

# Hawk Creek Allotment Management Plan

## **ENVIRONMENTAL ASSESSMENT DOI-BLM-OR-135-2009-0005**

Bureau of Land Management  
Spokane District Office  
Border Resource Area  
1103 N. Fancher Road  
Spokane Valley, Washington 99212

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ENVIRONMENTAL ASSESSMENT  
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### INTRODUCTION:

#### Background

Hawk Creek Allotment #00564 is located approximately 8 miles west of Davenport, Washington (Map B). The 4,050 ± acre allotment is within the Upper Crab Creek Management Area, an area designated in the Bureau of Land Management's (BLM's) Spokane Resource Management Plan Amendment (1992). The Upper Crab Creek management area (808,559 acres) contains public lands of multiple ownerships including 26,000 acres managed by the Bureau of Land Management (BLM), 21,000 acres managed by Washington Department of Fish and Wildlife (WDFW), and 5,760 acres by Washington Department of Natural Resources (DNR).

#### Purpose and Need

The purpose for the action is to respond to the application to authorize grazing on the Hawk Creek allotment.

The project is needed to comply with the Federal Land Policy and Management Act of 1976 (FLPMA) (43 U.S.C. § 1701 et seq.), to address the requirements of 43 CFR 4180.1, Fundamentals of Rangeland Health, and to incorporate management direction from the Spokane Resource Management Plan.

### Compliance with Land Use Plans, Laws, Regulations, and Policy

This AMP/EA has been designed to conform to the following documents, which direct and provide the framework for management of BLM lands within the Spokane District:

- Taylor Grazing Act (43 U.S.C. 315, 1934)
- The National Environmental Policy Act (NEPA) (43 U.S.C. 4321-4347, 1970)
- Endangered Species Act (ESA; 7 U.S.C. § 136, 16 U.S.C. § 1531 et seq. 1973) Sections 2 (c) and 7 (a) 1
- Federal Land Policy and Management Act (FLPMA) (43 U.S.C. 1701, 1976)
- Public Rangelands Improvement Act (43 U.S.C. 1901, 1978)
- Spokane Resource Management Plan/Record of Decision/Rangeland Program Summary (May 1987)
- Spokane Resource Monitoring Plan (April 1988)
- Spokane RMP Plan Amendment ROD (December 1992)
- Standards for Rangeland Health and Guidelines for Livestock Management for Public Lands Administered by the BLM in the States of Oregon and Washington, (August 1997)
- The Record of Decision (ROD) for the Vegetation Treatments Using Herbicides Programmatic Environmental Impact Statement (PEIS) on BLM Lands in Seventeen Western States (September 2007)
- State, local, and Tribal laws and regulations
- Code of Federal Regulations (CFR); Title 43; Part 4100 – Grazing Administration Exclusive of Alaska Section 106 of the National Historic Preservation Act (NHPA) of 1966 (36 CFR § 800.1(a)), as amended (2006)

### ISSUES

The BLM has identified issues through an interdisciplinary process and public scoping that were used to develop alternatives and to focus the environmental analysis. Letters notifying the public, permittee, other agencies and tribal representatives regarding the process were sent out in July, 2011. BLM accepted scoping comments through August 15, 2011. The following issues were identified:

- Address the potential for impacts to riparian resources, habitat, and water quality
- Address the potential for impacts to habitat and known populations of Spalding's catchfly, a Federally threatened species
- Address the potential for impacts to upland habitats including sage and sharp-tailed grouse breeding, brood rearing and wintering habitat
- Address the spread and/or establishment of noxious weeds and invasive plant species
- Protect or maintain cultural resource values

- Address the potential for impacts of climate change
- Address the potential for impacts related to fence density

Issues that were identified but not analyzed in this document as they are outside the scope of this AMP are as follows:

- OHV
- Road Density

## ALTERNATIVES INCLUDING THE PROPOSED ACTION

Three management alternatives are assessed in this document, No Action (current interim livestock management), the Proposed Action (range improvements and grazing plan), and Removal of Livestock Grazing (no grazing).

### Guidance Common to Alternatives A & B

Cultural resource inventories were conducted and consultation on the Area of Potential Effect (APE) with the Washington State Historic Preservation Office (SHPO) and Colville Confederated Tribes and the Spokane Tribe of Indians. Design features and proposed project design features would minimize or eliminate any impacts to cultural resources.

Management actions would be consistent with conservation needs of special status species and that they would not contribute to the need to list under the provisions of the Endangered Species Act (BLM Manual Section 6840.02). Activities undertaken as part of this grazing permit would comply with procedures set forth in the Programmatic Biological Assessment completed in August 2002 between BLM and the Fish and Wildlife Service concerning Spalding's catchfly (FWS 1-9-02-I-0532), and any subsequent updates, revisions, or replacements of these documents.

Noxious weeds and invasive plant inventory, treatment and monitoring would continue on the Hawk Creek allotment. Herbicide applications would be conducted in accordance with the Standard Operating Procedures (SOPs) and guidance identified in the Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States Programmatic Environmental Impact Statement (PEIS) (BLM 2007), and any subsequent updates, revisions, or replacements. Site-specific mitigation measures would be developed to prevent incidental damage from herbicide applications to desired biological, cultural, or aquatic resource values.

### Alternative A: No Action

The No Action Alternative would renew the existing livestock grazing permit for a period of ten years on the Hawk Creek Allotment with terms and conditions listed under the expiring lease. A livestock grazing permit would be issued that would continue livestock grazing during the permitted season of use May 1 through October 13. The allotment would continue to be managed with the Permitted Active Use set at 500 Animal Unit Months (AUM's). Under the No Action Alternative, grazing authorizations would be issued in accordance with the May 19, 1987 Spokane Resource Management Plan (RMP), Record of Decision as amended in 1992 and BLM

regulations, including the Standards and Guidelines for Rangeland Health for Oregon and Washington (1997). In accordance with the RMP, this alternative would allow average use of key upland bunchgrasses to achieve up to 50% utilization.

***Terms and Conditions:***

The grazing authorizations would be issued according to guidance in the Spokane RMP and BLM regulations, including the Standards and Guidelines for Rangeland Health for Oregon and Washington (August 12, 1997). Interim grazing authorizations would be approved subject to future development of an allotment management plan which would entail analyzing current conditions and tailoring grazing regimes to maintain or enhance conditions on the allotment.

**Alternative B: Proposed Action:**

The Proposed Action would authorize preference grazing of 504 Active AUMs with cattle the primary class of livestock for a period of 10 years. The preference grazing period would occur May 1<sup>st</sup> thru October 11<sup>th</sup> annually. Additional temporary non-renewable (TNR) AUMs (up to 250 AUMs) with no additional preference assigned, may be granted on annual basis if grazing monitoring indicates additional forage is available. TNR authorized use would be allowed if monitoring indicates that management would continue to meet stubble height and other use criteria. The following information would be included as part of the authorization:

***Terms and Conditions:***

Grazing authorizations would be issued according to guidance in the Spokane RMP and BLM regulations, including the Standards and Guidelines for Rangeland Health for Oregon and Washington (August 12, 1997). Specific terms and conditions that would be included and are common to all grazing leases in the District are identified in Appendix A.

**Design Features for Alternative B**

The following guidelines are established for upland and riparian habitat types:

**Upland**

- Spring grazing would avoid pastures one out of three years during the critical growth period of key native perennial upland bunchgrasses.
- Utilization of key upland bunchgrasses would not exceed 30-40% average utilization of the current year's growth by weight.
- Median residual herbaceous vegetation would be maintained at 6-12 inches tall in key areas identified as capable of supporting sage and sharp-tailed grouse during nesting and brood rearing periods.
- When moving livestock between pastures, the lessee would avoid active herding of cattle in close proximity to occupied sage-grouse and sharp-tailed grouse nesting habitat from April 1 through June 30.

## Riparian

- 4-inch median stubble height (at end of growing season) of lentic (wetland) systems.
- 6-inch median stubble height (at the end of the growing season) of lotic (riparian) systems.
- Browsing of riparian shrubs by livestock would be limited to <50% of the current year's growth.
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The following guidelines would be applied to rangeland improvement project.

- Fences would be constructed using BLM approved standards in the BLM Fencing Handbook 1741-1.
- Fences constructed in identified sage-grouse habitat would include plastic safety clips where necessary to improve the visibility of wire and reduce the potential for wildlife collisions with fence wires.
- Troughs installed would be equipped with escape ramps for birds and small mammals. In addition water overflow may be used to establish desirable vegetation within an enclosure.
- Soil displaced for pipeline installation would be pulled in and returned to original slope and grade then seeded.
- If previously undiscovered cultural resources are found during project implementation, historic property documentation would be completed and work would cease in the vicinity until a BLM archaeologist can determine the significance of the resource. Cultural sites would be avoided if possible. If avoidance is not possible, appropriate mitigation plans would be determined in consultation with the Department of Archaeology and Historic Preservation, affected Tribes, and possibly the Advisory Council on Historic Preservation.
- Site-specific botanical clearance would be completed prior to proposed range improvement project implementation.

