also reduce or eliminate remnant desirable species in the short-term in the target area and in adjacent plant communities (Monsen *et al.* 2004). Mechanical methods could also damage or destroy desirable vegetation. Native vegetation in dry, sandy soils is generally more susceptible to mechanical damage than vegetation in loamy soils.
- Restoration through the use of prescribed fire and mechanical treatments would impact biological soil crusts. Crusts are generally not prevalent in annual dominated communities; therefore, impacts would be localized but could extend into the long-term because of the relatively slow recovery rate of biological soil crusts (Belnap *et al.* 2001, pp 49-50, 61-62).

Visual Resources Management Activities

- Areas containing VRM Classes I and II restrict most surface disturbing activities (i.e., recreation, construction of livestock management facilities, military training, etc.) that could visually affect the characteristics of the natural landscape and would consequently reduce or eliminate the impacts (i.e. soil compaction, loss of desirable perennial species, increase in invasive and noxious weeds, short fire return interval). Restoration and fuels management activities that don't disturb the soil could occur in Class I areas. Vegetation treatments that disturb the soil or otherwise affect the visual characteristics of the landscape could occur in Class II areas if the long-term result was an improvement in visual resources, although design and implementation requirements would be stricter than for Class III and IV areas.
- VRM classes III and IV have more moderate tolerances for modifications and allow for more surface disturbing activities. Since these areas are generally subject to greater levels of use from a greater number of users, the probability of adverse impacts (short- and long-term) affecting

upland vegetation, as discussed above, would be elevated. Vegetation treatments would not be constrained by these classifications.

Indirect Impacts

Idaho Army National Guard Activities

- Impacts to soils would indirectly affect perennial grasses over the long-term (see discussion under Miscellaneous Soil Disturbing Activities).
- Restrictions on training in shrub communities would help maintain shrub stands in the OTA over the long-term. Perennial grasses and forbs could increase over the long-term in relatively undisturbed shrub communities (no off-road vehicle maneuver training and protected from fire). These areas could move toward the desired fire regime condition class over the long-term. Where off-road maneuver training occurs in grasslands adjacent to existing shrub communities, expansion of shrub communities into those grasslands would be limited (Jones and Kunze 2004, p 54). Shrubs would likely be unable to establish where continued surface disturbance from off-road maneuvers and live firing occurs. These areas would continue to be dominated by introduced annual grasses and forbs. These areas and adjacent shrub stands would remain susceptible to frequent fires over the long-term.
- Rehabilitation efforts could have long-term benefits in localized areas of existing shrub communities.

Lands and Realty Activities

- Approximately 19% of public lands in the NCA are within one-quarter mile of private or State lands. Most private lands in the area are cultivated; however, private lands near expanding population centers are susceptible to residential, commercial, or industrial development. Consolidation would reduce short- and long-term opportunities for offsite impacts from these types of development, such as increased off-highway vehicle use, introduction and spread of noxious weeds, chemical overspray, trash or debris, and human caused fires. Current habitat conditions on State lands are generally similar to adjacent public lands; however, State lands are available for disposal where it meets the State's mandate to maximize economic return to the school endowment fund. Acquisition of State and private lands would ensure they remain undeveloped over the long-term, and would reduce fragmentation of vegetation communities in the short- and long-term. In the short- and long-term, consolidated Federal ownership would increase management efficiency, and reduce management costs and liabilities. With fewer private and State inholdings, BLM could design larger weed control, restoration, and hazardous fuel reduction (vegetation treatment) projects. On consolidated lands, these projects would cost less per acre and would entail less off-site project liability associated with treatment efforts that could adversely affect adjacent non-public lands.
- Realigning the current NCA boundary to more recognizable on-the-ground locations could enhance management of upland vegetation in the short- and long-term. Especially if new areas that become a part of the NCA through realignment were previously subject to soil and vegetation disturbing activities that would not be allowed or would be more restricted in the NCA, such as motorized vehicle use. Areas that would no longer be in the NCA would not be managed with the emphasis of maintaining or improving raptor prey habitat. Vegetation treatments could have a lower priority or would not occur in these areas.
- Withdrawing the OTA Impact Area to the Department of Defense (DoD) would be an administrative action that entails no direct impacts on the ground; however, the area would be dominated by non-shrub communities and would be susceptible to repeated wildfires. Adjacent shrub communities would also be susceptible to wildfires over the long-term.

Livestock Grazing Management Activities

- Soil compaction occurring during periods of high soil moisture or in areas of concentrated use would reduce water infiltration, restrict root depth, and limit seed germination (Hart *et al.* 1993). Mechanical impacts to soils and biologic crusts would reduce soil stability and fixed nitrogen availability (Belnap 1995; Eldridge and Green 1994). Soil disturbance from hoof sheer and bedding would create habitat for non-native invasive and noxious weeds species, which could increase the overall competition with native species for limited resources (water, nutrients, space, etc.) (Laycock and Conrad 1981). Each of these impacts, or a combination of all, would reduce the reproductive capacity of residual perennial communities (Cook and Child 1971; Yensen 1982). Long-term impacts from reduced perennial reproduction and increased competition from invasive species could result in increased fuel loads that would decrease the interval between disturbance events (wildfire) and potentially enhance the size and severity of those events resulting in an accelerated expansion of exotic annual dominated communities.
- Livestock grazing after seed set could have limited, short-term benefits for upland vegetation by dispersing seeds and creating microhabitats for native species through localized soil disturbance (Burkhardt 1996). Livestock can provide short-term benefits by reducing accumulated fuel loads that could potentially increase the frequency, size, or severity of a wildfire (Pellant 2000, p 105); however, the effectiveness of livestock to manage fuels depends on a variety of factors including season of use, pasture size, and amount of fuel loading in a given year. Spring grazing would have the best potential for reducing fuel loads; however, effective fuel control during high precipitation years may require stocking levels that would be detrimental to desirable species and could result in increased mechanical disturbance to soil. In years with greater than average precipitation, timing of grazing for removal of annual grass biomass is key to reducing the risk of fire. Palatability and rapid growth of cheatgrass is typically earlier than the rapid growth phase for perennial native grasses. Also, cryptobiotic crusts are more resilient in spring than later in the season when dry.
- Removing livestock use would have benefits akin to those realized through grazing systems that provide rest or deferment during the growing season. It would allow native perennial species to increase over the long-term and could render these areas more resistant to invasion by exotic species (Anderson and Holte 1981; Anderson and Inouye 2001). Removing grazing of perennial vegetation during the flowering and seed set timeframes can lead to increased vigor, increased seed production, and increased habitat diversity. In these areas, removal of grazing would help reestablish native herbaceous perennial species which serve as reliable pollen sources for native pollinators (insects). These pollinators are necessary for the long term survival of many plant species.

Recreation Management Activities

- Reducing human-caused fires would allow vegetation conditions in unburned areas to improve over the long-term allowing upland vegetation to progress towards a historic fire regime.
- Recreation developments usually attract users to an area, which may increase impacts by concentrating use. Developed facilities contain the impacts from surface disturbance with the goal of protecting the surrounding area. Localized impacts to vegetation adjacent to recreation facilities would be adverse over the long-term, primarily from surface disturbances and the potential introduction of noxious weeds. This increased use may also have beneficial impacts by attracting users to an area with facilities that can help mitigate the impacts of use (i.e., hardened roads) and moving them away from sensitive areas or areas without adequate facilities to meet

the demand. Over the long-term, impacts from dispersed recreation (i.e., destruction of vegetation, introduction of invasive and noxious weeds, increased fire starts) could be reduced.

