

Chapter 2 – The Alternatives

2.1 Introduction

This chapter describes the formulation of the proposed action and alternatives and discusses alternatives considered but not analyzed in detail. It also summarizes the environmental impacts of the alternatives and associated mitigation measures.

2.2 Formulation of Alternatives

Subsection 1502.14 of the NEPA regulations require that agencies should “vigorously explore and objectively evaluate all reasonable alternatives” to the proposed action. The alternatives should achieve the same or similar purpose as the proposed action and should address issues raised and include appropriate mitigation measures not already included in the proposed action. Alternatives that would not be reasonable, either because they do not meet the purpose and need or because of other considerations, may be eliminated from detailed study. A brief discussion of the reasons for their having been eliminated is given.

The Forest Service ID Team evaluated the proposed action in consideration of the relevant issues. Alternatives to the proposed action addressing the relevant issues were developed. If alternatives were identified which were not reasonable, they were recorded but not analyzed in detail (see Section 2.3 below).

The resulting range of alternatives is consistent with the purpose and need for action and with the issues raised. Any of the elements included in the proposed action or any of the action alternatives could be implemented independently of each other, and therefore the Forest Service decision maker may ultimately choose and combine elements from any of the alternatives. This analysis fully discloses the effects of all activities considered, regardless of the alternative in which they are included.

2.3 Alternatives Considered and Eliminated from Detailed Analysis

The following alternatives were considered, but were eliminated from detailed study. These alternatives were judged by the Interdisciplinary Team to not be reasonable, because they do not meet the purpose and need or because of other considerations. A brief discussion of the reasons for their having been eliminated is given.

2.3.1 Rest rotation grazing system with fenced pastures

An alternative that would use fencing to divide the allotment into pastures was considered but eliminated from detailed study. A rest rotation system is not warranted at this time. The proposed action would accomplish similar results, (improved conditions on about 500 acres of unsatisfactory rangelands ~ 10% of the allotment) without construction of fences. Because of the steep topography, difficulty of access due to the area’s geographic features, and the fragmented nature of suited rangeland, it would be difficult to construct and maintain a pasture fence across the allotment to divide it into pastures. Consideration of this at some time in the future would require additional NEPA analysis.

2.3.2 Authorize Grazing East of Highway 89

The private land located east of Highway 89 in the Brush Canyon and Rigby Hollow area is divided into several 40-acre parcels. A few cabins and recreational homes have been constructed and portions of some of them have been fenced. Some of the landowners commented that cows repeatedly come on to their private land for watering. One landowner constructed a fence to allow cattle access to the water, yet keep them off the rest of his land. However, cattle pushed through the fence and grazed throughout his private land.

An alternative to authorize grazing east of Highway 89 was eliminated from detailed study because there is no readily accessible or reliable source of water on National Forest System (NFS) land within the Brush Canyon and Rigby Hollow area east side of Highway 89 (report available in the project file). There is only intermittent water in the steep upper part of the canyon, and cows do not readily graze these steep slopes in the upper canyons.

The only reliable accessible water sources in the area east of the highway are located on private land. The cows are naturally drawn to these water sources located on the gentle slopes of the private land. Since there is no readily accessible water on NFS land, this alternative was eliminated from detailed study.

2.3.3 Grazing Practices That Are Within the Forest Service Budget

This alternative, suggested by a scoping respondent, would rely on grazing practices “that can function with almost no Forest Service staff time”. As stated in the comment letter, “in the past, the preferred alternative called for range projects, maintenance, monitoring, and analysis that was not fiscally possible”. This alternative calls “for grazing management that is within the Forest Service budget resources to be modeled over conditions that are expected during drought periods”.

This alternative as presented by a scoping respondent was not considered in depth because fiscal feasibility is already incorporated into all of the alternatives. The management activities in the alternatives considered in detail are expected to be implemented within anticipated Forest Service budgets. This consideration is already given in the development of the proposed action and alternatives to it, so an additional alternative specifying fiscal responsibility is redundant.