## Monitoring and Evaluation

Monitoring and evaluations would be done in accordance with the Spokane District Monitoring Resource Plan (1988) and any subsequent revisions or BLM guidance. Specifically, utilization data would be collected at the end of the growing season for identified key bunchgrass communities on a 1-2 year cycle. Long term trend data would be established and measured on a 5 year cycle as identified by the BLM interdisciplinary team. In addition the following monitoring techniques may be implemented within the allotment.

- Spalding's catchfly monitoring would be consistent with the 2009 Amendment to the Programmatic Biological Assessment for Spalding's catchfly (FWS 1-9-02-I-0532).
- The Sage-grouse Habitat Assessment Framework (Striver et al. 2012) methodology would be the monitoring technique used to determine key **areas capable of supporting suitable sage-grouse habitat.**

- MIM (Multiple Indicator Monitoring Technical Reference 1737-23 revised) methodology would be utilized to monitor long term trend of lotic riparian systems.
- Implementation monitoring may be conducted during project construction to ensure cultural sites are not damaged.
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#### Proposed Range Improvements.

Fence Construction/Removal: Within the allotment, approximately 3.5 miles of permanent barbed-wire fences and 1.75 miles of temporary electric fence would be constructed (Map B), along with removal of approximately 5.25 miles of existing barbed-wire fence.

Other range improvements would include water developments, maintenance of existing waterholes, corral maintenance and cattle guard installation. The proposed rangeland improvements (Map B) are listed below:

#### Pasture Specific Projects

##### Pasture 2

- Water Development: Construct a water development utilizing overflow from the existing spring development originating on Department of Natural Resources land. The trough site would be leveled, geotextile fabric placed on the ground and covered with crushed rock. Troughs would be placed on the rock and plumbed. An overflow system would be developed to return the water to a natural drainage.

##### Pasture 3

- Fence: Construct approximately 1.25 miles of three-strand barbed-wire fence. This fence would separate Pasture 3 from Pasture 2. This fence would facilitate livestock control and allow for periodic rest in areas serviced by existing water sources.
- Remove .75 miles of fence between section 9 and 10.
- Solar Water Development Maintenance: The existing solar pump station in pasture 3 is in need of maintenance. The trough site would be leveled, geotextile fabric placed on the ground and covered with crushed rock. Troughs would be placed on the rock and plumbed. An overflow system would be developed to return the water to a natural drainage.

##### Pasture 4

- Fence: Construct approximately 1.25 miles of temporary electric fence. This fence would be utilized during the rangeland seeding implementation in order to control livestock and allow the seeding to become established. This fence would be removed upon successful establishment of the seeding.
- Solar Water Development: Construct a solar powered water pumping station utilizing the existing well in pasture 4 which already contains a pump and wiring. The trough site would be leveled, geotextile fabric placed on the ground and covered with crushed rock.

Troughs would be placed on the rock and plumbed. An overflow system would be developed to return the water to a natural drainage

- Drift Fence: Construct approximately .25 mile of drift fence. This fence would facilitate livestock control and prevent livestock access to a portion of Hawk Creek.

#### Pasture 6

- Water Development: The current watering site in Pasture 6 is gravity fed from an existing spring development. The trough site would be leveled, geotextile fabric placed on the ground and covered with crushed rock. Troughs would be placed on the rock and plumbed. An overflow system would be developed to return the water to a natural drainage
- Fence: Construct approximately 1 mile of three-strand barbed-wire fence. This fence would separate Pasture 6 from Pasture 7.
- Cattle guard: Install permanent cattle guard at the entrance of Pasture 6. This road is used frequently and is the only access for the private residence adjacent to BLM.

#### Pasture 8

- Fence: Construct approximately 1 mile of four strand fence. This fence would be a new north-south fence line dividing pastures 8 and 9.
- Remove approximately 2 miles of existing fence
- Cattle guards: In consultation with the Lincoln County Roads Department, install cattle guards on Sam Knack road at the intersection of Sam Knack and Sterret and Sam Knack road and Highway 2.

#### Pasture 9

- Remove approximately 2 miles of existing fence.

#### Alternative C – No Livestock Grazing

Livestock grazing would no longer occur in Hawk Creek Allotment under this alternative. No range improvement projects would be proposed or implemented.

Maintenance, improvement, or removal of range improvements and water sources within the allotment would occur as needed only to achieve resource objectives other than livestock management.

#### Alternatives Considered but Eliminated from Further Analysis Maximizing Livestock Production

This alternative would emphasize maximizing forage availability for livestock production. This alternative would emphasize livestock production over all other resource values. This alternative would not meet the need for the project and is inconsistent with the FLPMA (43 U.S.C. 1701, 1976).

## AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section provides a description of the general environmental setting and resources within that setting that could be affected by the proposed action and alternative(s). In addition, the section presents an analysis of the direct, indirect, and cumulative environmental impacts likely to result from the implementation of the various alternatives.

### Current Condition

Since BLM acquired the Hawk Creek Allotment in 2005, a deferred rotational livestock grazing management system has been implemented. Management includes controlling the timing of grazing and providing periodic rest to key upland plant species during the critical growing season. Upland livestock forage use is restricted to moderate utilization with an upper threshold of 50% consumption of current year's growth of *Pseudoroegneria spicata* (bluebunch wheatgrass). In July 2010, an evaluation of the uplands using the Interpreting Indicators of Rangeland Health (TR 1734-6) technique was performed on several sites and soil types across the allotment. A total of 10 assessments representing the various soil types and vegetation conditions were completed. Each site was rated utilizing the 17 indicators and the ecological site descriptions (ESD's) developed by the NRCS as baseline reference condition. Of the sites evaluated on the allotment, the majority of the sites have a "none to slight" departure from the expected (reference state) for those sites. This qualitative assessment indicates the Hawk Creek Allotment is meeting Soil/Site Stability, Hydrologic Function, and Biotic Integrity criteria. In addition eight sites have been established to monitor long term trend and changes in plant composition within the Hawk Creek Allotment. However, at this time data is insufficient to determine trend for these plant communities.

**TABLE 1. RESOURCES CONSIDERED IN THE IMPACT ANALYSIS**

Access		X		The proposed action would not result in changes in access to the area.
Air Quality		X		The implementation of the proposed action or no action alternative would not result in the production of vehicle or equipment emission or particulate matter above incidental levels.
Areas of Critical Environmental Concern (ACEC's)	X			The proposed project area is not located within or near an ACEC.
<b>Cultural Resources</b>			X	A cultural resource inventory was conducted in the Fall of 2012/Spring of 2013 known cultural resources would not be adversely affected by the undertaking.
<b>Economic and Social Values</b>			X	The proposed action or no action alternative is consistent with the prevalent economic and social values characteristic of this area. Impacts are disclosed under <u>Environmental Consequences</u> .
Environmental Justice	X			There are no minority or low income populations residing near the proposed project area.

**Table 1. Resources Considered in the Impact Analysis.**

Existing and Potential Land Uses		X		The proposed action or no action alternative would not affect the identified area's current and likely future use.
<b>Fisheries</b>			X	Impacts are disclosed under <u>Environmental Consequences</u> .
Forest Resources		X		Forest veg. consists of sparse Ponderosa pine and is not productive timber land.
<b>Noxious Weeds and Invasive Plant Species</b>			X	Impacts are disclosed under <u>Environmental Consequences</u> .
Mineral Resources		X		Mineral resources would not be affected by the proposed action or alternatives.
<b>Migratory Birds</b>			X	Impacts are disclosed under <u>Environmental Consequences</u> .
Paleontological Resources	X			There are no paleontological resources located in the area.
Prime and Unique Farmlands	X			There are no prime or unique farmlands located within or near the proposed project area.
<b>Soil Resources</b>			X	Impacts are disclosed under <u>Environmental Consequences</u> .
<b>Threatened, Endangered, and Sensitive Plants</b>			X	Impacts are disclosed under <u>Environmental Consequences</u> .
<b>Threatened, Endangered, and Sensitive Animals</b>			X	Impacts are disclosed under <u>Environmental Consequences</u> .
Threatened, Endangered, and Sensitive Fish	X			There are no threatened, endangered, and sensitive fish species within the project area.
<b>Range Resources</b>			X	Impacts are disclosed under <u>Environmental Consequences</u> .
Recreational Use		X		Recreation resources would not be impacted as a result of implementing the proposed action or alternatives.
<b>Vegetation</b>			X	Impacts are disclosed under <u>Environmental Consequences</u> .
Visual Resources		X		The proposed action or alternatives would not change the existing character of the landscape.
Hazardous Materials	X			There are no solid or hazardous wastes in the project area and none would be created during the implementation of the proposed action or no action alternative.
Water Quality (Surface and Ground)		X		There are no 303d streams listed in the Hawk Creek allotment.
<b>Wetland and Riparian Zones</b>			X	Impacts are disclosed under <u>Environmental Consequences</u> .
Wild and Scenic Rivers	X			There are no Wild and Scenic Rivers near the project area.
Wilderness	X			There are no wilderness areas or WSAs within or near the proposed project area.
<b>Wildlife Resources</b>			X	Impacts are disclosed under <u>Environmental Consequences</u> .