Surface Disturbing Activities

- The loss of a plant canopy on soils would increase the potential for wind erosion, the primary erosive force in the NCA, and increase erosion from raindrop impact. Where surface disturbance creates soil compaction, water infiltration is reduced, resulting in increased overland flow and further potential for erosion and off-site impacts from deposition. Invasive and noxious weeds that become established in disturbed areas may spread into adjacent areas resulting in increased competition for resources over the short- and long-term, further impacting vegetation communities. The resulting long-term impacts include increased fire frequency as a result of the introduction of invasive annual grasses, reduced water infiltration, limited seed germination from soil disturbance, and reduced soil stability and fixed nitrogen availability resulting from the loss of biological soil crusts (Belnap 1995).
- Soil compaction would reduce water infiltration, restrict rooting depth, and limit seed germination (Hart *et al.* 1993). Mechanical impacts to soils and biological soil crusts would create habitat for invasive and noxious weed species, which would increase the overall competition for limited resources (water, nutrients, space, etc). Each of these impacts, or a combination of all, would reduce the reproductive capacity of perennial communities over the long-term (OTA 2004; USDI 1996). Long-term impacts from reduced perennial reproduction and increased competition from invasive species could result in increased fuel loads that would decrease the interval between disturbance events (wildfire) and potentially enhance the size and severity of those events. The result would be a shift away from perennial-dominated communities toward annual dominated ones where continual localized surface disturbance occurs, and a static condition where limited surface disturbance occurs.
- Dust from surface disturbing activities (i.e. motorized vehicle use, IDARNG training, areas of concentrated livestock use, mineral material sites) could adversely impact vegetation by affecting photosynthesis, respiration, transpiration, and reproduction (Farmer 1993, Reheis 1995, Trombulak and Frissell 2000). Native vegetation could be replaced by invasive and noxious weeds that are less susceptible to dust. Actions that reduce dust could mitigate these impacts.
- Establishing an avoidance area would potentially reduce surface disturbance in that area by minimizing the number of rights-of-way and surface disturbing activities.

Transportation Management Activities

- Vehicle use could alter species composition and community dynamics in immediately adjacent areas by compacting and disturbing soils, which reduces water infiltration, restricts root depth, and limits seed germination, reducing the potential for re-establishment of perennial communities (Argonne National Laboratory 2004). Vehicles could facilitate dispersion of invasive and noxious weeds from sources within the NCA and introduce noxious weeds from sources outside the NCA (Sheley *et al.* 1999, p 69). As a consequence, invasive weeds could be introduced in disturbed areas and spread to adjacent areas over the short-term, potentially shortening fire return intervals over the long-term and resulting in further disturbance to adjacent perennial communities. Vehicles accounted for approximately 10% of human-caused fires between 1980 and 2004. Fires caused by vehicles and associated recreational activities could adversely affect vegetation over the short- and long-term.
- Route designation would eliminate some redundant routes resulting in larger contiguous (less fragmented) areas that are

not subject to impacts associated with ORVs (Knick *et al.* 2003, pp 617-618). A reduction in fragmentation would increase the resilience of areas to disturbance factors over the long-term.

Vegetation – Fire Suppression Activities

- Fire suppression priorities could have short- and long-term adverse effects on upland vegetation if priority is given to protecting occupied slickspot peppergrass habitat. When suppression resources are concentrated on protecting occupied slickspot peppergrass habitat, other important remnant and restored shrub communities could be lost to fire as a tradeoff. Short-term beneficial effects would occur where suppression resources concentrate on protecting remnant and restored shrub communities. These communities are not adapted to fire and are difficult to successfully restore when burned. Long-term effects could be beneficial and adverse, depending on the amount of vegetation lost or saved from fire. Repeated successful suppression efforts could lead to a historic fire regime, because areas that are successfully protected from burning would allow perennial species the opportunity to expand through natural recruitment. Where suppression is either unsuccessful or does not occur because of limited resources (i.e. multiple fire starts require managers to prioritize suppression efforts), affected areas would not move towards a historic fire regime. Non-fire adapted shrubs would be eliminated. A variety of factors, including pre-burn species composition and fire intensity, would determine what species dominate after a burn. Annual species could recover within 1 to 5 years post-fire (Piemeisel 1951). Remnant perennial plants, especially Sandberg bluegrass, could survive in these areas, but would be adversely affected by repeated fires and would be expected to disappear (Laycock 1991 p 430). Annual communities (primarily cheatgrass) would be slightly impacted by fire over the short-term.

Vegetation – Fuels Management Activities

- Hazardous fuels treatments and fuel breaks could protect adjacent areas by reducing the size and severity of wildfires in the short- and long-term.
- Successful projects would have beneficial long-term impacts by improving upland vegetation and moving vegetation from annual to perennial dominated communities. Successful fuel treatments could have a long-term impact by leading to a historic fire regime in treated and adjacent areas. Because these sites would have a greater amount of time to recover and reestablish structural and functional components, they would have a greater potential to naturally recover after future fires (Peters and Bunting 1992). Areas protected by hazardous fuels projects would have an opportunity to expand through natural recruitment over the long-term (Longland and Bateman 2002).

Vegetation – Noxious Weeds Management Activities

- Reducing or eliminating weeds would reduce competition for scarce resources and improve the ecological condition of vegetation communities and their ability to withstand and recover from disturbance events in the short- and long-term. Because of the competitive nature of noxious weeds, most infestations would be treated more than one time, reducing the total acres that could be affected by this program.
- Activities that address the sources of noxious weeds (i.e. IDARNG requirement to wash vehicles from outside the Treasure Valley) would help reduce the potential for establishing new populations of noxious weeds over the short- and long-term.

Vegetation – Research Areas

- Weeds that become established in research areas would adversely impact adjacent communities if they spread to those areas. The success of restoration efforts in other

areas could improve through the knowledge gained in research areas.

Vegetation – Restoration Activities

- Restoration activities that reduce competition or disturb the soil could increase the potential for the establishment of noxious and invasive weeds over the short-term if seeded species do not out-compete them. Treated areas would become more resistant to noxious and invasive weed establishment over the long-term as desirable perennial species become established.
- Short-term reductions in vegetation cover would make soils more susceptible to erosion, which could reduce productivity over the short- and long-term depending on the degree of soil loss. Soils with high erosion potential and that are dominated by annual vegetation cover (primarily within 6 miles of the north rim of the Snake River) are most vulnerable to this impact.
- As perennial species become established in treated areas, natural succession processes would return over the long-term. Shallow rooted annual species would be replaced by a diversity of moderate to deep-rooted perennial species that more closely represent the original functional and structural components of the sites being restored. The return of these components would result in a variety of long-term benefits including improved nutrient cycling, increased and more stable productivity, greater resistance to disturbance (including establishment of noxious weeds), a reduction in fragmentation, and longer intervals between fires (Tillman *et al.* 1997, p 1301; Hooper and Vitousek 1997 pp 1303-5).
- Restored areas would provide long-term benefits to adjacent perennial communities by reducing sources of noxious or invasive species and threats from fire (Keeley *et al.* 1999).
- Ecological site, pre-treatment conditions, restoration methods available, and precipitation conditions would have the greatest influence on the success of restoration efforts and, therefore, the number of treatments required. Success would be greatest in Wyoming big sagebrush sites where: 1) some desirable perennial species exist (Management Area 1); 2) minimal ground disturbing treatments are used; and 3) average or above average precipitation conditions occur. Success rates would be lowest in salt desert shrub sites dominated by exotics (management area 2), where ground-disturbing treatments are required, and where precipitation conditions are below average. Successful restoration could occur within four years under the first set of conditions, but could require 10 or more years under the second set of conditions, since multiple treatments could be required (Monsen *et al.* 2004).

Visual Resources Management Activities

- Limiting use in Class I and II designated areas may distribute or concentrate use to other areas, which would have a short- or long-term adverse affect on upland vegetation.

Discussion of Impacts by Alternative

Upland Vegetation: Alternative A

Idaho Army National Guard Activities: Disturbance from off-road maneuver training and live-fire activities would have moderate localized adverse impacts in non-shrub communities at the landscape level. There could be slight to moderate long-term adverse impacts at the local level because of the susceptibility to fire of shrub communities adjacent to annual grass areas. The voluntary policy of avoiding shrub areas during off-road maneuver activities would help maintain remnant shrub communities. Continued off-road maneuvers and live firing in non shrub areas would preclude BLM' ability to restore these areas. Should the voluntary policy of avoiding shrub areas during off-road maneuver training change, there could be high long-term adverse impacts to shrub communities throughout the OTA. Other IDARNG activities would have slight localized impacts over the long-term. Use of the existing 5-acre excavation site, hardened sites and roads would have no additional impacts on vegetation.