2.3.4 Ecologically-Based Grazing Alternative

This alternative calls for utilization levels no more than 25% in habitat, including riparian areas, with periods of use for no more than 14 days in an area. This alternative calls for grazing practices that have a score of a positive 1 or better using the grazing response index score. The Grazing Response Index was developed by Colorado State University’s Range Extension and Integrated Management Programs to help managers evaluate the effects of grazing on rangelands.

This alternative, as presented by a scoping respondent, was dismissed from detailed study because it is unnecessary to implement these actions in order to move rangeland conditions towards desired, since other alternatives being considered, including the

proposed action, would accomplish the same objectives. There are no other issues this alternative addresses that are not already addressed in other alternatives being considered (i.e. vegetation response to grazing). The proposed action, which would implement a grazing system (e.g., deferred grazing and/or other techniques) that ensures the time and timing of grazing use is altered on an annual basis, is an ecologically-based alternative, considers the principles of the grazing response index, and would move unsatisfactory conditions towards desired (as defined in Section 1.6).

2.3.5 Grazing As Is Permitted and Reported in Grazing Permit Payments

This alternative was suggested by a scoping respondent, recommending that “the analysis should reflect the impacts that would occur should grazing at this higher level occur”. The alternative apparently is based on the belief there are fewer cows actually grazing on the allotment than are paid for (authorized) annually, giving the impression of lighter grazing (less impact) than would occur with a larger number of cattle. This alternative suggests that it would consider the effects of grazing at the “authorized” number (which is thought to be higher than what is “actually” out there).

There is no need for this alternative because Alternative 3, Current Management, already analyzes the authorized number of grazing cows (and the number that are actually grazing on the allotment). The effects analysis for the current management alternative shows the impacts of grazing the authorized number of cows (which is the actual number grazed). Annually, for each allotment, “authorized use” (including stocking rate and season of use) is determined and specified in the Annual Operating Instructions (AOI). This determination is based on a number of things including resource and climatic conditions. Permits holders are billed annually based on their “authorized use”. The current management alternative discloses the effects of grazing at the authorized use of 607 head of cattle for a season of 108 days, under a season-long grazing system, using Forest Plan standards and guidelines to determine proper use. There is no need to consider an additional alternative because Alternative 3 already analyzes the current authorized number.

2.4 Alternatives Considered in Detail

This section describes the features of three alternatives considered in detail. The alternatives analyzed include the required “No Action”, which analyzes no grazing (Alternative 2), and “Current Management” (Alternative 3), which represents the past and current grazing situation. The third alternative is the “Proposed Action” which was developed by the ID Team to respond to issues and needs identified for this project. Each alternative has specific impacts associated with how it achieves the purpose and need for the project. The impacts are discussed in Chapter 3.

Forest Plan direction, including descriptions of desired future condition and standards and guidelines apply to all alternatives. Desired future conditions prescribed by the Forest Plan are summarized in Section 1.5.1 of this EA. Standards and guidelines, and management requirements and mitigation included in all of the alternatives are shown in Section 2.5 of this environmental analysis.

2.4.1 Alternative 1 – Proposed Action

The proposed action employs an adaptive management strategy, which adjusts the timing, intensity, frequency and management of grazing on the allotment as needed to meet Forest Plan standards and guidelines, and that would continue to meet or satisfactorily move forest resources toward desired conditions and meet Forest Plan objectives. Monitoring would determine the need and frequency for administrative adjustments in the timing, intensity, frequency, and/or management of grazing.

The proposed action includes an adaptive management strategy and incorporates a grazing management system, such as deferred grazing and/or other techniques, that ensures the time and timing of grazing use is altered on an annual basis. The grazing management system is incorporated to respond to issues dealing with unsatisfactory range conditions on some upland sites and riparian areas within the allotment.