## Grazing Management/Rangelands

### *Affected Environment:*

The Current grazing authorization allows livestock grazing on Hawk Creek Allotment for 500 AUMs of permitted active use from May 1 through October 13. Livestock are currently being managed under a deferred grazing system utilizing existing range infrastructure. The allotment is prioritized as an “I” (Improve) allotment for BLM management purposes. Allotments are categorized according to the characteristics of natural resources within the allotment. The “I” category allotments are of highest priority for monitoring and investment.

Reliable water sources and dilapidated fences limit BLM grazing management opportunities across the allotment. Livestock use is concentrated primarily in areas less than 1 mile from reliable water sources. The range infrastructure was in this condition when BLM acquired the lands in 2005. The current permittee has worked diligently to maintain facilities and cooperated with BLM employees to move livestock throughout the allotment. With the current stocking rates and management, livestock use has been light with marked improvement of riparian condition. Upland vegetative communities and associated soils structure and function are meeting BLM Rangeland Health Standards.

### *Environmental Consequences:*

#### Alternative A: No Action

This alternative would maintain grazing during the current authorized season of use (May 1 through October 13) on the Hawk Creek Allotment. Use levels of up to 50% utilization of key upland bunch grasses would be allowed. No new fences or water developments would be constructed. Management would continue to maintain existing infrastructure at current levels. Some existing fences no longer required under the current management would remain in place. Conditions are expected to continue to improve across the allotment.

#### Alternative B: Proposed Action

Under this alternative upland and riparian vegetation would continue to improve. Livestock use levels would be limited to 40% utilization of key upland bunch grasses and other specified use criteria (Appendix A). This alternative allows for up to 250 temporary non-renewable AUM's. This additional grazing use would be authorized if available forage conditions and monitoring indicate that use criteria limitations are not met. Adaptive management would be used to adjust season, timing of use and stocking rates based on rangeland monitoring. Once all improvements are implemented, management would have more opportunity to respond to short term resource needs through the increased ability to control and move livestock on the allotment.

#### Alternative C: Removal of Livestock

Under this Alternative, the current livestock grazing permit would no longer be authorized.

## *Cumulative Effects*

Cumulative effects are defined as the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such action.

The Upper Crab Creek Management Area is the geographic scope for the cumulative impacts analysis. All alternatives contribute 4050 acres of public lands to the cumulative effects analysis.

The cumulative impacts of alternative A and B are similar as stocking rates and use levels are not significantly different. Alternative B allows more flexibility for the management of livestock throughout the allotment. Alternative C, excluding livestock grazing on the allotment may result in increased grazing on adjoining private lands.

## Soils/Biological Soil Crusts

*Affected Environment:* The Hawk Creek Allotment consists primarily of the Anders Bakeoven Rock Outcrop soil complex and is dominated by several native and non-native plant species. Much of the Anders soils (deeper, well drained soils) are dominated by non-native annual species. The vegetation is primarily grasses with pockets of Ponderosa Pine and sagebrush. There are several springs and wet areas throughout the allotment that support a variety of native and non-native vegetation.

Soils structure and function are meeting rangeland health standards on the allotment. Soil indicators such as compaction layer, bare ground and soil surface resistance to erosion were rated as none to slight departure from expected. Several indicators including litter amount, bare ground and biological soil crusts are a component considered when determining the functional ability of the soil resistance and resilience to disturbance and erosion. Some small isolated (less than 1 acre) areas of compaction and bare ground do occur on the allotment. This is associated with historic and current livestock/wildlife use and is primarily near watering facilities and other existing infrastructure.

## *Environmental Consequences:*

### Alternative A: No Action

The No Action Alternative would not change current management. Impacts associated with livestock grazing would remain at current levels.

### Alternative B: Proposed Action

Under this alternative the removal of old fences and the construction of new fences would change the disturbance patterns associated with livestock. New trails would occur along new fence lines. Livestock trails are typically less than 18 inches in width and once established, used on a regular basis. For instance, 1 mile of newly established trail at 18 inches wide is less than .2 acres. The removal of old fences would likely change trailing behavior and allow existing trails to repair through natural processes such as frost heave and natural re-vegetation. Soil

impacts associated with existing watering facilities would remain the same. One new water improvement is proposed in pasture 2. Impacts to soils associated with this improvement would be less than 1 acre. The future condition of soils and soil structural components would be dependent on the condition of other resources, primarily upland and riparian vegetation. These communities are anticipated to continue to trend in an upward direction under this alternative. The deferred rotation grazing system, timing of grazing and livestock distribution throughout the allotment should reduce the potential for adverse impact to soil resources.

### Alternative C: Removal of Livestock Grazing

Removal of livestock grazing would remove any disturbance to soils associated with permitted livestock use on the allotment.

### *Cumulative Effects*

Cumulative effects are defined as the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions. The geographic scope of the cumulative impacts on soils is the entire Upper Crab Creek Management Area. The largest past and present land management action that has impacted soil resources in the Upper Crab Creek Management Area is livestock grazing and wildfire.

Alternative A would permit grazing on approximately 4,050 acres of public lands within the 808,559 acre Upper Crab Creek Management Area. All areas on the allotment have the potential to receive livestock use at varying levels. Livestock impacts to soils and soil biological crust would not change significantly due to the minor contribution (less than 1%) of the Upper Crab Creek Management Area. Impact to soils and soil biotic crusts associated with livestock use are isolated to areas that cattle concentrate. No improvements to range infrastructure would not allow management the flexibility to manipulate livestock use in certain areas. Riparian areas are expected to continue to trend upward under this alternative. Improved vegetative cover and soil stability would continue under this alternative.

Alternative B would permit grazing on approximately 4,050 acres of public lands within the 808,559 acre Upper Crab Creek Management Area. All areas on the allotment have the potential to receive livestock use at varying levels. Livestock impacts to soils and soil biological crust would not change and are a minor contribution (less than 1%) to the Upper Crab Creek Management Area. Impact to soils and soil biotic crusts associated with livestock use are isolated to areas that cattle concentrate. Improvements to range infrastructure would increase the ability of management to manipulate livestock use in certain areas. Riparian areas are expected to continue to trend upward under this alternative. Improved vegetative cover and soil stability would also continue under this alternative.

Alternative C would contribute approximately 4,050 acres of un-grazed land within the 808,559 acre Upper Crab Creek Management Area. No impacts to soil resources would occur on BLM managed Lands. Management changes to public lands would likely result in increased livestock use on the adjoining private land.

## Upland Vegetation

### *Affected Environment:*

The Hawk Creek Allotment contains Tall Sagebrush (*Artemisia tridentata*)/bluebunch wheatgrass (*Pseudoroegneria spicata*) is most common plant community found within the allotment. Secondary plant communities include low sagebrush (*Artemisia arbuscula*)/Sandberg's bluegrass (*Poa secunda*), Tall Sagebrush/cheatgrass (*Bromus tectorum*), and Ponderosa pine (*Pinus ponderosa*)/bluebunch wheatgrass. Other common perennial grass species found within these plant communities include Idaho fescue (*Festuca idahoensis*), basin wildrye (*Leymus cinereus*), and bottlebrush squirreltail (*Elymus elymoides*). Common shrub species found include green rabbitbrush (*Chrysothamnus viscidiflorus*), chokecherry (*Prunus virginiana*), and serviceberry (*Amelanchier alnifolia*). Numerous species of perennial and annual forbs exist across these plant communities. Common perennial forb species include Lupine (*Lupinus sp.*), buckwheat (*Eriogonum sp.*), Phlox sp., and *Lomatium sp.*

Additionally, the allotment supports a large population of the *Silene spaldingii* (Spalding's catchfly), a Federally Listed, Threatened perennial plant species. Surveys completed of the allotment have found approximately 900 plants on 122 sites. Inventories show that the majority of the *Silene spaldingii* were present on the allotment prior to BLM acquisition.

