

CHAPTER 2 — ALTERNATIVES, INCLUDING THE PROPOSED ACTION

This chapter presents descriptions and comparisons of alternatives considered for (1) authorizing / not authorizing continued livestock grazing on the four allotments and (2) managing livestock grazing use on the allotments if continued livestock grazing were to be authorized. The chapter presents the alternatives in comparative form, sharply defining the differences between each alternative for the public and decision maker and providing a clear basis for the decision maker to decide among the options.

The main elements of the AMP — and therefore of the action alternatives — are listed in the *Brief Overview of the Proposed Action* (Chapter 1), and these are addressed for each of the action alternatives. For the alternatives that contain a complete set of allowable-use standards, the allowable-use standards provide the basis for analyzing environmental effects.

Alternative 1 would carry current management forward. However, “current management” is not static and unchanging. It has evolved (or, adapted) over the years, and Alternative 3 represents yet another stage in this progression. Many changes to sheep grazing and sheep grazing management have been made since the late 1800s and first half of the 20th Century in recognition of the severe impacts that were occurring and the need to provide for the restoration of depleted rangelands. The largest change was a major reduction in numbers, but changes also included reduced season-of-use, attempts to graze sheep in a once-over manner, attempts to only bed sheep once in any given location each season, and more care given to salting operations. The current permittee, for example, voluntarily reduced the number of sheep bands for the four allotments from four to three when he acquired the term permit, to incorporate rest, and he has been running fewer sheep per band than his permitted numbers (see Alternative 1, Tables 2-1 and 2-2) and voluntarily reduces the season of use.

Alternatives Considered, But Not Studied in Detail

The following are specific recommendations on elements of alternatives that were identified during the scoping and commenting process, but that do not need to be studied in detail for reasons provided below.

- Reductions of 40% and 60% in permitted sheep numbers were not considered as requested by one member of the public. These reductions in permitted sheep numbers were not studied in detail because direction provided in FSH 2209.13, Chapter 10, sections 16.13 and 16.14, and Chapter 90, section 92 encourage modifying livestock numbers be done administratively, if needed, rather than through the allotment management planning process.
- Reductions in permitted numbers of ewes with lambs from 1,300 to 1200 (Bear Creek and Virginia Peak) and from 1,300 to 950 (North Salt and South Salt) were

identified by the interdisciplinary team as an alternative to consider for facilitating progress toward achieving desired conditions and resource objectives. The reasons for not studying this in detail included the reasons described in the previous paragraph. Furthermore, development and adherence to allowable-use standards designed to allow resource objectives to be met would accomplish the same end, so long as livestock grazing management adheres to them each year.

- The use of vegetation treatments to attain desired conditions was identified during the scoping and commenting period. Periodic fire was identified by several entities, and high stock density for short periods was identified by one entity as an alternative to periodic fire for reducing big sagebrush canopy cover. Seeding was identified in one comment. These management approaches are beyond the scope of this project as defined in the purpose and need statement.

Alternative 1 (Current Management) _____

AUTHORIZATION OF CONTINUED LIVESTOCK USE

Under this alternative, continued livestock use on the allotment would be authorized (see Table 2-1 for livestock numbers and season of use).

LIVESTOCK NUMBERS, SEASON OF USE, AND GRAZING SYSTEM

Basic information characterizing current management on the Bear Creek, Virginia Peak, North Salt and South Salt allotments is summarized in the following table:

Table 2-1. Number of permitted number of livestock, season of use, and number of days under Alternative 1 – Current Management.					
Allotment	Number of Animals		Permitted Season of Use	Permitted Number of Days	Permitted AUMs
	Permitted	Actual (1999-2008)			
Bear Creek	3,900 ewes with lambs (3 bands of 1,300)	2,880-3,600 ewes with lambs	7/06-9/20	77	2,964
Virginia Peak			7/06-9/20	77	
North Salt			7/06-9/20	77	
South Salt			7/06-9/20	77	
All combined	12 horses	12 horses	7/06-9/20	77	38

A total of up to 1,300 ewes with lambs would continue to be permitted to graze on each of three of the four allotments for up to 77 days each year. In the near term, actual use would be expected to remain at approximately 1,050-1,170 ewes with lambs (Bear Creek), 850-1,100 (Virginia Peak), 940-1,150 (North Salt), and 900-1,110 (South Salt), with 1,050-1,150 ewes with lambs occasionally grazing North and South Salt allotments as one allotment (i.e., this number of sheep spread across the entire allotment); see Table 2-2. Numbers in Table 2-2 primarily reflect reductions that were self-imposed by the existing permittee. The permittee has also consistently removed sheep prior to the end of the permitted season. The darker line in Table 2-2 reflects the signing of the 2005 permit.

However, it would be possible under this alternative for actual use levels and season of use to more consistently reflect permitted numbers because this alternative does not contain allowable-use standards and other management controls to limit use levels to those of 2000-2008 (Table 2-2). Therefore, the analysis of this alternative in Chapter 3 assumes fully permitted numbers and season of use.

Table 2-2. Actual use on the Bear Creek, Virginia Peak, North Salt, and South Salt sheep allotments during 1999-2008, and total number of sheep on the four allotments each year.

Year	Allotment				Total Number
	Bear Creek	Virginia Peak	North Salt	South Salt	
1999	1,300	1,300	0	1,300	3,900
2000	0	1,050	1,140	1,080	3,270
2001	1,170	1,080	1,150 ^A		3,400
2002	1,150	0	1,150	900	3,200
2003	1,050	850	1,050 ^A		2,950
2004	1,070	850	1,040	0	2,960
2005	0	940	940	1,000	2,880
2006	1,050	0	960	1,050	3,060
2007	1,060	1,020	0	1,000	3,080
2008	0	1,100	1,100	1,100	3,300

^A During these years the permittee was allowed to run one band of sheep over both allotments to reduce grazing pressure on drought stressed vegetation.

Rest would continue to be rotated among the allotments, with each being rested about every fourth year, except on the North Salt and South Salt where allotment-wide rest has only occurred about once every 8-10 years. Much of the grazing route within the Virginia Peak, North Salt, and South Salt allotments is generally the same from year to year, except when one band grazes the North Salt and South Salt allotments. The grazing route varies somewhat in the Bear Creek allotment. When sheep from the Virginia Peak allotment exit the district from lower Willow Creek (on the Bear Creek allotment) the Virginia Peak band grazes on Bear Creek allotment about two weeks. The term permit requires a deferred rotation system of grazing within each allotment, although this is not currently practiced on all allotments.

Of the permitted number of horses (Table 2-1), 5-6 are typically with the herders, and the others are at the permittee’s camp at Smith’s Fork Meadows all summer.

ACCESS TO AND FROM THE ALLOTMENTS

North and South Salt Allotment

Entry: sheep are trailed up from lands administered by the Bureau of Land Management (BLM) and enter National Forest System lands at the southern end of the South Salt Allotment on one of the ridges of Dry Fork.

Exit: sheep are trailed back to BLM lands and leave National Forest System lands at the South Salt or North Salt Allotment boundary on the other ridge of Dry Fork.

Bear Creek Allotment

Entry: sheep are trucked onto the Greys River Ranger District and are unloaded on the Bear Creek Allotment at the lower end of either Willow Creek (at the North Fork tributary) or lower Bear Creek.

Exit: sheep are loaded at either Willow Creek (at the North Fork tributary) or lower end of Bear Creek, and trucked either directly to BLM lands or to a parking area along Highway 89 in the Fish Creek drainage where they are then trailed south across the south end of the North Salt Allotment to BLM lands. This is coordinated with sheep being trucked from the Virginia Allotment (below); it is either done for the band of sheep coming off the Bear Creek Allotment or the Virginia Peak Allotment, not both in any given year.

Virginia Peak Allotment

Entry: sheep are trucked onto the Greys River Ranger District and are unloaded on the allotment near the Meadows guard station (lower Meadow Creek).

Exit: sheep are loaded near the Meadows guard station or lower Willow Creek (at the North Fork tributary in the Bear Creek Allotment) and trucked either directly to BLM lands or to a parking area along Highway 89 in the Fish Creek drainage where they are then trailed south across the south end of the North Salt Allotment to BLM lands. This is coordinated with sheep being trucked from the Bear Creek Allotment (above); it is either done for the band of sheep coming off the Virginia Peak Allotment or the Bear Creek Allotment, not both in any given year.

MANAGEMENT STRATEGY

The following management strategy characterizes current management.