Under this alternative, grazing intensity is regulated by utilization standards and not solely by the number of livestock. Therefore, the number of cattle grazed is not the critical factor. Currently, the Forest Service uses forage utilization and resource condition (e.g., range condition and trend) monitoring to determine whether stocking is within capacity or whether adjustments are necessary. Utilization levels and desired resource conditions (e.g., rangeland vegetation condition and trend) are specified and monitored to ensure plant vigor and productivity are maintained and/or improved. Forage utilization monitoring (including the time in which utilization levels are reached) and other resource condition monitoring (e.g., range condition and trend monitoring) is the basis upon which determinations of whether adjustments in management or stocking rates should be made. If livestock use is consistently within forage utilization levels, and soils and vegetation conditions and trends are acceptable, then stocking is considered to be within capacity. If livestock use results in having to consistently accelerate the scheduled rotations through the allotment or requires livestock to be removed early, it is considered to indicate that stocking is outside of capacity, and a need for change in the grazing capacity is appropriate.

Currently, 607 cattle are permitted on the allotment and follow the utilization standards described in the Forest Plan and displayed on the table in Section 2.5 of this EA. Adjustments may be made to the number authorized based on environmental conditions (e.g., drought, burns, and/or range or non-range conditions/trends) or due to utilization levels being met or exceeded (as described above).

The proposed action would not authorize grazing in that portion of the allotment east of Highway 89. There is no readily accessible water available on National Forest System (NFS) land within the Brush Canyon and Rigby Hollow area on the east side of Highway 89 (report available in the project file). These canyons are very steep and have intermittent water only high in the canyon, where cattle do not typically graze. The only other water sources in this area east of the highway are located on private land for which there is no private land grazing permit.

The White Pine Lake area is a popular site for backcountry recreation and camping. Livestock grazing has never been authorized in this area, and under the proposed action, White Pine Lake would remain unauthorized for grazing.

2.4.1.1 Details of the Proposed Action

As described in section 2.4.1 of this environmental analysis, the proposed action employs an adaptive management strategy, which adjusts the timing, intensity, frequency and management of grazing on the allotment as needed to meet Forest Plan standards and guidelines, and that would continue to meet or satisfactorily move forest resources toward desired conditions and meet Forest Plan objectives. Monitoring would determine the need and frequency for administrative adjustments in the timing, intensity, frequency, and/or management of grazing. The following sections of this document outline site-specific management principles, limits and direction for the proposed action.

Site-Specific Desired Future Conditions

Desired future conditions (DFC) for the Wasatch-Cache National Forest and the Cache Box Elder Management Area are described in the Forest Plan (USFS 2003, LRMP p. 4-5 thru 4-15 and 4-128 thru 4-138). Components of those that are applicable to the Franklin Basin Allotment project area and this environmental analysis are summarized in Section 1.5.1 of this environmental analysis. In accordance with direction in the Forest Plan (p. VII-3), the interdisciplinary team (ID Team) has reviewed and in some cases refined or supplemented the Forest Plan prescribed DFC to be more specific to the project area and the proposed action. The refinements/supplements are consistent with the Forest Plan prescribed DFCs, and are outlined in the following table:

Table 2.4.1.1: Additional Site-Specific Desired Conditions

Resource Ecosystem Community Type	Applicable Component of the Forest Plan Prescribed Desired Future Condition	Additional Site-Specific Desired Condition
Soil, Water, Riparian, and Aquatic Resources (soil productivity)	Most soils have at least minimal protective ground cover. Soils have adequate physical properties for vegetative growth and soil-hydrologic function. Degradation of soil quality and loss of soil productivity is prevented. Soil productivity, quality, and function are restored where adversely impaired and contributing to an overall decline in watershed condition.	Minimal protective ground cover is defined by Forest Plan standard S7 as at least 85% of potential. In tall forb communities minimum ground cover is defined by Forest Plan guideline G14 as at least 90% of potential. (see S7 and G14 in Section 2.5 of this EA) Applying this, for this allotment the desired condition is to maintain at least the following average ground covers (% of potential) in vegetation communities impacted by livestock grazing: <ul style="list-style-type: none"> • 78% in aspen, silver sagebrush and mountain brush communities. • 69-82% in few-flowered sagebrush • 60% in low sagebrush and curlleaf mountain mahogany • 73% in mountain big sagebrush (range is 81 to 96%, as reported in the North

