

STINKINGWATER  
ALLOTMENT  
MANAGEMENT PLAN

ENVIRONMENTAL ASSESSMENT  
DOI-BLM-OR-B050-2009-0042-EA

Three Rivers Resource Area  
Bureau of Land Management  
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CHAPTER I: INTRODUCTION: PURPOSE OF AND NEED FOR ACTION

A. Background

Stinkingwater Allotment is located 30 miles east of Burns, Oregon, and 10 miles southwest of Drewsey, Oregon (Map A – Vicinity Map). Elevation of the allotment ranges from 3,600 feet along Stinkingwater Creek to 4,873 feet at the summit of Bartlett Mountain. Stinkingwater Allotment contains 23,775 acres of Bureau of Land Management (BLM)-administered land and 1,083 acres of private land. The 24,858-acre allotment is divided into the following six pastures containing 3,493, 3,751, 3,501, 3,744, 1,186, and 9,183 acres, respectively: Conly Basin, Clear Creek Seeding, Bartlett Mountain, Stinkingwater Seeding, Well, and Stinkingwater Pass (Map B – Land Status and Special Management Areas Map). Two changes to pasture boundaries have occurred since the 1997 Stinkingwater Allotment Management Plan (AMP). First, Conly Basin Pasture was divided into two pastures in 2006, creating the Stinkingwater Pass and Conly Basin Pastures. Second, the Stinkingwater Seeding Pasture was separated into two pastures, the Well and Stinkingwater Seeding Pastures. The latter was the result of private lands being fenced within Stinkingwater Seeding Pasture.

Three Term Grazing Permits (#3600067, 3602289, and 3602278 – further referred to as Herd A, B, and C) authorize 2,857 Animal Unit Months (AUMs) of Active Use within Stinkingwater Allotment. Season of use differs between all three permits. Herd A is authorized for 616 AUMs from April 16 to September 20, Herd B is authorized for 1,695 AUMs from April 16 to September 20, and Herd C is authorized for 546 AUMs from December 1 to February 28.

The allotment is part of the Stinkingwater Wild Horse Herd Management Area (HMA) and the Biscuitroot Cultural Area of Critical Environmental Concern (ACEC) (Map B – Land Status and Special Management Areas Map). Approximately 1,740 acres (40 percent) of the Biscuitroot Cultural ACEC designated land fall within Stinkingwater Allotment. All of Stinkingwater Allotment is contained within the Stinkingwater HMA, comprising 27 percent of the total HMA acreage. Stinkingwater Allotment is one of three allotments that lie within the Stinkingwater HMA. Appropriate Management Level (AML) for wild horse populations within the entire Stinkingwater HMA is between 40 and 80 horses. Within Stinkingwater Allotment, low and high AML are 10 and 20 horses, respectively.

In 2006, grazing management actions conducted on Stinkingwater Allotment from 1993 to 2005 were analyzed through a formal interdisciplinary evaluation process. During this evaluation, an Interdisciplinary Team (IDT) of Burns BLM staff identified resource objectives that were or were not being met. The evaluation included an analysis of the allotment to determine if current management was in conformance with Oregon and Washington Standards for Rangeland Health (Standards) and Guidelines for Livestock Grazing Management (Guidelines) (August 12, 1997). The Standards for Rangeland Health determinations from the 2006 evaluation are shown in Table 1 below.

**Table 1.** 2006 Allotment Evaluation Standards for Rangeland Health Determinations

Standard	Achieved	Not Achieved	Causal Factors	Comments
1. Watershed Function - Uplands	Yes			The cover of perennial vegetation has remained stable or increased, bareground has decreased, plant litter is accumulating in place, and plant communities have experienced increased functional diversity across the allotment.
2. Watershed Function - Riparian/Wetland Areas		Stinkingwater Creek, Little Stinkingwater Creek, Clear Creek*	Livestock grazing management	The season of use in the Bartlett Mountain and Clear Creek Seeding Pastures concentrates livestock use along Stinkingwater and Little Stinkingwater Creeks every other year. Wild horses also have year-round access to these creeks.
			Wild horses	
3. Ecological Processes	Yes			Plant composition is within expected ranges of variability relative to a potential natural plant community except in areas of medusahead-rye infestation.
4. Water Quality		Clear Creek*, Stinkingwater Creek	Livestock grazing management*	Water temperatures exceed Oregon Department of Environmental Quality's (ODEQ) 68 °F water temperature standard for salmonid fish rearing. Fish habitat surveys document woody vegetation suppressed by livestock and wild horse grazing.
			Wild horses	
5. Native, Threatened and Endangered (T&E), and Locally Important Species	sage-grouse	Redband trout (Stinkingwater and Clear Creek*)	Livestock grazing management	Same as those for Standards 2 and 4.
			Wild horses	

\*Since the 2006 evaluation, creation of the Conly Basin Pasture has removed late season livestock grazing along Clear Creek.

Guidelines for livestock grazing management were only partially met in the allotment.

Prior to the construction of the Clear Creek fence in 2006, the Conly Basin Pasture was grazed from June 1 through late September each year. Downward trends in riparian habitat condition along Clear Creek necessitated a change in grazing management and provided the impetus for creating the riparian pasture now known as Conly Basin Pasture, and the upland pasture now known as Stinkingwater Pass Pasture. Since 2007, Conly Basin Pasture has been grazed from the end of April through early June. Grazing management in this riparian pasture is meeting guidelines by removing livestock grazing during critical growth periods of riparian vegetation. Presently, grazing management is providing periodic growing season rest from livestock grazing for upland vegetation in the Clear Creek Seeding, Stinkingwater Seeding, Well, Bartlett Mountain, and Stinkingwater Pass Pastures. However, late season (post July 1) livestock grazing has contributed to Stinkingwater and Little Stinkingwater Creeks failing to achieve standards, therefore grazing management is not conforming to guidelines for season of use, timing, and grazing intensity in these riparian areas.

The allotment resource objective for causing an upward trend in riparian habitat condition on Stinkingwater and Little Stinkingwater Creeks was not met due to the previously identified reasons. Resource objectives for maintaining perennial forb availability for sage-grouse, causing stable to upward trends in upland conditions, and maintaining the condition of biscuitroot gathering sites were all met, except for areas of heavy medusahead-rye infestations.

This AMP/Environmental Assessment (EA) analysis addresses issues from the 2006 Stinkingwater Allotment Evaluation and is tiered to the 1992 Three Rivers Proposed Resource Management Plan/Final Environmental Impact Statement (PRMP/FEIS).

## B. Purpose and Need

Based on the 2006 allotment evaluation, the IDT recommended and the Three Rivers Field Manager concurred Standards for Rangeland Health could be achieved through changes in grazing management with additional range improvements.

The purpose of the action is to manage livestock grazing within Stinkingwater Allotment to continue to achieve Rangeland Health Standards and Guidelines currently being achieved, and make significant progress<sup>1</sup> toward achieving the Riparian, Water Quality, and Locally Important Species Standards not achieved within Clear Creek Seeding and Bartlett Mountain Pastures.

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<sup>1</sup> **Significant Progress:** Used in reference to achieving a standard as outlined in the Standards for Rangeland Health and Guidelines for Livestock Grazing Management for Public Lands Administered by the BLM in the States of Oregon and Washington (1997). The use of the word "significant" in this document does not meet the Council on Environmental Quality's (CEQ) definition of the word.

Based on utilization records, riparian monitoring, and professional observation of BLM personnel, there exists a need to eliminate late season livestock and wild horse grazing within riparian communities along Stinkingwater and Little Stinkingwater Creeks to make significant progress toward achieving Standards not currently met. There also exists a need to provide a yearlong source of water to wild horses within Clear Creek Seeding to maintain current wild horse range. In addition, the AMP/EA analyzes renewal of three Term Grazing Permits associated with Stinkingwater Allotment, which expire in 2011.

This AMP/EA analyzes the recommendations developed through the allotment evaluation process, IDT recommendations, public comments, and through coordination with the livestock permittees to aid in accomplishing allotment resource objectives and achieving all Standards and Guidelines.

### C. Resource Objectives

The following resource objectives are from the 2006 Stinkingwater Evaluation.

1. Increase hydric herbaceous and/or deciduous woody species composition in conjunction with upward trend in riparian habitat condition on publicly administered portions of Stinkingwater Creek, Little Stinkingwater Creek, and Clear Creek over the next 5 years. Trend would be measured by comparison of photographs taken at the permanent photo points established along each creek at 5-year intervals. Riparian photographs taken in 2006 shall serve as a baseline for determining progress toward achieving this objective. Indicators of riparian trend should include recruitment of deciduous woody species, increased stabilizing riparian species, and revegetating point bars.
2. Maintain or increase the frequency of occurrence of native perennial forbs on all sagebrush ecological sites to maintain sage-grouse brood-rearing habitat over the next 5 years. Progress toward meeting this objective would be measured by the change in relative frequency of occurrence of forb species as compared with total ground cover at established Pace 180° trend plots in key areas in the allotment. Upland trend data collected in 2006 from key areas of Stinkingwater Allotment should serve as a baseline for determining progress toward achieving this objective. This is a grazing management objective, therefore determinations of success or failure in achieving the objective should not be dependent on phenomena outside management's control (i.e., drought, fire, etc.).
3. Maintain or increase the relative frequency of occurrence and ground cover of key forage plant species at key areas of Stinkingwater Allotment over the next 5 years. Progress toward meeting this objective would be measured by the change in relative frequency of occurrence of key forage plant species as compared with total ground cover at established Pace 180° trend plots in key areas in the allotment.

Upland trend data collected in 2006 from key areas of Stinkingwater Allotment should serve as a baseline for determining progress toward achieving this objective. This is a grazing management objective, therefore determinations of success or failure in achieving the objective should not be dependent on phenomena outside management's control (i.e., drought, fire, etc.).

4. Maintain the relative frequency of occurrence of biscuitroot (and other culturally important root plants) in the Biscuitroot Cultural ACEC over the next 5 years. Progress toward meeting this objective would be measured by the change in relative frequency of occurrence of biscuitroot as compared with total ground cover. A trend site should be established using Pace 180° methodology within the ACEC. These data should serve as a baseline for determining progress toward achieving this objective. This is a grazing management objective, therefore determinations of success or failure in achieving the objective should not be dependent on phenomena outside management's control (i.e., drought, fire, root gathering, etc.).

D. Conformance with Land Use Plans

The Proposed Action and action alternatives described below are in conformance with the Three Rivers RMP/Record of Decision (ROD)/Rangeland Program Summary, approved September 1992. Although the Proposed Action and action alternatives are not specifically provided for, they are consistent with the following management actions for Grazing Management and Wild Horse and Burro Programs:

*Implement management practices to resolve conflicts and concerns and meet multiple-use objectives identified for Stinkingwater Allotment (GM 1.1, Three Rivers RMP, 1992, 2-33).*

*Utilize rangeland improvements, as needed, to support achievement of multiple-use management objectives (GM 1.3, Three Rivers RMP, 1992, 2-36).*

*Improve surface water quality on public lands to meet or exceed quality standards for all beneficial uses as established by the DEQ, where BLM authorized actions are having a negative effect on water quality (Appendix 9, Allotment Management Summaries, Three Rivers RMP, 1992, 90).*

*Provide facilities and water sources necessary to ensure the integrity of the individual wild horse herds (WHB 2.4, Three Rivers RMP, 1992, 2-45).*

E. 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 Burns District:

- August 2005, Oregon Department of Fish and Wildlife (ODFW) Greater Sage-grouse Conservation Assessment and Strategy for Oregon: A Plan to Maintain and Enhance Populations and Habitat
- 2004, BLM National Greater sage-grouse Habitat Conservation Strategy
- 2004, Local Integrated Noxious Weed Control Plan Burns
- September 1999, Biscuitroot ACEC Management Plan
- August 12, 1997, Standards for Rangeland Health and Guidelines for Livestock Grazing Management for Public Lands Administered by the BLM in the States of Oregon and Washington
- 1977, Stinkingwater Wild Horse Herd Management Area Plan
- Public Rangelands Improvement Act (43 U.S.C. 1901, 1978)
- Federal Land Policy and Management Act (43 U.S.C. 1701,1976)
- The National Environmental Policy Act (NEPA) (43 U.S.C. 4321-4347,1970)
- State, local, and Tribal laws, regulations, and land use plans
- Taylor Grazing Act (43 U.S.C.315, 1934)

F. Decision Factors

Decision Factors are additional questions or statements used by the decision maker to choose between alternatives that best meet project goals and resource objectives. These factors generally do not include satisfying legal mandates including requirements under the NEPA, which must occur under all alternatives. Rather, Decision Factors assess, for example, the comparative cost, applicability, or adaptability of the alternatives considered. The following Decision Factors will be relied upon by the authorized officer in selecting a course of action from the range of alternatives fully analyzed that best achieves the goals and objectives of the project:

Would the alternative:

1. improve livestock and wild horse distribution across the allotment and encourage more uniform utilization patterns?
2. provide late season water to wild horses to maintain year-round wild horse range?
3. provide social and economic benefit to local communities and Harney County?

G. Decision to be Made

The BLM will decide whether or not to issue new grazing permits with modifications from the current permits. As part of this decision, BLM will determine whether or not range improvements should be constructed and if so, which ones will be constructed.

## CHAPTER II: ALTERNATIVES INCLUDING THE PROPOSED ACTION

Alternatives A through C have been fully analyzed in Chapter III of this AMP/EA. Following the public review period for this document a proposed decision would be made by the Field Manager that may choose to proceed with any one of the alternatives analyzed or a combination of portions of multiple alternatives.

### A. Actions Common to All Alternatives

#### 1. Wild Horse Management:

This section identifies wild horse management objectives and applies to all alternatives. The information provided is to aid the reader in understanding all aspects of administration of and resources within Stinkingwater Allotment. The intent of this AMP/EA is not to analyze the effects of gathering horses or preparing an HMA Plan, but rather to provide the multiple-use context of the Proposed Action and action alternatives.. Additional NEPA documentation would be prepared for proposed wild horse gathers or proposed revision to the HMA Plan.

#### Management Objectives

Wild horse management would be implemented to maintain the AML of horses with the permitted numbers of cattle, and existing populations of wildlife in a thriving natural ecological balance with the capability of the land. The 2009 Stinkingwater Wild Horse HMA Plan states that "the objectives are to:

- a. Maintain a viable herd of 40 to 80 wild horses. These horses are found to run between three allotments within the HMA (Stinkingwater, Mountain, and Texaco Basin Allotments). The breakdown of AUMs and AML for each allotment follows (ranges represent low and high ends of the AML for each allotment):

Stinkingwater	120 to 240 AUMS	10 to 20 Horses
Mountain	310 to 620 AUMS	26 to 52 Horses
Texaco Basin	50 to 100 AUMS	4 to 8 Horses

- b. To supply sufficient winter range forage so that only the old or animals weakened from causes other than malnutrition, die during the winter.

- c. Maintain horse numbers between 40 and 80 animals (low and high AML) within the HMA. Gathers should be planned when horse numbers are approaching or would exceed the high end of AML for the HMA or when monitoring data (census, utilization, use supervision, etc.) indicates that ecological balance would be compromised. Knowledge from BLM staff members would ensure safe and humane treatment of the animals along with "on the ground" knowledge of where the horses are located and how many are present. The numbers of horses to be removed (excess animals) are those animals that exceed the low end of the AML.

Depending on reproductive rates, rangeland monitoring data, funding, and other management considerations, horses within HMAs are typically gathered and removed on a 4 to 5-year cycle. In order to maintain the horse population within the AML during a 4 to 5-year gather cycle and perpetuate desirable characteristics, horses would be gathered initially to below the low AML. Horses would then be chosen based upon their sex, color, and conformation characteristics and returned to the HMA, to equal the low AML of 40 horses within the HMA. To ensure the low end of AML has been attained in the HMA a census should be conducted immediately after a gathering and on the second year following a gathering to verify numbers and begin planning for the next gather.

## 2. Adaptive Management:

Adaptive management based upon predetermined resource objectives (Allotment-Specific Resource Objectives in Chapter I (b), Standards for Rangeland Health) and monitoring would be used to provide flexibility in grazing management. "Adaptive management ... is about taking action to improve progress toward desired outcomes." ([www.doi.gov/initiatives](http://www.doi.gov/initiatives), 2007). Knowing that uncertainties exist in managing for sustainable ecosystems, adjustments to timing of grazing, pasture use sequence, etc., to ensure measurable progress toward achieving standards and to meet resource objectives may be implemented. Such changes to the rotation may be authorized for reasons such as, but not limited to:

- previous year's monitoring and current year's climatic conditions.
- drought causing lack of available water in certain areas originally scheduled to be used.
- heavy utilization levels (>50 percent) from wild horses in certain areas leaving little feed for livestock.
- uneven utilization levels per pasture based on annual monitoring.

Rangeland monitoring is a key component of adaptive management. As monitoring indicates changes in grazing management are needed to meet resource objectives, they would be implemented annually working with the permittees. Flexibility would be authorized and changes in rotations would continue to meet

resource objectives. Flexibility is dependent upon the demonstrated stewardship and cooperation of the permittees. In the event of delayed spring turnout, Herds A and B would be allowed to remain on the allotment for a maximum of 2 weeks (off by October 4) past their scheduled off date so long as utilization does not exceed target levels and Active Use AUMs are not exceeded. Additionally, on years when Clear Creek and Stinkingwater Seedings are spring grazed, the permittees would be authorized to gather into the respective pasture for 5 days while coming out of Stinkingwater Pass Pasture.

3. Monitoring:

Monitoring by BLM staff in coordination with the livestock operator of the success in meeting allotment-specific resource objectives and achieving Standards would take place following implementation of any alternative. Pace 180° methodology (Technical Reference (TR) 4400-4) and permanent photo points would be used to measure the relative frequency of occurrence of key forbs, shrubs, and perennial grass species, to assess trend in rangeland condition. Soil Surface Factor methodology would be used to measure soil stability and Observed Apparent Trend would be assessed at each upland trend plot. Permanent photo points would be used to assess trend in riparian habitat condition along Stinkingwater Creek, Little Stinkingwater Creek, and Clear Creek. Greenline monitoring (Winward 2000) would also be used to assess riparian trend along Stinkingwater and Clear Creeks. Upland trend and riparian data would be collected and analyzed on 5-year intervals.