Allowable-use Standards*Forage Utilization Limits from the Forest Plan*

The following allowable-use standards are listed in the 2005 term permit. The permit recognized that an AMP for the four allotments that met Forest Plan standards and guidelines had not yet been developed or had not yet been analyzed in a NEPA document. The addition of the allowable-use standards were made to the permit without any substantive changes to sheep management practices or numbers. The double line between 2004 and 2005 in Table 2-2 indicates when the new permit was signed.

Maximum utilization level allowed for all herbivory on key vegetative species on
Upland Range Sites:

- Range in satisfactory conditions — 60%
- Range in unsatisfactory conditions — 50%

Maximum utilization level allowed for all herbivory on key vegetative species on
Riparian Range Sites:

- Range in satisfactory conditions — 65%
- Range in unsatisfactory conditions — 55%

The 2005 permit clarified, in accordance with Forest Plan direction, that (1) “all herbivory” includes grazing from all herbivores, including livestock, wildlife, and recreational stock; (2) a utilization standard may be changed if the prescribed level is not accomplishing planned objectives, (3) site-specific utilization levels for key wildlife ranges will be established by an interdisciplinary team; and (4) interdisciplinary teams will determine other proper-use standards to achieve site-specific objectives. The allowable-use standards will include combination of forage utilization, ground cover, plant vigor, soil disturbance, or streambank stability. For example, an objective of minimizing soil disturbance will be more important than forage utilization on sheep allotments.

As recognized in the Forest Plan, the allowable-use standards listed above do not provide meaningful standards for limiting sheep grazing use since there currently are no accepted procedures for measuring utilization of perennial forbs in a timely manner. However, percent utilization can generally be applied to the management of forage utilization by sheep.

Once-Over Grazing

The permittee and herders would continue to work to limit sheep grazing to “once-over” in most parts of the allotments. Sheep bands pass through several parts of the North Salt and South Salt allotments more than one time each season due to the narrow current configuration of large parts of portions of the North Salt and South Salt allotments, the practice of trailing sheep through parts of allotments that are also grazed, the practice of other permittees trailing their sheep through the southern portion of the two allotments, and the routes used by herders within the allotments from start to finish of the grazing season. Parts of Bear Creek allotment area also grazed by sheep more than one time each season, but it is much more limited than in the North Salt and South Salt allotments.

The practice of once-over grazing, as compared to twice-over and three-times-over grazing, is a way to generally limit grazing intensity. However, grazing intensity on any given area that is grazed “once-over” depends on production levels of herbaceous vegetation on the area (which is heavily influenced by range conditions, precipitation levels, etc.), numbers of sheep passing through the area, the width of the area being grazed (which is influenced by topographic features, conifer forestland, etc.), and other factors. For example, a wide area with high production of a large diversity of herbaceous vegetation may be grazed lightly by a given number of sheep, while a narrow corridor with low production of a limited diversity of forbs would be grazed more intensively by the same number of sheep.

Required Sheep Management Practices (Best Management Practices)

The following Best Management Practices have been included in recent Annual Operating Instructions and in the term grazing permit. They would be implemented as an element of Alternative 1.

- Livestock are not allowed to enter the allotment or portion of the allotment until the soils are dry enough to prevent damage and key plant species are ready to withstand grazing (known as “range readiness”).

- Permittees shall take measures necessary in order to protect meadows, sensitive, and fragile areas. It is important to note that reaching the allowable use or other resource condition standards will result in early livestock removal from an allotment.
- Permittees are responsible to provide sufficient herding to ensure that all livestock remain within the allotment boundaries.
- All salt is to be placed at least ¼-mile from streams, wetlands, key areas, and critical areas, and must be placed in containers or on rocks. In no case can salt be placed outside of the allotment boundaries.
- Sheep must not be bedded in any given area more than one time each season.
- Dead sheep must be at least 50 feet above the high water line and away from roads, trails, campsites, and riparian areas. Dead sheep must be disposed of according to State laws.
- Closed and restricted roads will be used only when authorized by the Bridger-Teton National Forest Supervisor when recommended by the District Ranger.
- If a prescribed burn were to be implemented within any of the allotments, the permittee may be required to rest the area prior to implementation and for 1-2 growing seasons after implementation. The Forest Service would coordinate with the permittee, including one year's notice prior to implementation of any planned treatment.

The 2005 AMP also listed the following Forest Plan standards, prescriptions, and guidelines:

- Range Vegetation Prescription (for DFCs 1B, 3, and 12)
- Forage Improvement Standard (forest wide)
- Streambank Stability Guideline (forest-wide)
- Fencing Riparian Area Guideline (forest-wide)
- Structural Improvement Standard (forest-wide)
- Elk Calving Area Standard (forest-wide)
- Fish; Wildlife; and Threatened, Endangered, and Sensitive Species Standard (forest-wide)

Other Sheep Management Requirements

The provisions and requirements listed in the 1985 AMP developed for the four allotments are included as part of the existing permit.

- A full-time herder would be provided by the permittees for each band of sheep.
- All sheep would be dye-branded, tagged, or counted before they enter National Forest System lands.
- The owner of all livestock grazed under the permit would need to comply with State livestock laws.

- The permittee would need to repair all damage, other than ordinary wear and tear, to all improvements such as roads and trails on National Forest System lands caused by the permittee in the exercise of the privileges granted by this permit.
- Camps would be kept and left in a sanitary condition. All temporary structures and garbage would need to be removed from National Forest System lands.

Structural Improvements

Existing structural improvements (e.g., fences, water developments) would remain as they are. They were located in part to take advantage of and augment topographic barriers to sheep movement. Maintenance of these structures is the responsibility of the permittee, as specified in the term grazing permit. Existing structural improvements are to be reconstructed as necessary to retain their functionality.

MONITORING

Vegetation, riparian, and rangeland monitoring on the allotment would follow the *Intermountain Region Rangeland Analysis Handbook* (FSH 2209.21), the *Interagency Technical Reference for Utilization Studies and Residual Measurements* (BLM ITR 1734-3), *Interagency Technical Reference for Sampling Vegetation Attributes* (BLM ITR 1734-4), *Wyoming Rangeland Monitoring Guide*, and *Monitoring Stream Channels and Riparian Vegetation—Multiple Indicators* (Burton et al. 2007). Additional technical information is found in *Measuring and Monitoring Plant Populations* (BLM Techn. Ref. 1730-1). Nested frequency plots may also be established and monitored (these are not addressed in the cited publications). Continued involvement by the permittee would be encouraged. The *Wyoming Rangeland Monitoring Guide* would be used in working with permittees in monitoring efforts. Any changes in monitoring sites would be coordinated with the permittee in advance of establishing new effectiveness monitoring sites.

Monitoring sites may change over time in response to changes in livestock distribution as a result of implementing management changes and for other reasons. Locations of monitoring sites would be coordinated with the permittee in advance of establishing new effectiveness monitoring sites.

Effectiveness Monitoring

Effectiveness monitoring is long-term monitoring and is used to track changes in resource conditions over time. It is used to determine whether healthy rangelands and riparian areas are retaining characteristics of healthy conditions and whether less-than-satisfactory rangelands and riparian areas are improving or declining in condition over time, or are remaining unchanged. Results of effectiveness monitoring (i.e., trends) are evaluated to determine if any changes in livestock grazing management are needed from the standpoint of achieving resource objectives.

Availability of funds and personnel for monitoring, dictated in large part by regional, BTNF-level, and district-level priorities, would continue to have a large influence on the number of monitoring sites that can be revisited each year across the four allotments and the intensity of the data collection process. Any additional permanent monitoring sites, beyond those already established, would be located with input from the permittee.

Livestock Use

Livestock use would continue to be monitored on an annual basis, and would be tracked over time based on numbers of animals, season of use, and animal unit months.

Ground Cover & Species Composition

A total of 38 permanent transects were established in rangeland areas during 2003-2007 to monitor long-term trends (Maps 4a and 4b), with 4 permanent transect sites in Virginia Peak Allotment 17 in each of the North Salt and South Salt Allotments, and none on the Bear Creek Allotment. These transects would continue to be monitored over time, with additional sites in Virginia Peak and Bear Creek established as time permits. Long-term monitoring on the allotments began in 2003-2007 (the 1960s effort was aimed at assessing range conditions and capacity and was not designed as a monitoring program).