Resource Ecosystem Community Type	Applicable Component of the Forest Plan Prescribed Desired Future Condition	Additional Site-Specific Desired Condition
		<p>Rich Allotment FEIS potential there was 86%. The potential for these communities on the Franklin Basin is similar).</p> <ul style="list-style-type: none"> • 67% in subalpine tall forbs (90% of potential per LRMP Guidance G14) • 85% in mesic riparian vegetation types.
<p>Soil, Water, Riparian, and Aquatic Resources (riparian areas)</p>	<p>Riparian areas have a range of vegetative structural stages that are at or moving toward properly functioning condition, provide a transitional zone between upland terrestrial habitats and aquatic habitats, and have the features necessary to promote stable stream channels and diverse habitat conditions. Desirable riparian vegetation occupies the historical floodplain. Riparian areas provide for fish, wildlife, and water quality requirements.</p>	<p>Class I riparian areas within the project area listed in the Forest Plan are: Logan River, Beaver Creek (ID border to mouth) and White Pine Creek (lower perennial flow source to mouth). (USFS 2003, LRMP p. VII-6 to VII-7)</p> <p>In addition to the riparian areas identified in the Forest Plan and listed above, in accordance with Forest Plan direction (p. VII-3) the ID Team has identified the following Class I riparian areas: Steep Hollow (lower perennial source to mouth), Steam Mill Canyon Spring, Hells Kitchen Canyon (lower perennial source to mouth), from the source to the mouth of Bunchgrass Creek, Brush Canyon, and Rigby Hollow. (see Map in Appendix C)</p> <p>No Class II riparian areas within the project area are identified in the Forest Plan (USFS 2003, p. VII-7).</p> <p>In accordance with Forest Plan direction (p. VII-3), the ID Team has identified the following Class II riparian areas: White Pine Creek (White Pine Lake to lower perennial flow source), Steam Mill (Steam Mill Lake to mouth), Hells Kitchen (source to lower perennial flow source), and Crescent Lake Canyon (source to mouth).</p> <p>All riparian areas not identified above as Class I or II are Class III riparian areas.</p>
<p>Soil, Water, Riparian, and Aquatic Resources (springs and wetlands)</p>	<p>Spring sources and associated wetlands in the Cache Box Elder Management Area will be protected from excessive use and will be restored to proper functioning. Riparian areas will be protected from overuse and trampling from livestock grazing and recreation uses. Spring sources</p>	<p>Existing livestock spring/wetland exclosures will be maintained in order to protect vegetation, water quality and habitat associated with these areas.</p> <p>Riparian areas will have adequate deep-rooted vegetation or armoring along banks to allow for sediment filtering and erosion prevention.</p>