This plant is a regional endemic, growing only in Idaho, Montana, Oregon, Washington, and British Columbia. Of all known *S. spaldingii* sites, 57% occur in Washington State, within Lincoln, Whitman, Spokane, Asotin, and Adams counties. Of the Washington occurrences, 80 percent (consisting of 83 percent of the plants) are in the sagebrush-steppe areas of the Channeled Scablands (Lincoln, Spokane and Adams counties as well as the northwest corner of Whitman County.) A population of this size (400 to 500 plants) is considered by the U.S. Fish and Wildlife Service to be of high priority for conservation and protection. Of all known *S. spaldingii* sites (including sites in Idaho, Montana, Oregon and Washington), 21% consist of 100 to 499 plants. Only 14 percent of sites have 500 or more plants. [Background information from Janice L. Hill and Karen L. Gray. *Conservation Strategy for Spalding's Catchfly (Silene spaldingii* Wats.) Conservation Data Center, Idaho Department of Fish and Game, Boise, 2004.]

### *Environmental Consequences:*

#### Alternative A: No Action

The No Action Alternative would not change current management. Under this alternative, range improvements with the potential to ease grazing effects on Spalding's catchfly and other vegetative communities would not be made. Grazing would continue at current levels, with no attempt to increase protection for Spalding's catchfly populations. With less flexibility to move livestock among pastures, there could be increased likelihood of having to remove livestock from the allotment to avoid damage to Spalding's catchfly sites.

#### Alternative B: Proposed Action

The Proposed Action would promote recovery and health of plant communities across Hawk Creek Allotment. The proposed grazing prescription and range improvements would make it

easier to respond with flexibility to changing range conditions by moving livestock, deferring grazing, or resting a pasture, providing a wider variety of options for management actions to protect Spalding's catchfly. Livestock distribution would be improved with development of additional water sources. A larger foraging area would be available by providing additional reliable water later in the year. More uniform utilization patterns are expected with more water sources, reducing heavy to severe utilization levels on key forage species within service areas around reliable water. It is anticipated that plant communities would continue to improve under this alternative. This would allow for improved plant vigor and diversity, improved plant community composition, age class distribution and overall production within the allotment.

### Alternative C: Removal of Livestock Grazing

Under this alternative there would be no utilization of plant species by livestock and no forage competition for wildlife. Complete growing season rest and life cycle completion would be provided for plant species if livestock were removed. It is expected that suspending livestock grazing would increase ground cover, density and vigor of native plant species. Under this alternative, there would be no cattle grazing pressure on Spalding's catchfly populations. The plants would still be subjected to browsing and trampling by deer and elk and predation by rodents. It is possible that Spalding's catchfly populations could increase under this alternative. However, there could also be increased risk of wildfire. Effects of fire on Spalding's catchfly populations would vary, depending on the intensity of a burn and the season occurring, as well as the potential for weed invasion following a burn.

Plant communities dominated by established invasive plant species would continue to remain in the current plant community.

### *Cumulative Effects*

The geographical scope of cumulative effects for upland vegetation and Spalding's catchfly impacts would be considered at the scale of the Key Conservation Area for the Channeled Scablands (USFWS 2007) within the Upper Crab Creek Management Area. The largest past and present land management action that has impacted upland vegetation and Spalding's catchfly populations are livestock management and habitat conversion. Of the 808,559 acre Upper Crab Creek Management Area nearly all public lands upland vegetation and Spalding's catchfly habitats is or would have been under some level of historic grazing management or has been converted to agriculture. The 19,297 acre Swanson Lakes Wildlife Area within the management area is not currently being grazed by livestock.

Fire has and will continue to affect vegetation in the management unit. There have been 5 major fires (10,000-20,000 each) that have removed shrub habitat in the last decade, and this trend is expected to continue.

Similar to public lands, resource conditions on private lands have been largely affected by livestock management and other infrastructure and developmental projects. It is difficult to determine the extent these land management decisions have had on rangeland health since private land owners are not required to monitor or assess private lands. Therefore, it is assumed rangeland health on private land is relatively similar to public lands where most of the impacts are similar.

Alternative A, livestock management would continue at current levels. Alternative A would contribute approximately 4,050 acres cumulative effects from reduced distribution of livestock grazing and reduced rotation flexibility.

Alternative B, livestock management would reflect current scientific knowledge for improving uplands vegetation communities to meet rangeland health standards on public lands. Alternative B would contribute approximately 4,050 acres of habitat with increased distribution of livestock and increased rotation flexibility. Some effects from light to moderate grazing to plant communities on the allotment would occur within the Upper Crab Creek Management Area.

Alternative C, would contribute approximately 4,050 acres of un-grazed land within the Upper Crab Creek Management Area. Exclusion of livestock grazing on public lands may result in increased grazing on adjoining private lands within the management area. Future livestock demands on private lands may reduce the vigor and recruitment of desirable perennial bunchgrasses as well as increase the risk weed invasion on lands adjacent to the allotment. Livestock management on private lands managed in conjunction with BLM lands tend to favor BLM management and standards. Therefore, management changes to public lands would likely result in modifications to livestock management on the adjoining private land.

### **Noxious Weed and Invasive Plants**

#### *Affected Environment:*

Scattered small populations of noxious weeds and invasive plants are known to occur within the Hawk Creek allotment. No field surveys for weeds were conducted for this project. Instead Spokane District weed inventory data on the allotment was reviewed. Noxious weed species found on the allotment include: diffuse and spotted knapweed, Canada and bull thistle, houndstoungue, St. Johnswort, Dalmatian toadflax, Russian knapweed, rush skeletonweed and common mullein. Invasive annual grasses, such as cheatgrass, are known to occur ranging from low to moderate densities (up to 40% canopy cover) throughout the allotment but do not form monotypic stands. Reed canarygrass is the dominant herbaceous species in the riparian area of Hawk Creek with an estimate of 91% canopy cover recorded during a Greenline survey in 2009. Noxious weeds and invasive plants do not presently dominate the allotment but do occur where ground disturbance has opened niches within the established plant communities such as roadsides, along fence lines, and old agricultural fields. Although noxious weeds are present, these populations have only resulted in a “slight to moderate” departure of biotic integrity according to the ecological site evaluations for Hawk Creek in 2010. The Hawk Creek allotment is moderately susceptible (approximately 53% of the allotment area) to weed invasion and spread due to the influence of roads, trails, and streams which are capable of introducing new populations.

## *Environmental Consequences:*

### Alternative A: No Action

Under the no action alternative, current livestock management and utilization levels are not anticipated to increase the risk of new noxious weed and invasive plant species introductions or spread of existing populations. Range monitoring has included reporting noxious weed infestations and describing the need for treatment. Noxious weeds and invasive plants are not present to the extent that they are adversely altering ecological processes. The biotic integrity rating of “slight to moderate” is in part due to the presence of noxious weeds and invasive plants, such as cheatgrass, as well as other agricultural plants that were introduced prior to BLM acquisition. Impacts to native plant communities that may introduce and spread weeds often result from trampling or concentrated grazing near water developments and trailing along fence lines. Existing livestock management has maintained overall plant community health and average utilization on bluebunch wheatgrass has been light for the entire allotment. To date there is no grazing utilization data that suggests that the 50% allowance threshold has been annually met or exceeded on this allotment. Livestock grazing at this level is known to maintain forage production and improve plant vigor. Since stocking rates and grazing intensity have been lower under BLM management than prior to BLM acquisition, it is likely that native plant communities are resisting invasion pressure from noxious weeds and other plants.

### Alternative B: Proposed Action

Ground disturbing activities that would be authorized under the proposed action, including new water developments and fences, have the potential to introduce and spread noxious weeds and invasive plants. The risk of introducing new weed populations is directly correlated to the number and acres of ground disturbance associated with these range improvement projects. The estimated area of potential impact from the 3.5 miles of new permanent fences would be 0.4 acres and 2.3 acres from the new water development in pasture 2. Concentration of livestock and trailing associated with these developments may remove existing vegetation and increase opportunities for weed establishment and spread. Monitoring these new developments for noxious weeds and invasive plants would be essential for detecting incipient weed populations and treating them before they establish. Ground disturbance related to construction of range improvements would be minimized to the extent practical. If new infestations are detected within these project areas, appropriate weed control treatments would be conducted in conformance with the guidance identified in the 2007 PEIS, and any subsequent updates, revisions, or replacements.