Each permanent transect site consists of a permanently marked 200-ft. or 400-ft. transect line. Permanent transects involve the measurement of ground cover (bare ground, $\geq 3/4$ -rocks, litter, moss, and basal vegetation) based on 200 points along the transect line (this is the “second hit” at each 1-foot increment). The “first hit” on vegetation (when a plant canopy or any other part of a live plant is hit) would be recorded by species if time permits. Pictures would continue to be taken of each transect at each visit.

At least 4 permanent transect sites would be revisited a minimum of every 8 years, at which time ground cover by life form would be collected. As other priorities and funding permit, the first hit by species would be recorded as well. Photographs would be taken at designated points at designated bearings with every site visit. These efforts would be carried out in conjunction with allotment inspections to the extent possible.

Implementation Monitoring

Implementation monitoring is short-term monitoring and is conducted in an allotment while or shortly after it is grazed by livestock, and is conducted more frequently than effectiveness monitoring. Implementation monitoring is conducted to assess whether direction in AMPs and AOIs (e.g., allowable-use standards, other required livestock management practices) and terms of the permit are being followed. Implementation monitoring includes verifying the number of sheep turned out at the beginning of the season (and actual turnout dates) and number of sheep coming off the allotment at the end of the season (and actual end-of-season date). It also involves checking whether herders are adhering to once-over grazing, other Best Management Practices (e.g., for salting, bedding), and requirements for herder camps. Allowable-use standards of this alternative would be monitored after sheep have moved through an area or after the livestock grazing season.

RESTORATION ACTIVITIES, INCLUDING VEGETATION TREATMENTS

The allowable-use standards and required management practices of this alternative are not sufficient to ensure recovery of rangelands and wildlife habitat in less-than-satisfactory condition, including no provisions or protocols in the AMP for resting pastures or portions of pastures to accommodate vegetation treatments and no provisions or protocol for managing livestock in the event of a wildland-fire-use fire. Alternative 3 identifies management controls that, if added to Alternative 1, would allow riparian areas,

rangelands, and wildlife habitat to recover. Therefore, additional management controls (e.g., allowable-use standards, other required sheep grazing practices) are not listed here.

The Squaw Creek-Weiner Creek, Birch Creek-Star Peaks, and White Creek forage reserves (on Greys River Ranger District), and the Triple Peak forage reserve (straddling the Greys River and Big Piney Ranger Districts) would be available to facilitate flexibility in managing vegetation treatments on the Bear Creek, Virginia Peak, North Salt, and South Salt allotments.

Alternative 2 (No Grazing Alternative) _____

Under this alternative, the focus would be exclusively on restoring rangeland and riparian health and functionality and providing wildlife habitat and recreation opportunities, and livestock grazing would not be authorized.

AUTHORIZATION OF CONTINUED LIVESTOCK USE

Under this alternative, continued livestock use on the allotment would not be authorized.

LIVESTOCK NUMBERS, SEASON OF USE, AND GRAZING SYSTEM

Livestock grazing would not occur in the allotment under this alternative and, therefore, this section is not applicable. No sheep would be grazed on the allotment.

MANAGEMENT STRATEGY

Objectives

All objectives outlined in Chapter 1 would apply to this alternative, except the objective for livestock use.

Allowable-Use Standards

Allowable-use standards would not be needed since livestock grazing would not be authorized.

Sheep Management Practices

Under this alternative, and required/optional livestock grazing management practices would not be needed since livestock grazing would no longer occur in the allotment.

Structural Improvements

Structural improvements would not be needed and would not be maintained.

Allotment Configuration

The existing configuration of the allotment would remain as it is so that boundaries of adjoining allotments would not be adjusted to include parts of the existing allotments.

MONITORING

While rangeland and riparian monitoring would continue under this alternative, it would not be conducted at the same scale as would occur under Alternative 3. Implementation monitoring (e.g., monitoring of livestock use) would not be needed. Effectiveness

monitoring of ground cover, plant species composition, and streambank stability/stream channel integrity would continue, but at a reduced level and frequency than would occur under Alternative 3. This alternative would provide an opportunity to monitor recovery of deteriorated rangelands over the long term.

RESTORATION ACTIVITIES, INCLUDING VEGETATION TREATMENTS

The management emphasis in the allotment would shift to vegetation treatments (including fire) which, together with long-term rest from livestock grazing, would contribute to meeting long-term ecosystem health. However, the No Livestock Grazing Alternative would not include any specific treatments. Because livestock grazing use would not be authorized, there would no longer be a need to coordinate vegetation treatments with livestock grazing in this allotment.

Alternative 3 (Proposed Action) _____

Alternative 3 would retain the currently permitted numbers of livestock and season of use. Allowable-use standards and required sheep management practices were adjusted to place more emphasis on sustaining and — where resource conditions are less-than-satisfactory — restoring rangeland and riparian health and provision of wildlife habitat. Therefore, allowable-use standards and required sheep management practices are central to this alternative.

Part 3 of the 2005 term permit explains that the allotment management planning process could involve adjustments to the allowable-use standards and other changes (e.g., the addition of site-specific allowable-use levels on key wildlife ranges) in order to achieve Forest Plan objectives. To date, comprehensive, definitive direction has not been provided in term permits, AMPs, and Annual Operating instructions as to how this would be accomplished. Alternative 3 would provide this direction. Basic elements of the AMPs are provided in Appendix B.

The existing term permit states that, according to the Forage Utilization Standard of the Forest Plan, allowable-use standards “will be a combination of forage utilization, ground cover, plant vigor, soil disturbance, or streambank stability,” and specifically that an objective of minimizing soil disturbance would be more important than numeric forage-utilization limits on sheep allotments. Alternative 3 follows this direction by providing more meaningful allowable-use standards for sheep allotments.

AUTHORIZATION OF CONTINUED LIVESTOCK USE

Continued livestock use on the allotments would be authorized by implementing Alternative 3.

LIVESTOCK NUMBERS, SEASON OF USE, AND GRAZING SYSTEM

A decision to implement Alternative 3 would not change the number of permitted cattle and the permitted season of use, as compared to Alternative 1. See Table 2-1 for numbers, season of use, and AUMs. The allotments would continue to be grazed in a rest-

rotation system among allotments, with each allotment being rested periodically as described below in the “Allowable-use Standards” subsection.

A decision to implement Alternative 3 would not do away with the ability to make future administrative adjustments in the future to meet allowable-use standards and required management practices and, ultimately, to better meet Forest Plan direction and other mandates. Any needed annual adjustments to livestock numbers and season-of-use would be done administratively in Annual Operational Plans.

ACCESS TO AND FROM THE ALLOTMENTS

Sheep unloading and loading sites would be similar to those of Alternative 1, except that sheep from the Bear Creek and Virginia Peak allotments would no longer be trucked to the Fish Creek area and trailed to BLM lands. Other possible exceptions are discussed in the “Optional Sheep Grazing Strategies and Practices” section of this alternative (Alternative 3).

North and South Salt Allotment

Entry: sheep would be trailed up from lands administered by the Bureau of Land Management (BLM) and would enter National Forest System lands at the southern end of the South Salt Allotment on one of the ridges of Dry Fork.

Exit: sheep would be trailed back to BLM lands and leave National Forest System lands at the South Salt or North Salt Allotment boundary on the other ridge of Dry Fork.

Bear Creek Allotment

Entry: sheep would be trucked onto the Greys River Ranger District and unloaded on the Bear Creek Allotment at the lower end of either Willow Creek (at the North Fork tributary) or lower Bear Creek.

Exit: sheep would be loaded at either Willow Creek (at the North Fork tributary) or lower end of Bear Creek, and trucked off of National Forest System lands.

Virginia Peak Allotment

Entry: sheep would be trucked onto the Greys River Ranger District and would be unloaded on the allotment near the Meadows guard station (lower Meadow Creek).

Exit: sheep would be loaded near the Meadows guard station or lower Willow Creek (at the North Fork tributary in the Bear Creek Allotment) and trucked off of National Forest System lands.

MANAGEMENT STRATEGY

Livestock would, under this alternative, be managed to ensure that objectives (outlined in Chapter 1) are achieved and, secondarily, that allowable-use standards (below) are met. It is the responsibility of the permittee to control livestock distribution, grazing intensity, and movements sufficiently to meet allowable-use standards, to allow resources in less-than satisfactory condition to move toward resource objectives, to allow resources in satisfactory conditions to remain at objective levels, and to meet other requirements as described in the following subsections.

A focus of this alternative would be on making adjustments as necessary to adequately address resource management needs in order to achieve resource objectives outlined in Chapter 1, while at the same time maintaining opportunities for sheep grazing.