Annual utilization studies for each pasture grazed by livestock along with multiple-use supervision reports of livestock and wild horses would be collected by BLM staff. The Key Forage Plant method would be used to measure utilization in each pasture. Target utilization levels for key forage species are shown in Table 2 below.

**Table 2.** Key Species and Target Utilization Levels for Pastures Comprising Stinkingwater Allotment

<b>Pasture</b>	<b>Acres</b>	<b>Key Species</b>	<b>Utilization Target</b>
Conly Basin	3,493	bluebunch wheatgrass	50%
Bartlett Mountain	3,501	bluebunch wheatgrass	50%
Clear Creek Seeding	3,751	crested wheatgrass	60%
Stinkingwater Seeding	3,744	crested wheatgrass	60%
Well	1,186	bluebunch wheatgrass	50%
Stinkingwater Pass	9,183	bluebunch wheatgrass	50%

Utilization cages have been installed along Clear Creek within the Conly Basin Pasture to measure wild horse utilization of riparian vegetation following livestock removal. Results of this monitoring could be used to make adjustments to horse numbers or location, to facilitate achievement of rangeland health standards and allotment-specific resource objectives. A separate NEPA analysis would be prepared to address actions related to the removal of wild horses.

During each allotment visit monitoring for noxious weed establishment would occur as well as observations of overall rangeland condition. Any disturbed areas created by construction of proposed range improvement projects would be monitored closely for at least 3 years after construction for noxious weeds. All information would aid in determining if management actions are sufficient to achieve Standards and meet objectives.

**B. Alternative A: No Action**

The No Action Alternative would renew all three existing livestock grazing permits on Stinkingwater Allotment. Ten-year Term Grazing Permits would be issued that would continue livestock grazing during the permitted season of use for each permittee as shown in Table 3 below. Permitted Active Use would remain at 2,857 AUMs. The permits would be issued with the same terms and conditions as the expiring permits.

**Table 3.** No Action Alternative: Total Active Use for Stinkingwater Allotment

Permittee	Season of Use	Permitted Active Use	Suspended Use	Total Permitted Use	Exchange of Use
Herd A (#3600067)	04/16 – 09/20	616	300	916	38
Herd B (#3602289)	04/16 – 09/20	1,695	809	2,504	0
Herd C (#3602278)	12/01 – 02/28	546	550	1,096	0
Total		2,857	1,659	4,516	38

Under the No Action Alternative, no rangeland improvement projects would be implemented. Livestock grazing rotations would continue as described in Table 4 as follows:

**Table 4.** No Action Alternative: General Livestock Grazing Management for Stinkingwater Allotment (2-Year Rotation)

<b>Pasture</b>	<b>Odd Year</b>	<b>Even Year</b>	<b>Treatment*</b>	
Stinkingwater Seeding	12/01 – 02/28 Herd C	06/01 – 06/30 Herd B	Winter	Graze
Clear Creek Seeding	06/01 – 06/30 Herd B 06/01 – 08/30 Herd A	12/01 – 02/28 Herd C	Graze	Winter
Bartlett Mountain	Rest	04/16 – 09/20 Herd A	Rest	Graze
Conly Basin	04/16 – 05/31 Herds A and B	04/16 – 05/31 Herd B	Early	Early
Stinkingwater Pass	07/01 – 09/20 Herd B	07/01 – 09/20 Herd B	Defer	Graze
Well	12/01 – 02/28 Herd C	06/01 – 06/30 Herd B	Winter	Graze

\*See Treatment Definitions in Appendix A

C. Alternative B: Proposed Action – Management Changes and Project Development

The Proposed Action was designed by a BLM IDT with representatives from all affected resources. The Proposed Action was developed to address Standards determined as not achieved with livestock and wild horses as causal factors in the 2006 Stinkingwater Allotment Evaluation. It was also designed to meet Stinkingwater Allotment resource objectives brought forth from the 2006 Stinkingwater Evaluation (Chapter I, Section C). To achieve Standards, meet resource objectives, and conform to the Guidelines, the proposed management follows:

1. Livestock Grazing Management
  - a. There is no evidence suggesting a need for change in Permitted Active Use on the allotment. Carrying capacity from the 2006 evaluation was calculated at 4,840 AUMs for all demands (Actual Yield data 1990 – 2005). Permitted Active Use would remain at 2,857 AUMs for livestock. Permitted Active Use for each permittee is shown in Table 5 as follows:

**Table 5.** Proposed Action: Total Active Use for Stinkingwater Allotment

Permittee	Season of Use	Permitted Active Use	Suspended Use	Total Permitted Use	Exchange of Use
Herd A (#3600067)	04/16 – 09/20	616	300	916	38
Herd B (#3602289)	04/16 – 09/20	1,695	809	2,504	0
Herd C (#3602278)	12/01 – 02/28	546	550	1,096	0
Total		2,857	1,659	4,516	38

- b. Livestock grazing management was designed and would be authorized to provide periodic growing season rest to upland plant species. Grazing management in riparian areas would be designed to limit grazing intensity and remove livestock grazing during the critical growth period of riparian vegetation. Use periods per pasture may vary annually in order to provide for the recommended rest periods described in Table 6 as follows:

**Table 6.** Proposed: General Livestock Grazing Management for Stinkingwater Allotment (2-Year Rotation)

Pasture	Odd Year	Even Year	Treatment	
Stinkingwater Seeding	12/01 – 02/28 Herd C	04/16 – 05/31 Herd B	Winter	Graze
Clear Creek Seeding	04/16 – 05/15 Herds A and B	12/01 – 02/28 Herd C	Graze	Winter
Bartlett Mountain	Rest	04/16 – 09/20 Herd A	Rest	Graze
Pasture	Odd Year	Even Year	Treatment	
Conly Basin	05/15 – 06/25 Herds A and B	Rest	Graze	Rest
Stinkingwater Pass	06/26 – 09/20 Herds A and B	06/01 – 09/20 Herd B	Defer	Graze
Well	12/01 – 02/28 Herd C	04/16 – 05/15 Herd B	Winter	Graze

- c. Proposed grazing treatments would include winter use by Herd C in Clear Creek Seeding Pasture (even years) and Stinkingwater Seeding and Well Pastures (odd years) from December 1 to February 28.

On odd years, Herds A and B would begin grazing in Clear Creek Seeding Pasture on April 16 and concurrently move to Conly Basing Pasture on May 15. On June 25, both herds would be moved to the Stinkingwater Pass Pasture and remain there until September 15. On September 15, the permittees would gather into the Clear Creek Seeding Pasture until September 20, when they move off the allotment.

On even years, Herd A would graze Bartlett Mountain Pasture from April 16 through September 20. Herd B would move into the Stinkingwater Seeding Pasture on April 16 and remain until May 31 then move into the Stinkingwater Pass Pasture. The majority of Herd B would remain in Stinkingwater Pass until September 15; however, a portion of this herd would be moved into Stinkingwater Seeding as early as August 15. This would alleviate disproportionate utilization which occurs along the boundary fence within the Stinkingwater Pass Pasture, as livestock naturally move off the high country toward private land pastures late in the summer. On September 15, livestock remaining in Stinkingwater Pass Pasture would be gathered into Stinkingwater Seeding until September 20, when they move off the allotment (Maps C1 and C2: Proposed Action Grazing Schematic).

2. Permit Renewal

The Proposed Action also includes the renewal of the existing livestock grazing permits (#3600067, 3602289, and 3602278) in Stinkingwater Allotment for the current permittees. Ten-year Term Grazing Permits would be issued to authorize livestock grazing on public land. The new term permits would be issued with the terms and conditions on the expiring permits with the addition of changes in this AMP.

3. Proposed Range Improvements

Refer to Map D: Proposed Action Range Improvements Map.

a. Spring Development:

One spring would be developed by BLM and maintained by the grazing permittee. The spring is located within the Stinkingwater Pass Pasture in T. 22 S., R. 34 E., Section 22, SE $\frac{1}{4}$ NE $\frac{1}{4}$ . A grazing enclosure was constructed around the spring source in 2006; however, no spring development (other than a small and nonfunctioning dugout) has been installed to provide water outside of the enclosure. Additionally, the enclosure fence bisects a portion of the spring source, which has resulted in heavy livestock pressure on this fence as livestock naturally seek out water and riparian vegetation. This proposed spring development would realign the enclosure fence to incorporate the entire spring source and install a water trough outside of the existing enclosure. BLM would apply for a water right (from the State of Oregon) for livestock water upon developing this spring.

Construction would be for a typical spring development with a collection box at the spring source and water piped to a trough within 100 feet of the spring. The spring source would be dug out using a backhoe to make a hole large enough for a collection box. From the collection box, a trench would be dug to bury a plastic pipe that would transport water to the new trough. An overflow pipe would transport water approximately 50 feet from the trough and return it to its drainage across the fence within the Conly Basin Pasture. A ripper tooth mounted to a dozer would most likely be used for digging a trench approximately 30 to 36 inches deep where 2-inch black PVC pipe would be buried.

b. Riparian Exclosures:

- (1) Clear Creek Seeding Pasture: Construct one-half mile of four-strand barbed wire fence along the west side of Stinkingwater Creek. The proposed fence would tie into the existing pasture boundary fences for the Clear Creek Seeding and Bartlett Mountain Pastures, subsequently creating a riparian exclosure along this reach of Stinkingwater Creek. Unless a cooperative agreement can be reached to construct a portion of this fence on adjacent private land, this fence would follow the private property line north and cross over Stinkingwater Creek to tie in with the Bartlett Mountain Pasture boundary fence.

Bartlett Mountain Pasture: Construct one-half mile of four-strand strand barbed wire fence along the east side of Stinkingwater Creek and Little Stinkingwater Creek (at its confluence with Stinkingwater Creek). The proposed fence would tie into the existing pasture boundary fences for the Clear Creek Seeding Pasture and adjacent private land, subsequently creating a riparian exclosure along these creeks.

The proposed riparian exclosures are needed to remove livestock and wild horse grazing during the critical growth period of riparian vegetation along these creeks. Although these exclosures would be removed from the proposed livestock grazing rotations, periodic short-duration, early season livestock grazing could be authorized to maintain herbaceous productivity within these exclosures. Grazing treatments within the proposed exclosures would be coordinated by a BLM IDT and the grazing permittee(s).

A contract would be awarded to construct these fences. Manual labor with the use of hand tools, All-Terrain Vehicles (ATVs), and pickup trucks would be used during fence construction. One wire gate would be constructed along each proposed fenceline to allow removal of livestock or wild horses in the event they should breach the enclosure. These gates would remain closed year-round to prevent wild horses from entering the proposed enclosures. After construction, the permittees would be responsible for maintenance of the proposed fences.

c. Stinkingwater Creek Water Gap:

Construct a water gap into the proposed Stinkingwater Creek enclosure within the Clear Creek Seeding Pasture. This water gap would be located along an existing livestock/wild horse trail to provide easy access to livestock and wild horses. The water gap is needed to provide reliable water to livestock and year-round water to wild horses on the east side of this pasture, while excluding access to the majority of Stinkingwater Creek.

A four-strand barbed wire fence would be constructed to create an alley (approximately 75 yards long) from the proposed enclosure fence to the edge of the Stinkingwater Creek flood plain. From this point, wood rails or metal panels would be used to provide access to the creek. Rock cribs, H-Braces, or wood posts would be used to anchor this fence and provide support during high flow events. The water gap would cross to the east side of Stinkingwater Creek and tie in to the existing boundary fence with Bartlett Mountain Pasture. This would allow livestock access to the water gap when they are in the Clear Creek Seeding and Bartlett Mountain Pastures (at different times). Swinging metal panels anchored by rock cribs and supported with metal cable would be used to cross the creek. A wire gate would be installed at both ends of this gap to control access to Stinkingwater Creek. The water gap would be small enough (width <100 feet) to discourage livestock and wild horse loafing in the area. Course gravel would be used to create a hardened pad (where necessary) from the existing cutbank to the water's edge.

A contract would be awarded to construct the water gap. Manual labor with the use of hand tools, ATVs, and pickup trucks would be used during construction. Heavy equipment would be used to haul material to the site, auger post holes, and spread gravel. Construction would occur during low-flow periods (late summer) to minimize soil disturbance and sedimentation within the riparian zone. After construction, the permittees would be responsible for maintenance of the water gap.

d. Additional Bartlett Mountain Pasture Water Source:

Utilization studies indicate disproportionate use occurs in the northern and western portions of this pasture, around the two existing water sources, with very light utilization on the southern slopes of Bartlett Mountain. Providing an additional source of livestock water is proposed to promote more even utilization throughout the pasture. The following two options are being proposed to establish water in this area:

Option 1: Solar Pump and Trough (preferred option)

Install a new water trough (1,500-gallon aluminum) and storage tank in the southeast corner of the Bartlett Mountain Pasture (T. 22 S., R. 35 E., Section 2, NE $\frac{1}{4}$ NW $\frac{1}{4}$ ). This trough would be serviced by installing a solar powered submersible pump to pump water from Little Stinkingwater Creek (on adjacent private land) to the proposed trough. This solar system would be mounted on a trailer to facilitate removal of the unit during the winter and on years when Bartlett Mountain Pasture is rested. A float valve would control water supplied to the trough and an overflow pipe would pipe water from the storage tank back into Little Stinkingwater Creek. Approximately 200 yards of PVC pipe would be trenched and buried to transport water from the pump to the storage tank and trough.

Option 2: Bartlett Mountain Well (to be used only if "Option 1" fails to provide reliable water).

Drill a new well and install a new water trough (1,500-gallon aluminum or 10-foot bottomless) and storage tank in the southeast corner of the Bartlett Mountain Pasture (T. 22 S., R. 35 E., Section 2, NE $\frac{1}{4}$ NW $\frac{1}{4}$ ). Heavy equipment (i.e., drill rigs) and manual labor would be used during construction of this well. The well pad would be leveled for the drilling rig and water trough installation. The disturbed area would measure approximately 100 feet in diameter. This proposed well would be located along an existing road to eliminate the need for construction of a service road. Depending on depth, this well would be powered by solar panels or a fuel type generator.

e. General Project Design Elements for Proposed Rangeland Improvements:

- (1) Proposed rangeland improvement sites would be surveyed for cultural values prior to implementation. If cultural resources are found, historic property documentation would be completed. National Register eligible sites would be avoided and mitigation plans would be developed in consultation with the State Historic Preservation Office if necessary.

- (2) Proposed rangeland improvement sites would be surveyed for Special Status plant species prior to implementation. Special Status plant sites would be avoided.
- (3) Special Status wildlife species (terrestrial, avian, and aquatic) habitat would be protected during proposed range improvement project implementation.
- (4) No range improvement projects would be constructed within 0.6-mile) of known sage-grouse lek sites.
- (5) Proposed range improvement sites would be surveyed for noxious weed populations prior to implementation. Weed populations identified in or adjacent to the proposed projects would be treated using the most appropriate methods in accordance with the Burns District Noxious Weed Management Program/Decision Record (EA/DR) OR-020-98-05.
- (6) The risk of noxious weed introduction would be minimized by ensuring all equipment (including all machinery, 4-wheelers, and pickup trucks) is cleaned prior to entry to the sites, minimizing disturbance activities, and completing follow-up monitoring, to ensure no new noxious weed establishment. Should noxious weeds be found, appropriate control treatments would be performed in conformance with the Burns District Noxious Weed Program Management EA/DR OR-020-98-05. Disturbed areas would be closely monitored for weeds for 3 years after project construction.
- (7) All proposed fences would be constructed using BLM approved standards for four-strand fences. Plastic clips, visible in low light conditions, would be installed at regular intervals along new fences to reduce bird collisions.
- (8) The grazing permittees would be responsible for all range improvement maintenance. Proper fence maintenance would be a stipulation for turnout each year.
- (9) All watering troughs installed would be equipped with escape ramps for birds and small mammals.
- (10) Reseeding would take place in areas disturbed by implementation of rangeland improvement projects. Soil displaced for pipeline installation would be pulled in and returned to original slope and grade then seeded with a whirly bird seeder and drag. The seed mix used for these rangeland improvement projects would be a mixture of native and nonnative species including crested wheatgrass, bluebunch wheatgrass, squirreltail, and native forbs.

Crested wheatgrass would be used in the seed mix because it is drought tolerant, competitive with invasive species, has a long seed viability period, and aggressive germination characteristics, therefore reducing noxious weed establishment.

D. Alternative C – Removal of Livestock Grazing from Clear Creek Seeding and Bartlett Mountain Pastures

To eliminate livestock grazing as a causal factor for failing to achieve riparian standards along Stinkingwater and Little Stinkingwater Creeks, livestock grazing would no longer occur within the Clear Creek Seeding and Bartlett Mountain Pastures under this alternative. This would equate to a reduction of 1,162 AUMs or 40 percent of current Permitted Active Use (2,857 AUMs) on Stinkingwater Allotment.

Removing livestock grazing from these two pastures would require the permittees of Herds A and C to find alternative forage every other year. Changes to the current grazing rotation for Herd B would be required to accommodate removal of the Clear Creek Seeding Pasture. Livestock grazing rotations would be adjusted as described in Table 7 as follows:

**Table 7.** Alternative C: General Livestock Grazing Management for Stinkingwater Allotment (2-Year Rotation)

Pasture	Odd Year	Even Year	Treatment	
Stinkingwater Seeding	12/01 – 02/28 Herd C	05/16 – 07/01 Herd B	Winter	Graze
Clear Creek Seeding	Rest	Rest	Rest	Rest
Bartlett Mountain	Rest	Rest	Rest	Rest
Conly Basin	04/16 – 05/31 Herds A and B	04/16 – 05/15 Herd B	Graze	Early
Stinkingwater Pass	06/01 – 09/20 Herds A and B	07/01 – 09/15 Herd B	Graze	Defer
Well	12/01 – 02/28 Herd C	04/16 – 05/15 Herd B	Winter	Early

The proposed spring development (from Proposed Action) within Stinkingwater Pass Pasture would still occur under this alternative; however, no additional range improvement projects would be proposed. Maintenance, improvement, or removal of range improvements and water sources within these pastures would occur as needed only to achieve resource objectives other than livestock management, as funding is available. Funding would likely come from the wild horse or riparian programs. Perimeter fences would be maintained by the grazing permittee(s) adjacent to Stinkingwater Allotment, adjacent private landowners, or the BLM wild horse program staff.