Current livestock management allows utilization levels up to 50% of the available forage but in practice utilization levels have been considered light by BLM rangeland management staff. According to the Interpreting Indicators of Rangeland Health Summary for the Hawk Creek Allotment in 2010, the stocking rate was 90 cattle for 491 AUMs over a 5.5 month period. Under Alternative B an additional 13 AUMs would be available over the same season of use, however, the utilization level will be reduced by 10%. This increase in AUMs is not anticipated to result in either degradation of existing plant communities or increase the dispersal and establishment of noxious weeds and invasive plants.

If seasonal patterns of plant growth exceed typical levels additional Temporary Non-renewable AUMs may be granted to the permittee. Although increased grazing of vegetation can increase the risk of susceptibility to weed invasions, utilization monitoring, including stubble height triggers, will be used to ensure that the 40% threshold would not be exceeded. The increased ground disturbance from the additional livestock grazing and the extended season of use may also increase the risk of noxious weed and invasive plant colonization. In addition to utilization measures, monitoring livestock distribution and areas of congregation and trailing would be used to rotate pastures or remove livestock, thereby reducing the potential for degradation of plant communities. Maintaining plant community composition and cover are essential to minimize weed establishment and spread and ensure ecological processes remain in-tact.

### Alternative C:Removal of Livestock Grazing

Under this alternative livestock grazing would be removed from the Hawk Creek allotment. This would eliminate risks to noxious weed and invasive plant establishment and spread associated with congregation, trailing, and seed dispersal by livestock. In addition, the removal of livestock grazing would reduce impacts to vegetation from trampling, resulting in fewer disturbances where weeds could invade. However, other sources of disturbance that could promote weed invasion such as recreational use, vehicles, wildlife, and periodic wildfires would still contribute to the presence of weeds on the allotment. The removal of livestock grazing may increase the accumulation of litter and fine fuels that promote wildfire and open niches for cheatgrass and other invasive annual plants.

### *Cumulative Effects*

The geographical scope of cumulative effects are the Hawk Creek (HUC: 1702000118) and the Lake Creek-Crab Creek (HUC: 1702001305) Watersheds. Past and present land management actions have introduced and spread noxious weeds and invasive plants throughout the watersheds. Conversion of native plant communities for agricultural, industrial, and residential uses have permanently altered these ecosystems and increased the susceptibility of degraded lands to weed invasions.

The effects of native sagebrush steppe community loss and declining ecosystem health on public and private lands within the watersheds are exacerbated by structural and functional changes caused by noxious weeds and invasive plants. Competition affects from noxious weeds are known to displace native plants, reducing both community diversity and altering ecosystem processes including nutrient cycling, soil water storage capacity, and erosion. Historically, livestock grazing has caused changes in plant communities and impacted native plant associations and the diverse values for wildlife and humans.

Noxious weeds and invasive plants are known to occur within 97% of the BLM administered lands in the cumulative effects area. However, there is no estimate of the total area infested by weeds on BLM lands either on the Hawk Creek allotment or throughout the watersheds. BLM lands encompass approximately 14% of the total area of the watersheds. It is assumed that non-BLM administered lands have been similarly impacted by weeds and the degree of ground disturbance is correlated to the susceptibility of weed invasion.

### Alternative A: No Action

Under the no action alternative livestock grazing risk factors that could promote weed invasion on the Hawk Creek allotment would likely be similar to those on private and public lands within the cumulative effects area. Agricultural and other land management uses adjacent to the Hawk Creek allotment, including the bisection of the allotment by State Highway 2, would continue to serve as sources of weed propagule dispersal. BLM's multiple use mission would continue to authorize activities that may contribute to the introduction and spread of weeds. General recreation (e.g. hunting and hiking) and travel corridors are likely to overlap and compound the effects of livestock grazing, potentially increasing the spread of existing weed infestations.

### Alternative B: Proposed Action

The spread and establishment of noxious weeds and invasive plant populations under the proposed action is not likely to be different from current livestock management. The reported average utilization data on the Hawk Creek allotment indicates that the reduction of the utilization threshold of key upland bunchgrasses from 50% to 40% would not alter the risk factors for weed invasion. The livestock grazing schedule and authorized AUMs would not be substantially different from current management and therefore unlikely to degrade vegetation condition greater than the current rate and extent. Since the stocking rates and use levels are similar among the two action alternatives, increased livestock use on private lands, and the associated risks for weed spread are not expected to increase. Additional Temporary non-renewable (TNR) AUMs would only be granted as seasonal patterns of plant growth are conducive to additional livestock grazing use. It is unlikely that TNR's would increase the spread of noxious weeds and invasive plants either on the Hawk Creek allotment or across the cumulative effects area at a level greater than other weed dispersal factors. Since TNR grazing is a discretionary management action and would be closely monitored, impacts to plant community integrity should not conflict with desired rangeland health condition. Proposed range improvements would have a minor impact on potential weed spread during construction but could have a future impact as congregation and trailing increases along the new fence lines and water development. Sources of weed propagules and vectors of dispersal not related to livestock grazing would be similar among the two action alternatives.

### Alternative C – No Livestock Grazing

Excluding livestock grazing on the Hawk Creek allotment would directly reduce risk factors that promote weed invasion. The severity of weed expansion is dependent on the level of ground disturbing activities that reduce the resistance capacity of the native plant communities and number and proximity of weed populations. Past grazing management both prior to BLM acquisition and under current management would continue to influence weed population dynamics because of seed banks that have developed over time. Areas of disturbance from congregation and trailing would continue to exist until either active or passive restoration improves plant community composition. These disturbed areas would continue to be potential sources of weed establishment unless treatments are conducted to eliminate the infestations.

Livestock grazing can remove noxious weeds and reduce the vigor and extent of invasive annual grasses. Removing livestock grazing could therefore potential increase the levels of fine fuels from weed litter and may increase the risk of wildland fires which has effected vegetation across the cumulative effects area. Additional resources for noxious weed and invasive plant management may be required to reduce weed populations that are currently browsed by livestock. Weed introduction and spread is expected to continue due to wildlife movements, roads and corridors, wind dispersal of seeds, and from human activities. These human activities include general recreation within the Hawk Creek allotment and the land uses actions adjacent to the allotment.

### **Wildlife, Special Status Wildlife and Migratory Birds**

#### *Affected Environment:*

There are no federally-listed threatened, endangered, or proposed wildlife species or their habitat found within the Hawk Creek allotment.

Greater sage-grouse and Columbian sharp-tailed grouse, both BLM sensitive species (also Washington State threatened species) are known to use the allotment. Sage-grouse use can be characterized as occasional (no known nesting or wintering) as a result of temporary movements from re-introductions at Swanson Lakes Wildlife Area approximately 12 miles southwest of the allotment. The allotment is not within a mapped habitat concentration area (HCA) for sage-grouse (WHCWG 2012), but it is within the occupied Crab Creek sage-grouse management area (Stinson et al 2004). The allotment is relatively more important to sharp-tailed grouse, which breed at a lek near the east end of the allotment. The east end of the allotment (Pastures 2-4) is within a mapped habitat concentration area (HCA) for sharp-tailed grouse (WHCWG 2012) and is likely used for nesting, brood rearing and winter habitat.

The only other BLM sensitive wildlife species known to inhabit this allotment include long-billed curlew, also near the east end of the allotment. BLM sensitive wildlife species that may be present on the allotment based on habitat and range include white-tailed jackrabbit, Lewis' woodpecker (both State species of concern), and pallid bat.

Migratory bird surveys were conducted on June 2, 2012 with assistance from the Audubon Society's Spokane Chapter. Seventy-four (74) species were documented using the allotment (Appendix B). Overall, migratory bird diversity is high. Riparian areas contain a good diversity of warblers (5 species) and swallows (6 species). Ponderosa pine woodlands contain several cavity-nesting species such as mountain bluebird, chickadees, Pacific-slope flycatcher, pigmy nuthatch, downy woodpecker, flicker, and others. Shrub-steppe and grasslands contain all seven species of sparrows expected for the area. The following Birds of Conservation Concern (USFWS 2008) were documented on the allotment: bald eagle (foraging only), willow flycatcher, Brewer's sparrow, and sage thrasher.

Mule deer utilize the allotment year-round including during fawning and fawn-rearing periods. In the Columbia Basin and the Hawk Creek allotment, fawning and fawn-rearing habitats are probably the most limiting factors for mule deer and are most available in riparian areas

including streams, ponds and mesic vegetation in lowlands and irrigated pastures (WHCWG 2012).

*Environmental Consequences:*

Alternative A: No Action

Grazing management under the no action alternative would continue to authorize 500 AUMs on approximately 4,050 acres (8 ac/AUM) but not allow for proposed range improvements or temporary non-renewable AUMs. Average utilization of key upland bunchgrasses under this alternative would not be allowed to exceed 50%, which usually equates to 4-6 inch stubble on bluebunch wheatgrass.