Resource Ecosystem Community Type	Applicable Component of the Forest Plan Prescribed Desired Future Condition	Additional Site-Specific Desired Condition
	will be fenced and provide water for livestock.	Proper function of wetlands and riparian areas associated with springs will be maintained by managing Beaver Spring and Steam Mill Canyon Spring as a Class I riparian area, and other springs as Class II riparian areas to meet or exceed conditions outlined in Forest Plan standards and guidelines S24, S25, S26, G4 and G7 (see Section 2.5 below).
Aquatic Habitats	Habitats will be managed to maintain cool, clear water and well-vegetated stream banks for cover and bank stability. Cool water temperatures will be preserved through well-vegetated banks.	Undisturbed stream banks exist on at least 80% of Class I riparian areas. Pool-riffle ratios are approximately 1:1 in fish-bearing streams. Summer water temperatures in fish-bearing streams average 13°C ± 4°C.
Vegetation (aspen)	Associated herbaceous and woody vegetation is in aspen communities is highly variable and is dominated by desired perennial grasses and forbs with a range of shrub cover.	At least 10% of the understory cover in aspen communities is comprised of desired tall forb species ¹ .
Vegetation (upland vegetation and big game winter range)	Maintain upland (sagebrush, mountain brush, grassland) plant communities are dominated by desired perennial grasses, forbs, and have a range of shrub cover. Associated herbaceous and woody vegetation provides for plant communities that are diverse in seral status and structure and provide food and habitat for wildlife, forage for livestock, and a variety of recreational opportunities and aesthetic values.	A wide variety of sagebrush canopy closures exist, with a maximum closure of 35%. Most (greater than 50%) vegetation canopy in sagebrush stands are desired grass and forb species. A variety of shrubs such as snowberry, serviceberry, chokecherry, and elderberry are present in mountain brush communities.
Vegetation (riparian)	Riparian areas have a mix of seral and climax vegetation that is at or approaching PFC. Trees, willows, dogwood, birch, alder, sedges, rushes and hydric grasses, depending on stream substrate, gradient, and elevation, dominate riparian areas. These areas provide healthy self-perpetuating plant communities.	Adequate vegetative cover (as defined by the heights prescribed in Forest Plan standards S24 and S25) provide filtering of runoff, protection of the soil, and habitat for wildlife in riparian areas. Riparian shrub and trees are perpetuated by retaining at least 50% of annual growth of these plants (i.e., as provided for in Forest Plan standard S26 [see Section 2.5 of this EA]).

¹ Plant species listed as moderate or high value rating for erosion control/watershed protection in the Region 4 Forest Service Handbook 2209.21 – Range Management Resource Value Ratings Guide.

Resource Ecosystem Community Type	Applicable Component of the Forest Plan Prescribed Desired Future Condition	Additional Site-Specific Desired Condition
	<p>Riparian plant habitats and rare riparian species will be protected from trampling and overuse by livestock grazing and recreational uses.</p>	
<p>Rangeland/Livestock Grazing:</p>	<p>Livestock grazing is a permitted use. Grazing levels will be adjusted and managed with up-to-date Allotment Management Plans (AMPs). AMPs prescribing rest and deferred rotation grazing systems and riparian pastures will be in place. Structural improvements such as fences and water developments will be constructed or reconstructed and maintained to improve animal distribution and control. Structural improvements that are not needed will be removed from the forest. Grazing permit holders will move livestock as needed to meet management objectives for the ground. Ongoing ecosystem monitoring will be used to refine standards. Permit holders will share responsibility with the Forest Service for monitoring use, and will hold full responsibility for movement and control of livestock. Excess and unauthorized livestock use will be minimal. The number of term grazing permits will be reduced by the formation of grazing associations and the issuance of grazing agreement permits instead of individual ones.</p>	<p>Grazing levels will be adjusted and managed with an up-to-date Allotment Management Plan (AMP) that prescribes grazing systems and establishes management that ensure the time and timing of grazing is altered annually. When and/or if needed, structural improvements such as fences and water developments will be constructed or reconstructed and maintained, to improve animal distribution and control.</p> <p>The number of term grazing permits will be reduced by the formation of grazing associations and the issuance of grazing agreements instead of individual term grazing permits.</p>
<p>Recreation</p>	<p>A variety of recreational opportunities will be provided. Livestock management conflicts with other uses will be minimized consistent with management direction for the area.</p>	<p>High value camping areas, such as White Pine Lake, are free from cattle and their impacts, but cattle may be seen in the distance away from popular campsites and trails. Visitors experience a natural appearing landscape, with little development except what is needed for resource protection or safety. Visitors are satisfied with their experiences which meet or exceed their expectations.</p>

Grazing Season

The specific grazing season will vary from year to year, but would generally fall between June 25 and October 10. Annual adjustments would be planned and authorized by the District Ranger in the Annual Operating Instructions (AOI's). Turn out would not occur before *range readiness*—that point in the plant growth cycle at which grazing may begin without permanent damage to vegetation or soil (Heady and Child, 1994).