E. Alternatives Considered but Eliminated from Further Analysis

1. Conversion of Livestock Type and Removal of Fences

This alternative would convert the current livestock grazing permits from cattle to domestic sheep. Because sheep utilization is intensively managed by a herder, the internal allotment fences could be removed. This type of livestock use would intensively manage utilization levels and timing of use on riparian areas and around reliable water sources, therefore improving rangeland condition without the construction of riparian exclosures. Removal of fences would benefit the free-roaming nature of wild horses and aid in improved wild horse distribution across the HMA. However, this alternative was eliminated from detailed analysis for the following reasons:

- a. Proximity to bighorn sheep - Bighorn sheep have been documented within Bartlett Mountain Pasture which could result in contact with domestic sheep. Interactions between wild and domestic sheep have proven to be detrimental to bighorn sheep populations. In recent years, biologists and veterinarians have shown that even casual contact may lead to respiratory disease and fatal pneumonia in bighorns (Onderka and Wishart 1988, Schommer and Woolever 2006). In the summary of their disease overview, Schommer and Woolever (2006) quote several scientists concluding contact between bighorn and domestic sheep increases the risk of bighorn mortality and complete range of causal agents that lead to these disease events cannot be conclusively proven at this point. Therefore, segregation of these two species on native range is the best management tool until more information is collected.
- b. No demand for domestic sheep grazing – Stinkingwater Allotment has historically been a cattle grazing allotment. The three permittees who hold grazing permits on the allotment operate ranches which have been producing cattle for multiple generations. The infrastructure of these ranches (i.e., handling facilities, winter range, winter feed, and employees) are designed for cattle production, and significant costs would be required to facilitate the switch to sheep production. There has been no demand by the affected permittees to switch to sheep production on this allotment.

Based on the above rationale, this alternative was not considered for further analysis.

2. Switch to Early Season Livestock Grazing within the Bartlett Mountain and Clear Creek Seeding Pastures Instead of Building the Enclosures

This alternative would change the current season of use in the Bartlett Mountain Pasture from seasonlong (April 16 to September 20) every other year, to an early (April 1 to April 30) treatment every year. Season of use in the Clear Creek Seeding Pasture would be changed from (June 1 to June 30) every other year, to an early (April 1 to April 30) treatment every year. The early graze treatments would be designed to allow ample time for regrowth of riparian vegetation along Stinkingwater and Little Stinkingwater Creeks following livestock removal.

This alternative was considered but did not receive further analysis because it did not address the Purpose and Need of eliminating wild horse access to Stinkingwater and Little Stinkingwater Creeks to help in making significant progress toward achieving all Rangeland Health Standards. Although removing livestock grazing along Stinkingwater and Little Stinkingwater Creeks during the critical growing season of riparian vegetation would eliminate heavy utilization by livestock, wild horses would continue to have year-round access to these streams. Wild horses are known to congregate along Stinkingwater Creek during the hot season, contributing to heavy utilization of riparian vegetation. Under this alternative, wild horses would continue to cause heavy utilization of riparian vegetation, which would retard riparian habitat improvement, and would not allow for achievement of all Riparian, Water Quality, and Special Status Species (SSS) Standards for Rangeland Health. The resource objective of causing an upward trend in riparian habitat condition along these streams would not be achieved and the Purpose and Need for Action would not be met.

Based on the above rationale, this alternative was not considered for further analysis.

3. Removing Livestock and Wild Horses from the Bartlett Mountain and Clear Creek Seeding Pastures Instead of Building the Enclosures

This alternative would remove both livestock and wild horses from Bartlett Mountain and Clear Creek Seeding Pastures. Although removing all large ungulate grazing from these pastures would meet the purpose of eliminating late season grazing from Stinkingwater and Little Stinkingwater Creeks, this alternative did not receive further analysis for the following reasons:

- a. Removing livestock from Bartlett Mountain and Clear Creek Seeding Pastures is fully analyzed under Alternative C, therefore effects would be equivalent.

- b. Adjustments to HMA boundaries can only be conducted during the land use planning process or within an RMP revision or amendment. This action is not a land use plan allocation; therefore, elimination of wild horses is outside the scope of this analysis. Furthermore, the Wild Horse and Burro Act requires the BLM to protect and manage wild horses in areas they were found at the time the Act was passed and in a manner designed to achieve and maintain a thriving ecological balance in keeping with the public land, multiple-use concept; and moving wild horses to other HMAs would jeopardize herd viability, genetic diversity and the genetic and physical characteristics that distinguish individual herds.

Based on the above rationale, this alternative was not considered for further analysis.

4. Proposed Action including an Increase in Permitted Active Use AUMs

This alternative would include the same management and projects as the Proposed Action, but would increase Permitted Active Use (for livestock) from 2,857 AUMs to 4,174 AUMs (1,317 AUM increase) to meet the calculated carrying capacity of 4,480 AUMs for all demands (66 AUMs for wildlife and 240 AUMs for wild horses). Although the current carrying capacity exceeds the current forage demand for all grazers (livestock, wildlife, and wild horses), the potential is high for downward trends in carrying capacity if medusahead-rye increases on the allotment. It has been estimated that grazing capacity can be reduced by up to 80 percent on medusahead dominated rangelands (Hironaka 1961). For this reason, increasing Active Use AUMs to meet calculated carrying capacity was not considered because it is speculative that all Rangeland Health Standards would be achieved with increased grazing on the allotment.

### CHAPTER III: DESCRIPTION OF THE AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

The IDT reviewed the elements of the human environment, required by law, regulation, Executive Order and policy, to determine if they would be affected by the Proposed Action or other alternatives. The results are summarized in Table 8 below.

This environmental consequence section presents the potential effects to the environment resulting from implementation of the alternatives. This chapter describes all effects including direct, indirect, and cumulative on resources from enacting the proposed alternatives. A distinction between direct and indirect effects is not made and in many cases cumulative effects are included in the general effects analysis.

**Reasonably foreseeable future activities:** There are several reasonably foreseeable, ongoing, and Proposed Actions within the allotment and the geographic scope of affected resources which have the potential to contribute to cumulative effects of the Proposed Action and Alternatives. Activities likely to occur over the 10 to 20-year life of this AMP include wildfire and related

suppression activities, ongoing treatment of noxious weeds, wild horse gathers (4 to 5-year cycle) within Stinkingwater HMA, installation of six meteorological towers on or near the western portion of the allotment, routine road/range improvement maintenance, and juniper cutting and prescribed burning (approximately 3,500 acres) approximately 4 miles south of the allotment.

**Table 8.** Elements Affecting the Human Environment

<b>Elements of Human Environment</b>	<b>Status</b>	<b>If Not Affected, why? If Affected, Reference Applicable EA Section</b>	
ACECs/American Indian Traditional Practices	<b>Affected</b>	See Section III.	
Air Quality (Clean Air Act)	Not Affected	There would only be temporary change in air quality as a result of constructing proposed range improvements (dust particles). Effects would not be measurable.	
Cultural Heritage	<b>Affected</b>	See Section III.	
Environmental Justice (Executive Order 12898)	Not Affected	The Proposed Action and Alternatives would not have disproportionately high and adverse human health or environmental effects on minority populations and low-income populations as such populations do not exist in the Project Area.	
Farmlands (prime or unique)	Not Present		
Flood Plains (Executive Order 13112)	Not Affected	No occupancy or modification of flood plains, no risk of flood loss.	
Hazardous or Solid Waste	Not Present	No concerns have been disclosed.	
Migratory Bird Treaty Act (Executive Order 13186)	<b>Affected</b>	See Section III.	
Noxious Weeds (Executive Order 13112)	<b>Affected</b>	See Section III.	
Wetlands/Riparian Zones and Water Quality (Executive Order 11990)	<b>Affected</b>	See Section III.	
SSS and Habitat	Wildlife	<b>Affected</b>	See Section III.
	Plants	Not Present	Two sites supporting Raven's Lomatium ( <i>Lomatium ravenii</i> ), a State Director SSS (State Director's SSS list, 2008), occur on public land in the adjacent allotments to the West. No known SSS of flora are known to occur within the Stinkingwater Allotment.
	Fish	Not Present	

Threatened or Endangered Species or Habitat	Wildlife	Not Present	
	Plants	Not Present	
	Fish	Not Present	
Wild and Scenic Rivers	Not Present	Not Present	
Designated Wilderness/Wilderness Study Area		Not Present	
Grazing Management/Rangelands		<b>Affected</b>	See Section III.
Greenhouse Gas Emissions		<b>Not Affected</b>	Assuming each AUM results in 0.168 metric tons of carbon dioxide equivalent, authorizing 2,857 AUMs would result in methane emissions of 480 metric tons of carbon dioxide equivalent per year. This emission would be so small that it would not merit reporting under the EPA rule on mandatory reporting of greenhouse gases, which presents a reporting threshold of 25,000 metric tons of carbon dioxide equivalent.
Upland Vegetation		<b>Affected</b>	See Section III.
Soils/Biological Soil Crusts (BSCs)		<b>Affected</b>	See Section III.
Paleontology		<b>Affected</b>	See Section III.
Recreation/Visual Resources		<b>Affected</b>	See Section III.
Fisheries		<b>Affected</b>	See Section III.
Social and Economic Values		<b>Affected</b>	See Section III.
Wilderness Characteristics		Not Present*	
Wildlife/Locally Important Species and Habitat		<b>Affected</b>	See Section III.

\* An intensive inventory evaluating presence of wilderness characteristics on the BLM-administered lands in Stinkingwater Allotment was completed in the late 1970s. The final intensive inventory decision found wilderness characteristics were not present on these lands (Wilderness Review Inventory in Oregon and Washington, March 1980, page 41). In December 2009 the Wilderness Inventory Maintenance process was completed on approximately 13,245 acres of BLM land within the allotment as part of a proposal to monitor wind resources. BLM's updated (2009) inventory of wilderness characteristics found no areas within Stinkingwater Allotment which met the minimum criteria for containing wilderness characteristics.

## AFFECTED ELEMENTS

### 1. Cultural Resources

This discussion and analysis of potential effects to cultural heritage is tiered to the 1992 Three Rivers PRMP/FEIS and relevant information contained in the following sections is incorporated by reference: Chapter 2, p. 2-152 and Chapter 3, p. 3-21.

#### *Affected Environment:*

Approximately 880 acres (3.5 percent) of the 24,858-acre Stinkingwater Allotment have been inventoried for cultural resources. Thirteen pre-contact archaeological sites have been found within the allotment. The site types range from large, deeply buried camps to small lithic scatters where stone tools were made or repaired. In addition, obsidian tool stone sources are close to the allotment and fine-grained basalt can be found within the allotment. Based on the projectile points found in sites in this allotment, this area was used between 5000 and 100 years ago. As mentioned below, some of these sites have been used to the present time as root gathering camps.

Sixty-one percent (8 of 13) of the sites in the allotment have been impacted by livestock or wild horse trampling. See Table 9 for the types of impacts reported at the 13 sites.

**Table 9.** Types of Impacts Reported at 13 Pre-contact Archaeological Sites in the Stinkingwater Allotment

<b>Site Number</b>	<b>Impacts</b>
05020500036si	Highway construction, erosion
0037si	Highway construction, erosion, excavation
0503si	Fire
763si	Vandalism, erosion, grazing
870si	Animal burrowing, grazing, erosion
2343si	Animal burrowing, vandalism
2344si	Pond construction, road building, grazing
2345si	Grazing, Off-Highway Vehicles (OHVs), erosion
2346si	Erosion
2348si	Grazing, OHV
2349si	Erosion, grazing
2785si	Grazing
2786si	Grazing, erosion

#### *Environmental Consequences:*

*Effects Common to All Alternatives:*

For the purposes of this analysis, the cumulative effects analysis area for cultural resources is at the allotment scale. All alternatives and other ongoing and reasonably foreseeable future projects would not lead to cumulative effects to cultural resources, because impacts of proposed projects would be localized or completely avoided. Potential direct and cumulative effects to cultural resources would be mitigated through project-specific cultural resource inventory and clearances prior to any project implementation.

Alternative A: No Action – Current grazing and wild horse herd management are not likely to affect cultural resources sites in areas of the allotment away from water sources and other livestock congregation areas. Sites in these areas may have sustained trampling effects such as lateral (less than 2 feet) and vertical (less than 6 inches) movement of artifacts, artifact breakage and shallow (less than 6 inches) ground surface scuffing. Such effects are not likely to increase the deterioration of site integrity under the No Action Alternative.

Sites adjacent to or within water sources or other livestock congregation areas are likely to continue to sustain trampling effects such as lateral (over 3 feet) and vertical (over 6 inches) movement of artifacts, artifact breakage and moderate (over 6 inches) to deep (over 12 inches) ground surface scuffing or hoof shear (when wet). Because these effects are concentrated in the same locations year after year, it is likely that the same site deposits are being disturbed every year and the surfaces of these sites have little integrity. Cultural materials beneath this disturbance zone are probably in an undisturbed condition and would remain so under the No Action Alternative.

Alternative B: Proposed Action - Sites located within the proposed riparian enclosures (Stinkingwater and Little Stinkingwater Creeks) would not continue to be affected by livestock and wild horse grazing. Sites located near new water developments (well and spring) or within the water gap on Stinkingwater Creek would be subject to new trampling effects detailed under the No Action Alternative. These effects would likely cause the deterioration of site integrity, especially sites that have subsurface deposits. The water gap on Stinkingwater Creek has the potential to affect buried archaeological sites because livestock and horses would be concentrated within a limited gap area (<100 feet).

The proposed spring development has a site both inside and outside the existing enclosure fence. Site monitoring has not occurred since the enclosure was constructed so it is not known if the current fence configuration has caused an increase or decrease of trampling effects. In order to eliminate any further effects, the site would be entirely located within the proposed enclosure fence and away from the proposed trough location.

Sites near or within current water developments would experience a slight decrease in grazing effects because new water developments may reduce the number of livestock at any one water development at any one time.

Upland sites away from water developments would sustain grazing effects similar in intensity to those described under the No Action Alternative.

Alternative C: Removal of Livestock Grazing from Clear Creek Seeding and Bartlett Mountain Pastures - Eliminating livestock grazing from Bartlett Mountain and Clear Creek Seeding Pastures would allow, to some degree, archaeological site surfaces to stabilize even though previously disturbed sediments would still have low integrity (condition). Site integrity below previously disturbed sediments would more likely remain undisturbed under this alternative than other alternatives. However, stabilization of these sites may be limited as wild horses would continue to congregate in riparian areas along Stinkingwater and Little Stinkingwater Creeks. Effects to the remaining pastures of the allotment would be equivalent to the No Action Alternative.

2. Areas of Critical Environmental Concern/American Indian Traditional Practices

This analysis of effects to the Biscuitroot Cultural ACEC/American Indian Traditional Practices is tiered to the 1992 Three Rivers PRMP/FEIS at ACEC - Chapter 2, p. 2-140 and Cultural Resources – Chapter 2, p. 2-154.

*Affected Environment:*

In addition to archaeological sites, the allotment is home to a number of historic and modern root gathering camp locations and the formally designated Biscuitroot Cultural ACEC. Approximately 1,740 acres of the Biscuitroot Cultural ACEC designated lands fall within the Stinkingwater Pass Pasture of Stinkingwater Allotment. Four trend plots have been established in this portion of the ACEC. Monitoring has been completed three times at the trend plots but trend has not been established at this time.

Potential species of traditional use plants include Canby's biscuitroot (*Lomatium canbyi*), biscuitroot (*Lomatium cous*), Gorman's biscuitroot (*Lomatium gormanii*), Henderson's lomatium (*Lomatium hendersonii*), Indian celery (*Lomatium nudicale*), Raven's biscuitroot (*Lomatium ravenii*), Bolander's yampah (*Perideridia bolanderi*), bitterroot (*Lewisia rediviva*), and wild onion (*Allium* spp.). Anecdotal field observations of livestock grazing impacts on root crops have been noted, primarily on wild onions and bitterroot. Bitterroot is more important to root gatherers than onions. Even though grazing impacts have been noted in the ACEC, grazing impacts are generally low (<5 percent) on target species such as a number of *Lomatium* sp., Indian carrot (*Perideridia* sp.) and bitterroot. The primary complaint of Burns Paiute Tribal users of the area is root depletion by other, non-local root diggers.

A management objective was established in the Three Rivers RMP/ROD for adjusting grazing management in Stinkingwater Allotment, including levels, areas and seasons of authorized use as required by the ACEC portion of the Three Rivers RMP/ROD. An allotment-specific objective for maintaining the portion of Biscuitroot Cultural ACEC within Stinkingwater Allotment was included in the 1997 Stinkingwater AMP. Subsequent to implementation of the 1997 AMP, Biscuitroot Cultural ACEC Management Plan was prepared and signed in 1999.

Burns Paiute Tribal members also use the area for sacred or religious activities. At least one of such sites occurs within the allotment. Suspected reasons for such activities is the importance this geographic location has had in the Paiute economic system and the view it provides of sacred places such as Castle Rock.

*Environmental Consequences:*

*Effects Common to All Alternatives:*

For the purposes of this analysis, the cumulative effects analysis area for ACEC is the portion of the Biscuitroot Cultural ACEC contained within Stinkingwater Allotment. All alternatives and other ongoing and reasonably foreseeable future projects would not lead to cumulative effects to the ACEC because such projects would occur outside the ACEC boundary or in the case of noxious weed treatments, would be localized. Predicting the effects of potential wildfire on traditional use plants within the ACEC would be mere speculation.