The effects of grazing on grouse are variable depending on the level of utilization (Stinson et al 2004, Hoffman 2012). Heavy grazing (>60% utilization) decreases perennial forbs and grasses and can shorten the growing season in meadows through desiccation resulting in loss of food plants, and the reduction of grass cover at nest sites can result in high rates of nest predation. Grazing at moderate levels (40-50% utilization) can be compatible with good grouse habitat in mid to late summer as long as the site has not been degraded by past overgrazing, but this level of grazing in spring may not provide for adequate residual nesting cover. Light grazing is generally recommended for maintaining nesting cover and for allowing plants to maximize their herbage-producing ability thus allowing native vegetation to improve in condition.

The Conservation Strategy for Landbirds in the Columbia Plateau of Eastern Oregon and Washington indicates that poorly managed grazing may negatively affect habitat by altering species composition, reducing residual vegetation, inhibiting vegetation recruitment, and increasing encroachment of noxious weeds (Altman and Holmes 2000). However, the Conservation Strategy also recognizes that grazing may not adversely impact vegetation if relatively light pressure is rotated between pastures on an annual and seasonal basis. Similarly, grazing at light to moderate levels has little impact on deer, but overuse in arid environments removes much of the herbaceous cover that is crucial for doe nutrition and fawning cover (Cox et al 2009). Guidelines for mule deer in the Intermountain West Ecoregion suggest managing utilization at <35% to optimize habitat.

In practice, utilization levels would vary considerably over the pasture from heavy near water to slight or none away from water. Without the proposed range improvements livestock would continue to concentrate at the existing water points, and rotation opportunities would be limited. Areas further from water would continue to receive slight to no use and would continue to provide high quality wildlife habitat.

Alternative B: Proposed Action

Grazing management under the Proposed Action alternative would authorize 504 AUMs on approximately 4,050 acres and allow for proposed range improvements. Grazing under this alternative would result in light to moderate levels of utilization (30-40%) as described above for Alternative A. As stated above, these levels of utilization are recommended

by the Conservation Strategy for Landbirds in the Columbia Plateau of Eastern Oregon and Washington (Altman and Holmes 2000) and consistent with grazing, grouse and mule deer guidelines (Rouse and Guinn 2009, Stinson et al 2004, Hoffman 2012, Cox et al 2009). In general, utilization levels would vary considerably over the pasture from heavy near water to slight or none away from water. Creating new water sources as proposed, would increase livestock distribution throughout the allotment and reduce grazing pressure around existing water sources. Areas currently far from water receiving slight to no use would become utilized resulting in light to moderate use in these areas and increased use around the new water development. Proposed pasture fencing would increase rotation opportunities resulting in periodic rest during the critical growth period. This would lead to better plant growth and improved nesting habitat and forage conditions for wildlife. Periodic rest allows for increased forb production, which is an important spring food source for sage and sharp-tailed grouse.

Alternative C: Removal of Livestock Grazing – A number of species nesting in herbaceous ground cover may respond positively to removal of livestock grazing in shrub-steppe. There are data supporting this conclusion for vesper sparrow and western meadowlark (Bock et al. 1993). Savannah, grasshopper, and white-crowned sparrows, which are more peripherally associated with shrub-steppe, could also benefit from the removal of livestock grazing (Bock et al. 1993). Guidelines for sharp-tailed grouse recommend retirement of grazing privileges where practical, which presumably would benefit sharp-tailed grouse (Hoffman 2012). Mule deer guidelines suggest that removing livestock may not result in improvements to habitat or improvements may take 40-50 years.

In riparian habitat, the complete removal of livestock has been shown to have measurable positive effects on riparian obligate bird species within several years (Altman and Holmes 2000). Understory vegetation would increase significantly resulting in population increases of understory obligate birds such as western wood-pewee, flycatchers, vireos, warblers, tanager and oriel (Krueper 1993).

Cumulative Effects – The geographic extent of cumulative effects for wildlife impacts would be considered at the scale of the Crab Creek sage-grouse management area as described in the State’s sage-grouse recovery plan (Stinson et al 2004). Using this area utilizes the concept of sage-grouse as an umbrella species, includes lands that have been determined by the recovery plan to have similar characteristics, and is inclusive of the Swanson Lakes sharp-tailed grouse recovery unit.

The 808,559-acre Crab Creek management unit is composed of approximately 80% shrub-steppe and 20% agriculture and Conservation Reserve Lands. Nearly all of the shrub-steppe habitat whether on BLM, State or private is or could be under some level of grazing management. The only area planned for non-grazing to maximize wildlife benefit is the 19,297-acre Swanson Lakes wildlife area, which does support sage and sharp-tailed grouse and the other species present in the Hawk Creek allotment. Swanson Lakes represents 2.4% of the management unit. BLM authorizes grazing on approximately 70,630 acres of shrub-steppe habitat in the management unit, of which, 58,078 (82%) is managed under an “improve” allotment category. At 4050 acres, this Hawk Creek allotment management plan represents approximately 7% of the land in the “improve” category.

Other factors affecting sage and sharp-tailed grouse and the other species addressed include habitat fragmentation from multiple sources or anthropogenic disturbance (roads, powerlines, tall structures, etc.). Approximately 2-3% of the management unit has been impacted by these disturbances.

Fire has and will continue to affect habitat in the management unit. There have been 5 major fires (10,000-20,000 acres) that have removed shrub habitat in the last decade, and this trend is expected to continue.

Alternative A would contribute approximately 4,050 acres cumulative effects from livestock grazing, reduced rotation flexibility, and utilization up to 50%. Alternative B would continue to improve 4,050 acres of habitat by increased distribution of livestock, increased rotation flexibility, and utilization levels (30-40%) within recommended levels for grouse and other wildlife. Alternative C would contribute 4,050 acres on ungrazed land to the 19,297-acre Swanson Lakes Wildlife Area that maximizes wildlife benefit.

### Fisheries/Riparian/Water Quality

#### *Affected Environment:*

The Hawk Creek allotment contains Water Resource Inventory Areas (WRIA) 53, Lower Lake Roosevelt, and WRIA 43, Upper Crab-Wilson. There are no perennial or ephemeral streams on the Hawk Creek allotment within WRIA 43. However, there are several ephemeral lentic bodies of water. WRIA 53 contains Hawk Creek, a perennial stream that flows into the Columbia River. Approximately 1.25 miles of Hawk Creek flows through the Hawk Creek allotment. Hawk Creek supports a resident population of rainbow trout (*Oncorhynchus mykiss*). Water quality basin station 53C070, located downstream from the Hawk Creek allotment, indicated moderate water quality in 2009 and good water quality in 2010 based on the Water Quality Index from Washington Department of Ecology. There are no 303d streams listed in the Hawk Creek allotment:

<http://www.ecy.wa.gov/apps/watersheds/riv/stationlistbywria.asp?wria=53>

There are approximately 650 acres of riparian areas within the Hawk Creek allotment. The BLM conducted a Proper Functioning Condition (PFC) assessment in 2007, and follow up evaluations in 2013. All the sites assessed were rated as meeting Proper Functioning Condition. Currently, these lentic and lotic areas receive seasonal use by livestock and wildlife each year.

#### *Environmental Consequences:*

##### Alternative A: No Action

Grazing management and livestock impacts would be dependent on existing infrastructure and the availability of water. Livestock use would continue at or about current use levels. No new range improvements would be constructed. Livestock distribution would be expected to remain at current use with no opportunities to facilitate improved use patterns based on existing range

infrastructure. Riparian resources are expected to continue to improve without any changes to the existing grazing management.

#### Alternative B: Proposed Action

The Proposed Action would facilitate livestock grazing management that allows periodic rest throughout the allotment. Proposed range improvements would improve increased livestock distribution by providing water away from aquatic and riparian habitats currently used by livestock and wildlife. Impacts associated with livestock grazing on riparian and aquatic systems throughout the allotment would be reduced through decreased pressure on riparian resources and reduced concentrated use in and around existing riparian areas. Some areas would receive periodic concentrated use depending on the localized climatic factors at the time livestock are present. The prescribed grazing system would ensure that impacts associated with livestock grazing would not occur on the same area of the allotment during consecutive years. The time and duration of livestock grazing is influenced by management and local climatic factors. Riparian resources are expected to continue to improve with more opportunities for adaptive management available under this alternative. Improved range infrastructure would enable land managers to better facilitate grazing systems and react to livestock and resource concerns throughout the allotment.