Adjustments to livestock grazing management would be directed and guided by the extent to which allowable-use standards met and required management practices are followed year-to-year (implementation monitoring) and the extent to which resource objectives are being achieved (determined primarily through effectiveness monitoring).

This would be accomplished in accordance with implementation and effectiveness monitoring. Trends in percent ground cover would be a key element of effectiveness monitoring. As ground cover increases, plant species composition would increasingly become a more important element of effectiveness monitoring.

Objectives

The objectives outlined in Chapter 1 would provide the focal point of sheep management and these would be incorporated into the AMP. Adjustments to the resource objectives, if necessary, would need to be based on sound scientific information. For example, ground cover minimums in resource objectives provide one of the target for determining whether changes in management would be necessary, but reaching the minimum thresholds is not the ultimate goal. The ultimate goal with respect to ground cover is to attain and sustain healthy riparian and rangeland conditions. If through monitoring it is determined at a later date that ground cover figures in the resource objectives are too low to adequately achieve this goal or are unnecessarily too high, the objective should be adjusted accordingly.

Allowable-Use Standards

One component of the Forage Utilization Standard in the Forest Plan was to prescribe allowable-use standards for individual allotments to achieve Forest Plan objectives. Allowable-use standards identify parameters and measures, identified as “thresholds” for determining acceptable utilization levels in a given area. Allowable-use standards and protocol for their implementation will be incorporated into AMPs and Annual Operating Instructions.

Under Alternative 3, allowable-use standards were driven by (1) the requirement to contribute to achieving the livestock use objective; and (2) the need to address resource management needs that may be hindering attainment of resource objectives; and, finally, (3) the requirement to achieve these resource objectives. The allowable-use standards developed for this alternative would allow band size and season-of-use to remain at current levels and keep frequency of full-allotment rest as low as possible, while at the same time allowing (1) soil and vegetation conditions to move toward desired conditions and (2) an adequate amount of suitable forage and cover to be retained for wildlife on an year-to-year basis. Rest is a critical component of allowable-use standards.

Allowable-use standards for Bear Creek, Virginia Peak, North Salt, and South Salt allotments under Alternative 3 would be as follows:

1. Grazing Intensity — The maximum level of grazing would be set at “once-over conservative grazing,” except that up to two cross-over points would be allowed per allotment in order to assure access to areas that may otherwise not be

accessible. *Once-over* means that sheep do not graze on any given site more than one time each grazing season. This prohibits sheep movement across the same site later in the same day or the next day. *Conservative* means that grazing intensity is low enough to allow resource objectives B.1, B.2, B.3, and B.5 to continue to be achieved in areas that currently are at functioning condition, to allow sustained recovery toward achieving these objectives in areas that are functioning-at-risk, and to allow objectives B.4, C.1, and C.2 to be achieved year-to-year. At this point, conservative grazing does not equate to any specific maximum utilization limits in forbland, herbland, and shrub-forb communities. Sheep grazing intensity is a function of band size, annual production levels of herbaceous vegetation (which in turn is influenced by rangeland conditions and soil moisture), breadth of rangeland being grazed as influenced by terrain and dense forests, movement rate of sheep, among other factors.

Under once-over grazing, sheep would be allowed to graze “at their own pace” and would be distributed across the area being grazed. Sheep would not be pushed through any areas (except occasionally facilitate counting), nor would their movement be restricted or halted.

A method for characterizing, estimating, or measuring residual herbaceous vegetation or the utilization level would be identified prior to the sheep grazing season of 2012 in order to be more definitive about “conservative” grazing pressure. The Forage Utilization Standard of the Forest Plan calls for allowable-use standards to be prescribed to meet site-specific objectives. FSH 2209.21, Chapter 3 provides general direction, and points to BLM et al. (1999) for descriptions of monitoring methods and protocol. BLM et al. (1999) identifies several methods for characterizing, estimating, or measuring residual vegetation and utilization levels.

The method selected for characterizing, estimating, or measuring residual herbaceous vegetation or the utilization level would need to provide a sufficient level of detail and rigor to ensure that enough herbaceous vegetation is retained to sustain and restore rangeland health and to provide for the forage and cover needs of wildlife, especially in DFC 10 and 12 areas. This, however, does require measurements. Minimum criteria that would need to be met by the standard include:

- a. Retention of enough vegetative material to maintain a sufficient level of plant vigor and health and litter material to maintain rangeland conditions (where ground cover and plant species composition are meeting objectives) and allow recovery (where ground cover or plant species composition are below objectives);
- b. Allow enough seedlings and young plants to become fully established in order to maintain rangeland conditions (when properly functioning) and allow recovery (when functioning-at-risk); and
- c. Retention of enough leaf material, stalks, flowers, and seeds to retain an adequate amount of suitable forage and cover for wildlife. Retention of fine fuels would also be considered. While the allowable-use standard may not be

numeric, meeting the standard would need to retain a minimum of approximately 70-80% of the annual production of herbaceous vegetation and a minimum of approximately 60-70% of the annual production of key forage species, unless pertinent information shows otherwise.

With respect to retaining an adequate amount of suitable wildlife forage and cover, three issues need to be addressed and incorporated into the standard: (1) proportion of each allotment that remains ungrazed by sheep and distribution of these non-use areas (to be taken into account when addressing the “amount” parameter); (2) reduced productivity on functioning-at-risk rangelands, which is proportional to the degree of reduced functionality; and (3) the extent of broken-off, bent, and matted plant material.

Options and actions to meet the standard are listed in the “Required Sheep Management Practices” and “Optional Sheep Grazing Strategies and Practices” section, below.

If an area is grazed more than one time in a given year or an area is grazed more intensively than conservative, two options exist for the next season the allotment is grazed by sheep: (1) the area would be rested, and (2) the number of sheep or season of use would be reduced by as much as 10%, depending on the degree of over-use. One or both could be implemented.

2. Rest — Full-season and/or long-term rest would be dependent on range health:
 - a. On portions of allotments where rangelands are predominantly in functioning condition, each area would be rested a minimum of once every four years. The same minimum frequency of rest would be applied to rangelands that are near functioning condition (upper end of functioning-at-risk) and that have a demonstrated upward trend.
 - b. There are two options for portions of allotments where rangelands are predominantly in the middle and lower end of functioning-at-risk and where small inclusions of non-functioning rangelands may exist: (1) each area would be rested once every three years, so long as rangeland monitoring data demonstrate upward trends in basal vegetation; and (2) each area would be rested for two consecutive years each of every five years, so long as rangeland monitoring data demonstrate upward trends in basal vegetation. The subsection, below, on optional sheep grazing strategies provides more information on implementing periodic rest.

Where an upward trend is not documented, frequency of rest would be increased until a sustained upward trend (i.e., ≥ 2 sampling periods) can be verified. For areas where there currently is an *apparent* upward trend (but where pre-2000 data is not available on ground cover to numerically document a trend), monitoring data would be needed to verify trends starting in 2013; until this time, these areas would be rested once every three years.

Higher frequencies of rest may not be implemented on areas where potential does not exist for ground cover to substantively improve within 50 years.

- c. Each area known to have predominantly less than 60% ground cover (Table 2-3) would be rested until ground cover across the area increases above 60%. If sheep grazing resumes at this point, an upward trend in basal ground cover would need to be sustained until ground cover objectives are achieved and sustained. An upward trend means there are at least three time periods showing an upward trend, and there would need to be at least two progressively higher trend readings in basal vegetation. Rest would be accomplished by instructing herders to keep sheep out of these areas every year. Other areas would be added to this list if ground is found to be predominantly below 60%.

Table 2-3. Areas to be rested from sheep grazing use until ground cover and basal vegetation improve to acceptable levels. Map codes refer to Maps 6a and 6b.

Allotment	Map Code	Area (see map)	Dominant Vegetation Types	Approx. Acres
Bear Creek	BC-6	East slope from Bear Paw Lakes up to crest	Forbland, herbland, grassland, mix of sagebrush, & aspen	529
North Salt	NS-2	East of Wagner Lake	Forbland, herbland, & open conifer	546
South Salt	SS-1 SS-3 SS-16	Head of Poker Hollow (incl. east fork) and crest, & head of Salt River (south branch)	Forblands, grasslands, big sagebrush, & open conifer	440
	SS-7	Smiths Fork Meadows	Meadow	186
	SS-14	West slope just southeast of fork of Salt River	Big sagebrush	73

If sheep graze, cross over, or otherwise make use of an area that is required to be rested (e.g., those in Table 2-3) in a given year, sheep would not be allowed within 1/2-mile of the rest-area boundary the following season of grazing, and/or the number of sheep or season of use would be reduced by at least 10% the next season the allotment is grazed following the incident.