Grazing Strategy

Livestock grazing would be managed to incorporate a grazing management system, such as deferred grazing and/or other adaptive management strategies (see section on the following page) that ensures the time and timing of grazing use is altered on an annual basis. Because the allotment does not have any interior pasture fences, direct management of cattle will increase. The deferment could be for the entire allotment or specific areas within the allotment, as determined in the corresponding Allotment Management Plan (AMP) and reflected in the Annual Operating Instructions. The deferment cycle would be based on the phenology of key forage species, as follows:

- 1) At *range readiness* (as defined above under Grazing Season)
- 2) Defer grazing until the “fast growth” period for native grasses is complete. This period is generally recognized when the leaves have completed growth and the seed head is well established and full. This allows key species to complete their growth and minimize grazing impacts to the growing plants when their carbohydrate root reserves are at their lowest levels.
- 3) Defer grazing until 2 weeks following “fast growth.” This allows for completion of the grass growth cycle and lets the plant begin to restore carbohydrates into their root systems and accumulate plant biomass.

Intensity

The intensity of grazing (utilization) would be according to grazing utilization standards and guidelines described in the Forest Plan (USFS 2003, p. 4-51 and 4-52; also see Section 2.5 of this EA). Research and information substantiating these requirements are found in the Forest Plan and FEIS (USFS 2003) and Rangeland Health EIS (USFS 1996).

Some riparian areas in the allotment show signs of use in excess of the Forest Plan standards indicating a need for better cattle control. Implementation of the proposed action would require cattle to be moved out of riparian areas before the 5-inch maximum stubble height is reached. In addition, upland, aspen, and riparian areas (away from the greenline) identified as being in unsatisfactory condition are restricted to 30-40% utilization.

Annual forage utilization is measured by averaging the use of key species in key areas based on the measurement of typically 50 to 100 individual plants. Key areas are defined as “a relatively small portion of rangeland which because of its location, grazing or browsing value and/or use, serves as a monitoring and evaluation site” (FSH 2209.21). The proposed action identifies the following “key areas” (at a minimum) to be monitored for annual utilization.

- 1) The Logan River riparian area just north of the Beaver Springs riparian enclosure.
- 2) An area of upland sagebrush directly to the east of the Beaver Springs riparian enclosure.
- 3) The riparian area in Steep Hollow.
- 4) An aspen stand in lower Steep Hollow.

Frequency

The frequency of grazing any certain area will be one time per season. Cattle would not be allowed to re-graze an area where utilization had already been met. This means that cattle would be managed to ensure that grazing of re-growth of native perennial grass species during the same grazing season does not occur. This applies to both riparian and upland sites.

Adaptive management strategies

Implementation of the proposed action would require a more intensive level of herding than is currently practiced. Other adaptive management strategies to achieve the objectives of the proposed action include:

- Rotating turn-on/off locations (deferred rotation)
- Utilizing temporary electric fencing
- Salting
- Adjusting permitted number of livestock according to utilization patterns, as explained above
- Constructing short drift or protection fences*
- Developing alternative watering sites*
- Vegetation manipulation projects*

*Requires additional environmental analysis

Monitoring

Monitoring is a critical element of the proposed action and implementation of an adaptive management strategy. Monitoring to be conducted for all the action alternatives is described in Section 2.6 of this environmental analysis.