Alternative A: No Action – Potential effects to root gathering within the ACEC would be minimal as livestock grazing in the Stinkingwater Pass Pasture would generally not occur until after July 1 each year, which would allow traditional use plant species to set seed and maintain vigor prior to livestock grazing. Deferred grazing treatments would perpetuate traditional use plant species composition within the ACEC. Root gathering operations generally occur before livestock grazing (April to June); therefore, potential impacts from livestock grazing would be limited to livestock sign (i.e., loafing areas, manure) within root gathering sites/camps.

Alternative B: Proposed Action – Under the proposed grazing rotation, the Stinkingwater Pass Pasture would receive deferred grazing every other year, thus perpetuating traditional use plant species within the ACEC. On years when this pasture receives a graze treatment, grazing would not occur until the first week of June, which on most years would be toward the end of the root gathering season.

On these years, the presence of livestock in the ACEC may pose negative visual effects to root gathering operations occurring in mid- to late June. Implementing the proposed spring development within the Stinkingwater Pass Pasture would help spread grazing use across the pasture, and may reduce livestock congregation near the two existing reservoirs within the ACEC boundary. Because the proposed spring development is outside the viewshed of the ACEC, there would be no effects to the visual quality of the ACEC. The proposed riparian enclosures, water gap, and trough/well are outside the ACEC boundary; therefore they would not affect root gathering operations.

Alternative C: Removal of Livestock Grazing from Clear Creek Seeding and Bartlett Mountain Pastures - Eliminating permitted livestock grazing within Clear Creek Seeding and Bartlett Mountain Pastures would not affect root gathering operations, as no part of the ACEC exists within these two pastures. Effects to ACEC would be equivalent to the No Action Alternative.

### 3. Noxious Weeds

This discussion and analysis of potential effects to noxious weeds is tiered to the 1992 Three Rivers PRMP/FEIS vegetation sections and relevant information contained in the following sections is incorporated by reference: Chapter 2, p. 2-53, V1.6.

#### *Affected Environment:*

The Burns District BLM database currently lists 41 noxious weed sites totaling 1,499 acres in the Stinkingwater Allotment. The following 11 noxious weed species have been documented in the allotment: 15 medusahead-rye (*Taeniatherum caput-medusae*) sites (1,484.2 acres although more are predicted), 4 whitetop (*Cardaria draba*) sites (0.3-acre), 1 Canada thistle (*Cirsium arvense*) site (0.003-acre), 4 bull thistle (*Cirsium vulgare*) sites (0.11-acre), 1 halogeton (*Halogeton glomeratus*) site (9.3 acres), 1 St. Johnswort (*Hypericum perforatum*) site (0.06-acre), 1 perennial Pepperweed (*Lepidium latifolium*) site (0.003-acre), 6 Dalmatian toadflax (*Linaria dalmatica*) sites (4.7 acres), 4 purple loosestrife (*Lythrum salicaria*) sites (0.009-acre), 1 Scotch thistle (*Onopordum acanthium*) site (0.003-acre), and 3 Mediterranean sage (*Salvia aethiopsis*) sites (0.004-acre).

In 2008, remote sensing was used to quantify areas of heavy medusahead infestation within and around Stinkingwater Allotment. Results of this project predict medusahead infestations on approximately 2,803 acres or 11 percent of Stinkingwater Allotment. Medusahead has been documented in all the pastures with the largest infestations occurring in the Clear Creek Seeding and Stinkingwater Seeding Pastures. None of the medusahead sites have been treated.

The ground-truthed extents of all weeds have been more informally documented over the years. In 2003, purple loosestrife was documented on private land upstream from the BLM portion of Stinkingwater Creek in the Stinkingwater Allotment. During the inventory of the riparian area, BLM also documented Dalmatian toadflax, perennial pepperweed, whitetop, and Canada thistle. BLM began treatments on those weeds in the riparian corridor in 2004. In 2005, BLM inventoried and treated infestations of whitetop and Scotch thistle, totaling 2.8 acres, primarily in the Bartlett Mountain Pasture. Most of the other weeds have been and will continue to be treated. The halogeton site has not received any treatment.

The adjacent private lands also contain infestations of medusahead in the uplands and infestations of perennial pepperweed, whitetop, Dalmatian toadflax, and Canada thistle along Stinkingwater Creek and other riparian areas. Most of the landowners in this area have been aggressively treating their weeds, including medusahead.

The most contentious weed problem in the allotment is the medusahead rye. It has been increasing rapidly in the allotment uplands for many years. In many areas it is replacing the bunch grasses, both native and crested wheatgrass. The Stinkingwater Mountains area receives heavy recreational hunting and recreational OHV use which may be contributing to the spread of medusahead.

The BLM currently has limited tools to effectively manage medusahead rye on BLM lands in Oregon. In areas with heavy clay soils, medusahead outcompetes mid- and late-seral species, as well as competitive introduced species such as crested wheatgrass (Pyke 1999). However, management actions that encourage mid- to late-seral vegetation and good to excellent condition rangeland, managed to encourage vigor and productivity in those species would possibly be helpful in occupying niches and slowing down potential movement of medusahead into those areas.

It appears that decadent, late-seral grass species are not able to effectively monopolize resources that medusahead then capitalizes on. Grazing management which revitalizes and invigorates those species would be beneficial for enhancing weed resistance in this allotment. Burning areas with medusahead favors Medusahead (Young 1992). Fire exacerbates the problem by opening ecological niches for medusahead to establish and increase. Fire can stimulate desirable grasses and forbs and reduce medusahead in the short term. However, if the burn is not followed shortly thereafter by an herbicide treatment, the short-term gain is soon overwhelmed by increased medusahead, capitalizing on new niches and newly released nutrients.

At the present, Oregon BLM is under a court-ordered herbicide injunction which limits the use of herbicides on BLM lands in Oregon to four active ingredients (dicamba, picloram, glyphosate, and 2,4-D) for noxious weed control only. A recommended treatment for medusahead is a fall application of Plateau at 6 oz/acre. Glyphosate can be used early in the spring but injures any associated desirable vegetation. Until the injunction is resolved, OR BLM is in a "wait and see" mode and can only try to prevent additional spread of medusahead by using adjusted timings of pasture moves for livestock and limiting vehicles in medusahead-infested areas when it is likely that seeds could be picked up and transported.

*Environmental Consequences:*

*Effects Common to All Alternatives:*

For the purposes of this analysis, the cumulative effects analysis area for noxious weeds is at the allotment scale. Reasonably foreseeable future projects within the allotment include wildfire (and suppression activities), routine road maintenance, and continued OHV use. All alternatives and other ongoing and reasonably foreseeable future projects would not lead to cumulative effects to noxious weeds, because monitoring and treatment of noxious weeds would continue on the allotment and potential new weed sites occurring around proposed projects would be localized. Predicting the effects of potential wildfire on noxious weeds would be speculative; however, analysis of post fire rehabilitation plans would address noxious weeds and other affected resources, including livestock grazing management.

Alternative A: No Action – Selection of the No Action Alternative would continue downward trend in riparian conditions along Stinkingwater and Little Stinkingwater Creeks within the Clear Creek Seeding and Bartlett Mountain Pastures. Since there are no ground-disturbing activities under this alternative, there would be less risk of new introductions initially. However, grazing management which concentrates livestock and wild horse grazing on these riparian areas during the hot season does not allow for establishment of desirable riparian vegetation. Reduced competition with desired riparian species and heavy utilization (>50 percent) would continue to provide ecological niches for noxious weed establishment. Under this alternative, the existing perennial pepperweed, whitetop, Dalmatian toadflax, and Canada thistle populations would likely increase along Stinkingwater and Little Stinkingwater Creeks and spread to adjacent lands downstream from the allotment even with annual treatments.

Current grazing management which is causing stable or upward trend in upland plant communities would continue under this alternative. Periodic growing season rest would continue to be provided to all pastures within the allotment.

However, without an aggressive medusahead control strategy implemented soon, we may very well see a downward upland trend regardless of grazing management.

Alternative B: Proposed Action – Implementing the proposed riparian exclosures along Stinkingwater and Little Stinkingwater Creeks would promote the establishment of desired riparian vegetation within these areas. Maintaining a healthy and productive riparian plant community along these creeks would increase resistance to noxious weed introduction and spread. The proposed water gap into Stinkingwater Creek would concentrate livestock and wildlife within a small (<100 feet) area along the bank of this stream. This would result in heavy utilization and localized soil disturbance within the gap, which could increase the potential for noxious weed establishment.

Proposed grazing management in the upland portions of this allotment is similar to current grazing management, which is causing a stable or upward trend in upland plant communities. Periodic growing season rest from livestock grazing would maintain plant vigor and increase resistance to noxious weed introduction and spread. The proposed water developments (spring and trough/well) within the Stinkingwater Pass and Bartlett Mountain Pastures would promote more even grazing distribution and would reduce grazing pressure around existing water sources. Range improvement projects designed to moderate livestock congregation and help spread animals on the landscape would reduce disturbance and, therefore, reduce opportunities for noxious weed introduction and spread. Range improvements would also help spread horse use across the landscape, reducing concentrations and impacts from horses, contribute to enhancing desirable plant communities, and thus lessen opportunities for weed introduction and spread. Unfortunately, without an aggressive medusahead control strategy implemented soon, we may very well see a downward upland trend regardless of range improvements and progressive grazing management strategies.

Any ground-disturbing activities associated with proposed range improvements have potential to create opportunities for noxious weed establishment and spread. Proposed fences, water developments, and pipelines are activities that could open up niches for weed introductions. Ensuring vehicles and equipment used to perform those activities are free of noxious weed seed or plant parts would aid in preventing introductions to the sites. Those disturbed areas would be monitored closely for at least 3 years after projects are constructed. If weeds are found, they would be treated as soon as possible using the most effective and appropriate methods available.

Alternative C: Removal of Livestock Grazing from Clear Creek Seeding and Bartlett Mountain Pastures - Removal of livestock grazing from the Clear Creek Seeding and Bartlett Mountain Pastures could help enhance desirable plant community diversity, productivity, and vigor which could reduce opportunities for noxious weed introduction and spread. On the other hand, by removing livestock from these pastures, implementation of range improvement projects which would also help moderate distribution and concentrated impacts of wild horse populations, would not occur. Overuse of riparian areas by wild horses can create opportunities for noxious weed introduction and spread.

With no livestock in these pastures, opportunities for trained staff and grazing permittees to discover new weed populations would be compromised as there would be reduced monitoring on the allotment. New weed introductions, if not discovered and treated in a timely manner, would spread rapidly and become difficult and expensive to treat. Eradication would be much less likely to occur.

Heavy infestations of medusahead already occur in this allotment and would continue to spread and adversely impact the health and ecological diversity of the upland vegetative communities, regardless of whether or not grazing occurs. We have witnessed a decline in vigor and productivity of bunchgrasses with no disturbance in this area, and the subsequent competitive pressure that medusahead can then exert (Warm Springs Creek Enclosure). Appropriate grazing can help mitigate this effect, as can periodic fires, followed by herbicide treatments.

Effects on noxious weeds within the remaining pastures of the allotment would be equivalent to the No Action Alternative.

#### 4. Migratory Birds

This discussion and analysis of potential effects to migratory birds is tiered to the 1991 Three Rivers PRMP/FEIS wildlife sections and relevant information contained in the following sections is incorporated by reference: Chapter 2, p. 2-66 and Chapter 3, p. 3-9.

*Affected Environment:*

Migratory birds use suitable habitat in Stinkingwater Allotment for nesting, foraging, and resting as they pass through on their yearly migrations; however, no formal monitoring for migratory birds has been conducted. The allotment offers a variety of habitat for birds, including sagebrush-grasslands, juniper (*Juniperus occidentalis*) sagebrush (*Artemisia* spp.), and riparian areas.

Species that favor open grasslands on the allotment may include vesper sparrow (*Pooecetes gramineus*) and horned lark (*Eremophila alpestris*). Brewer's sparrow (*Spizella breweri*), sage sparrow (*Amphispiza belli*), sage thrasher (*Oreoscoptes montanus*), loggerhead shrike (*Lanius ludovicianus*), and sage sparrow (*Amphispiza belli*) are typically found in sagebrush communities. Gray flycatcher (*Empidonax wrightii*), dark-eyed junco (*Junco hyemalis*), American kestrel (*Falco sparverius*), northern flicker (*Colaptes auratus*), western woodpecker (*Contopus sordidulus*), and chipping sparrow (*Spizella passerine*) may be present in woodland habitat. Generalist species that may be found in two or more habitats include American robin (*Turdus migratorius*), brown-headed cowbird (*Molothrus ater*), lark sparrow (*Chondestes grammacus*), and western meadowlark (*Sturnella neglecta*). Nest locations vary by species with some placing nests on or near the ground, while others such as loggerhead shrike and chipping sparrows, prefer to nest in shrubs or trees. Insects comprise the majority of these species diet, but some also forage on seeds and fruit or even small animals in the case of the loggerhead shrike (Ehrlich et al. 1988). The U.S. Fish and Wildlife Service (USFWS) classifies several of the migratory species listed above as Birds of Conservation Concern in the Great Basin Region due to the risk that these species may become candidates for listing under the Endangered Species Act without appropriate conservation actions (USFWS 2008).

Several raptors may nest or hunt in the allotment including red-tailed hawk (*Buteo jamaicensis*), ferruginous hawk (*Buteo regalis*), and Swainson's hawk (*Buteo swainsoni*). These birds typically nest in trees and prey on small mammals, reptiles, birds, and insects. Four burrowing owl (*Athene cucularia*) nests have been documented in Stinkingwater Allotment. These owls use burrows excavated by other animals, typically badgers (*Taxidea taxus*), for nesting and raising their young. Insects comprise the majority of their diet, but they will also prey on small mammals and reptiles.

Riparian areas are a relatively small component within the allotment, but can provide critical habitat for birds. Riparian areas often contain higher bird diversity than surrounding upland habitat during the breeding season and in migration (Thomas et al. 1979). Birds that nest and forage in uplands adjacent to riparian areas often use them as travel corridors between preferred habitats or as a reliable water source.

Approximately 80 percent of the allotment is in mid- to late-seral condition. Most of the vegetation in the allotment is in fair to good range condition.

Sagebrush mixed with native understory vegetation comprises approximately 88 percent of the habitat types within the allotment. Juniper occurs at low densities in all pastures, and may provide adequate habitat to support raptors and other tree nesting birds. Medusahead rye (*Taeniatherum caput-medusae*) has invaded this allotment and may be outcompeting the preferred native and desirable nonnative understory species on up to 2,800 acres on the allotment. These areas provide poor habitat for migratory bird species and are a threat to persistence of birds in the allotment.

Current grazing management has resulted in utilization levels below the Target Utilization Level of 50 percent use on key upland forage species across the allotment; however, heavy livestock and wild horse use has been observed along Stinkingwater and Little Stinkingwater Creeks within the Clear Creek Seeding and Bartlett Mountain Pastures. Heavy utilization along portions of these two creeks has resulted in reduced horizontal and vertical plant cover and reduced structural diversity resulting in less desirable nesting and foraging habitat for migratory birds. Current grazing management does not allow for periodic growing season rest for riparian vegetation and is a primary contributing factor to the degraded conditions.

Ongoing and reasonably foreseeable future events potentially affecting migratory birds in this vicinity include livestock grazing, installation of six temporary meteorological towers near the western portion of the allotment, regular road maintenance, hunting and other recreational pursuits, juniper cutting and prescribed burning treatments approximately 4 miles south of the allotment, and wildfire.

*Environmental Consequences:*

*Effects Common to All Alternatives:*

The cumulative effects analysis area for migratory birds extends a couple of miles beyond the allotment boundary to incorporate most movements of birds regularly using the allotment. Potential effects to migratory birds would decrease as the distance from the allotment increases. Wildfires may occur in the future, but predicting the effects of potential wildfires would be speculative and analysis of post fire rehabilitation plans would address migratory birds. All alternatives combined with other ongoing and reasonably foreseeable future events would not lead to cumulative effects to migratory birds, because the impacts of this AMP would be localized primarily around Stinkingwater and Little Stinkingwater Creeks in Clear Creek and Bartlett Mountain Pastures. Medusahead would likely continue to spread, further degrading migratory bird habitat in the uplands, until there is an effective treatment available.

Alternative A: No Action – Late season livestock and yearlong wild horse

concentration would continue along Stinkingwater and Little Stinkingwater Creeks. Heavy use of riparian vegetation can negatively impact migratory birds by substantially reducing hiding and nesting cover, available forage, and the habitat for insect prey associated with riparian and aquatic systems.

The downward trend in riparian vegetation would continue under pressure of livestock and wild horse concentrations, and migratory birds would likely move out of the riparian area and use it less frequently as a travel corridor. Overuse of these areas may also facilitate the invasion and spread of noxious weeds, which further degrades the quality of suitable habitat for migratory birds and their insect prey. The direct impacts would be localized around the riparian habitat in Camp Creek and Bartlett Mountain Pastures, but adjacent riparian and upland habitat may also be affected by receiving increased use from birds displaced along degraded portions of Little Stinkingwater and Stinkingwater Creeks.

Grazing management in the uplands of this allotment would continue to allow for a stable or upward trend in upland plant communities, maintaining adequate nesting and hiding cover for migratory birds. Plant diversity and recruitment in the uplands would continue to provide horizontal and vertical nesting and hiding cover, and support insect prey.

Alternative B: Proposed Action – The proposed grazing schedule would change the current rotation to incorporate rest in Conly Basin Pasture. Livestock grazing would shift from summer to spring in Stinkingwater Seeding, Stinkingwater Pass, and Well Pastures every other year, and would overlap the nesting period for some migratory birds. Ground nesting species are most likely to be affected while livestock are in these pastures. Later arriving species, such as common poorwill (*Phalaenoptilus nuttallii*) are least likely to be affected. The grazing season would be shortened by 2 months in alternating years in Clear Creek Seeding Pasture which contains approximately 0.6-mile of Stinkingwater Creek. Conly Basin Pasture would be rested every other year, which would eliminate potential disturbance from cattle and give plants a full year of rest enhancing nesting and foraging cover for migratory birds and their insect prey. Resting this pasture would help maintain cover and vigor of perennial bunchgrasses and forbs, potentially slow the spread of noxious weeds, and promote growth of riparian vegetation along approximately 3.1 miles of Clear Creek.