- 3. Grazing of slopes steeper than 45% is permissible (1) in areas where steep (>45%) slopes comprise <25% of the area, and (2) in areas where it can be demonstrated that functioning conditions on steep slopes can be sustained, or an upward trend can be sustained on slopes that are functioning-at-risk.
- 4. No more than 20% of the total streambank length within any given stream reach would be allowed to show signs of hoof action caused by large herbivores during the current livestock grazing season (Simon 2008a). This would be applied on a case-by-case basis as concerns are identified (i.e., streambank trampling would not be monitored as a general rule on the sheep allotments). It is anticipated that any impacts to streambanks caused by sheep hoof action would be far below the 20% identified above since sheep typically do not graze in riparian zones.
- 5. Uplands and meadows grazed by horses would not exceed 40% utilization of key forage species (or 30% utilization of herbaceous vegetation), and a minimum stubble height of 6 inches would be retained along the green-line.

Allowable-use standards would be adjusted, as needed, to better reflect what is required to achieve resource objectives and other desired conditions.

Allowable-use standards would be followed to ensure that the remaining herbaceous plant material is sufficient to provide for plant vigor, litter, soil protection, sediment trapping (in riparian zones), wildlife forage (e.g., leaves, seedheads, flowers), wildlife cover (e.g., for nesting and hiding) and fine fuel for fire spread when needed. Livestock would be removed from each allotment prior to allowable-use standards being exceeded.

Required Sheep Management Practices and Design Criteria

The following practices supplement the allowable-use standards and would be implemented to meet resource objectives while achieving the livestock use objective.

- Entry onto an allotment or portion of an allotment must be at a time when key plant species have had sufficient growth and development to adequately provide for their vigor.
- Entry onto an allotment or portion of an allotment must be at a time when soils are dry enough to prevent damage from concentrated hoof action.
- The following bedding practices must be followed:
 - Each bedding site must be used no more than one time (one night) each grazing season, unless otherwise approved by the District Ranger.
 - Any traditional bedding grounds located above an active gully must not be used until the gully has healed.
 - Sheep must not be bedded within 100 yards of any running stream.
 - Bedding sites must be rotated from year to year to the extent possible.
 - Bedding must not occur in the parts of the North Salt and South Salt Allotment identified in Table 2-4.

Table 2-4. Areas where bedding would not be allowed. Map codes refer to the alphanumeric codes in Maps 6a and 6b.

Allotment	Map Code	Area (see map)	Approx. Acres
North Salt	NS-1	Wagner Lake area	38
	NS-3	Wagner Lake area	555
South Salt	SS-2	Poker Hollow headwaters	300
	SS-4	Sheep Pass area	954
	SS-5	Poker Hollow headwaters	266
	SS-6	Poker Hollow CCC Camp Area	14
	SS-8	Headwaters of Water Canyon	23
	SS-10	Lander Trail area	88
	SS-11	Headwaters of Water Canyon	32
	SS-13	Historic Driveway	218
	SS-14	Just southeast of Salt River elbow	74
SS-15	East Fork Smiths Fork and Salt River Headwaters Area	98	

If sheep are bedded in a given area more than one time in a given season, the area would not be used as a bedding area for 1-3 seasons.

- Sheep must be shaded at different locations each day and away from streams and wetlands.
- Salt must be placed inside containers to prevent salt leaching into the soil and must be placed no closer than ¼-mile to the nearest water. Wherever possible, salt would be placed on rocky knolls/ridges.
- Providing rest must periodically be provided, if needed, to accommodate or support prescribed burning, wildland fire use, and possibly other vegetation treatments designed to restore properly-functioning conditions and age mixes in several vegetation types. Livestock typically should be kept off burned sites for at least one to two growing seasons, and one season of rest may be needed prior to prescribed burning to build adequate fuels. The Forest Service will coordinate with the permittee whenever rest is needed, and would notify permittees early in the planning process. It is likely that this level of rest in any given allotment would be no more frequent than once every 15 years, and it may be possible to graze part of an allotment in which a burn occurs.

Note: Existing forage reserves may be used to support these efforts, as needed, to facilitate vegetation treatments on the allotments. The forage reserves, established during 2005-2007, may be used by sheep in the Bear Creek, Virginia Peak, North Salt, and South Salt allotments, when it is necessary to accommodate vegetation restoration and wildland fire use.

- If hay, cubes, or straw are provided to horses, they would first need to be certified weed-free.
- Predator control activities would need to be in compliance with the BTN predator control program.
- Food storage and sanitation requirements would be added to AMPs, permits, and Annual Operating Instructions, and would be translated into Spanish.
- If allotment boundaries are adjusted (e.g., to facilitate once-over grazing, facilitate alternation of grazing routes, increase frequency of rest of specific areas), any such adjustments would avoid any increases in sheep grazing on mule deer crucial winter ranges.
- Where key breeding areas for spotted frogs, boreal toads, and possibly chorus frogs have potential for being directly impacted by sheep (e.g., trampling of metamorphosing frogs/toads), one or more of the following sheep grazing management practices would be implemented to lessen the potential for impacts: deferment of grazing routes (start at different ends each year), increased frequency of rest in that particular area (e.g., by alternating grazing routes), longer-term rest, and equivalent measures.
- Additional practices and related actions would be added to Annual Operating Instructions if bighorn sheep were observed in any of the allotments. These instructions would be consistent with and would be based on measures identified

in the Wyoming Statewide Bighorn/Domestic Sheep Interaction Working Group (2004) and WAFWA (2007). At a minimum, Annual Operating Instructions would include notification procedures to be undertaken if bighorn sheep are seen and procedures for keeping separation between domestic and bighorn sheep).

- Any exceptions to these practices must be waived in writing by the District Ranger in Annual Operating Instructions.

Other Sheep Grazing Strategies and Practices

A wide range of options would continue to be available to permittees and herders for managing sheep to meet allowable-use standards, required management practices, and resource objectives. Combinations of herding, salting, boundary adjustments, adjustments in sheep numbers, increased frequency of season-long rest, alternation of grazing routes, deferment of grazing routes within an allotment, establishment of new off-loading and loading sites, and other methods would continue to be available under Alternative 3. A grazing route refers to the full length and location of the area grazed by sheep in a given season on a particular allotment; under once-over grazing, sheep are constantly on the move through the course of the grazing season. One option for adjusting the boundary of the North Salt Allotment is relocating the northwest corner of the North Salt allotment from its current location to include the Porcupine Creek, Wagner Creek, and possibly Mud Gulch drainages (Map 3).

The management strategies, actions, and facilities summarized above and in Appendix B would supplement the allowable-use standards and required management practices in order to meet allowable-use standards and to achieve resource objectives. A decision to implement Alternative 3 would not require the implementation of any given strategy, action, or facility identified above or in Appendix B, but would require that enough of the options are implemented as necessary to meet allowable-use standards and achieve resource objectives. The potential effects of the options listed below are analyzed in Chapter 3.

MONITORING

Vegetation, riparian, and rangeland monitoring on the allotment would follow the *Intermountain Region Rangeland Analysis Handbook* (FSH 2209.21), the *Interagency Technical Reference for Utilization Studies and Residual Measurements* (BLM et al. 1999), *Interagency Technical Reference for Sampling Vegetation Attributes* (BLM ITR 1734-4), *Wyoming Rangeland Monitoring Guide* (BLM et al. 2008), and *Monitoring Stream Channels and Riparian Vegetation—Multiple Indicators* (Burton et al. 2007), and Simon (2008). Additional technical information is found in *Measuring and Monitoring Plant Populations* (BLM Techn. Ref. 1730-1). Nested frequency plots may also be established and monitored (these are not addressed in the cited publications). Continued involvement by the permittee would be encouraged. The *Wyoming Rangeland Monitoring Guide* would be used in working with permittees in monitoring efforts. Any changes in monitoring sites would be coordinated with the permittee in advance of establishing new effectiveness monitoring sites.

Monitoring sites may change over time in response to changes in livestock distribution as a result of implementing management changes and for other reasons. Locations of

monitoring sites would be coordinated with the permittee in advance of establishing new effectiveness monitoring sites.