Lands and Realty Activities: Consolidating public ownership would result in slight benefits at the local level in the long-term. A 43,000-acre avoidance area would have slight localized long-term beneficial effects by limiting ground disturbance normally associated with utility developments. Use and maintenance of the existing utility corridor would have negligible long-term adverse impacts at the local level.

Livestock Grazing Management Activities: Determining stocking levels, season, and duration of livestock use through the Idaho S&G process (Appendix 3) would result in slight to moderate localized benefits to perennial communities over the long-term and slight benefits to remnant perennial species in annual communities over the long-term. Livestock grazing exclusions and restrictions on <1% of the NCA would have a moderate beneficial affect on upland vegetation at the local level over the short- and long-term. Reducing 200 acres of hazardous fuels in Wildland Urban Interface (WUI) sites through intensive livestock grazing would cause short-term moderate localized adverse affects to annual and perennial vegetation. However, the reduction of wildfire potential would have moderate short-term localized beneficial effects on adjacent upland vegetation. Limiting livestock grazing in annual grasslands to leave minimum amounts of residual litter would have little or no short-term adverse impacts to annual communities. However, leaving residual annual vegetation would protect watershed functional components (soil stability, hydrologic function, and energy flow); therefore, slight, long-term beneficial impacts to annual communities would be realized. These benefits may be offset in years when production of annuals is low or nonexistent because of climatic conditions.

Recreation Management Activities: If there were no restrictions on campfire locations, except during emergency fire closures, there would be a slightly increased probability of fires escaping and burning adjacent vegetation. Escaped campfires would slightly contribute to a portion of the expected loss of 50,000 acres of existing native shrub habitat. Expanding existing developed recreation sites would cause slight adverse short-term localized impacts; however, if new sites are not developed, slight to moderate adverse impacts would occur at the landscape level over the long-term.

Surface Disturbing Activities: Actions that limit or eliminate surface disturbing activities in small areas would provide slight localized short-term benefits. Actions that cover large areas would result in slight beneficial impacts at the landscape-level over the long-term and would slightly reduce habitat fragmentation. Use of the 16 active mineral material sites and 29 inactive sites would result in high adverse localized short-term impacts. Although the impacts would primarily occur at the local level, they could contribute to landscape level weed invasions because the sites occur throughout the NCA.

Transportation Activities: Maintaining vehicle closures on 1,600 acres would have moderate localized beneficial long-term impacts. Application of the route designation criteria would result in slight to moderate long-term benefits at the landscape level. Restoration of closed routes would result in slight localized short-term adverse impacts and moderate landscape-level long-term beneficial impacts.

Vegetation – Fire Suppression Activities: At the landscape level, fire suppression priorities would be highly beneficial to shrub communities over the long-term and would have moderate adverse impacts to remnant perennial plants in annual communities. Highly adverse impacts to shrub communities would occur when suppression resources are sufficient to protect only designated slickspot peppergrass management areas.

Vegetation – Fuels Management Activities: Approximately 2% (10,000 acres) of the NCA would be treated for hazardous fuels reduction. There would be relatively few acres treated resulting in slight short-term adverse impacts and slight to moderate long-term

beneficial impacts primarily in Management Areas 1 and 2. Fuel breaks would result in moderate long-term benefits at the landscape level. Benefits from fuels management would be eclipsed by the approximate 50,000 acres of remnant shrub communities that are estimated to burn during the same timeframe.

Vegetation – Noxious Weeds Management Activities: The relatively few acres treated would be inadequate for controlling the introduction and spread of weeds and would potentially result in moderate short- and long-term landscape wide adverse impacts.

Vegetation – Research Areas: No research areas are proposed.

Vegetation – Restoration Activities: Approximately 3% of degraded communities would be restored resulting in slight short-term adverse impacts and slight to moderate long-term beneficial impacts primarily in Management Areas 1 and 2. These restored areas would provide some degree of protection to remnant shrub communities over the short- and long-term. However, the long-term benefits of restoration would not provide adequate protection on a landscape level nor would they replace the estimated 50,000 acres of shrubs that would be lost to wildfire in the long-term.

Visual Resources Management Activities: Slight long-term beneficial impacts from Class I or II designations would occur primarily on the local level over a small portion of the NCA (approximately 7%). Class III and IV designations would provide slight protection from surface disturbance landscape-wide and would not have an impact on vegetation.

Conclusion – Upland Vegetation: Alternative A

Land consolidation, restrictions on surface disturbing activities, and areas closed to motorized vehicle use would provide slight to moderate localized benefits over the long-term. Vegetation treatments could have slight adverse localized impacts in the short-term, but would have slight to moderate long-term benefits at the local level. Fire suppression priorities could moderately benefit shrub communities and could adversely affect annual communities slightly at the landscape level over the long-term. Implementation of S&Gs, application of route designation criteria, avoidance areas, and VRM classifications would provide slight to moderate long-term benefits at the landscape level. IDARNG activities, livestock grazing in annual communities, and limited recreation facilities and weeds treatments would have slight to moderate adverse impacts at the landscape scale over the long-term.

Overall, there would be a landscape-wide loss of 40,000 acres of shrub communities and further ecological degradation, principally as a result of fire. In addition, continued off-road maneuvers and live firing would preclude BLM from restoring 80,000 acres of degraded non-shrub habitat in the OTA. The objectives and DFC would not be met because vegetation loss through fire and degradation would exceed BLM projections for restoration.

Upland Vegetation: Alternative B

Idaho Army National Guard Activities: Restricting off-road maneuver training to designated routes would moderately reduce impacts to vegetation over the short- and long-term in the Bravo Area (Management Area 1). Shrub communities in the Bravo Area could expand over the long-term into grass-dominated areas that are not repeatedly disturbed, which would provide slight to moderate local benefits. Approximately 50% of the training in the Bravo Area would be redistributed to the other maneuver areas. Impacts to grassland communities would be greater in these areas than in Alternative A. The mandatory avoidance of shrub areas during off-road maneuver training would help maintain remnant shrub communities; however, continued off-road maneuvers and live firing in 80,000 non shrub acres of the OTA would preclude BLM ability to restore these degraded habitats. Shrub and perennial grass communities account for approximately 37% of the proposed expansion area. The introduction of training activity into the expan-

sion area could moderately reduce the amount of perennial grasses and increase the amount of cheatgrass, thus increasing the likelihood of fire over the short- and long-term. Restoration would not occur in the 20,400-acre expansion area; however, IDARNG could rehabilitate isolated areas within remnant shrub communities. These additional acres would slightly benefit from IDARNG fire suppression efforts during training activities. The impact of other training activities would be as described in Alternative A.

Lands and Realty Activities: The effects of land purchases and exchanges on upland vegetation would be the same as Alternative A. However, there would be an increased likelihood that consolidation activities would moderately benefit treatment activities at the local level, because larger areas would be treated over the long-term. There would be no change in the NCA boundary. A 105,000-acre avoidance area would have slight long-term beneficial effects on upland vegetation by limiting ground disturbance over the long-term. A utility corridor would have slight to moderate long-term adverse impacts at the local and possibly at the landscape level through the introduction of weeds.

Livestock Grazing Management Activities: Impacts from implementing S&Gs (Appendix 3) would be the same as Alternative A. However, based on the increased number of acres being excluded, seasonally restricted, or rested for restoration and fuels management purposes, adverse impacts from livestock grazing on perennial and annual communities would be slightly decreased over a greater area. In vegetation treatment areas, removing livestock would not increase fuel loads because fuel treatments would result in reduction of fuels. Managing Sandberg bluegrass areas to benefit Piute ground squirrels would have slight to moderate short- and long-term localized benefits. Using livestock grazing as a tool to reduce hazardous fuels would have the same impacts as Alternative A. The total number of acres potentially affected would be greater, but impacts would still occur primarily at the local level. Limiting livestock grazing in annual grasslands to leave minimum amounts of residual litter would have the same affect as Alternative A.