#### Alternative C: Removal of Livestock

Removing livestock grazing would reduce impacts to riparian and water resources associated with grazing. Over time, removal of livestock grazing may result in late seral conditions in areas of established riparian vegetation. Decreased deciduous and other key riparian species recruitment would continue to occur in areas dominated by invasive herbaceous species such as reed canary grass.

#### *Cumulative Effects:*

The geographical scope of cumulative effects would be the Water Resource Inventory Areas. Hawk Creek is contained within (WRIA) 53, Lower Lake Roosevelt, and WRIA 43, Upper Crab-Wilson. Past and present land management actions that have impacted aquatic and riparian habitat health include livestock management and other ground-disturbing projects such as vegetation treatments (i.e., noxious weed abatement) and road construction. Similar to public lands, resource conditions on private lands have likely been affected by the same past and present land management actions. It is difficult to determine the extent of impacts on private land since private landowners are not required by law to monitor or assess private rangeland health. Alternative A: Impacts to aquatic and riparian habitats as a result of ongoing livestock grazing management would continue improvement. Habitats associated with the riparian systems throughout the allotment would continue to improve and may provide beneficial opportunities for wildlife and aquatic species that occupy these habitats.

Alternative B: Livestock management would reflect current science and knowledge for improving uplands and riparian areas. Riparian stubble height requirements associated with management would decrease the potential for erosion and sedimentation. The proposed projects

would facilitate management decisions contributing to the improvement of riparian the structure and function.

Alternative C: Livestock management on private lands managed in conjunction with BLM administered lands in the area is interconnected. Therefore management changes to public lands would require livestock operators associated with BLM grazing to make modifications to their private rangeland grazing systems. This alternative would remove the 4050 acres of public lands managed with grazing in Lincoln County. This could lead to increased use on private lands managed in conjunction with BLM lands.

## **Cultural Resources**

### *Affected Environment:*

The project occurs within traditional use areas of the Spokane Tribe and members of the Confederated Tribes of the Colville Reservation (Miller 1998:254; Ray 1936:116, 118,119; Ross 1998:271; Teit 1928:93; Wazaney 2007). Previous cultural resources inventories of the allotment have identified both historic and prehistoric sites (Perry 2002; Schlegal 2010). The project area also includes diverse habitats such as upland plant communities, ponderosa pine forestlands, and seasonally important wildlife habitat. These habitats support plant and wildlife species of cultural value to Native Americans. A large number of plant species that are common and abundant on lithosols in the parcel are important traditional “first foods” for local tribes (Ross 1998; Wazaney 2007). Historically, camas, bitterroot, and several species of *Lomatium* or biscuit root were the main plant species gathered.

The Department of Archaeology and Historic Preservation’s predictive model for site occurrence shows the Hawk Creek Allotment at moderate to high potential to contain historical and archaeological resources. Results of inventories conducted in the nearby Telford parcels confirm this (Boyd 2009; Smith 2007; Perry 2008). As a result of this project, approximately 25% of the allotment has been inventoried for cultural resources, resulting in the recordation of 66 historic and prehistoric sites and isolates. Surveys have revealed that the area contains historic homesteads, trails, rock features, roads, and prehistoric lithic scatters.

### *Environmental Consequences:*

#### **Alternative A: No Action**

Grazing management and livestock impacts would continue to be dependent on existing infrastructure and the availability of water, and use would remain at or about current levels. Cultural site types, such as short-term prehistoric camps or habitation sites, are often found adjacent to creeks, lakes, and wetlands. Cattle concentration in these areas could cause damage to surficial and near-surface sites such as lithic scatters, rock features, and historic artifacts (Nielson 1991; Wildeson 1982).

**Alternative B: Proposed Action** - The actions authorized by this alternative include preference permitting 504 AUMs, fence construction and removal, cattle guard installation and water

developments as described above to better facilitate the distribution of livestock use throughout the allotment. Development of additional water sources may increase the geographic distribution of livestock into locations that may not have received prior grazing pressure and reduce the effects of grazing in other, more intensively used areas. Use of methods that distribute grazing over the allotment are not expected to increase the effects on cultural resources except where congregation areas occur as a result of proposed range improvements such as along new fences and water developments. In these areas, direct impacts of cattle concentration on cultural resources would be the result of trampling surface artifacts, destruction of architectural features, and the creation of trails through sites (Nickens 1991).

In addition, plants of cultural importance may be affected in areas actively grazed by livestock during traditional harvest seasons.

Ground disturbing project activity, such as the construction of the new water troughs, would be monitored by a BLM archaeologist in high probability areas during implementation. Overall, the design features of new range improvement projects would minimize impacts such as trampling and mechanical damage through avoidance or the exclusion of livestock. Range improvements would avoid identified sites within the Area of Potential Effect (APE) to minimize impacts. Fence construction and/or monitoring are generally the most successful forms of site protection in these areas.

#### Alternative C: Removal of Livestock Grazing

No livestock would remove the potential impacts associated with grazing and proposed allotment improvements to cultural resources.

#### *Cumulative Effects:*

The cumulative effects analysis area for cultural resources is considered at the allotment scale. All action alternatives would not lead to cumulative effects for cultural resources because proposed projects would be localized or cultural resources would be completely avoided. Livestock congregation areas (current or future) are the only locations of ongoing grazing effects to cultural resources in the Hawk Creek allotment.

Alternative A: No Action – Current, high concentration congregation areas would continue to be grazed to the extent that the eventual loss of sediment could lead to the exposure of unknown, subsurface cultural materials. This would lead to exposure of archaeological resources to trampling, relic collecting, and adverse weather conditions (Nickens 1991).

Alternative B: Proposed Action – Alternatives that spread grazing impacts evenly over the allotment are not expected to increase the effects on cultural resources except in locations where new congregation areas arise. Additional congregation areas in the Hawk Creek allotment are expected to arise around new water trough placements and fence line additions (Map B). The future concentration of animals at all water developments would be localized to areas generally less than half an acre. Grazing, trampling and soil compaction by cattle associated with new congregation areas have the potential to cause damage to culturally important native plants in the allotment (Cingolani et al. 2005). Historic homesteads located adjacent to watering areas may be

adversely affected by incidental livestock use. Cattle concentration in these areas may also cause damage to lithic scatters, rock features and other site types susceptible to impacts from trampling (Nickens 1991; Nielson 1991; Osborn et al. 1987; Wildeson 1982). Cultural resource consultations would occur prior to the development of any range improvement and any resources discovered would be avoided to eliminate effects as described in the project design. A reduction of impacts to cultural resources would result from the expected improvement in ecological condition over an extended period of time as concentrated grazing in sensitive riparian zones is reduced. Local and regional knowledge regarding the cultural setting would be increased as a result of implementation of the standard operating procedures which require that all projects be preceded by inventory and the incorporation of mitigation efforts to reduce long term cumulative impacts.

Alternative C: Removal of Livestock Grazing – Impacts to cultural resources as a result of ongoing livestock grazing and management would cease.

### Social and Economic Values

#### *Affected Environment:*

Livestock grazing operations on public and private lands can have a stabilizing influence on local employment and standards of living. Hunting, wildlife viewing, and other types of dispersed outdoor recreation also contribute to the local economy on a seasonal basis. The undeveloped, open spaces in Lincoln County are a tourist attraction and contribute to a share of revenue for local business.

#### *Environmental Consequences:*

##### Alternative A: No Action

The value of livestock in the allotment would remain at current levels. Public lands in and around the allotment would continue to contribute environmental amenities such as open space, scenic quality and recreational opportunities (including hunting, bird watching, sightseeing, and hiking).

The Federal government would continue to collect grazing permit fees from the permittee at approximately the current annual rate. Under this alternative, no contracts for construction of range improvement projects would be granted and no supplies would be purchased from local vendors for the purpose of range improvement project implementation.

Alternative B: Proposed Action - An investment of public funds would be required to implement the proposed projects, providing economic opportunities for local contractors and vendors. The permittee would be responsible for implementation of the proposed projects and annual maintenance of those projects.

Alternative C: Removal of Livestock Grazing - Under Alternative C, no materials would be purchased from local vendors as no new range improvements would be constructed. Several

contracts may become available for removal of fences and other range improvements deemed unnecessary due to removal of livestock grazing.

Based on current rates reported by permittees, cost to livestock operators to find alternative forage is estimated at \$12 to \$16 per AUM to place livestock on private pasture, which does not include labor, fuel, and equipment for hauling livestock if only distant pasture is available. The cost of providing hay is variable (currently approximately \$185 per ton for grass hay in the area), based upon annual supply and demand, but is likely to be much higher than pasture. Viability and sustainability of the ranches holding grazing permits in Hawk Creek Allotment could decline as a portion of the lands they rely on become unavailable; therefore, potentially affecting their way of life.