Proposed range improvements would protect riparian habitat along approximately 1.3 miles of Stinkingwater and 0.25-mile of Little Stinkingwater Creek from livestock and wild horse trampling and grazing. Excluding grazing from this sensitive area would promote recovery of late-seral riparian vegetation. Plants in the enclosure area would provide more horizontal and vertical cover and increased structural diversity important to migratory birds for nesting and foraging habitat. Insect abundance may increase along the ungrazed portions of the creeks (Rambo and Faeth 1999), leading to improved foraging habitat for

migratory birds and their young (Gill 2006). The proposed water gap in Stinkingwater Creek would be subject to concentrated livestock and wild horse use, which would result in poor habitat and limited use of the area by migratory birds; however, this disturbance would be restricted to a small (<100 feet) area between adjacent protected habitat within the proposed exclosures.

The proposed rebuilding of the spring exclosure between Stinkingwater Pass and Conly Basin Pastures and the additional water source in Bartlett Mountain may benefit migratory birds by protecting additional riparian habitat, providing another water source in the allotment, and potentially reducing the amount of time livestock spend concentrated in one area. The proposed well would be in habitat that is within easy flying distance of existing water sources; therefore, this development would not likely result in range expansions or an increase in bird diversity in the allotment. However, it may improve foraging habitat and result in increased use of the area.

West Nile virus (WNV) is a threat to several species of migratory birds, and the primary mode of transmission from the bite of an infected mosquito. Slow moving or still water sources with shallow water, high organic content, and emergent vegetation provide suitable habitat for mosquito larvae. One new water source (Bartlett trough/well) is proposed in this AMP, and would hold water every other year. Water would be captured in a steep-sided metal trough, which does not provide favorable habitat for mosquito egg-laying and larval development (Doherty 2007). The ODFW and Oregon Department of Human Services (ODHS) have been monitoring WNV since it was first detected in the State in 2004 (DeBess 2009), and no evidence of WNV has been reported at existing permanent and semi-permanent water sources near the allotment.

WNV was last reported in Harney County in 2007 (DeBess 2009), and it is highly unlikely that adding a water trough less than 0.2-mile from Little Stinkingwater Creek will affect WNV occurrence or spread.

Alternative C: Removal of Livestock Grazing from Clear Creek Seeding and Bartlett Mountain Pastures - Under this alternative, habitat conditions for migratory birds in the uplands would improve in these two pastures. Upland vegetation would respond with increased vigor, providing maximum horizontal and vertical cover distributed across the pastures throughout the year. Increased vegetative cover provides additional hiding and nesting habitat, and may support more insects (Rambo and Faeth 1999). There would be no disturbance from livestock and livestock management activities, especially for ground nesting birds. However, areas of medusahead-rye infestation within Clear Creek Seeding would continue to provide poor quality habitat for migratory birds.

Habitat conditions for migratory birds would improve along Stinkingwater and Little Stinkingwater Creeks as late-seral riparian plants occupy the site. However, recovery of riparian habitat would be limited as wild horses would

continue to have yearlong access to these areas.

Effects on migratory birds within the remaining pastures of the allotment would be equivalent to the No Action Alternative.

5. Wetland/Riparian Zones and Water Quality

This discussion and analysis of potential effects to water quality and wetlands/riparian zones is tiered to the 1992 Three Rivers PRMP/FEIS and relevant information contained in the following sections is incorporated by reference: Water Quality: Chapter 2, p. 2-4 and Chapter 3, p. 3-2; Riparian: Chapter 2, 2-96 and Chapter 3, p. 3-12 (Aquatic Habitat).

*Affected Environment:*

The majority (approximately 26,700 acres) of Stinkingwater Allotment falls within the Upper Malheur Sub-basin – Stinkingwater Creek Watershed with a small portion (920 acres) of the southwest corner of the allotment in the Harney-Malheur Lakes Sub-basin – Malheur Slough Watershed. Stinkingwater Creek, Clear Creek, and Little Stinkingwater Creek are the only known streams providing salmonid habitat (redband and/or rainbow trout) in the Stinkingwater Creek Watershed. Stinkingwater Creek is 29 miles long with approximately 1.7 miles (5.9 percent) falling under BLM administration in Stinkingwater Allotment. Stinkingwater Creek is listed as water quality limited on the ODEQ 303(d) list for exceeding the 68 °F standard for salmonid rearing. Clear Creek is 11 miles long with approximately 3.4 miles (29 percent) falling under BLM administration in Stinkingwater Allotment. Little Stinkingwater Creek is approximately 15.2 miles long with .25 mile (1.6 percent) falling under BLM administration within Stinkingwater Allotment. No perennial streams in the 920 acres of the Malheur Slough Watershed occur in this allotment.

Proper Functioning Condition Assessments, Greenline Monitoring and Photo Monitoring on Stinkingwater and Clear Creeks indicated that neither creek met Standard 2 (Watershed Function – Riparian/Wetland Areas) or 4 (Water Quality) in the 2006 Allotment Evaluation. Livestock and wild horse management were listed as causal factors for not meeting the standards. Following the 2006 evaluation, Clear Creek was fenced and placed into an early use riparian pasture.

Wild horses still have year-round access to Clear Creek as interior allotment gates are left open to allow passage for horses across the allotment when livestock are removed. At this time, a band of 18 wild horses is known to roam between the riparian pasture and adjacent Stinkingwater Pass Pasture. In 2009, utilization cages were placed along Clear Creek to measure wild horse utilization following livestock removal from Conly Basin Pasture. These data indicate wild horses were causing heavy utilization along Clear Creek within this pasture. These data also indicated that by removing livestock by mid-June, adequate regrowth of riparian vegetation (6 inches+) would occur in the absence of wild horse grazing.

*Environmental Consequences:*

*Effects Common to All Alternatives:*

For the purposes of this document, the cumulative effects analysis area for riparian/water quality encompasses the Stinkingwater Creek and Malheur Slough Watersheds. Cumulative effects to water quality and riparian/wetland areas within the Malheur Slough Watershed are not expected as there is no perennial water within this watershed in the Stinkingwater Allotment. Reasonably foreseeable future projects in the Stinkingwater Creek Watershed include wild horse gathers within the Stinkingwater HMA, weed treatments along riparian corridors, and wildfires. All alternatives combined with other ongoing and reasonably foreseeable future projects would not lead to adverse cumulative effects to riparian/wetland areas and water quality. Weed treatment Best Management Practices would be followed to minimize/negate impacts from weed treatments and wild horse gathers would temporarily (2 to 3 years) reduce grazing impacts on riparian areas/water quality from wild horses. These actions combined with the proposed riparian exclosures would lead to cumulative effects of improved riparian health through recruitment of deep-rooted herbaceous and deciduous woody riparian species and promote streambank stability. The effects of wildfire on riparian/wetlands and water quality would be analyzed in rehabilitation plans.

Alternative A: No Action –Under the No Action Alternative, Clear Creek would continue to be grazed under an early season riparian grazing treatment (grazing typically removed before June 15 each year) and would likely see an upward trend in riparian function and water quality. However, wild horses still have year-round access to Clear Creek. At this time, a band of 18 wild horses is known to roam between the riparian pasture and adjacent Stinkingwater Pass Pasture; however, data specific to wild horse utilization on Clear Creek is presently lacking. It can be assumed that if wild horse utilization on Clear Creek increases, improvements to riparian function and water quality from the 2006 change in livestock management would be limited or negated.

Under the No Action Alternative, late season grazing would continue on Stinkingwater and Little Stinkingwater Creeks. Wild horse use is high in this portion of Stinkingwater Allotment. Heavy utilization from livestock and wild horses would continue to negatively affect riparian function and water quality along these streams. Temperatures would remain above the ODEQ standard for salmonid bearing streams. This alternative would not meet the purpose and need for action as Riparian and Water Quality Standards would likely still not be met.

Alternative B: Proposed Action – Livestock and wild horse grazing would essentially be removed from 1.3 miles (4.5 percent) of Stinkingwater Creek and .25-mile (1.6 percent) of Little Stinkingwater Creek under this alternative. Excluding Stinkingwater and Little Stinkingwater Creeks from livestock and wild horse use would eventually result in late-seral, deep-rooted hydric vegetation throughout the riparian zones and greater recruitment of deciduous woody species.

Deep-rooted riparian vegetation would improve the streams' ability to dissipate stream energy at peak flows, filter sediment, aid in groundwater recharge and maintain channel characteristics. This would help reduce erosion, maintain water temperatures, and improve the lateral and vertical stability of the stream channels. Stinkingwater and Little Stinkingwater Creeks would make progress toward achieving the Water Quality and Riparian Standards.

Early season livestock use would continue on 3 miles (27 percent) of Clear Creek every other year. Under this alternative, livestock grazing would be removed with ample time to provide adequate regrowth of riparian vegetation along Clear Creek. However, wild horses still have year-round access to Clear Creek, and if heavy utilization continues, potential improvements to riparian condition and water quality may be limited or negated.

Excluding the spring source at the proposed spring development in Stinkingwater Pass Pasture would prevent trampling of the spring currently accessible to livestock and wild horses. The additional water development in the Bartlett Mountain Pasture would not have measureable effects to riparian/wetland areas as this development would be in the upland portions of the pasture. The amount of water pumped from Little Stinkingwater Creek would be equivalent to the amount of water livestock would drink from the stream; therefore no water right would be needed for this development. There would be no effect to water quality as water would overflow from the storage tank and be piped back into Little Stinkingwater Creek.

The proposed water gap into Stinkingwater Creek would concentrate livestock and wild horses, thereby impairing riparian habitat improvement along this portion of the stream. However, the concentrated use would be localized within a small (<100 feet wide) portion of the creek.

The Proposed Action, which protects riparian communities and ensures periodic rest of upland plant communities, would achieve and maintain healthy watershed conditions.

Alternative C: Removal of Livestock Grazing from Clear Creek Seeding and Bartlett Mountain Pastures – Removing livestock grazing from Clear Creek Seeding and Bartlett Mountain Pastures would reduce grazing impacts in unfenced riparian/wetland areas. Over time, removal of livestock grazing may result in late-seral riparian vegetation and increased riparian deciduous woody species recruitment along Stinkingwater Creek and Little Stinkingwater Creek. However, riparian habitat improvement would be limited as wild horses would still have yearlong access to these areas. Wild horses are known to concentrate on this portion of Stinkingwater Creek, especially during the hot season. Like cattle, wild horses preferentially select riparian habitats during the growing season (Crane 1997). For this reason, it is unlikely this alternative would fully meet the purpose and need for action for making significant progress toward achieving Standards 2 and 4.

Under this alternative, livestock grazing management along Clear Creek within the Conly Basin Pasture would be equivalent to the No Action Alternative, therefore effects on riparian habitat would be the same.

6. Wildlife/Plant - BLM Special Status Species and Habitat

Special Status Fauna

Current discussion and analysis of potential effects to Special Status Fauna are tiered to the 1991 Three Rivers PRMP/FEIS and relevant information contained in the following sections is incorporated by reference: SSS 1, SSS 2, SSS 2.1: p. 2-56, 2-57.

*Affected Environment:*

There are no known Federally listed Threatened, Endangered, or Proposed wildlife species found within or near Stinkingwater Allotment.

Greater sage-grouse (*Centrocercus urophasianus*), a BLM SSS, are present and four leks occur within the allotment. Clear Creek leks 1, 2, and 3 are near the center of the allotment in Stinkingwater Seeding and Clear Creek Seeding Pastures.

The Connolly Basin lek is near the southern boundary of the allotment in Conly Basin Pasture. Sage-grouse are usually active at one or more of the three Clear Creek lek sites each year during the breeding season. In 2009, a high count of 11 sage-grouse was recorded for the Clear Creek Lek Complex. The Connolly Basin Lek is considered active, although the last recorded survey observations were of five birds in 2004. The dominant vegetative community in the allotment is sagebrush steppe, and the majority of this is classified as yearlong habitat for sage-grouse. Approximately 15 percent of the allotment is classified as probable habitat

with uncertain seasonal usage.

Several factors are negatively affecting suitable habitat for sage-grouse. Juniper is growing at low densities in all pastures, with higher densities occurring in drainages in Stinkingwater Seeding and Conly Basin Pastures. Power poles along the northern, western, and southern boundaries of the allotment provide hunting perches for raptors and common ravens, potentially limiting sage-grouse use in these areas. Two recent wildfires converted extensive stands of sagebrush to grasslands across 4,900 acres of Well and Bartlett Mountain Pastures, creating marginal to unsuitable habitat in these areas for sage-grouse until sagebrush vegetation recovers. Medusahead (*Taeniatherum caput-medusae*), a noxious weed, has encroached on the Connolly Basin lek and may be displacing native vegetation preferred by sage-grouse on up to 2,800 acres across the allotment.

Other SSS potentially present, at least seasonally, in Stinkingwater Allotment include Townsend's big-eared bat (*Corynorhinus townsendii*), fringed myotis (*Myotis thysanodes*), pallid bat (*Antrozous pallidus*), and spotted bat (*Euderma maculatum*). These bats may forage along the creeks and the sagebrush uplands. Potential roosting habitat includes cavities or deep furrows in the bark of larger juniper trees and crevices in cliffs in the area. Trampled and heavily grazed riparian vegetation may have reduced insect abundance or diversity along the creek, decreasing the quality of bat foraging habitat in the allotment.

Note: At the time of the 2006 Stinkingwater evaluation, redband trout were identified as a BLM SSS. Rangeland Health Standard 5 (Native, T&E, and Locally Important Species) was not met for redband trout due to water temperatures exceeding the 68 °F temperature standard for salmonid fish rearing. Redband trout are no longer classified as an SSS, therefore effects on this species are not included in this section. Please refer to the "Fisheries/Locally Important Fish Species" element for complete analysis of the effects on this species. Ongoing and reasonably foreseeable future events potentially affecting migratory birds in this vicinity include livestock grazing, installation of six temporary meteorological towers near the western portion of the allotment, regular road maintenance, hunting and other recreational pursuits, juniper cutting and prescribed burning treatments approximately 4 miles south of the allotment, and wildfire.

*Environmental Consequences:*

*Effects Common to All Alternatives:*

The cumulative effects analysis area for SSS extends a couple of miles beyond the allotment boundary to incorporate most movements of birds regularly using the allotment. Potential effects to SSS would decrease as the distance from the allotment increases. Wildfires may occur in the future, but predicting the effects of potential wildfires would be speculative and analysis of post fire rehabilitation plans would address migratory birds. All alternatives and other ongoing and reasonably foreseeable future projects would not lead to cumulative effects to SSS, because impacts from the alternatives would be localized and combined effects with the other projects would not be measurable due to distance to other projects or lack of direct and indirect effects to species or habitat. Medusahead would likely continue to spread, displacing native habitat for sage-grouse under all alternatives until an effective treatment is available.

Alternative A: No Action Alternative – Current livestock grazing management has kept livestock utilization levels below the target level of 50 percent on key upland forage species, maintaining critical herbaceous cover including forbs for sage-grouse. However, heavy livestock and wild horse use has been recorded along Stinkingwater and Little Stinkingwater Creeks within the Clear Creek Seeding and Bartlett Mountain Pastures. Grazing management does not allow for growing season rest for riparian vegetation, and would continue to adversely impact sage-grouse habitat along the creeks by limiting structural diversity, decreasing cover, and reducing forage through trampling and concentrated grazing. Range improvements would not be implemented, and late season livestock and wild horse grazing would continue to contribute to the downward trend in riparian condition along Stinkingwater and Little Stinkingwater Creeks.

Heavy use on riparian vegetation, especially late season use, may also have negative impacts to SSS bats that commonly forage and drink along creeks. Insect abundance may be reduced in areas where vegetation has been trampled or heavily grazed (Rambo and Faeth 1999). Livestock and wild horse grazing would not affect potential bat roost sites, which typically roost in areas that are difficult to access or alter.

SSS may reduce time spent in riparian habitat or potentially be displaced from this habitat in the Clear Creek Seeding and Bartlett Mountain Pastures.

Alternative B: Proposed Action - Proposed fencing would protect riparian areas from livestock and wild horse grazing, including the spring above Clear Creek and the 1.3-mile section along Stinkingwater Creek and 0.25-mile along Little Stinkingwater Creek. Exclusion of late season livestock and wild horse grazing along Stinkingwater and Little Stinkingwater Creeks would improve forage and cover availability for sage-grouse and sensitive bat species along these creeks.

The proposed water gap in Stinkingwater Creek would experience concentrated livestock and wild horse use, which would result in poor habitat and limited use of the area by sage-grouse; however, this disturbance would be restricted to a small (<100 feet) area between adjacent protected habitat within the proposed enclosures.

Potential negative effects to sage-grouse (i.e., potential predator perches, mortality from fence collisions, etc.) from construction of additional fence within the allotment would be minimized by constructing the fence over 0.6-mile from the nearest lek (Hagen 2005). Additionally, the proposed enclosure fences are topographically screened from sage-grouse leks, negating the potential use as predator perches on lek sites. Bats are agile flyers, capable of maneuvering in narrow spaces with obstructions in low light conditions (Tuttle et al. 2006), and would not likely be substantially affected by construction of fences around the spring and creeks as proposed.