Recreation Management Activities: Limiting campfires would result in slight long-term benefits at the local level. Short-term adverse impacts associated with developing two new recreation sites would be greatest in shrub communities in the vicinity of the proposed Three Pole site. Impacts from increased recreation use could slow recovery of shrubs in the Initial Point area over the long-term; however, impacts would be slight and localized. The new sites would slightly reduce long-term impacts from dispersed recreation in the western portion of the NCA; however, the proposed sites may not be adequate to address increased recreation use associated with projected population increases.

Surface Disturbing Activities: Impacts of limiting or eliminating surface disturbing activities would be the same as described in Alternative A. Impacts associated with the continued use of the 16 active mineral material sites would be as described in Alternative A, but would occur only at the local level.

Transportation Management Activities: Beneficial impacts to vegetation associated with areas closed to motorized vehicles would be the same as Alternative A except that there would be a larger area closed to motorized vehicle use. Application of the route designation criteria would have the same impacts as Alternative A.

Vegetation – Fire Suppression Activities: Impacts would be as described in Alternative A.

Vegetation – Fuels Management Activities: Approximately 14% (70,000 acres) of the NCA would be treated for hazardous fuels reduction. The majority of Management Areas 1 and 2 would be treated resulting in slight short-term local adverse impacts and moderate long-term beneficial impacts at the landscape level. Fuel breaks would result in moderate

long-term benefits at the landscape level. Although the hazardous fuels treatments would act as a substantial protection of remnant perennial communities and restoration area, up to 30,000 acres of shrub communities could still be lost.

Vegetation – Noxious Weeds Management Activities: The level of treatment would be slightly to moderately beneficial in Management Areas 1 and 2 over the long-term; however, noxious weeds could increase at the local level and potentially at the landscape level in Management Area 3.

Vegetation – Research Areas: As a result of up to 1000 acres being utilized for research, slight short-term adverse impacts would occur at the local level. Slight to moderate long-term beneficial impacts would occur at the local, and possibly landscape level.

Vegetation – Restoration Activities: Focusing restoration projects in Management Area 1 (outside the OTA) and portions of Management Area 2 (14% of the NCA) would result in slight short-term adverse impacts at the local level and moderate long-term benefits in restored areas and adjacent perennial communities at the landscape level. While an estimated 30,000 acres of shrubs may be lost to wildfire, the proposed restoration efforts would result in a net gain of 20,000 acres of shrub cover over the long-term.

Visual Resources Management Activities: Class III and IV designations would provide slight protection from surface disturbance landscape-wide and would not have an impact on vegetation.

Conclusion – Upland Vegetation: Alternative B

Individually, areas closed to motorized vehicle use, and restrictions on surface disturbing activities and livestock grazing in Sandberg bluegrass communities, and consolidating land ownership would provide slight to moderate localized benefits over the long-term; however, combined the impacts would be slight at the landscape level. Vegetation treatments and research areas could have slight adverse localized impacts in the short-term, but would have moderate long-term benefits at the landscape level. Fire suppression priorities could moderately benefit shrub communities and could adversely affect annual communities slightly at the landscape level. Implementation of S&Gs and application of the route designation criteria would provide slight to moderate long-term benefits at the landscape level.

Surface disturbing activities and development of recreation facilities could have slight to moderate short- and long-term localized adverse impacts. IDARNG off-road training, utility development, livestock grazing in annual communities, visual resources classifications, and inadequate recreation facilities and weeds treatments would have slight to moderate short- and long-term adverse impacts at the landscape scale. Overall, there would be a slight landscape-wide net increase (20,000 acres) in shrub communities, and degraded communities would occur primarily in Management Area 3 and non-shrub portions of the OTA. Under this alternative, continued off-road maneuvers and live firing would preclude BLM from restoring 80,000 acres of degraded non-shrub habitat in the OTA. The objective would be met. The DFC would be met except for the Impact Area and designated off-road Maneuver Areas of the OTA and in Management Area 3 where shrub communities would not increase.

Upland Vegetation: Alternative C

Idaho Army National Guard Activities: Restricting off-road maneuver training to three designated routes in the Bravo Area (Management Area 1) would moderately benefit shrub and grass communities at the local level for the short-and long-term. Shrub communities in the Bravo Area could expand over the long-term into grass-dominated areas. Approximately 80% of the training in the Bravo Area would be redistributed to the other maneuver areas. Impacts to grassland communities would be greater in these areas than in

Alternatives A and B. The benefit of mandatory avoidance of shrub communities in the remainder of the OTA would be as described in Alternative B. Removal of 3,900 acres of slickspot peppergrass habitat from the OTA would have no impact on upland vegetation. The impact of other training activities would be as described in Alternative A. Under this alternative, continued off-road maneuvers and live firing would preclude BLM from restoring 80,000 acres of degraded non-shrub habitat in the OTA.

Lands and Realty Activities: The effects of land purchases and exchanges on upland vegetation would have a moderate long-term benefit at the landscape level. The proposed change in the NCA boundary would result in a net loss of approximately 2,100 acres of degraded or disturbed habitat that would no longer be part of the NCA restoration priorities, which would result in little or no impact to the NCA. A 163,600-acre avoidance area would have slight beneficial long-term landscape-wide effects on upland vegetation by limiting ground disturbance associated with major utility developments. A utility corridor would have slight to moderate long-term adverse impacts at the local level.

Livestock Grazing Management Activities: Removing all livestock grazing, except for fuels management projects, would result in moderate to high landscape-wide long-term benefits for perennial communities. The loss of short-term beneficial impacts associated with livestock grazing would be negligible, because restoration and rehabilitation projects would increase. Using livestock grazing as a tool to reduce hazardous fuels would have the same impacts on upland vegetation as Alternative B.

Recreation Management Activities: Impacts of limiting campfires would be the same as described in Alternative B. Impacts associated with the proposed Three Pole and Initial Point sites would be as described in Alternative B. Shrub and annual grass communities dominate in the vicinity of the proposed Celebration Park Annex and Guffey Butte sites. Increased recreation use and the potential for increased fire starts could have slight long-term adverse impacts to vegetation in the vicinity of these sites. The proposed sites would help reduce some long-term impacts from dispersed recreation in the western portion of the NCA and would more adequately address increased recreation use associated with projected population increases than Alternative B. The net results would be slightly beneficial at the landscape level.

Surface Disturbing Activities: The impacts of limiting or eliminating surface disturbing activities would be the same as described in Alternative A. Impacts associated with the continued use of the 16 active mineral material sites would be as described in Alternative A, but would occur only at the local level.

Transportation Management Activities: The beneficial impacts to vegetation associated with area closures (approximately 13,200 acres) would be the same as Alternative A except that there would be a larger area closed to motorized vehicle use. The application of the route designation criteria would have the same impacts as Alternative A.

Vegetation – Fire Suppression Activities: Impacts would be as described in Alternative A.

Vegetation – Fuels Management Activities: Approximately 20% (100,000 acres) of the NCA would be treated for hazardous fuels reduction. The majority of the NCA outside of restored and remnant shrub communities would be treated resulting in moderate short-term local adverse impacts and long-term highly beneficial impacts at the landscape level. Fuel breaks would result in moderate long-term benefits at the landscape level. The hazardous fuels treatments would act as a substantial protection of remnant perennial communities and restoration areas and would limit the loss of shrub communities to no more than 15,000 acres.

Vegetation – Noxious Weeds Management Activities: The types of impacts to vegetation from weed treatments would be the same as described in Alternative A; however, they would occur at a greater scale than either Alternative A or B. Because of the extensive level of soil disturbance associated with vegetation treatments, there could be a high potential for noxious weed infestation that may exceed the level of treatment proposed (4,000 acres). Should this happen, over the long-term there could be moderate to high adverse impacts at the local level. Long-term improvements in rangeland and habitat condition resulting from habitat restoration and fuels treatments would increase resistance to weed infestations, ultimately reducing the overall area susceptible to infestation.

Vegetation – Research Areas: Although a larger area would be subject to research activities, the impacts would be the same as Alternative B.