Effectiveness Monitoring

Effectiveness monitoring is long-term monitoring and is used to track changes in resource conditions over time. It is used to determine whether healthy rangelands and riparian areas are retaining characteristics of healthy conditions and whether less-than-satisfactory rangelands and riparian areas are improving or declining in condition over time, or are remaining unchanged. Results of effectiveness monitoring (i.e., trends) are evaluated to determine if any changes in livestock grazing management are needed from the standpoint of achieving resource objectives. If allowable-use standards and required management practices are annually being met, but progress is not being made toward the objectives or if conditions are moving away from objectives, adjustments could involve modification of allowable-use standards and required livestock management practices.

Regardless of method used in long-term monitoring at any given site, photographs would be taken and data would be collected at approximately the same time of year or period of plant phenology and at approximately the same time in the grazing-system rotation. Timing of data collection at a given site may be different than at other sites, but timing of data collection at any given site must, to the greatest extent possible, occur at about the same time (as described above) every time data is collected there.

Table 2-5. Summary of effectiveness monitoring measures/estimates and methods for tracking progress toward objectives, Alternative 3.

Objective	Measure/Estimate	Methods
A.1 – livestock use	Number of animals, season of use, animal unit months.	Billings On/off inspections
B.1 – ground cover	Percent ground cover, broken down by vegetation, moss, litter, duff, ≥3/4 rock, bare soil.	Ground cover by species transect Ground cover by life form transect Permanent photo point
B.2 – plant species composition	Percent canopy cover by plant species.	Point-intercept along transect (1 st hit) Line-intercept method
B.3 – mix of seral stages	Proportion of vegetation type in early, mid, and late succession	GIS analysis
B.4 – streambank stability	Percent of the length of stream-banks in a reach that are stable.	Green-line stability Streambank stability and cover

Availability of funds and personnel for monitoring, dictated in large part by regional, BTNF-level, and district-level priorities, would continue to have a large influence on the number of monitoring sites that can be revisited each year across the four allotments and the intensity of the data collection process. Any additional permanent monitoring sites, beyond those already established, would be located with input from the permittee.

Livestock Use

Livestock use would be monitored on an annual basis, and would be tracked over time based on numbers of animals, season of use, and animal unit months.

Ground Cover & Species Composition

Ground cover and plant species composition would be monitored at a minimum of 6 sites in each of the four allotments, divided among major vegetation types according to the acreage of each type and level of resource concern. Rangelands predominated by functioning-at-risk (especially those with intermixed non-functioning conditions) where slopes are predominantly less than 45% (FAR <45%) would be highest priority for establishing and monitoring permanent transects (or nested frequency plots). At a minimum, permanent photo points would be established in parts of allotments predominated by non-functioning and functioning conditions.

At a minimum, each permanent site would consist of a permanently marked 200-ft. transect line and permanently marked sites for permanent photos, including a photo of the transect line and at least two ground-cover photos. Permanent transects involve the measurement of ground cover (bare ground, $\geq 3/4$ -rocks, duff, litter, moss, and basal vegetation by species) based on 200 points along the transect line (this is the “second hit”). “First hit” by species (when a plant canopy or any other part of a live plant is hit) would be recorded if time permits, as outlined below.

The following designates the level of monitoring that would occur, depending on availability of funds and prioritization of personnel time:

1. Basic Level — This level of monitoring would be the bare minimum that would be carried out, and would consist of (a) retaking photographs and recording inspection notes at each of a minimum of 6 permanent sites per allotment every 4 years; (b) measuring ground cover by life form along the 200-ft. transect on a minimum of 6 permanent sites per allotment every 8 years; and (c) measuring ground cover by life form and collecting species information on the first hit along the 200-ft. transect on a minimum of 6 permanent sites per allotment every 12 years. These efforts can be carried out in conjunction with allotment inspections. Photographs would be taken at designated points at designated bearings with every site visit.

At a minimum, 4 of the 6 sites must be in areas that are functioning-at-risk with <45% slope. Depending on need, other sites would be selected that represent areas with less than 60% ground cover (Table 2-4), steep slopes (>45% slope), or other areas of concern.

2. Medium Level — If sufficient funds and prioritization of personnel time allow, either (a); ground cover along 200-ft. transects can be collected by life form every 4 years as opposed to only photos being take; (b) vegetation cover along 200-ft. transects can be collected at the species level, including for first hits (canopy cover); (c) permanent transects (or nested frequency plots) can be established and monitored in areas where ground cover is <60% (e.g., those in Table 4) as well as where slopes are predominantly >45%; and/or (d) more permanent sites can be visited in any given year when transects are being read (i.e., more than 6 sites identified in ‘1.a,’ ‘1.b,’ and/or ‘1.c’ above). Staggering of data collection among years would help by reducing the number of transects that need to be revisited in any given year.

3. High Level — There are two elements to this level: (a) in years when a sufficient number of range technicians are available (either through the Forest Service or another agency), all permanent sites in each allotment should be revisited (according to the four-year schedule and depending on needs in other allotments) and ground and canopy cover should be collected by species; (b) in years when other entities (e.g., Wyoming Game and Fish Department) provide additional support, nested-frequency plots should be established and/or reread. Nested frequency plots would be established as funding and personnel become available and as other agencies (e.g., Wyoming Game and Fish Department) can provide personnel to help establish and read the plots. Nested-frequency plots should be read a minimum of every 10 years.

Notes from field inspections and other information would be used in combination with results of from permanent transects to periodically assess conditions and trends.

Allowable-use standards may be adjusted, as needed, to better meet Forest Plan objectives and desired conditions. Exclosures would be erected to establish site production potentials in order to refine allowable-use standards in the future.

Streambank Stability

Streambank stability would only be monitored as concerns are identified. Stream reaches would be selected based on criteria outlined in Burton et al. (2007). At a minimum, the green-line stability protocol in the *Wyoming Ranegland Monitoring Guide* would be followed, with additional information in the *Monitoring Stream Channels and Riparian Vegetation—Multiple Indicators* bulletin being collected. Care would be taken to distinguish between vegetation that is effective in stabilizing banks (e.g., plant species that naturally occur on streambanks in healthy condition) and vegetation that is not.

At a minimum, monitoring on any established site would consist of a minimum of revisiting the transect or quadrat every four years until recover is satisfactory. Cover would be collected by life form (at a minimum: wet sedge, other sedge, wet grasses, other grasses, etc.). The site would act as a permanent photo point.

MIS and Sensitive Plants

The Forest Service would continue to periodically obtained population survey information from the Wyoming Game and Fish Department for elk, mule deer, and moose. Key breeding areas of chorus frogs and spotted frogs (a sensitive species) would be monitored to track levels of breeding activity over time. If boreal breeding sites are found in areas grazed by cattle, these would also be monitored as well. Breeding Bird Survey data from established sites would periodically be obtained to track changes in the Brewer's sparrow population on the Bridger-Teton National Forest. While these populations would be monitored, habitat parameters — including ground cover, plant species diversity, mix of seral stages, and percent of herbaceous vegetation retained — would be the most critical monitoring parameters relevant to MIS.

Additionally, monitoring of the populations of Payson's bladderpod and Payson's milkvetch would provide managers with information showing whether additional protective measures need to be instituted. If populations are shown to be declining, increased frequency of rest, reduced grazing intensity, and/or long-term rest of sites

would be implemented. As other populations of these and other sensitive plant species are detected, they would be monitored.

Implementation Monitoring

Implementation monitoring is short-term monitoring and is conducted in an allotment while or shortly after it is grazed by livestock, and is conducted more frequently than effectiveness monitoring. Table 2-6 summarizes implementing monitoring methods. Implementation monitoring is conducted to assess whether direction in AMPs and AOIs (e.g., allowable-use standards, other required livestock management practices) and terms of the permit are being followed. Implementation monitoring would include verifications of the number of sheep turned out at the beginning of the season and the number gathered at the end of the season. Allowable-use standards of this alternative would be monitored after sheep have moved through an area or after the livestock grazing season.

Table 2-6. Summary of implementation monitoring measures/estimates and methods for assessing whether allowable-use standards are met, Alternative 3.