The proposed grazing schedule would change the current rotation to incorporate rest in Conly Basin Pasture, site of the Connelly Basin lek. Livestock grazing would shift from summer to spring in Stinkingwater Seeding, Stinkingwater Pass, and Well Pastures every other year, and would overlap lekking and early nesting periods for sage-grouse. However, the anticipated utilization and disturbance from livestock in these pastures is expected to achieve Rangeland Health Standards and Guidelines, and therefore be at levels compatible with populations of sage-grouse (Hagen 2005). The grazing season would be shortened by 2 months in alternating years in Clear Creek Seeding Pasture, which contains Clear Creek lek sites #1 and #3 and 0.6-mile of Stinkingwater Creek. Livestock grazing would be excluded from Conly Basin Pasture every other year, which would give plants a full year of rest from livestock grazing and eliminate potential disturbance from cattle for sage-grouse using this pasture. Resting this pasture would maintain cover and vigor of perennial bunchgrasses and forbs, potentially slow the spread of noxious weeds, and promote growth of riparian vegetation along approximately 3.1 miles of Clear Creek.

WNV is a threat to greater sage-grouse, and has been reported in some species of bats (Naugle et al. 2005, Bunde et al. 2006). The primary mode of transmission is from the bite of an infected mosquito species capable of carrying and transmitting the disease. Slow moving or still water sources with shallow water, high organic content, and emergent vegetation provide suitable habitat for mosquito larvae.

One new water source (Bartlett trough/well) is proposed in this AMP, and would hold water every other year. Water would be captured in a steep-sided metal trough, which does not provide favorable conditions for mosquito egg-laying and larval development (Doherty 2007). ODFW and ODHS have been monitoring WNV since it was first detected in the State in 2004 (DeBess 2009), and no evidence of WNV has been reported at existing permanent and semi-permanent water sources near the allotment. WNV was last reported in Harney County in 2007 (DeBess 2009), and it is highly unlikely that adding a water trough less than 0.2-mile from Little Stinkingwater Creek will affect WNV occurrence or spread.

Alternative C: Removal of Livestock Grazing from Clear Creek Seeding and Bartlett Mountain Pastures – Under this alternative, habitat conditions for SSS would improve over time as vegetation would likely become denser within the Clear Creek Seeding and Bartlett Mountain Pastures, providing better hiding and nesting cover and forage availability. There would be no disturbance from livestock and livestock management activities, especially for ground nesting sage-grouse. Foraging habitat for SSS would improve along Stinkingwater and Little Stinkingwater Creeks; however, recovery of riparian habitat may be limited as wild horses would continue to have yearlong access to these areas.

Effects on SSS within the remaining pastures of the allotment would be equivalent to the No Action Alternative as grazing management would be the same.

## 7. Grazing Management/Rangelands

This discussion and analysis of potential effects to livestock grazing management is tiered to the 1992 Three Rivers PRMP/FEIS and relevant information contained in the following sections is incorporated by reference: Chapter 2, p. 2-33 and Chapter 3, p. 3-4.

### *Affected Environment:*

Three Term Grazing Permits (#3600067, 3602289, and 3602278 – further referred to as Herds A, B, and C) authorize 2,857 AUMs of Active Use within Stinkingwater Allotment. There are two spring/summer permits and one winter permit authorized within the allotment. Herd A is authorized for 616 AUMs from April 16 to September 20, Herd B is authorized for 1,695 AUMs from April 16 to September 20, and Herd C is authorized for 546 AUMs from December 1 to February 28.

There is no evidence suggesting a need for changes in Permitted Active Use on the allotment. Total calculated carrying capacity from the 2006 evaluation was calculated at 4,480 AUMs (using actual yield for calculations 1990 to 2005).

After accounting for the 2,857 Active Use AUMs available for livestock, 1,623 AUMs of forage remain available for wildlife and wild horses, which exceed the 66 AUMs for wildlife and 240 AUMs for wild horses designated in the 1992 Three Rivers RMP/ROD. These numbers were based upon calculations completed in the 2006 Stinkingwater Allotment Evaluation.

The current AMP was written in 1997. It established critical growing season rest to upland vegetation on all pastures within the allotment. In response to downward trends in riparian habitat condition along Clear Creek, the 1997 AMP provided the impetus for creating the riparian pasture now known as Conly Basin Pasture, and the upland pasture now known as Stinkingwater Pass Pasture. Construction of this division fence was completed in the summer of 2006 and since 2007; this pasture has been a spring use riparian pasture (April 16 to June 1.) Grazing management in this riparian pasture is meeting guidelines by allowing riparian forage species to completely regrow following livestock removal.

The 2006 Allotment Evaluation identified late season livestock grazing as a causal factor for Stinkingwater and Little Stinkingwater Creeks failing to meet riparian, water quality, and SSS (redband trout) standards within the Clear Creek Seeding and Bartlett Mountain Pastures. Year-round access by wild horses was also a contributing factor for failing to meet these standards. The evaluation recommended placing these creeks in some form of riparian pasture or grazing enclosure to promote riparian recovery. The evaluation indicated management in the uplands was meeting all standards and guidelines by providing critical growing season rest to key forage plant species at least every other year. Stable to upward trends in rangeland condition (based on stable or increased herbaceous plant and litter cover, reduced bareground, increased functional diversity, and plant compositions within expected ranges of variability relative to a potential natural plant community) were assessed on all key areas within the allotment, excluding areas of heavy medusahead-rye infestations within the Clear Creek Seeding Pasture.

*Environmental Consequences:*

*Effects Common to All Alternatives:*

For the purpose of this analysis, the cumulative effects analysis area for grazing management encompasses Stinkingwater Allotment. Reasonably Foreseeable Future Actions (RFFAs) include wildfire, wild horse management, and noxious weed control. All alternatives and other ongoing and reasonably foreseeable future projects would not lead to cumulative effects to grazing management, because impacts would be localized or speculative in nature. The effects of wildfire and wild horses on livestock grazing management would be analyzed in rehabilitation plans or wild horse gather analysis.

Alternative A: No Action – The No Action Alternative would authorize the 1997

AMP. The three permittees would continue to be authorized for 2,857 AUMs of Permitted Active Use. Late season livestock grazing would continue along Stinkingwater and Little Stinkingwater Creeks. Conly Basin would continue to be managed as a riparian pasture to allow hydric herbaceous species time for adequate regrowth following grazing.

Grazing management in the uplands would continue to provide growing season rest to key forage plant species at least every other year. Stable or upward trends in rangeland condition would likely continue except in areas of heavy medusahead-rye infestation. Until the BLM can effectively treat this species, current grazing management which promotes productivity and vigor of mid- to late-seral vegetation is the principle means of occupying niches and slowing the spread of medusahead into new areas.

No new range improvement projects would be implemented under this alternative.

Alternative B: Proposed Action – The Proposed Action would implement range improvement projects to aid grazing management in achieving or make significant progress toward achieving all rangeland health standards and guidelines. The proposed riparian exclosures would remove livestock and wild horse grazing as causal factors for Stinkingwater and Little Stinkingwater Creeks failing to achieve riparian, water quality, and SSS standards. Removal of late season grazing would likely result in riparian habitat improvement along these streams. It is anticipated that all rangeland health standards and guidelines would be achieved as well as allotment-specific resource objectives within 10 years of implementing the Proposed Action.

The effects to grazing distribution of removing these streams as critical water sources within the Clear Creek Seeding and Bartlett Mountain Pastures would be mitigated by implementing the proposed water gap into Stinkingwater Creek and the proposed tough/well within the Bartlett Mountain Pasture. The proposed spring development within Stinkingwater Pass Pasture and the additional water source within Bartlett Mountain Pasture would improve livestock distribution to provide more uniform utilization patterns. The spring source would be fenced to maintain its integrity. By developing these additional water sources, livestock and wild horse use would be distributed more evenly across the allotment and may reduce the amount of forage competition occurring now due to limited watering sources.

Grazing management outlined in the proposed grazing rotations is similar to current grazing management under the No Action Alternative. The salient difference between the two alternatives is that under the Proposed Action, grazing in the Stinkingwater Pass Pasture would be authorized as early as June 1 every other year (July 1 the subsequent year). Under the No Action Alternative, the Stinkingwater Pass Pasture would be grazed beginning July 1 each year. Grazing management in the uplands would continue to provide growing season rest to key forage plant species at least every other year. Stable or upward trends in rangeland condition would likely continue except in areas of heavy medusahead-rye infestation.

The Proposed Action includes the renewal of the three Term Grazing Permits for a period of 10 years (2010-2020). Grazing management outlined under the Proposed Action would be included as a term and condition of the new permits. Permitted Active Use would remain at 2,587 AUMs on the allotment and season of use would remain the same as the existing permits. As part of the changed management, this level of livestock use would be expected to meet or make progress toward meeting the standards and guidelines.

Alternative C: Removal of Livestock Grazing from Clear Creek Seeding and Bartlett Mountain Pastures – Under this alternative, livestock grazing in the Bartlett Mountain and Clear Creek Seeding Pastures would no longer be authorized. The BLM would implement changes in active use through a documented agreement or by this decision.

Existing range improvements (i.e., internal pasture fences) in place for livestock grazing management would most likely be removed by the Burns District BLM wild horse program to facilitate improved wild horse distribution. The HMA boundary fences and existing spring developments would be maintained by the BLM wild horse and riparian programs, adjacent livestock grazing permit holders, or adjacent private landowners.

Under this alternative there would be a reduction of 1,345 AUMs or 47 percent of current Permitted Active Use on the allotment. Grazing management within the remaining pastures would be the same as grazing management outlined under the No Action Alternative.

## 8. Upland Vegetation

This discussion and analysis of potential effects to vegetation is tiered to the 1992 Three Rivers PRMP/FEIS and relevant information contained in the following sections is incorporated by reference: Chapter 2, p. 2-51 and Chapter 3, p. 3-7.

*Affected Environment:*

Major vegetation types in Stinkingwater Allotment include stiff sagebrush/Sandberg bluegrass (*Poa secunda*) (31 percent), big sagebrush/bluebunch wheatgrass (*Pseudoroegneria spicata*) (19 percent), big sagebrush/Sandberg bluegrass (12 percent), big sagebrush/crested wheatgrass (*Agropyron cristatum*) (10 percent), big sagebrush/medusahead rye (*Taeniatherum caput-medusae*) (9 percent), low sagebrush/Idaho fescue (*Festuca idahoensis*)/bluebunch wheatgrass (7 percent), and bluebunch wheatgrass grassland (3 percent). Vegetation types comprising <3 percent of the allotment include monocultures (not counting infestations) of medusahead rye, western juniper (*Juniperus occidentalis*) woodland, and green rabbitbrush (*Ericameria viscidiflora*) with either a Sandberg bluegrass or cheatgrass (*Bromus tectorum*) dominated understory.

The 2006 Stinkingwater Allotment Evaluation analyzed trend in rangeland condition (1987-2006) on 11 upland sites. Stable trends in rangeland condition were determined in key areas of the Bartlett Mountain and Conly Basin Pastures. Upward trends in rangeland condition, resulting from increased plant functional diversity, were determined in key areas in the Stinkingwater Pass, Well, Clear Creek Seeding, and Bartlett Mountain Pastures. Plant composition is within expected ranges of variability relative to a potential natural community on 9 of 11 key areas in the Stinkingwater Allotment. Exceptions include a key area in Stinkingwater Seeding Pasture experiencing a heavy medusahead-rye infestation. Such areas within the allotment with a medusahead-rye component are at risk of crossing thresholds, both from ecological and managerial standpoints, pending a large-scale disturbance event (e.g., wildfire). Current grazing management is not causing downward trends in rangeland condition in these areas.

*Environmental Consequences:*

*Effects Common to All Alternatives:*

For the purpose of this analysis, the cumulative effects analysis area for upland vegetation encompasses Stinkingwater Allotment. Reasonably foreseeable future projects include wildfire, wild horse management, and noxious weed control. Grazing management which maintains healthy rangelands, along with ongoing noxious weed treatments and wild horse management would result in positive cumulative effects to upland vegetation. Impacts of potential wildfire on upland vegetation would be speculative and analyzed during post fire rehabilitation analysis. However, it is highly probable fire rehabilitation seeding would include crested wheatgrass to compete with medusahead rye. It is also very likely that medusahead-rye infestations would expand following wildfire.

Alternative A: No Action – Current grazing management which provides periodic growing season rest to upland plant communities would continue. Under current management, upland vegetation receives either a deferred, winter, or rest grazing treatment following a year of growing season grazing (Appendix A - Grazing Treatment Descriptions). This allows key forage plant species to complete their life cycles, maintain vigor, reach seed ripe, and store adequate carbohydrate reserves every other year.

Stable to upward trends in rangeland condition would continue in upland plant communities throughout the allotment. The exception to this is areas of medusahead-rye infestation, primarily within the Stinkingwater Seeding and Clear Creek Seeding Pastures. This species is capable of outcompeting mid- to late-seral native species and competitive introduced species such as crested wheatgrass in areas with heavy clay soils, which comprise these pastures. By providing periodic growing season rest, and maintaining utilization levels at or below Target Utilization Levels (Table 2), current management would maintain plant vigor and productivity in these areas. Until BLM can effectively treat medusahead infestations, grazing management which promotes productivity and vigor of competing vegetation is the principle means of occupying niches and slowing the spread of medusahead into new areas.

Alternative B: Proposed Action – Proposed grazing management is similar to current grazing management; therefore the effects on upland vegetation would be similar. Under proposed management, upland vegetation would continue to receive either a deferred, winter, or rest grazing treatment following a year of growing season grazing (Appendix A - Grazing Treatment Descriptions). This allows key forage plant species to complete their life cycles, maintain vigor, reach seed ripe, and store adequate carbohydrate reserves every other year.

Providing additional water sources within the Stinkingwater Pass and Bartlett Mountain Pastures would promote enhanced livestock and wild horse distribution and reduce grazing pressure around existing water sources. Promoting enhanced grazing distribution would help ensure utilization remains at or below target levels.

Alternative C: Removal of Livestock Grazing from Clear Creek Seeding and Bartlett Mountain Pastures – Under this alternative lower utilization levels would occur on key forage plant species and less forage competition between wildlife and wild horses would occur as livestock grazing would be removed from the Clear Creek Seeding and Bartlett Mountain Pastures. More frequent growing season rest and life cycle completion would be provided for key forage plant species if livestock were removed. However; long-term removal of livestock grazing may not always be the best management in promoting vigorous and productive upland plant communities.

Proper land management should ensure perennial grasses remain strong and vigorous, to resist noxious weed establishment. Research suggests grasses typically require defoliation every 2 to 4 years to stimulate plant growth and enhance competitive ability (Sheley and Petroff 1999). Removing livestock grazing as a tool to promote plant vigor and competitiveness with noxious weeds could, over time, exacerbate medusahead-rye infestation into late-seral upland plant communities.

Grazing management within the remaining pastures of the allotment would be equivalent to the No Action Alternative; therefore effects on Upland Vegetation would be the same.

## 9. Paleontology

### *Affected Environment:*

Fossils have been found at two sites within Stinkingwater Allotment. One locality in T. 21 S., R. 35 E., Sections 18 and 19 (Clear Creek Seeding Pasture) has yielded plant, wood, and fish fossils. The other in T. 21 S., R. 35 E., Section 22 (Bartlett Mountain Pasture) contained a prehistoric mole fossil. Both fossil localities are less than 8 million years old and date to the Miocene Epoch. Neither fossil locality has been visited in the last 13 years nor is their condition known. Fossil localities, generally, are found in erosional environments where fossil bearing rock is exposed. Fossils are then released from their matrix and through water and wind erosion deposited as lag on erosional outwash surfaces. In a real sense, paleontologists would not make new discoveries if erosion was not present in the environment. Collection of vertebrate fossils such as fish, amphibians, reptiles, and mammals is prohibited except by permit. Other types of fossils such as petrified wood, leaves, and shells of invertebrate animals are subject to rock hounding regulations.

### *Environmental Consequences:*

#### *Effects Common to All Alternatives:*

For the purposes of this analysis, the cumulative effects analysis area for paleontological resources is at the allotment scale. All alternatives and other ongoing and reasonably foreseeable future projects would not lead to cumulative effects to paleontological resources, because impacts of proposed projects would be localized and known sites would be completely avoided.

Alternative A: No Action Alternative – Both fossil localities are located away from developed water sources and the effects from livestock grazing are not measureable. Effects are not likely to increase at paleontological localities under the No Action Alternative.

Alternative B: Proposed Action – The effects of livestock grazing under the Proposed Action Alternative would be the same as under the No Action Alternative. Potential direct effects to paleontological resources would be mitigated through project-specific inventory and clearances prior to any project implementation.

Alternative C: Removal of Livestock Grazing from Clear Creek Seeding and Bartlett Mountain Pastures – The effect to fossils of removal of livestock grazing from these localities would be unmeasurable. Grazing management within the remaining pastures would be equivalent to the No Action Alternative; therefore effects would be the same.

10. Soils/Biological Soil Crusts

This discussion and analysis of potential effects to soils is tiered to the 1992 Three Rivers PRMP/FEIS and relevant information contained in the following sections is incorporated by reference: Chapter 2, p. 2-15 and Chapter 3, p. 3-3.

*Affected Environment:*

Soils in Stinkingwater Allotment are mostly shallow to moderately deep, well-drained, cobbly to gravelly loams. Most soils have a low rating for wind and water erosion, but a few of the steeper areas have a high potential for water erosion.

Four general soil series are represented, but two dominate the allotment. Merlin-Observation-Lambring and Gumble-Risley-Mahoon comprise 52 percent and 39 percent of the allotment, respectively.

Merlin-Observation-Lambring which is shallow to moderately deep is primarily found on hillsides and dissected tablelands with *Artemisia tridentata wyomingensis*/*Festuca sp.* (Wyoming big sagebrush/fescue) and *Artemisia arbuscula*/*Festuca sp.* (low sagebrush/fescue) plant communities.

Gumble-Risley-Mahoon soils typically occur on or near old lake terraces and foothills with *Artemisia tridentata wyomingensis*/*Festuca sp.* plant communities.

Two lesser represented soils type are Fury-Skunkfarm-Housefield and Spangenberg-Enko-Catlow which occur on alluvial fans and drainage ways that support *Artemisia cana* (silver sagebrush) communities with varied understory grass and forb compositions.