Vegetation – Restoration Activities: All high priority areas and an additional 102,000 of degraded habitat outside the OTA (approximately 63% of degraded habitats) would be restored. Restoration of shrubs in perennial grass communities would occur on up to 47,000 acres resulting in minimal long-term landscape-wide adverse impacts to existing perennial vegetation. In the remaining areas that are being fully restored, short-term impacts to existing perennial vegetation would occur over a greater area than Alternatives A and B. While an estimated 15,000 acres of shrubs may be lost to wildfire, the proposed restoration efforts would result in a net gain of 115,000 acres of shrub cover over the long-term.

Visual Resources Management Activities: Slight long-term beneficial impacts from Class II designations would occur primarily at the landscape level (approximately 39%). Class III and IV designations would provide slight protection from surface disturbance landscape wide and would not have an impact on vegetation.

Conclusion – Upland Vegetation: Alternative C

Individually, areas closed to motorized vehicles, restrictions on surface disturbing activities, and consolidating land ownership would provide slight to moderate localized benefits over the long-term. Vegetation treatments and research areas could have slight adverse localized impacts in the short-term, but would be highly beneficial over the long-term at the landscape level. Fire suppression priorities could moderately benefit shrub communities at the landscape level and could adversely affect annual communities slightly at the local level. Application of the route designation criteria and protection afforded by the VRM Class II designation would provide slight to moderate long-term benefits at the landscape level. Removal of livestock would be highly beneficial to perennial communities and slightly beneficial to annual communities over the long-term at the landscape level. Surface disturbing activities, development of recreation sites and utilities could have slight to moderate short- and long-term localized adverse impacts. IDARNG off-road training would have slight to moderate long-term adverse impacts in the OTA. Overall, there would be a substantial landscape wide net increase (115,000 acres) in shrub communities. Degraded communities would occur primarily in non-shrub portions of the OTA. Under this alternative, continued off-road maneuvers and live firing would preclude BLM from restoring 80,000 acres of degraded non-shrub habitat in the OTA. The objective would be met. All DFC would be met except in the Impact Area and designated off-road Maneuver Areas of the OTA.

Upland Vegetation: Alternative D

Idaho Army National Guard Activities: Impacts in the Bravo Area would be the same as described in Alternative B. Approximately 50% of the training in the Bravo Area would be redistributed to the other areas; however, the expansion area would only be 4,100 acres, thus impacts to grassland communities would be greater in these areas than in Alternative A or B. The benefit of mandatory avoidance of

shrub communities in the remainder of the OTA would be as described in Alternative B. Shrub and perennial grass communities account for approximately 16% of the proposed expansion area. Impacts in the expansion area would be the same as Alternative B, but would only occur on 4,100 acres. The impact of other training activities would be as described in Alternative A. Under this alternative, continued off-road maneuvers and live firing would preclude BLM from restoring 80,000 acres of degraded non-shrub habitat in the OTA.

Lands and Realty Activities: The impacts on upland vegetation from acquisitions and consolidating public ownership would be the same as described in Alternative C. The proposed change in the NCA boundary would result in a net decrease of approximately 2,100 acres of degraded or disturbed habitat that would not be treated which would have no impact. The effects of the proposed avoidance area and use and maintenance of the existing utility corridor would be as described in alternative A.

Livestock Grazing Management Activities: Impacts to upland vegetation resulting from livestock grazing in perennial communities outside the Impact Area would be as described in Alternative B. Limiting livestock grazing in annual grasslands to leave minimum amounts of residual litter would have the same affect as Alternative A.

Recreation Management Activities: Impacts to vegetation from restricting campfires would be the same as described in Alternative B. Impacts associated with the four recreation sites would be the same as Alternatives C. Annual grass and invasive weed communities dominate in the vicinity of the proposed Black Butte Boat Access site. Short-term impacts to vegetation would be slight, but increased recreation use could impede long-term restoration efforts in the vicinity of this site. The potential for reducing impacts to upland vegetation from dispersed recreation would be the same as Alternative C. The additional site, located adjacent to the Snake River, would slightly benefit uses associated with riparian areas rather than uplands over the long-term at the landscape-level.

Surface Disturbing Activities: The impacts of actions common to all alternatives that limit or eliminate surface disturbing activities would be the same as described in Alternative A. Impact associated with the use of existing mineral material sites and reopening inactive sites would be as described in Alternative A.

Transportation Management Activities: The impacts related to closing 4,400 acres to motorized vehicle use would be the same as Alternative A. Although the closed area would be larger, the impacts would continue to be recognized at the local level. Impacts from application of the route designation criteria would be as described in Alternative A.

Vegetation – Fire Suppression Activities: Impacts would be as described in Alternative A.

Vegetation – Fuels Management Activities: The impacts associated with fuels management would be the same as described in Alternative C; however, the increased level of human use and associated greater probability of human-caused fires would result in a loss of up to 30,000 acres of remnant shrub communities.

Vegetation – Noxious Weeds Management Activities: Impacts would be the same as described in Alternative C.

Vegetation – Research Areas: Although a larger area would be subject to research activities, the impacts would be the same as Alternative B.

Vegetation – Restoration Activities: Impacts to upland vegetation related to restoration would be the same as those described in Alternative C with the exception of the net gain of shrub communities over the long-term. While an estimated 30,000 acres of shrubs may be lost to wildfire, the proposed restoration efforts would result in a net gain of

100,000 acres of shrub cover over the long-term.

Visual Resources Management Activities: Slight long-term beneficial impacts from Class II designations would occur primarily at the local level (approximately 11%). Class III and IV designations would provide slight protection from surface disturbance landscape wide and would not have an impact on vegetation.

Conclusion – Upland Vegetation: Alternative D

Individually, areas closed to motorized vehicles, restrictions on surface disturbing activities and livestock grazing in Sandberg bluegrass communities, and consolidating land ownership would provide slight to moderate localized benefits over the long-term. Vegetation treatments and research areas could have slight adverse localized impacts in the short-term, but would be highly beneficial over the long-term at the landscape level. Fire suppression priorities could moderately benefit shrub communities at the landscape level and could adversely affect annual communities slightly at the local level. Implementing S&Gs, application of the route designation criteria, and protection afforded by visual resources classifications (Class II) would provide slight to moderate benefits at the landscape level. Surface disturbing activities including development of recreation sites could have slight to moderate localized adverse impacts.

IDARNG off-road training in non-shrub communities would have slight to moderate adverse impacts in the OTA Continued off-road maneuvers and live firing would preclude BLM from restoring 80,000 acres of degraded non-shrub habitat in the OTA. The objective would be met. All DFC would be met except in the Impact Area and designated off-road Maneuver Areas of the OTA.

4.2.9 Water Quality, Riparian and Wetlands

Summary

Alternative A would provide the least amount of restoration. Alternative B provides an increased level of restoration over Alternative A. Alternatives C and D provide a significant amount of protection and restoration; however, Alternative C provides the greatest protection from utility development and livestock grazing.

Assumptions

- Riparian areas are dynamic systems that undergo natural changes frequently.
- Habitat restoration projects in riparian areas would experience degrees of success or failure. Successful projects would have beneficial impacts to water quality and riparian resources. Failures would have no long-term impact on these resources.
- Varieties of shrubs used for upland habitat restoration projects would not invade riparian areas.
- Short-term impact would be 5 years or less based on the average rate of recovery for riparian areas. Long-term impact would be greater than five years.

How Activities Affect Water Quality, Riparian and Wetlands

Direct Impacts

Livestock Grazing Management Activities

- Riparian areas can be affected by grazing in different ways depending on the season of use. Grazing these areas during the summer would generally have adverse impacts on riparian areas (Baker, *et al.* 2001 p 3). When temperatures are high and there is a lack of shade in the uplands, livestock tend to congregate in riparian areas and utilize riparian forage. This impacts riparian areas adversely in several ways. Surface disturbance and soil compaction is increased where livestock congregate, resulting in bank instability. In addition, riparian vegetation that is utilized by livestock for forage in the summer may not have enough growing days left in

the year for recovery and reproduction. In the late summer and fall, livestock tend to be drawn to riparian areas for shade and forage. During the fall season, riparian areas may offer more palatable forage for livestock than the uplands, which may be depleted.