2.4.2 Alternative 2 – No Action (No Grazing)

The “no action” alternative is included to meet requirements of the National Environmental Policy Act [40 CFR 1502.14 (d)] and the Grazing Permit Administration Handbook, FSH 2209.13, Chapter 90, Section 92.31 which stipulates that “in addition to the proposed action, the no action alternative shall always be fully developed and analyzed in detail.” “No action” is synonymous with “no grazing” and means that livestock grazing would not be authorized within the project area.

Under this alternative, livestock would no longer be permitted to graze on the Franklin Basin Allotment. This pertains to sheep and cattle. If this alternative were selected, grazing would not be authorized after a two-year notification to the permittee from the date the decision is made. Non-permitted recreational horse use would still occur. Selection of the “no action” alternative would require an amendment to the Forest Plan.

2.4.3 Alternative 3 – Current Management

This alternative would continue the current level of permitted grazing and the current management of the allotment. The permitted number of livestock and grazing season would be as has been authorized for the past few years (under Forest Service administration):

Livestock: 607 cow/calf pairs

Grazing Season: June 25 – October 10

The allotment is currently managed under a single pasture, season-long grazing system with no deferment or rest incorporated into any specific area or pasture within the allotment. There are no interior fences to provide control of cattle within the allotment. The southern boundary of the allotment is unfenced between the Logan Canyon Cattle Allotment to the south and the Franklin Basin Allotment. Cattle grazing currently occurs and would continue on the portion of the allotment east of Highway 89.

The same permittees have grazing permits on both the Logan Canyon and Franklin Basin Cattle allotments. Cattle are managed during the grazing season primarily through riding and herding. The season-long system is intended to allow for some areas to be delayed from grazing by the nature of the seasonal progression as cattle are herded through the allotment.

Under the current system, grazing use is subject to grazing standards described in the Forest Plan (see Section 2.5 of this EA). The applicable standards for grazing use are the same as under the proposed action (see Section 2.41).

2.5 Mitigation and Management Requirements

Mitigation measures, Best Management Practices (BMPs), and Forest-wide standards and guidelines included in all action alternatives are listed below. Research and information substantiating these requirements are found in the Forest Plan and FEIS (USFS 2003).

2.5.1 Mitigation

The stream in the steep, V-shaped, narrow canyon of Steep Hollow between the Franklin Basin road and the Steep Hollow road crossing must be avoided, by herding cattle around this area when moving cattle to the upper part of Steep Hollow. Cattle must be herded such that riparian utilization standards are not exceeded (as indicated in Section 2.4.1).

2.5.2 Management Requirements

The Forest Plan (USFS 2003, p. 4-36 thru 4-56 and 4-58 thru 4-78) contains standards and guidelines (see LRMP, p. 3-36 for definition of these 2 terms) including some applicable to livestock grazing. Those pertinent to the Franklin Basin Allotment project area and this environmental analysis are summarized in the following tables:

Table 2.5a: Forest Plan (LRMP) Standards (S) that apply to this project.

(S4) Place new sources of chemical and pathogenic pollutants where such pollutants will not reach surface or ground water. (LRMP, p. 4-36)		
(S7) Allow management activities to result in no less than 85% of potential ground cover for each vegetation cover type. (LRMP, p. 4-37). (See LRMP, Appendix VII for potential ground cover values by cover type).		
(S14) Allow no net decrease in areal extent of tall forb communities. (LRMP, p. 4-39)		
(S24) As a tool to achieve desired conditions of the land, maximum forage utilization standards for vegetation types in satisfactory condition using traditional grazing systems (rest rotation, deferred rotation, season long) are as follows:		
Table S24: Percent utilization of key grass or grass like vegetation, by vegetation type, for rangelands in satisfactory condition.		
Vegetation Type	Condition	Percent Utilization of Key Grasses or Grass-Like
Upland and Aspen	Satisfactory	50%
Crested Wheatgrass	Satisfactory	60%
Riparian* Class I	Satisfactory	50%
Riparian* Class II & III	Satisfactory	60%
* Riparian, away from greenline		
(S25) As a tool to achieve desired conditions of riparian areas, maximum forage utilization standards (stubble height) for low to mid elevation <i>greenline</i> species in Class I, II, and III riparian areas (see Appendix VII) in satisfactory condition are as follows: (Key species being grazed include water sedge, Nebraska sedge, and and/or wooly sedge.)		
Table S25: Greenline stubble height at the end of the growing season, by riparian class, for rangeland satisfactory condition.		
Vegetation Type	Condition	Greenline Stubble Height at End of Growing Season
Riparian Class I	Satisfactory	No less than 5"
Riparian Class II	Satisfactory	No less than 4"
Riparian Class III	Satisfactory	No less than 3"
(S26) For all rangelands, including big game winter range and riparian areas, permit no more than 50% of the current year's growth on woody vegetation to be browsed during one growth cycle (i.e., when use has reached 50% allow no additional livestock use). (LRMP, p. 4-52)		