Allowable-Use Standard	Measure/Estimate	Methods
Grazing by Sheep:		
Adherence to Rest Criteria	Presence/absence of sheep or sheep sign	Observations Photographs
Adherence to Once-Over Grazing	Number of times each area is grazed	Observations Photographs
Adherence to Conservative Grazing	Proportion of plant material removed, amount/description of remaining vegetation	Observations Photographs Method to be determined ^A
Grazing of Slopes >45%	Presence/absence of sheep or sheep sign	Observations Photographs
Grazing by Horses:		
Max. 30% Utiliz. of Herb. Veg.	Percent of annual production of herbaceous vegetation removed	Landscape appearance method
Min. 6-inch Stubble Height	Height of residual sedges and grasses	Stubble height transects
As Concerns Arise:		
Streambank Shearing (hoof-action)	Signs of hoof action	Bank shearing transects

^A A method for characterizing, estimating, or measuring residual herbaceous vegetation or the proportion of herbaceous vegetation removed would be identified by the sheep grazing season of 2012. The Forage Utilization Standard of the Forest Plan calls for allowable-use standards to be prescribed to meet site-specific objectives. FSH 2209.21, Chapter 3 provides general direction, and points to BLM et al. (1999) for descriptions of monitoring methods and protocol. BLM et al. (1999) identifies several methods that could be used for characterizing, estimating, or measuring residual vegetation and proportion of herbaceous vegetation that is removed.

In priority order, the following will be verified when implementation monitoring is conducted: (1) determining whether sheep are being kept out of long-term rest areas (Table 2-3); (2) whether sheep grazing is adhering to once-over grazing; (3) whether grazing is adhering to conservative grazing, according to minimum residual standard or maximum utilization standard; and (4) whether sheep grazing on slopes greater than 45% adhere to criteria outlined for this alternative. Annual allotment monitoring will include: verifying the number of sheep turned out at the beginning of the season (and actual turnout dates) and number of sheep coming off the allotment at the end of the season (and actual end-of-season date).

1. Basic Level — This level of implementation monitoring would be the bare minimum that would be carried out, and would consist of, in priority order: (a) determining whether sheep are being kept out of long-term rest areas at least once every 4 years for each site in Table 2-3; (b) determining whether allowable-use standards (e.g., no more than once-over grazing, retention levels or utilization levels) on at least 4 sites a minimum of every 4 years per allotment, as well as problem areas; (c) determining whether required sheep management practices are being followed at least once every 4 years per allotment; and (d) assess whether sheep grazing on slopes greater than 45% meet criteria for steep slopes a minimum of once every 4 years per allotment.
2. Medium to High Level — If sufficient funds and prioritization of personnel time allow: (a) determine whether allowable-use standards are being met based on more sites (i.e., >4 sites), and/or or (b) carry out implementation monitoring more frequently on each allotment.

The frequency and amount of additional implementation monitoring on any given allotment would depend primarily on funding levels, District and BTNF priorities, and other factors on a year-to-year basis. A basic level of allotment implementation monitoring would consist of assessing (1) implementation of mitigation measures, (2) whether rest areas remained unused by sheep, and (3) utilization of “cross only” areas. The highest priority areas for implementation monitoring would be (1) areas to be rested (Table 2-3), and (2) where functioning-at-risk and non-functioning conditions predominate.

Periodic spot checks would be made in other parts of allotments as time and funding allow, including assessments and photographs of once-over conservative grazing, bedding and salting sites, utilization by horses, and herder camps.

Implementation monitoring would be conducted at more frequent intervals on more areas when possible.

Use of GPS collars, as a voluntary procedure, could provide the permittee with an accurate record each year of routes taken by sheep bands, duration of time spent in each area, locations and frequency of use of bedding grounds, and other related information. Information gained through the use of GPS collars would help the permittee monitor and make needed changes to help meet allowable-use standards, including rest where it is needed.

RESTORATION ACTIVITIES, INCLUDING VEGETATION TREATMENTS

Given the provisions of this alternative (e.g., allowable-use standards and required management practices including provisions for accommodating vegetation treatments), no additional restoration activities, with respect to mitigating the effects of livestock grazing and management on rangeland and riparian functionality and wildlife habitat suitability, would be needed.

There is a need to restore ecological conditions that are not directly being limited by today’s livestock grazing, but that currently limit rangeland functionality, a balanced mix of vegetation age classes, and recovery of aspen communities. This primarily involves (1)

a need for converting late-successional communities (i.e., old age classes) to early-successional communities through fire, mechanical treatment, or other vegetation treatments, but may also involve (2) activities and projects to help build soil, reestablish native vegetation, and reduce erosion would be explored and implemented as needed and as staffing and funds allow. While effects of specific vegetation treatment projects are not analyzed in this EA, this EA identifies and the forthcoming AMP will identify the need for these projects and may identify future vegetation treatment projects that are needed. Site-specific environmental analysis of these projects would need to be completed prior to their implementation. Again, while this would benefit livestock grazing use and ecological conditions, this is separate and distinct from livestock grazing management, which is the topic of AMPs.

As with Alternative 1, the Squaw Creek-Weiner Creek, Birch Creek-Star Peaks, and White Creek forage reserves (on Greys River Ranger District), and the Triple Peak forage reserve (straddling the Greys River and Big Piney Ranger Districts) would be available to facilitate flexibility in managing vegetation treatments on the Bear Creek, Virginia Peak, North Salt, and South Salt allotments.

ADJUSTMENT TO THE PROPOSED ACTION

One element of the original Proposed Action outlined in the March 25, 2008 *Purpose & Need and Proposed Action* document was replaced with other elements of livestock grazing management.

A reduction in permitted sheep numbers was part of the March 2008 document, the main purpose being to One of the main purposes of the 20-day reduction in season of use was to reduce forage utilization, particularly in years of below-average precipitation, in order to leave sufficient residual vegetation to better ensure that rangeland health would be restored and sustained, and that an adequate amount of suitable forage and cover for wildlife would be retained each year. FSH 2209.13, Chapter 10, sections 16.13 and 16.14, and Chapter 90, section 92 encourage modifying livestock numbers be done administratively, if needed, rather than through the allotment management planning process.

The reduction in permitted sheep numbers was replaced with greater emphasis on meeting allowable-use standards and achieving resource objectives, and required other means of achieving them (e.g., greater frequency of rest). A strong emphasis on meeting allowable-use standards on a year-to-year basis (see the “Allowable-use Standards” section, including implications of not meeting the standards), therefore, reduces the need for reductions in permitted numbers of sheep. The intent of reducing permitted sheep numbers was to more readily meet allowable-use standards and achieve resource objectives, but the elimination of reductions in permitted numbers from the Proposed Action does not abolish the Forest Service’s responsibility to ensure these standards and objectives are met.

Summary of Alternatives and Effects

The following table displays a summary of key elements of the alternatives (Table 2-5).

Table 2-7. Summary of Alternatives.

Elements of Livestock Grazing Management	Alternative 1 Current Management	Altern. 2 No Cattle Grazing	Alternative 3 Mod. Proposed Action
Authoriz. of Sheep Grazing	Yes	No	Yes
Permitted Sheep Numbers^A	3,900 (3 bands of 1,300)	0	3,900 (3 bands of 1,300)
Permitted Season-of-Use^A	7/06 – 9/20	n/a	7/06 – 9/20
Allowable-Use Standards			
Rangelands			
Forage Utilization Standard			
- Key Forage Species	≤60% (satisfactory cond.) ≤50% (unsatisfact. cond.)	n/a	to be developed by 2012 ^B
Max. of Once-over Grazing	most of each allotment, but some areas ≥twice-over	n/a	all acres of each allotment, except 2 cross-over points/allotment
Rest			
- Functioning areas	once ev. 3-5 years (BC, VP) once ev. 8-10 years (NS, SS)	n/a	once every 4 years
- Functioning-at-risk areas	same as above	n/a	once every 2-3 years
- Non-functioning areas	same as above	n/a	until ground cover >60%
Grazing on Slopes	no constraints	n/a	≥45% slopes only if (1) <25% of area or (2) ground cover objectives met or upward trend
Areas Grazed by Horses			
Max. Forage Utilization of Key forage species	≤60% (satisfactory cond.) ≤50% (unsatisfactory Cond.)	n/a	≤40%
Min. Stubble Ht. (green-line)			
- Sedges and Grasses	None	n/a	6 inches

^A Permitted numbers and season of use are shown in grey because this element of the AMP is beyond the scope of this decision.