- Grazing earlier in the growing season (i.e., spring) allows riparian vegetation more time to recover than either summer or fall grazing and can actually improve vegetation growth in riparian areas if carefully monitored. Grazing riparian areas in the spring has been shown to be helpful in establishing woody plants (New Mexico Department of Game and Fish 2004 p 2, Baker, *et al.* 2001 p 4). Winter grazing has the least overall impact to riparian areas (USDI 1997, p 27). However, long-term use of riparian areas in the winter could lead to a decline of palatable native species.
- Degraded riparian systems are less able to withstand the disturbance of grazing than those in PFC. Grazing degraded riparian systems could directly reduce the functioning condition of the riparian area. Further indirect adverse impacts on water quality would result by reducing the ability of the system to withstand a high runoff event without erosion or stream channel alteration.
- Management systems or actions that use grazing to modify vegetation in a prescriptive manner, including those discussed in BLM Technical Reference 1737-14, would have beneficial direct and indirect impacts on riparian and water quality resources over the long-term. Limiting or eliminating livestock use of riparian vegetation would help promote healthy riparian vegetation that directly benefits riparian areas and water quality by stabilizing streambanks and filtering sediment from overland flow before it enters water bodies (Bellow 2003 p3).

Riparian/Wetland Management Activities

- Maintaining riparian and wetland areas that are in PFC would ensure that desirable riparian vegetation would occur in a diverse mixture and exhibit appropriate vigor, growth and reproduction relative to the landform, geology, and hydrology of the site. The sites would be relatively stable even during typical flood flows (high flows reached every 5 to 30 years) and would resist the establishment of noxious and invasive species over the short- and long-term.

Surface Disturbing Activities (Lands and Realty, Mineral Materials, Recreation)

- Surface disturbing activities that take place in riparian areas, including activities in utility corridors, would result in various degrees of disturbance. The removal of vegetation would increase the potential for erosion and sedimentation resulting in short and long-term adverse impacts. Avoidance areas would prevent major rights-of-ways and the resulting adverse impacts to riparian areas.
- The short-term direct impacts of surface disturbing activities (i.e. recreation, motorized vehicle use) include crushing and destroying riparian vegetation. Repeated localized impacts can limit the ability of plants to reestablish by reducing their numbers and reproductive capability. Areas where plants are eliminated could become functioning at risk over the short-term. Increased sedimentation from erosion could indirectly impact water quality over the short- and long-term. Invasive and noxious weeds that become established in disturbed areas may spread into adjacent areas resulting in increased competition for resources over the short- and long-term, further impacting riparian communities.
- Riparian areas receive a disproportionately high level of recreational use relative to their occurrence in the NCA. Direct impacts to vegetation from recreation use include trampling and destroying vegetation caused by foot and vehicle use, firewood gathering, and loss of vegetation caused by escaped campfires. Invasive and noxious weeds could become established in

disturbed areas. Functioning condition and water quality could be impacted over the short- and long-term as described above. The direct impacts could be less apparent where hardened use areas have been established. Actions that actively manage or limit use (i.e. creating recreational facilities such as trails or hardened use areas, limiting outfitter permits) would help limit impacts over the short- and long-term.

- In areas where scenic and biological values increase (i.e. riparian areas are in PFC) over time, they become more attractive to recreationists and use levels and associated impacts could increase over the long-term.

Transportation Management Activities

- Motorized vehicles directly impact riparian vegetation in the short-term by crushing and shearing plants. Repeated disturbances would alter species composition by reducing desirable species and allowing undesirable species to become established and increase. Over the long-term, riparian functioning condition could decline.
- Water quality could be adversely impacted as bare ground is exposed and erosion increases sediment input into water sources or shade is decreased resulting in increased water temperatures. Elimination of motorized vehicle use and associated impacts would help areas attain and maintain PFC and water quality over the long-term. Limiting access could also reduce dispersed recreation use and the impacts associated with that use.

Water Quality/Riparian Wetland Restoration Activities

- Re-establishing native trees and shrubs would benefit riparian areas and water quality over the long-term. Replacing exotic species with native species would not necessarily alter or improve the physical functioning condition of riparian areas, but it would improve the biological habitat quality over the long-term. Established woody species would protect stream banks from erosion, provide shade, and improve water quality (Hoag 1998, p 5). Over the long-term, native species would provide woody debris to the Snake River system as they mature and die.
- Weed species commonly found in the NCA (perennial pepperweed, poison hemlock, whitetop, Russian knapweed, Canada thistle, Syrian beancaper, etc.) generally lack the root masses capable of withstanding high-flow events, resulting in a relatively unstable streambanks or shoreline. As weed species are replaced with deeper-rooted desirable species, functioning condition would be improved over the short- and long-term. Riparian systems benefit indirectly from a diverse composition of hydric species over the long-term because they exhibit increased resiliency to disturbance events such as flooding, grazing, or fire. Diverse species composition is necessary for maintenance and recovery in riparian systems following such disturbance events. Areas treated for noxious weeds would be more resistant to the establishment and spread of noxious weeds as the vigor and productivity of desirable species increases. Eliminating a source of noxious weeds in the TWMA would benefit the TWMA and the Snake River over the short- and long-term. Soil microorganisms would be expected to thrive over the short through long-terms as nutrients are freed into the soil horizon and increased solar energy invigorates plant life.
- Restoration of the TWMA wetlands would have direct beneficial impacts to the functioning condition of the wetland and its associated water quality over the long-term. The introduction of prescribed fire on a cyclical basis could improve the vigor of decadent wetland plant communities over the long-term by eliminating dense mats of dead and dying perennial wetland vegetation. This would improve nutrient cycling and nutrient absorption by wetland obligate plant species and in turn, improve water quality within the wetland (Pappani and Inouye 2003, Tarter, A. 2005 Pers. Comm.). Burning portions of

the TWMA would give desirable species a competitive advantage over the short- and long-term by removing noxious weeds that are not adapted to fire. The short-term loss of structural and functional components could adversely impact water quality. The removal of vegetation would increase the potential for erosion and sedimentation of adjacent ponds and the Snake River. The relatively rapid return of vegetation would help stabilize the soil surface and decrease the potential for erosion and sedimentation over the short- and long-term.

Indirect Impacts

Livestock Grazing Management Activities

- Livestock can be vectors of noxious weeds in riparian areas. The presence of a disturbed soil surface and noxious weed seeds in riparian areas could lead to an increase in noxious weeds. Riparian area PFC could be adversely impacted where livestock create soil disturbance, transport noxious weed seeds into a riparian area, and those seeds germinate.
- Grazing livestock riparian areas could have adverse impacts to riparian area functioning condition and water quality by altering vegetative composition and the subsequent streambank destabilization.
- Adverse impacts to riparian areas could result from grazing practices in the adjacent uplands that do not leave enough residual vegetation for proper watershed function.
- Grazing practices in the uplands that continually reduce standing vegetation and litter can have adverse impacts to the stability of uplands by limiting the quantity of organic matter available for incorporation into the soil. Reductions in upland standing vegetation, litter, and soil organic matter content can increase the potential for non-point impacts to water quality by decreasing the ability of water to infiltrate the soil and encouraging more runoff (National Research Council 1994, p 102).
- Management systems and actions that use grazing to modify vegetation in a prescriptive manner would have beneficial direct and indirect impacts on riparian and water quality resources over the long-term. Limiting or eliminating livestock use of riparian vegetation would help promote healthy riparian vegetation that directly benefits riparian areas and water quality by stabilizing stream banks and filtering sediment from overland flow before it enters water bodies (Bellows 2003 p 3).
- Management actions that improve watershed conditions in adjacent uplands (i.e. implementing Idaho S&Gs, leaving minimum amounts of residual litter in annual grass pastures) could reduce sediment input into riparian and aquatic systems and would benefit water quality over the short- and long-term.