BSC data specific to the northern Great Basin has been lacking in the past. Research conducted by Ponzetti and McCune in 2001 provides insight concerning BSC communities in the Resource Area.

Carbon fixation, nitrogen fixation, and increased soil oxygen content (during

active photosynthesis) are beneficial contributions to the ecosystem resulting from BSCs. The effect of crust communities on soil water relations is highly site dependent (TR-1730-2). Soil surface microtopography and aggregate stability are important contributions from BSCs as they increase the residence time of moisture and reduce erosional processes. The influence of BSCs on infiltration rates and hydraulic conductivity varies greatly; generally speaking infiltration rates increase in pinnacled crusts and decrease in flat crust microtopographies. The northern Great Basin has rolling BSC microtopography and the infiltration rates are probably intermediate compared to flat or pinnacled crust systems.

Common BSCs found in the Project Area are included in the following list of genera. This is not an all inclusive list of potential genera.

Bryum  
Cladonia  
Collema  
Didymodon  
Lecanora  
Megaspora  
Peltigera  
Psora  
Tortula

Identification of BSCs at the species level is often not practical for fieldwork. The use of some basic morphological groups simplifies the situation. Morphological groups are also useful because they are representative of the ecological function of the organisms (Page 6, TR-1730-2).

Using a classification scheme proposed in 1994 microbiota such as BSCs can be divided into three groups based on their physical location in relation to the soil: hypermorphic (aboveground), perimorphic (at ground) and cryptomorph (below ground).

The morphological groups are:

1. Cyanobacteria - Perimorphic/cryptomorph.
2. Algae - Perimorphic/cryptomorph.
3. Micro-fungi - Cryptomorph/perimorph.
4. Short moss (under 10mm) - Hypermorph.
5. Tall moss (over 10mm) - Hypermorph.
6. Liverwort - Hypermorph.
7. Crustose lichen - Perimorph.
8. Gelatinous lichen - Perimorph.
9. Squamulose lichen - Perimorph.
10. Foliose lichen - Perimorph.
11. Fruticose lichen - Perimorph.

Morphological groups 1, 4, 5, 7, 8, and 9 would likely be the dominant groups represented in the Project Area. Groups 10 and 11 may also be represented as the

site-specific conditions required for their growth may exist in sufficient quantity.

*Environmental Consequences:*

*Effects Common to All Alternatives:*

There are no known future or ongoing projects (other than those discussed in the Environmental Consequences Section) which could contribute to cumulative effects to soils/BSCs. Soil and BSC resources are dependent on the condition of other resources, primarily upland and riparian vegetation. Management actions that influence the condition of these resources would also influence soils and BSCs. Activities other than livestock grazing, such as wild horses and off-road recreation, that disturb soils where BSC communities have developed, could deplete soil productivity and increase potential for noxious weeds and other invasive species.

Alternative A: No Action Alternative – Continuation of current livestock grazing management in Stinkingwater Allotment would not modify the compaction and erosion effects on the soils and BSCs in the areas of livestock concentration. Livestock and wild horse concentration along Stinkingwater and Little Stinkingwater Creeks would continue to cause heavy soil compaction and disturbance in these saturated areas. Soils and BSC cover could be reduced in localized areas around range improvements, watering areas, salting grounds and fence corners; however, soil chemistry would still be the determining factor in presence or absence of BSCs.

Alternative B: Proposed Action – Soils and BSC cover could be reduced in localized areas around range improvements, watering areas, salting grounds and fence corners, as a result of livestock and wild horse concentration. Proposed range improvements may induce concentrated use with localized impacts to soils and BSCs. However, range improvements which increase dispersal of herbivores (spring development and trough/well) would have an inverse effect and likely benefit soils and BSCs allotmentwide; although soil chemistry would still be the determining factor in presence or absence of BSCs. The proposed grazing exclosures along Stinkingwater and Little Stinkingwater Creeks would remove livestock and wild horse concentration in these saturated areas, subsequently eliminating large ungulate disturbance to soil. Over time, reduced soil erosion and increased streambank stability would likely occur in these areas. Localized soil disturbance would occur within the proposed water gap into Stinkingwater Creek. Concentration of livestock and wild horses would lead to increased soil compaction along Stinkingwater Creek for the width (approximately 100 feet) of the water gap.

Alternative C: Removal of Livestock Grazing from Clear Creek Seeding and Bartlett Mountain Pastures – Removal of livestock grazing from the Clear Creek Seeding and Bartlett Mountain Pastures could reduce soil compaction and

potential damage to BSCs, particularly in localized areas around range improvements, watering areas, salting grounds and fence corners along trails and at water sources. Under this alternative, potential improvements in soil stability and reduced soil compaction along Stinkingwater Creek would not be fully realized as wild horse concentration would continue in this area. Effects to remaining pastures of the allotment would be equivalent to the No Action and Proposed Action Alternatives.

## 11. Recreation/Visual Resources

This discussion and analysis of potential effects to recreation is tiered to the 1992 Three Rivers PRMP/FEIS and relevant information contained in the following sections is incorporated by reference: Chapter 2, p. 2-107 and Chapter 3, p. 3-15.

This discussion and analysis of potential effects to visual resources is tiered to the 1992 Three Rivers PRMP/FEIS and relevant information contained in the following sections is incorporated by reference: Chapter 2, p. 2-148 and Chapter 3, p. 3-17.

### *Affected Environment:*

The visual setting in the allotment area consists of gentle to steep ridges falling off into flat lands with vegetation dominated by sagebrush and grasses with widely scattered juniper. Observable developments within the vicinity of the Project Area consist of U.S. Highway 20, improved roads, fences, power lines, residential structures, irrigation pivots and water developments (wells, troughs, and waterholes). The north end of Stinkingwater Allotment is bordered by and visible from U.S. Highway 20. The western edge of the allotment is bordered by the heavily traveled Stinkingwater Access Road. A frequently traveled road bisects the allotment in the low elevation areas comprising the Stinkingwater and Clear Creek Seeding Pastures. Power lines and an associated access road define the southern boundary of this allotment.

Approximately 70 percent of Stinkingwater Allotment is in Visual Resource Management (VRM) Class IV. Management objectives for this class allow for modifications to the existing character of the landscape. Management activities may dominate the view and be the major focus of viewer attention. The remaining 30 percent of the allotment (Highway 20 corridor) is in a VRM Class III. Management objectives for this class require partial retention of the existing character of the landscape. Management activities which may attract attention are allowed but should not dominate the view of the casual observer or can be mitigated so they do not dominate the view of the casual observer. Stinkingwater Allotment receives heavy recreational use relative to surrounding areas. The majority of this use is concentrated off the Stinkingwater Access Road at the higher elevations in the Stinkingwater Pass and Conly Basin Pastures. The primary recreation activities in this area include upland game bird (e.g., chukar)

and big game (e.g., elk, mule deer, pronghorn antelope) hunting. Other recreation opportunities present, some of which may occur in association with each other, include rock hounding, wildlife and wild horse viewing, camping, hiking, horseback riding, target shooting, and OHV use.

*Environmental Consequences:*

*Effects Common to All Alternatives:*

For the purposes of this document, the cumulative effects analysis area for recreation/visual resources encompasses the Stinkingwater Mountains. Reasonably foreseeable future projects include the installation of six meteorological towers on or near the western portion of the allotment. All alternatives and other ongoing and reasonably foreseeable future projects would not lead to cumulative effects to recreation/visual resources because impacts of proposed range improvements would be localized, and the meteorological towers would only temporarily (<3 years) affect visual resources. Future development of wind turbines (related to the meteorological towers) is unknown; however, effects to recreation/visual resources would be analyzed through a separate analysis for such a project(s).

Alternative A: No Action – Effects to recreation and visual resources under the No Action Alternative would be minimal. Existing range improvements would be maintained and remain visible. However, current livestock and wild horse grazing is resulting in concentrated livestock and wild horse use along Stinkingwater and Little Stinkingwater Creeks. These impacts would continue and would remain noticeable to the casual observer under this alternative. Recreational opportunities such as bird hunting or watching may remain reduced as heavy utilization would hinder improvement to riparian habitat in these areas, which could reduce the presence of birds. Under this alternative, no new fences or wells would be constructed; therefore, there would be no additional affects to visual resources. There would likely be no additional affects to other recreation opportunities under this alternative.

Alternative B: Proposed Action – The range improvement projects proposed under this alternative are allowed under the VRM Class IV areas in the allotment.

The proposed riparian exclosures would improve riparian conditions, subsequently improving wildlife habitat and recreational opportunities such as hunting and viewing. None of the proposed developments are adjacent to any known campsites or other features associated with prolonged visitor use. If any encounters with visitors occur during construction of the proposed developments, there would be some temporary and short-term (days) disturbance to recreational activities in the immediate area surrounding project locations. After construction, should any visitor encounters with developments occur, they would likely be limited to minutes as visitors pass by foot, horseback or vehicle. Effects to recreation are expected to be immeasurable for the allotment as a whole, given their short term and localized nature. Overall, recreational opportunities would likely be enhanced by improvements in rangeland conditions.

Alternative C: Removal of Livestock Grazing from Clear Creek Seeding and Bartlett Mountain Pastures – Effects to recreation and visual resources would be similar to the No Action Alternative. Although livestock grazing would no longer occur in the Clear Creek Seeding and Bartlett Mountain Pastures, wild horses would continue to have yearlong access to the riparian areas along Stinkingwater and Little Stinkingwater Creeks. Heavy utilization levels would remain noticeable to the casual observer and recreational opportunities in these areas would be reduced. For some visitors, absence of livestock would enhance their recreation experience. Livestock grazing would continue in the remaining pastures of the allotment, therefore the effects to recreation and visual resources would be the same as the No Action and Proposed Action Alternatives.

## 12. Social and Economic Values

Current discussion and analysis of potential effects on economic values are tiered to the Three Rivers PRMP/FEIS (September 1992) on Pages 3-25 to 3-27.

### *Affected Environment:*

Livestock raising and associated feed production industries are major contributors to the economy of Harney County. The highest individual agricultural sales revenue in the county is derived from cattle production (65 percent), which is inextricably linked to the commodity value of public rangelands. The cattle industry provided \$37,955,000 in sales in Harney County in 2009 compared to \$42,973,000 in 2008 (Oregon State University, Extension Service, 2010).

"Quality of life" is very individual when determining what is valued in a lifestyle and what features make up that lifestyle. Lifestyle features can be determined by historical activities of the area, career opportunities and the general cultural features of the geographical area. Quality of life issues are subjective and can be modified over time with exposure to other ways of living.

Recreation is a component of most lifestyles in the area and includes driving for pleasure, camping, backpacking, fishing, hunting, hiking, horseback riding, photography, wildlife viewing, and sightseeing. These activities contribute to the overall quality of life for residents.

In addition to local recreation use, the undeveloped, open spaces in the county are themselves a tourist attraction and contribute a "sense of place" for many. The attachment people feel to a setting, typically through a repeated experience, provides them with this sense of place. Attachments can be spiritual, cultural, aesthetic, economic, social or recreational. Hunting and other types of dispersed outdoor recreational experiences contribute to the local economy on a seasonal basis. Fee hunting and recreation alone contributed \$110,000 to Harney County in 2009 (<http://oain.oregonstate.edu>, 2009).

*Environmental Consequences:*

*Effects Common to All Alternatives:*

There are no known reasonably foreseeable future projects, which combined with all alternatives would lead to measurable cumulative effects to Social/Economic Values.

Alternative A: No Action – No changes to livestock grazing management would occur on the allotment under the No Action Alternative and downward trend in the condition of riparian plant communities would continue along Stinkingwater and Little Stinkingwater Creeks. Since Rangeland Health Standards 2, 4, and 5 are not being achieved, some form of riparian protection measure(s) would need to be implemented so that "significant progress toward" properly functioning riparian areas can be made, and authorized grazing could continue. If no action is taken, this could result in the existing permits being cancelled reducing grazing fee revenues of approximately \$3,856 each year to the government. Reducing livestock numbers could negatively affect individuals who make their living from these ranches.

At the same time, 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, hiking, and OHV). These amenities would remain but could be reduced if riparian health is not maintained or improved to provide recreational opportunities such as wildlife viewing and hunting.

Alternative B: Proposed Action – An investment (approximately \$12,000) of public funds would be required to implement the proposed projects, providing economic opportunities for local contractors and vendors. The permittees would endure costs related to implementation of the proposed projects and annual maintenance of those projects. Grazing fees (approximately \$3,856) would continue to be collected for 2,857 AUMs of Permitted Active Use.

The proposed grazing management and range improvement projects are designed to improve conditions for uplands and riparian areas, which would maintain or increase forage production for livestock, wild horses, and wildlife. Providing for sustainable grazing management that improves habitat conditions for wildlife and wild horses would in turn increase economic opportunities for livestock operations, help sustain livelihoods for the multiple families employed by these ranching operations, and foster more desirable social opportunities.

Renewing the current 10-year Term Grazing Permits with the Proposed Action of this AMP as a term and condition of the permits would result in continued viable ranching livelihoods for livestock operators and families employed by these ranches. Continuing viable ranching operations would also enhance the economy of Harney County through taxes and goods and services purchased by the ranches and people employed by these ranches. By maintaining viable ranching operations and improving rangeland conditions in Stinkingwater Allotment, traditions associated with the ranching communities of Harney County would be maintained. In addition, in recent years there has been a rising demand for locally grown food sources. Maintaining a viable ranching operation would also aid in feeding that demand as cattle are produced locally and not imported. In this time of high transportation costs, locally grown food also reduces the amount of energy expended in shipping.

The area's intrinsic values (i.e., open space, scenic quality, and recreational opportunities) would be maintained and likely enhanced under this alternative. Maintaining and improving rangeland health would improve wildlife habitat and abundance thus providing for additional viewing and hunting opportunities. However, some visitors may feel additional range improvements would detract from their recreational experience.

Alternative C: Removal of Livestock Grazing from Clear Creek Seeding and Bartlett Mountain Pastures – Under this alternative, 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 from the Clear Creek Seeding and Bartlett Mountain Pastures. However, in order to achieve Standards wild horse management would continue; therefore, additional range improvements may be necessary in the future. Maintenance of existing and future improvements needed for wild horse management would be out of the BLM budget.

The collection of grazing fees would be reduced by approximately \$1,815 annually (based on the minimum cost per AUM); depending on the grazing year, and a reduction of 1,345 licensed AUMs would also occur. 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 \$100 per ton for grass hay in the area), based upon annual supply and demand, but is likely to be much higher than pasture. The ranches would also not be able to employ the current number of people which would have a negative effect on the rural economy of Harney County. Viability and sustainability of the ranches holding grazing permits in Stinkingwater Allotment could decline as a portion of the lands they rely on become unavailable; therefore, potentially affecting their way of life.

Tourism is a growing part of the economy of Harney County. Some people come here to see the wide open spaces and explore the rich history and traditions of the active ranching communities while others' social experience may be enhanced with removal of livestock. However, the needs of the local people, such as tourism in Harney County and the livelihoods associated with ranching, would be hindered with removal of livestock grazing from public land portions of Stinkingwater Allotment.

13. Wildlife/Locally Important Species and Habitat

This discussion and analysis of potential effects to wildlife is tiered to the 1991 Three Rivers PRMP/FEIS and relevant information contained in the following sections is incorporated by reference: Chapter 2, p. 2-66 and Chapter 3, p. 3-9.

*Affected Environment:*

The Stinkingwater Allotment supports a diversity of wildlife. Antelope (*Antilocapra americana*), mule deer (*Odocoileus hemionus*), and elk (*Cervus elaphus*) can be found on the allotment throughout much of the year. Antelope migrate out of the allotment during winter months. Approximately 10 percent of the allotment is classified as elk winter range and 17 percent is classified as deer winter range, and wintering populations vary depending on weather conditions. Elk and mule deer winter range overlaps along the south and west portions of the allotment, although both species may be found in other areas. ODFW manage game populations according to hunt units. Elk numbers are at or slightly above management objective for the hunt unit, while mule deer numbers are below the proposed management objective. The Three Rivers RMP (1992) allocated 23 AUMs to deer, 28 AUMs for elk and 15 AUMs to antelope in this allotment. There has been no formal wildlife or wildlife habitat monitoring in the allotment.

The Riverside herd of bighorn sheep (*Ovis canadensis*) has been documented in the eastern portion of the Stinkingwater Allotment. Bighorn sheep use open, steep mountainous habitat that provides good visibility, escape areas, and abundant forage. Low-elevation bunchgrass ranges on south- and west-facing slopes, adjacent to suitable escape terrain and water, provide winter habitat for all age classes and spring lambing areas. A mixture of conifers of varying age classes, either in clumps within the grasslands, or bordering the grasslands, provide some cover, but adjacent rock bluffs, ledges, canyons, and steep slopes are critical habitat. Visibility is an important factor for wild sheep, and they often use ranges where their view is unrestricted by standing timber, high shrubs, brush or other obstructions. Bartlett Mountain Pasture is the only portion of Stinkingwater Allotment known to provide bighorn sheep habitat. Although Bartlett Mountain Pasture offers quality habitat, actual bighorn sheep use is rare or infrequent. The Riverside herd generally inhabits rangelands to the east and south of Stinkingwater Allotment along the Middle Fork of the Malheur River.

Other wildlife in the allotment include mountain lions (*Puma concolor*), American badger (*Taxidea taxus*), bobcat (*Lynx rufus*), coyote (*Canis latrans*), and a myriad of small mammals, amphibians, and reptiles.

Monitoring indicates that current grazing management has maintained good plant species diversity and cover of key upland forage species across the allotment. Heavy use by livestock and wild horses has been observed along Stinkingwater and Little Stinkingwater Creeks within the Clear Creek Seeding and Bartlett Mountain Pastures. Heavy utilization along portions of these two creeks has resulted in reduced horizontal and vertical plant cover and reduced structural diversity, resulting in less desirable brood rearing and foraging habitat for SSS. Current grazing management does not allow for periodic growing season rest for riparian vegetation and is a primary contributing factor to the degraded conditions.