### Climate Change

According to the United States Environmental Protection Agency's website "Important scientific questions remain about how much warming would occur, how fast it would occur, and how the warming would affect the rest of the climate system including precipitation patterns and storms".

The U.S. Geological Survey, in a May 14, 2008 memorandum to the U.S. Fish and Wildlife Service, summarized the latest science on greenhouse gases and concluded that it is currently beyond the scope of existing science to identify a specific source of greenhouse gas emissions or sequestration and designate it as the cause of specific climate impacts at a specific location. This makes the spatial scale for analysis as global, not local, regional or continental. Based on this, the differences in greenhouse gas emissions from the current level of grazing in the Hawk Creek allotment (the no action alternative) and the other alternatives would be so small as to be very negligible.

Changes in rangeland carbon storage from changes in grazing practices are likely to be small and difficult to predict, especially where a rangeland health assessment has determined that Rangeland Standards and Guides (BLM 1997) are being met. Therefore, this analysis assumes that changes in grazing practices would only result in negligible, if any, change in total carbon storage in both the short and long term.

### **Coordination/Consultation with Other Agencies, Groups and Individuals**

Consultations for the APE were originally initiated with your office, the Spokane Tribe of Indians and Colville Confederated Tribes (CCT) on July 5, 2011 by Anne Boyd. No expressed concerns were received regarding proposed project activities in response to the 2011 consultations. Due to changes in the project description, a revised APE letter was sent to your office, the Spokane Tribe of Indians and the CCT on December 11, 2012. On February 27, 2013, we received a letter from the Spokane Tribe of Indians concurring with the APE and expressing no concerns. No other responses were received regarding the revised APE. No sacred sites, traditional cultural properties or other tribal concerns have been identified within the APE. Between October 2012 and March 2013, Class III cultural resources surveys were completed on all proposed permanent fence line installations, seeding areas, and water improvement sites within the APE.

Consultation with the U.S. Fish and Wildlife Service was accomplished through a 2002 Programmatic Biological Assessment (FWS 1-9-02-I-0532), as amended in 2009. This addressed various anticipated activities, including issuance and renewal of grazing leases. This document found a “may affect, but not likely to adversely affect” determination for Spalding’s catchfly, and a “no effect” determination for other listed plant species and for fish and wildlife species.

The BLM range staff coordinated with the grazing lessee, specifically to review the proposed pasture rotation and grazing plan. The grazing lessee will be provided with a copy of the environmental assessment for review and comment.

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Appendix A

The following information would be included as part of the authorization:

Authorization (3601434)

***Allotment Summary (AUMs)***

<u>Allotment</u>	<u>Active AUMs</u>	<u>Suspended AUMs</u>	<u>Total AUMs</u>
Hawk Creek Allotment (00564)	504	0	504

***Terms and Conditions:***

The grazing authorizations will be issued according to guidance in the Spokane RMP and BLM regulations, including the Standards and Guidelines for Rangeland Health for Oregon and Washington (August 12, 1997).

Grazing fees are due on the date shown on your grazing bill. Unauthorized grazing use may lead to trespass actions including fines, civil and criminal penalties, impoundment of livestock, and/or cancellation of your grazing lease. Failure to pay your annual grazing bill within 15 days of the due date may result in a late fee assessment of \$25.00 or 10 percent of the grazing bill, whichever is greater, not to exceed \$250.00. This lease is subject to modification as necessary to achieve compliance with these standards and guidelines (43 CFR 4180). The grazing lessee will provide reasonable access across private and leased lands to the Bureau of Land Management for the orderly management and protection of lands. Unless otherwise specified in writing, maintenance of all range improvements prior to making grazing use is a term and condition of your grazing lease. Such improvements include fences, water developments, and other structures existing for livestock control or management. No grazing use may be made until such structures have been maintained.

Cattle numbers would not exceed 100 cows, bulls, heifers, or any combination of these classes of livestock over the age of 6 months at the time of entering public lands or other lands administered by the BLM; no charge shall be made for animals under 6 months of age, at the time of entering public lands or other lands administered by BLM, that are the natural progeny of animals upon which fees are paid (CFR) 4130.8-1(c).

Supplemental feeding is authorized and is limited to salt, mineral, and/or energy/protein in block, granular, or liquid form. If used, these supplements must be placed at least one-quarter (1/4) mile away from any stream and 500 feet away from any spring.

As provided in 43 Code of Federal Regulations (CFR) 4130.3-2(d), you are hereby required to submit a certified actual use report within 15 days after completion of your annual grazing use. A deferred rotation livestock grazing management system would continue within the Hawk Creek Allotment. Livestock turnout dates may be adjusted annually based on vegetative response to seasonal conditions. Timing of grazing would provide for the management of key forage species. Spring grazing would avoid grazing pastures more than one out of three years

during the critical growth period of key forage species. Adjusted dates would be reflected on the annual bill schedule. Range improvements and livestock handling techniques such as herding, water availability and supplement placement may be used to facilitate livestock distribution.

## Appendix B

### Results of June 2, 2012 Migratory Bird Survey of Hawk Creek Allotment

Blackbird, Brewer's	1			1
Blackbird, Red-winged	14	13		27
Bluebird, Mountain		2		2
Bunting, Lazuli	2		7	9
Catbird, Gray	1			1
Chickadee, Black-capped			3	3
Chickadee, Mountain		1	3	4
Cowbird, Brown-headed	14	1	7	22
Crossbill, Red		2		2
Dove, Mourning	16	12	4	32
<b>Eagle, Bald (SEN, BCC)</b>			1	1
Finch, Cassin's	2			2
Flicker, Northern	9	5	11	25
Flycatcher, Pacific-slope	1			1
Flycatcher, Unid. Empid.	3	1	8	12
<b>Flycatcher, Willow (BCC)</b>	3	1	1	5
Goldfinch, American	9		4	13
Grosbeak, Black-headed	9		4	13
Grouse, Ruffed	1			1
Harrier, Northern	2			2
Hawk, Cooper's			2	2
Hawk, Red-tailed	4	2	4	10
Hawk, Swainson's			2	2
Kestrel, American	1	3	2	6
Killdeer	3			3
Kingbird, Eastern	13		1	14
Lark, Horned	15	8	1	24
Magpie, Black-billed	1		15	16
Mallard	10			10
Meadowlark, Western	45	24	9	78
Nuthatch, Pygmy	2	3		5
Oriole, Bullock's	9		4	13
Owl, Short-eared	1			1
Partridge, Gray		2		2
Pheasant, Ring-necked			2	2
Phoebe, Say's		1		1
Pigeon, Rock	2			2
Quail, California	4	2	3	9
Raven, Common		1		1

Common Name	Hawk Creek (Pasture 2)	Interior Wetlands (Pastures 10&11)	Mosquito Springs (Pasture 8)	Total
Robin, American	17	8	18	43
Sapsucker, Red-naped			1	1
Shoveler, Northern		4		4
Snipe, Wilson's			2	2
Solitaire, Townsend's	1			1
<b>Sparrow, Brewer's (BCC)</b>	6	13		19
Sparrow, Chipping		1	3	4
Sparrow, Grasshopper	19			19
Sparrow, Lark		1		1
Sparrow, Savannah	14	1		15
Sparrow, Song	22	1	11	34
Sparrow, Vesper	19	13	1	33
Starling, European	4	6	6	16
Swallow, Bank	10			10
Swallow, Barn		2		2
Swallow, N Rough-winged	5			5
Swallow, Tree	3		3	6
Swallow, Unidentified			4	4
Swallow, Violet-green	4	1		5
Tanager, Western	4			4
<b>Thrasher, Sage (BCC)</b>		6		6
Thrush, Hermit	2			2
Towhee, Spotted	1		5	6
Turkey, Wild		1		1
Veery	1			1
Vireo, Warbling	6			6
Warbler, Orange-crowned	1			1
Warbler, Unidentified			1	1
Warbler, Wilson's			2	2
Warbler, Yellow			12	12
Warbler, Yellow-rumped	21			21
Waxwing, Cedar			10	10
Wigeon, American	3			3
Woodpecker, Downy			1	1
Wood-Pewee, Western	20	5	6	31
Wren, House	19	15	15	49
Wren, Marsh		1		1
Wren, Rock	2		1	3
<b>Total Species Identified</b>	<b>50</b>	<b>33</b>	<b>37</b>	<b>74</b>
<b>Total Unidentified Species</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>3</b>
<b>Total Birds Counted</b>	<b>401</b>	<b>163</b>	<b>200</b>	<b>764</b>

SEN = BLM sensitive species; BCC = bird species of conservation concern.