Riparian/Wetland Management Activities

- Improving 'functioning at risk areas' in the NCA would primarily involve replacing less desirable plant species or noxious weeds with desirable plant communities. Methods used to eradicate undesirable species could directly impact desirable species in the short-term. Removal of vegetative cover could make stream banks in flowing water (lotic) systems more susceptible to erosion over the short-term. This potential increase in sedimentation also represents an indirect adverse impact to water quality. As desirable species become established in treated areas, stream banks would be stabilized by roots and woody debris over the short- to long-term. Wetland and riparian areas would be more resilient to the establishment of noxious or invasive species over the long-term.
- Any improvement in PFC would be beneficial for the area(s) affected with the scale of those impacts dependent upon how many miles of stream/shoreline were actually improved rather than simply maintained. Maintenance of PFC would represent no change in current conditions resulting in no impact.

Water Quality/Riparian Wetland Restoration Activities

- Removal of unwanted trees and shrubs in riparian areas may have indirect adverse impacts to water quality until planted species become established. Removal of woody species could adversely affect water temperature over the short-term, as shaded areas would be reduced. Streambanks would be more susceptible to erosion as root systems from removed plants decay and sources of woody debris were reduced or eliminated.
- Cyclical burning of the area would reduce the effectiveness of the golden loosestrife beetle release—a biological weed control agent currently present in the TWMA that has had excellent success controlling purple loosestrife. Selectively burning localized patches would reduce impacts to wintering golden loosestrife-beetle larvae and supplemental releases would occur as necessary.
- Water quality could be adversely affected over the short-term during the construction of a pond at TWMA. Sediment input to the Snake River could increase during construction activities and continue over the short-term due to a lack of stabilizing vegetation. Increased instability of the soil surface in the construction area would occur until vegetation became established and the pond began to function. The disturbed area would be susceptible to noxious weeds until desirable plants are established. Water quality would improve over the long-term as emergent vegetation becomes established. An additional pond would increase the ability of the TWMA to process chemical (e.g., nitrogen and phosphorus) and biological (e.g., E. coil bacteria) pollutants and would provide an additional area for sediment retention (Pappani and Inouye 2003).
- The aggressiveness and tenacity of noxious weed species in riparian areas can preclude the establishment of more desirable plant species. Reducing or eliminating weeds in riparian areas would reduce or eliminate competition from undesirable plants and would increase the ability of the riparian area to support a diverse composition of desirable wetland vegetation.

Discussion of Impacts by Alternative

Water Quality, Riparian and Wetlands: Alternative A

Livestock Grazing Management Activities: Approximately 6.744 miles of river and reservoir frontage in 10 allotments (USDI 2005a), 20 ft. (0.004 miles) in the Bruneau Arm Allotment (USDI 2004a), and up to 4.3 miles in the Con Shea are potentially accessible to livestock grazing in the NCA. Implementation of Idaho S&Gs (Appendix 3) would slightly improve (for segments rated functioning at risk) or maintain (for segments rated proper functioning) the functioning condition of these areas over the short-term and could moderately improve riparian condition over the long-term. The benefits to water quality and riparian habitat would occur at the local level. The remaining river and reservoir frontage would not be directly impacted by livestock. Reduction of sediment input from uplands, either from wind or runoff sources, would have a beneficial impact on water quality over the long-term. Livestock would not have access to approximately 5 miles of riparian habitat associated with the Priest Ranch and Battle Creek Pasture 8B. This would moderately improve or maintain functioning condition and water quality at the local level over the long-term.

Riparian/Wetlands – Management Activities: Improving condition class from functioning at risk to PFC would moderately benefit lentic wetlands at the local level (approximately 5%) over the long-term. The remaining lentic wetlands would be maintained in PFC, which would slightly benefit wetlands at the landscape level over the long-term. Improving 45 acres of lotic wetlands from functioning at risk to PFC and maintaining 45 acres in PFC would moderately benefit lotic wetlands over the short- and long-term at the landscape level. Improvement of wetland conditions in the TWMA would improve water quality at the local level over the long-term; however, improving or maintaining riparian functioning

condition throughout the NCA would have a minimal impact on total pollutant inputs into the Snake River, and, therefore, water quality.

Riparian Habitat Restoration Activities: Restoring riparian habitat (1 mile or approximately 1% of the riparian habitat in the NCA) would slightly benefit water quality and riparian resources at the local level, but would have no appreciable impact at the landscape level over the long-term. Using fire to restore 80 acres of wetlands at the TWMA would have slight short-term adverse impacts to water quality and wetland habitat; however, these impacts would occur at the local level and would be apparent primarily between the treatment and the next growing season. Water quality and habitat conditions, including resistance to noxious weed infestations, would slightly improve at the landscape level over the long-term. Because of the potential reduced effectiveness of the golden loosestrife beetle as a biological control agent, purple loosestrife could be present as a minor component over the long-term. The reduction or eradication of weeds in riparian and wetland areas would have minimal impacts to water quality over the short- and long-term, but would benefit functioning condition at the landscape level over the long-term.

Surface Disturbing Activities: The 43,000-acre avoidance area includes approximately 18 miles of the Snake River along the south side that would be protected from major rights-of-way actions. This would have slight localized benefits for that area over the long-term. There would be no impact to water quality from active mineral material sites. The potential for noxious weeds to spread from mineral material sites to riparian areas is limited and would depend on dispersal mechanisms (i.e., recreation users, livestock) traveling between mineral material sites and riparian areas. Dispersed recreation would have slight short- and long-term impacts to water quality and riparian habitat at the local level. Expanding the Cove Recreation site would increase recreational use in the immediate vicinity and could negligibly increase long-term adverse impacts to riparian vegetation and to a lesser degree impacts to water quality over the long-term. Expanding facilities at Dedication Point would have no impact on water quality or riparian habitat. The limited development would do little to offset the impacts of dispersed recreation on riparian areas, which would continue to be desirable destinations for recreationists regardless of the level of development.

Transportation Management Activities: Maintaining vehicle closures would slightly benefit water quality and riparian and wetland functioning condition over the short- and long-term at the local level. Benefits would result along 2.4 miles of riparian areas that have roads passing through them (1.8mi at Halverson Bar area, and 0.6mi at the TWMA). Designating routes in the vicinity of riparian areas in the remainder of the NCA would slightly benefit water and functioning condition primarily at the local level over the long-term. Approximately 14 miles of riparian areas are accessible by or adjacent to (within 165 feet) roads.

Conclusion – Water Quality, Riparian and Wetlands: Alternative A

Actions that limit surface disturbance or reduce the establishment or spread of noxious weeds (closures and restrictions to livestock grazing or limitations on off road vehicle use, etc.) would have slight to moderate long-term beneficial impacts at the local level. Existing recreation facilities would not meet the increasing demand for river-based recreation, which would result in slight to moderate long-term adverse impacts to riparian areas. Restoring one mile of riparian habitat and 80 acres of wetlands in the TWMA would result in slight long-term benefits at the local level; however, in the long-term, riparian areas would be moderately adversely impacted by weed infestations at the landscape level. In addition, maintaining or improving PFC along all 101 stream and shoreline miles would have a slight long-term benefit impact at the landscape level. The objective would be met; however, the DFC would not be met as a result of limited restoration of riparian habitat.

Water Quality, Riparian and Wetlands: Alternative B

Livestock Grazing Management Activities: The impacts of livestock grazing on water quality and riparian habitat would be as described in Alternative A. Impacts resulting from closures to livestock grazing would be as described in Alternative A; however, an additional 0.25 miles of riparian habitat in the Melba Seeding Allotment (river pasture) could slightly benefit from the elimination or seasonal restriction of grazing over the long-term.

Riparian/Wetlands – Management Activities: The impacts of improving or maintaining functioning condition of lotic and lentic wetlands would be as described in Alternative A. Restoring 20 miles of riparian habitat (approximately 20% of the riparian habitat in the NCA) would have minimal short-term adverse and long-term beneficial impacts to water quality at the local level. Riparian habitat conditions play a relatively small role in regulating water quality in the NCA. Although occurring over the same area as water quality improvements, restoration would have more substantial beneficial impacts to riparian habitat conditions, especially small streams, over the long-term. The impacts to water quality and wetland functioning condition of restoring wetlands in the TWMA would be as described in alternative A. The impacts on water quality associated with the construction and operation of a 20-acre pond in the TWMA would be slight at the local level over the short- and long-term. Because the pond would be managed for shorebird habitat, there would be a small (probably <5 acres) increase in wetland vegetation and limited improvement in water quality over the long-term. The impacts of reducing or eradicating weeds in riparian and wetland areas would be as described in alternative A.