Ongoing and reasonably foreseeable future events potentially affecting wildlife in this vicinity include livestock grazing, installation of six temporary meteorological towers near the western portion of the allotment, regular road maintenance, hunting and other recreational pursuits, juniper cutting and prescribed burning treatments approximately 4 miles south of the allotment, and wildfire.

*Environmental Consequences:*

*Effects Common to All Alternatives:*

For the purpose of this document, the cumulative effects analysis area for Wildlife/Locally Important Species and Habitat encompasses the Stinkingwater Mountains. No alternatives combined with other ongoing and reasonably foreseeable future projects would lead to cumulative effects to wildlife, because impacts from the alternatives would be localized, and effects with the other projects would be immeasurable due to distance to other projects or minimal direct and indirect effects to species or habitat. Medusahead would likely continue to spread, displacing native habitat for wildlife under all alternatives until an effective treatment is available.

Alternative A: No Action – Current livestock grazing management has kept livestock utilization levels below the target level of 50 percent on key upland forage species, and the uplands are currently meeting Rangeland Health Standards and Guidelines. However, current management does not allow for periodic growing season rest for riparian vegetation and has led to degraded riparian areas along 1.3 miles of Stinkingwater and 0.25-mile of Little Stinkingwater Creeks in Clear Creek Seeding and Bartlett Mountain Pastures.

Late season livestock grazing would continue the downward trend in vegetative cover along Stinkingwater and Little Stinkingwater Creeks. Riparian areas provide important resources to wildlife (Thomas et al. 1979), and heavy use of riparian vegetation negatively impacts wildlife by reducing cover, forage, and creating conditions suitable for noxious weed introduction and spread. The current conditions provide a less desirable environment for wildlife species, and as the downward trend continues wildlife would likely decrease use of these riparian areas. Elk and mule deer tend to avoid areas being grazed by cattle (Stewart et al. 2002), and currently scheduled winter grazing in the Stinkingwater Seeding, Well, and Clear Creek Seeding Pastures would generally not conflict with elk and deer winter use which tends to occur more in the southern and western portion of the allotment.

Alternative B: Proposed Action – The grazing season would be shortened by 2 months in alternating years in Clear Creek Seeding Pasture, which contains 0.6-mile of Stinkingwater Creek. Conly Basin Pasture would be rested from livestock grazing every other year. Resting this pasture would maintain cover and vigor of perennial bunchgrasses and forbs, potentially slow the spread of noxious weeds, and promote growth of riparian vegetation along approximately 3.1 miles of Clear Creek.

Wildlife habitat would likely improve with selection of the Proposed Action. Proposed range improvements, including fencing around the spring above Clear Creek and along Stinkingwater and Little Stinkingwater Creeks, would protect riparian areas and promote recovery of riparian vegetation important for forage and cover. The Proposed Action is expected to sustain and stimulate rangeland vegetation, improve riparian condition, promote enhanced livestock and wild horse distribution, improve water availability and provide more flexibility in timing of use. Elk and mule deer tend to avoid areas being grazed by cattle (Stewart et al. 2002), and currently scheduled winter grazing in the Stinkingwater Seeding, Well, and Clear Creek Seeding Pastures would generally not conflict with elk and deer winter use which tends to occur more in the southern and western portion of the allotment.

All of these factors would benefit wildlife and their habitat, while reducing potential conflicts with livestock and wild horses. Fences would be designed to BLM standards to minimize potential injury to wildlife and allow access to riparian areas and water sources.

Alternative C: Removal of Livestock Grazing from Clear Creek Seeding and Bartlett Mountain Pastures – Under this alternative, habitat conditions for wildlife would improve over time as vegetation would likely become denser within Clear Creek Seeding and Bartlett Mountain Pastures, providing better hiding, foraging, and nesting cover. There would be no disturbance to bighorn sheep and other wildlife from livestock and livestock management activities. Habitat conditions for wildlife would improve along Stinkingwater and Little Stinkingwater Creeks; however, recovery of riparian vegetation would be limited as wild horses would continue to have yearlong access to these areas.

Effects on wildlife within the remaining pastures of the allotment would be equivalent to the No Action Alternative as grazing management would be the same.

#### 14. Wild Horses

This discussion and analysis of potential effects to wild horses and burros is tiered to the 1992 Three Rivers PRMP/FEIS and relevant information contained in the following sections is incorporated by reference: Chapter 2, p. 2-43 and Chapter 3, p. 3-6.

*Affected Environment:*

Background

Stinkingwater Allotment is part of the Stinkingwater Wild Horse HMA. All of Stinkingwater Allotment is contained within the Stinkingwater HMA, comprising 27 percent of the total HMA acreage. Stinkingwater Allotment is one of three allotments that lie within the Stinkingwater HMA. AML for wild horse populations within the entire Stinkingwater HMA is between 40 and 80 horses. Within Stinkingwater Allotment, low and high AML are 10 and 20 horses (120 to 240 AUMs), respectively.

Management

There exists a direct competition for forage within Stinkingwater Allotment as livestock and wild horses (the primary species of large herbivores) have a dietary overlap of 90 to 100 percent. Site observations and utilization studies indicate wild horse utilization patterns are similar to livestock. Wild horse utilization is typically concentrated within 1 to 2 miles of reliable water. Although wild horse distribution cannot be controlled within the HMA, livestock grazing is controlled through prescribed rotations.

According to the Stinkingwater Wild Horse HMA Plan in order to maintain a natural ecological balance, meet resource objectives in the AMP, and the Standards, horse numbers must be maintained between 40 and 80 animals (low and high AML) within the HMA. Gathers should be planned when horse numbers are approaching or would exceed the high end of AML for the HMA or when monitoring data (census, utilization, use supervision, etc.) indicates that ecological balance would be compromised. Depending on reproductive rates, rangeland monitoring data, funding, and other management considerations, horses within HMAs are typically gathered and removed on a 4 to 5-year cycle.

Since 1992, there have been numerous census counts, gathers, and releases within the HMA. There is limited data available distinguishing horse populations specific to each allotment comprising the HMA; therefore, horse management must be presented for the entire Stinkingwater HMA. These data indicate wild horse populations are above the high end of the AML for Stinkingwater HMA. Additionally, these data indicate wild horse numbers typically exceed the high end of the AML before a gather is completed.

**Table 10.** Stinkingwater HMA - Census and Gather History since 1992

<b>Date</b>	<b>Activity</b>	<b>Number of Horses</b>
Sep-1992	Census	79
Sep-1992	Gather	68
Jan-1995	Census	34
Sep-1997	Census	74
Mar-1999	Census	30
June-2000	Census	92
Sep-2002	Census	119
Jul-2004	Census	175
Sep-2005	Gather	203
Sep-2005	Census	40
Jul-2009	Census	180

Fences

In an HMA, external perimeter fences contain wild horses within the horse area of use while internal fences are used to manage timing of livestock grazing or provide periodic rest from livestock grazing. While necessary for livestock grazing management, these internal fences create seasonal barriers to the free movement of wild horses within the HMA. To mitigate effects of fencing, once livestock have been removed from an HMA, internal fence gates are required to be opened by the permittee as a term and condition of their permit. In addition, during the livestock grazing season, pasture gates should be left open whenever possible (when not allowing livestock drift). Currently there are approximately 20 miles of fence in the interior of the HMA boundary within Stinkingwater Allotment. Existing fences were constructed to manage timing of livestock grazing, and exclude livestock and wild horses from riparian and wetland habitat on the allotment. Approximately 8.5 miles of these fences surround private property.

*Environmental Consequences:*

*Effects Common to All Alternatives:*

For the purpose of this document, the cumulative effects analysis area encompasses the Stinkingwater HMA. Reasonably foreseeable future projects affecting wild horses include periodic (4 to 5 years) wild horse gathers within the HMA. All action alternatives combined with periodic wild horse gathers would lead to positive cumulative effects to wild horses within the HMA.

Maintaining horse numbers within AML would reduce forage competition between all grazers, subsequently improving habitat for wild horses. Providing wild horse access to perennial water along Stinkingwater Creek (as proposed in all alternatives) would maintain year-round wild horse range within this portion of the HMA.

Alternative A: No Action – Under this alternative, no new fences would be constructed which could reduce the free-roaming nature of wild horses on the allotment. Wild horses would continue to have yearlong access to Stinkingwater and Little Stinkingwater Creeks within the Bartlett Mountain and Clear Creek Seeding Pastures. Existing interior allotment fences would be maintained to manage livestock grazing.

Alternative B: Proposed Action – Under the Proposed Action, there would be an increase of approximately 1-mile of interior allotment fences required for the riparian exclosures around Stinkingwater and Little Stinkingwater Creeks. However, this would pose minimal effects to wild horse range as the proposed water gap would still provide wild horses year-round access to water within the Clear Creek Seeding Pasture. The proposed exclosures would remove desired riparian forage for wild horses during late summer; however, ample upland vegetation would still be available to horses across the allotment. The proposed spring development in the Stinkingwater Pass Pasture could increase wild horse distribution, subsequently reducing forage competition with livestock around existing water sources.

Alternative C: Removal of Livestock Grazing from Clear Creek Seeding and Bartlett Mountain Pastures – Removal of livestock from the Clear Creek Seeding and Bartlett Mountain Pastures would allow for 1.2 miles of interior allotment fences to be removed (boundary fence between Bartlett Mountain and Clear Creek Seeding Pastures). Wild horse movement would likely expand into the Bartlett Mountain Pasture, which generally has remained free of horses. Removing livestock would reduce forage competition between livestock and wild horses within these two pastures. Herbaceous forage quality and quantity may increase as more key forage plant species are allowed to mature, set seed, and store carbohydrates. Effects to wild horses in the remaining pastures would be equivalent to the No Action Alternative.

15. Fisheries/Locally Important Fish Species

*Affected Environment:*

The ODFW lists Stinkingwater Creek and Clear Creek as providing habitat for Great Basin redband trout (*Oncorhynchus mykiss ssp.*). Currently, trout habitat in Stinkingwater Creek is limited by high water temperatures, low flow and high sedimentation. Clear Creek is dominated by riffle habitat and lacks sufficient pool habitat. Current streamside riparian habitat is poor along both systems – further limiting quality fish habitat.

Neither Clear Creek nor Stinkingwater Creek in this allotment support an abundant fishery and thus experience low angling pressure.

*Environmental Consequences:*

*Effects Common to All Alternatives:*

Cumulative effects to Fisheries/Locally Important Fish Species would be equivalent to those presented for Wetland/Riparian Zones and Water Quality.

Alternative A: No Action – Fish habitat conditions along Stinkingwater Creek would not improve under this alternative. Streambank stability would not increase, shade providing woody species would not recover and temperatures would remain above the ODEQ temperature standard, as current management is not allowing for natural recovery.

Alternative B: Proposed Action – Effects to fish habitat from the Proposed Action are likely to be related to change in vegetation communities following change in grazing management and proposed range improvement projects. Clear Creek would continue to be grazed early every other year. This earlier riparian use period provides an opportunity for riparian plant regrowth and recovery and reduces livestock use in riparian areas (TR-1737-20). With the exception of 100 feet of the proposed water gap on Stinkingwater Creek, Stinkingwater and Little Stinkingwater Creeks would be completely rested from livestock and wild horse grazing on public land portions of this allotment. This management plan should enhance deep-rooted, hydric herbaceous and woody riparian vegetation growth along these creeks. With development of these riparian plant communities, bank stability and percentage of overhanging banks, increased shading, and water storage/retention within the riparian zone are expected. These changes would improve fish habitat by increasing sediment storage capacity of riparian zones, reducing turbidity, maintaining water temperature and increasing fish cover, foraging, and spawning habitat.

Alternative C: Removal of Livestock Grazing from Clear Creek Seeding and Bartlett Mountain Pastures – Effects to fisheries under Alternative C would be similar to those analyzed under the Proposed Action (with the exception of Stinkingwater Creek). Wild horse use is high in this portion of Stinkingwater Allotment. Impacts from wild horses would continue to negatively affect riparian function, water quality and cold-water fish habitat along this reach by not allowing banks to stabilize, not improving water storage within the riparian zone, and not providing recruitment of deep-rooted herbaceous and woody riparian vegetation. Temperatures would remain above the ODEQ standard for salmonid bearing streams.

C. Discussion on Cumulative Effects

As the Council on Environmental Quality (CEQ), in guidance issued on June 24, 2005, points out, the "environmental analysis required under NEPA is forward-looking," and review of past actions is required only "to the extent that this review informs agency decision-making regarding the Proposed Action." Use of information on the effects on consideration of the Proposed Action's cumulative effects, and secondly as a basis for past action may be useful in two ways according to the CEQ guidance. One is for identifying the Proposed Action's effects.

The CEQ stated in this guidance that "[g]enerally, agencies can conduct an adequate cumulative effects analysis by focusing on the current aggregate effects of past actions without delving into the historical details of individual past actions." This is because a description of the current state of the environment inherently includes the effects of past actions. The CEQ guidance specifies that the "CEQ regulations do not require the consideration of the individual effects of all past actions to determine the present effects of past actions." Our information on the current environmental condition is more comprehensive and more accurate for establishing a useful starting point for a cumulative effects analysis, than attempting to establish such a starting point by adding up the described effects of individual past actions to some environmental baseline condition in the past that, unlike current conditions, can no longer be verified by direct examination.

The second area in which the CEQ guidance states that information on past actions may be useful is in "illuminating or predicting the direct and indirect effects of a Proposed Action." The usefulness of such information is limited by the fact that it is anecdotal only, and extrapolation of data from such singular experiences is not generally accepted as a reliable predictor of effects.

However, "experience with and information about past direct and indirect effects of individual past actions" have been found useful in "illuminating or predicting the direct and indirect effects" of the Proposed Action in the following instances: the basis for predicting the effects of the Proposed Action and its alternatives is based on the general accumulated experience of the resource professionals in the agency with similar actions.

The environmental consequences discussion described all expected effects including direct, indirect and cumulative on resources from enacting the proposed alternatives. A distinction between direct and indirect effects is not made and in many cases cumulative effects are only described as effects. All effects are considered direct and cumulative; therefore, use of these words may not appear. In addition, the Introduction Section of this EA, specifically the Purpose of and Need for Action, identifies past actions creating the current situation.

RFFAs include those Federal and non-Federal activities not yet undertaken, but sufficiently likely to occur, that a Responsible Official of ordinary prudence would take such activities into account in reaching a decision. These Federal and non-Federal activities that must be taken into account in the analysis of cumulative impact include, but are not limited to, activities for which there are existing decisions, funding, or proposals identified by the bureau. RFFAs do not include those actions that are highly speculative or indefinite. The beginning of Chapter III lists all RFFAs associated with this analysis. Cumulative effects were thoroughly addressed throughout Chapter III by resource if applicable.

#### CHAPTER IV: PERSONS, GROUPS, AND AGENCIES CONSULTED

##### A. Agencies and Individuals Consulted

Grazing Permittees  
Harney County Court  
Oregon Department of Fish and Wildlife

##### B. Interdisciplinary Team

Jason Brewer – Wildlife Biologist (*Migratory Birds, Wildlife, SSS – Fauna: Terrestrial*)  
Lindsay Davies/Lisa Grant – Fisheries/Riparian Specialists, (*Fisheries, Water Quality, Wetlands/Riparian Zones*)  
Michelle Franulovich – Recreation Planner (*Recreation, Visual Resources*)  
Terri Geisler – District Geologist (*Hazardous Materials, Minerals*)  
Eric Haakenson – Wilderness Planner  
Doug Linn – Botanist (*ACEC, SSS – Flora, Soils, BSCs*)  
Gary McFadden – Wild Horse and Burro Program Manager (*Wild Horses*)  
Brett Page – Recreation Planner (*Recreation, Visual Resources*)  
Lesley Richman – District Weed Coordinator (*Noxious Weeds*)  
Rob Sharp – Rangeland Management Specialist – Lead Preparer (*Livestock Grazing Management, Upland Vegetation*)  
Scott Thomas – District Archaeologist (*ACEC, American Indian Traditional Practices, Cultural Heritage, Paleontology*)

C. Advisory

Bill Andersen, District Range Lead  
Bill Dragt, Supervisory Natural Resource Specialist  
Stacy Fenton, GIS Specialist  
Kelly Hazen, GIS Specialist  
Rhonda Karges, District Planning/Environmental Coordinator  
Richard Roy, Three Rivers Resource Area Field Manager

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## Appendix A

### Grazing Treatment Descriptions

- Early** – (approximately March 1 to April 30) – This treatment provides the plants an opportunity to recover after utilization of early plant growth. By removing livestock before all spring and summer precipitation occurs, the plants will be able to store carbohydrates, set seed, and maintain their vigor. This "Early" treatment can be used every year with little effect on the plant.
- The dates of March 1 to April 30 are a guideline for the "Early" treatment. Early use must take place before grass plants are in the boot stage. There must also be enough soil moisture in the ground to provide for regrowth after grazing. Therefore, flexibility in the early treatment will allow for use prior to April 1, but generally not after April 30 and will depend on climate.
- Graze** – (approximately May 1 to July 1-15) – This treatment allows for grazing during the critical growth period of most plants. Carbohydrate reserves are continually being utilized because the green parts of the plants are constantly being removed by livestock. The pastures that are under the "Graze" treatment will generally experience some other treatment the following year so as not to repeat graze treatments.
- Defer** – (approximately July 1 to October 15) – Grazing during this treatment will not begin until after most plants have reached seed ripe and have stored adequate carbohydrate reserves. This treatment will assist in meeting the objectives by providing all plants an opportunity to complete their life cycles and produce the maximum amount of cover and forage.
- Winter** – Grazing during this treatment will occur when most plant species are dormant. Most plants will have completed their life cycles and stored maximum carbohydrates for the next growing season.
- Rest** – This treatment provides the plants a full year of growth in the absence of grazing. They are allowed to store maximum carbohydrate reserves, set seed, and provide carryover herbage for the following year's turnout.

These dates are approximation based on general plant phenology. Year-to-year variation in phenology will occur based on climatological phenology.