^B Minimum criteria that must be met include (1) retention of enough vegetative material to maintain a sufficient level of plant vigor and health and litter material to maintain rangeland conditions (where ground cover and plant species composition are satisfactory) and allow recovery (where ground cover or plant species composition are less-than-satisfactory); (2) allow enough seedlings and young plants to become established in order to maintain rangeland conditions (when properly functioning) and allow recovery (when functioning at risk); and (3) retention of enough leaf material, stalks, flowers, and seeds to retain an adequate amount of suitable forage and cover for wildlife. Retention of fine fuels would also be considered.

While the utilization standard to be developed may not be numeric, meeting the standard would need to retain a minimum of approximately 70-80% of the annual production of herbaceous vegetation and a minimum of approximately 60-70% of the annual production of key forage species, unless pertinent information shows otherwise. With respect to retaining an adequate amount of suitable wildlife forage and cover, three issues need to be addressed and incorporated into the standard: (1) proportion of every allotment that remains ungrazed by sheep (to be taken into account when addressing the “amount” parameter); (2) reduced productivity on functioning-at-risk rangelands, proportional to the degree of reduced functionality; and (3) the extent of broken-off, bent, and matted plant material.

Table 2-8 summarizes the effects of each alternative — relative to each of the other alternatives — on the ability of the Forest Service to meet direction in the Forest Plan. The ability to meet Forest Plan direction is discussed for each resource area the “Ability to Meet Forest Plan Direction” subsection of the “Determinations” section in Chapter 3. Highest rank (“1”) means that the designated alternative would meet the direction to the highest extent of the three alternatives.

Table 2-8. Ranking of how each alternative, relative to each other, would address direction in the Forest Plan and the extent to which each alternative would balance among resources and uses according to DFC direction. (1 = highest rank, 3 = lowest rank).

Objectives, Standards, Prescriptions, Guidelines, and DFCs	Existing & Alt. 1 Cur. Mgt.	Alt. 2 No Cattle Grazing	Alt. 3 Mod. Prop Action
Rangelands			
Objective 4.7(a) — Retain or improve overall forage and range conditions.	3	1	2
Range Vegetation Prescription (BTNF-wide) — Forage is provided on a sustained-yield basis that protects rangeland values, wildlife habitat, and meets other resource needs.	2	3	1
Range Vegetation Prescription (for DFCs 1B, 3, 10, and 12) — Range is managed to maintain and enhance range and watershed condition while providing forage for livestock and wildlife.	2	3	1
Forage Improvement Standard (BTNF-wide) — Range in less-than-satisfactory condition will be improved. Disturbed areas will be stabilized or regenerated prior to resuming livestock grazing use.	3	1	2
Forage Utilization Standard (BTNF-wide) — Maintain grazing-use levels below 65% in riparian areas of satisfactory condition and below 55% in riparian areas of satisfactory conditions, among other requirements (these are absolute maximum standards). Also, prescribe allotment-specific allowable-use standards in order to achieve Forest Plan objectives.	2	n/a	1
Riparian Areas			
Objective 1.3(a) — Protect municipal, agricultural, and other potable water supplies and ensure that management activities do not cause a deterioration in water-flow timing, quality, or quantity.	3	1	2
Objective 1.3(b) — Meet or exceed current State water quality standards and National Forest System water quality goals.	3	1	2
Objective 4.7(b) — Retain or enhance riparian vegetation, stream-channel stability, sensitive soils, and water quality where livestock are present.	2	n/a	1
Riparian Areas, Wetlands, and Floodplains Prescription (BTNF-wide) — These areas are managed as basic resources for forest management, key to the future productivity of the BTNF	3	1	2
Livestock Grazing of Riparian Areas Standard (BTNF-wide) — Livestock grazing in riparian areas will be managed to protect streambanks (see standard for more detail)	2	n/a	1
Streambank Stability Guideline (BTNF-wide) — Maintain a streambank stability of at least 90% for streams with fisheries and to maintain streambank vegetation at 80% of its natural condition (or an HCI rating of 85% or better)	3	1	2
Restoring Stream Channel Conditions Guideline (BTNF-wide) — Areas where human activities have resulted in adverse impacts such as channel widening, channel aggradation, or lowering of the water table should be restored.	3	1	2

Table 2-8 (cont'd). Ranking of how each alternative, relative to each other, would address direction in the Forest Plan and the extent to which each alternative would balance among resources and uses according to DFC direction. (1 = highest rank, 3 = lowest rank).

Objectives, Standards, Prescriptions, Guidelines, and DFCs	Existing & Alt. 1 Cur. Mgt.	Alt. 2 No Cattle Grazing	Alt. 3 Mod. Prop Action
Forage Utilization Standard (BTNF-wide) — Maintain grazing-use levels below 65% in riparian areas of satisfactory condition and below 55% in riparian areas of satisfactory conditions, among other requirements (<i>these are absolute maximum standards</i>). Also, prescribe allotment-specific allowable-use standards in order to achieve Forest Plan objectives.	2	n/a	1
Water Quality Standard (BTNF-wide) — Forest Service or permitted activity or project will, at a minimum, adhere to state rules and regulations concerning surface and ground water quality.	3	1	2
Livestock Use			
Obj. 1.1(h) – provide forage for about 260,000 AUMs BTNF-wide.	1	3	2
Wildlife, Fish, and Wildlife and Fish Habitat			
Obj. 2.1 (a) – Provide suitable and adequate habitat to support the game and fish population objectives established by the WGFD.	3	1	2
Obj. 3.3(a) – Protect sensitive species and provide suitable & adequate amounts of habitat to ensure that activities do not cause long-term/further decline in populations or their habitat, or trends toward federal listing.	3	1	2
Obj. 4.7(d) – Require that suitable and adequate amounts of forage and cover are retained for wildlife and fish in areas grazed by livestock.	3	1	2
Fisheries and Wildlife Prescr. (DFCs 1B, 3, 10, and 12) – Habitat is managed to help meet objectives for game populations, harvest levels, success, and recreation days.	3	1	2
Big-Game Habitat Guideline (DFCs 1B, 3, 10, and 12) – Sufficient habitat should be provided to maintain desired populations and distributions of big-game species.	3	1	2
Allotment Mgt. Plan Std – Fisheries, riparian habitats, TES species' needs, and big game winter range will be addressed in AMPs. Plans will identify the amount of streamside vegetation needed to maintain or improve riparian areas.	2	n/a	1
Aspen Guideline (BTNF-wide and DFCs 1B, 3, 10, 12) — Aspen sites should be managed for aspen-type perpetuation for its value as wildlife habitat and for providing seasonal colors.	3	1	2
The 2004 Forest Plan amendment that allows wildland fire use management in most of the Greys River Ranger District.	3	1	2
Fish Habitat Management Guideline — For fish habitat providing a fishery at or near its potential, fish populations should be maintained at existing levels. For habitat below its potential, habitat should be improved and maintained to at least 90 percent of its natural potential.	3	1	2

Table 2-6 (cont'd). Ranking of how each alternative, relative to each other, would address direction in the Forest Plan and the extent to which each alternative would balance among resources and uses according to DFC direction. (1 = highest rank, 3 = lowest rank).

Objectives, Standards, Prescriptions, Guidelines, and DFCs	Existing & Alt. 1 Cur. Mgt.	Alt. 2 No Cattle Grazing	Alt. 3 Mod. Prop Action
Recreation			
Objective 2.2(a) — Retain, improve, and add developed sites.	3	1	2
Objective 2.3(a) — Retain, improve, and add dispersed recreation opportunities.	3	1	2
Objective 4.7(c) — Coordinate the management of livestock with recreation use.	2	n/a	1
Dispersed Camp Site Condition Standard — Backcountry campsites will be managed according to the Frissell Condition Classification System...	3	1	2
Balancing Resources and Uses According to DFCs:			
Forest Plan Direction for DFC 1B areas: (1) sustain soil, water, & vegetation; (2) livestock production, (3) wildlife and recreation.	2	3	1
Forest Plan Direction for DFC 3 areas: (1) sustain soil, water, & vegetation; (2) recreation; and (3) wildlife, livestock production.	2	3	1
Forest Plan Direction for DFC 10 areas: (1) sustain soil, water, & vegetation; (2) wildlife; (3) livestock production; and (4) recreation.	2	3	1
Forest Plan Direction for DFC 12 areas: (1) sustain soil, water, & vegetation; (2) big game, recreation, other wildlife; and (3) livestock production.	2	3	1

Table 2-8 summarizes the environmental effects discussions of Chapter 3 for each resource area. The potential effects of each alternative on resources are summarized.

Table 2-9 — Summary of environmental consequences.

(SEPARATE ATTACHMENT)

p. 2