Special Designations – Wild & Scenic Rivers: A recommendation as suitable for a recreational classification under the W&SR Act would provide for 21.5 miles of the Snake River at least until Congress acts on the recommendation. Water quality and riparian conditions would be maintained over the long-term, as least as they could be affected by an impoundment. The potential impacts to water quality and riparian conditions in the remaining 27.5 miles would be as described in Alternative A.

Surface Disturbing Activities: The 105,000-acre avoidance area includes 31 miles of the Snake River that would be protected from major rights-of-way actions. This would have slight long-term landscape-wide benefits for riparian and wetland areas. Impacts from mineral activities would be the same as Alternative A. The impacts of, facilities development, and commercial use permit restrictions on water quality and riparian areas would be as described in alternative A. Development of the Initial Point site would have no impact on riparian areas. Development of the Three Pole site could slightly increase recreational use and associated impacts to water quality and riparian habitat in the vicinity of the Swan Falls dam. The impacts would occur over the long-term and would be at the local level.

Transportation Management Activities: Maintaining vehicle closures and designating routes would benefit water quality and riparian and wetland functioning condition as described in Alternative A; however, additional closures would benefit approximately 6 miles on both sides of the Snake River in the Halverson Bar area and up to 3.4 miles of riparian habitat on the south side of the Bruneau Arm. These benefits would occur over the long-term at the local level.

Conclusion – Water Quality, Riparian and Wetlands – Alternative B

Construction of an additional pond at TWMA would moderately improve water quality at the local level over the long-term. Actions that limit surface disturbance or reduce the establishment or spread of noxious weeds (closures and restrictions to livestock grazing or limitations on off road vehicle use, etc.) would have slight to moderate long-term beneficial im-

pacts at the landscape level. Additional recreational facilities would not meet the increasing demand for river-based recreation, which would result in slight to moderate long-term adverse impacts to riparian areas. Weed treatments and restoring 20 miles of riparian habitat and 80 acres of wetlands in the TWMA would result in slight to moderate long-term benefits at the local level. In addition, maintaining or improving PFC along all 101 stream and shoreline miles would have slight long-term benefits at the landscape level. Overall this alternative would maintain and slightly improve riparian areas. The objective and DFC would be met.

Water Quality, Riparian and Wetlands: Alternative C

Lands and Realty Activities: The benefits of consolidating ownership would be as described in Alternative A.

Livestock Grazing Management Activities: Elimination of grazing in riparian areas would have moderate short- and long-term benefits to water quality and riparian functioning condition in approximately 11 miles of river and reservoir frontage (those that are accessible to grazing in Alternative A). Improvements in watershed conditions throughout the NCA would reduce erosion and moderately benefit water quality at the landscape level over the long-term.

Riparian/Wetlands Management Activities: The impacts of improving or maintaining functioning condition of lotic and lentic wetlands would be as described in Alternative A. Restoring 40 miles of riparian habitat (approximately 40% of the riparian habitat in the NCA) would have the same impacts to water quality as described in Alternative B. The impacts to water quality and wetland functioning condition of restoring wetlands in the TWMA would be as described in Alternative A. The impacts of constructing a 20-acre pond in the TWMA would be as described in Alternative B. The impacts of reducing or eradicating weeds in riparian and wetland areas would be as described in Alternative A.

Surface Disturbing Activities: The 163,600-acre avoidance area includes 101 miles of the Snake River that would be protected from major rights-of-way actions. This would have slight long-term landscape-wide benefits for riparian and wetland areas. Impacts from mineral activities would be the same as Alternative A. Impacts of campfire restrictions, facilities development, and commercial use permit restrictions on water quality and riparian areas would be as described in alternatives A and B. Development of the Celebration Park Annex would have slight short- and long-term impacts to riparian vegetation and water quality in the immediate vicinity of the site with the potential for slightly increased dispersed use associated impacts in the area. Development of the Guffey Butte site could slightly increase impacts to riparian habitat and water quality from dispersed use in the vicinity of the site.

Transportation Management Activities: Maintaining vehicle closures and designating routes would be as described in Alternatives A and B; however, this alternative would benefit an additional 12.8 miles of riparian areas on the north side of the Snake River between Grand View and Sinker Butte. These benefits would occur at the landscape level in the short- and long-term.

Special Designations - Wild & Scenic Rivers: A recommendation as suitable for a recreational classification under the W&SR Act would provide protection for 49 miles of the Snake River, at least until Congress acts on the recommendation. Water quality and riparian conditions would be maintained over the long-term. Overall riparian use would be protected from uses that would alter the values for which there would be recommended through greater management emphasis.

Conclusion – Water Quality, Riparian and Wetlands: Alternative C

Construction of an additional pond at TWMA would moderately improve water quality at the local level over the long-term. Actions that limit surface disturbance or reduce the establishment or spread of noxious weeds (elimina-

tion of livestock grazing or limitations on off road vehicle use, etc.) would be moderately to highly beneficial over the long-term at the landscape level. Of the four recreation facilities, only Celebration Park and Guffey Butte would provide additional water-based opportunities, but they would not meet the increasing demand for river-based recreation. The result of limited water-based recreation facilities would result in slight long-term adverse impacts to riparian areas. Weed treatments and restoring 40 miles of riparian habitat and 80 acres of wetlands in the TWMA would result in moderate to high long-term benefits at the landscape level. In addition, maintaining or improving PFC along all 101 stream and shoreline miles would have a slight long-term benefit at the landscape level. Overall this alternative would maintain and improve riparian areas. The objective and DFC would be met.

Water Quality, Riparian and Wetlands: Alternative D

Lands and Realty Activities: The impacts to water quality and riparian habitat from Avoidance areas would be the same as Alternative A.

Livestock Grazing Management Activities: The impacts of livestock grazing and grazing closures would be as described in Alternative A.

Riparian/Wetlands Management Activities: The impacts of improving or maintaining functioning condition of lotic and lentic wetlands would be as described in Alternative A. The impacts of restoration would be as described in Alternative C. The impacts to water quality and wetland functioning condition of restoring wetlands in the TWMA would be as described in Alternative A. The impacts of constructing a 20-acre pond in the TWMA would be as described in Alternative B. The impacts of reducing or eradicating weeds would be as described in Alternative A.

Surface Disturbing Activities: The impacts of surface disturbances related to material extraction from mineral material sites and recreational uses would be as described in Alternative A. The impacts of recreation facilities development and commercial use permit restrictions would be as described in Alternative C. Development and use of the Black Butte Boat Access would have slight short- and long-term adverse impacts in the immediate vicinity of the site with the potential for slight to moderate adverse impacts from increased dispersed use in the surrounding area.

Transportation Management Activities: Maintaining vehicle closures and designating routes would be as described in Alternative B, except that approximately 1 mile of the Snake River near Guffey Butte area would remain open. These benefits would occur at the landscape level over the long-term.

Special Designations - Wild & Scenic Rivers: The impact by protecting, but not recommending as eligible, 49 miles of the Snake River would be as described in Alternative A.

Conclusion – Water Quality, Riparian and Wetlands – Alternative D

Construction of an additional pond at TWMA would moderately improve water quality at the local level over the long-term. Actions that limit surface disturbance or reduce the establishment or spread of noxious weeds would have moderate long-term beneficial impacts at the landscape level. Recreation facility development would not meet the increasing demand for river-based recreation and would result in slight to moderate short- and long-term adverse localized impacts. Weed treatments and restoring 40 miles of riparian habitat and 80 acres of wetlands in the TWMA would result in moderate to high long-term benefits at the landscape level. In addition, maintaining or improving PFC along all 101 stream and shoreline miles would have a slight long-term benefit at the landscape level. Overall this alternative would maintain and improve riparian areas. The objective and DFC would be met.