Table 2.5b: Wasatch-Cache NF Guidelines (G) that apply to this project.

(G3) Proposed actions analyzed under NEPA should adhere to the State Nonpoint Source Management Plan to best achieve consistency with both Sections 313 and 319 of the Federal Water Pollution Control Act. (LRMP, p. 4-37)
(G4) At the end of an activity, allow no more than 15% of an activity area to have detrimental soil displacement, puddling, compaction and/or to be severely burned. (LRMP, p. 4-37)
(G7) Manage Class 1 Riparian Area Greenlines for 70% or more late-seral vegetation communities as described in Intermountain Region Integrated Riparian Evaluation Guide (USFS, 1992). Manage Class 2 Riparian Area Greenlines for 60% or more late-seral vegetation communities. Manage Class 3 Riparian Area Greenlines for 40% or more late-seral vegetation communities. (LRMP, p. 4-37)
(G9) Avoid soil disturbing activities (those that remove surface organic matter exposing mineral soil) on steep, erosive, and unstable slopes, and in riparian, wetlands, floodplains, wet meadows, and alpine areas. (LRMP, p. 4-38)
(G11) Use Best Management Practices & Soil & Water Conservation Practices during project assessment/ implementation to ensure maintenance of soil productivity, minimization of sediment discharge into streams, lakes and wetlands to protect designated beneficial uses (LRMP 4-38)
(G12) Locate new actions (such as incident bases, fire suppression camps, staging areas, livestock handling facilities, recreation facilities, roads and improvements) outside of Riparian Habitat Conservation Areas. If the only suitable location for such actions is within Riparian Habitat Conservation Areas, sites will be located to minimize resource impacts (LRMP, p. 4-38)
(G14) Manage vegetation for properly functioning condition at the landscape scale. Desired structure and pattern for cover types of the Wasatch-Cache National Forest (from USFS 1996) ... are as follows ... (USFS 2003, LRMP p. 4-39 thru 4-42)

Table G14. Desired Structure and Pattern for Cover Types

Cover Type	Landscape Structure	Landscape Patterns
Aspen	<p><u>Balanced Range:</u> Grass/Forb and Seedling/Sapling = 40 % Young, Mid Aged and Mature forests = 30% Old Forests = 30%</p> <p>Stand Density Index > 300 and Basal Area < 140.</p>	Patterns are within historical ranges. Pattern sizes, shapes and corridors are maintaining processes. The role of fire is to influence distribution of structural classes and patterns across landscapes.
Pinyon-Juniper	<p><u>Balanced Range:</u> Grass/Forb about 10% Seedling/Sapling about 10% Young Forest about 20% Mid Aged Forest about 20% Mature Forest about 20% Old Forest about 20%</p>	Patterns are within historical ranges. Pattern sizes, shapes and corridors are maintaining processes. Pinyon-Juniper is primarily limited to habitats that offer protection from fire such as bare ridgetops and rock outcrops.
Mountain Mahogany	<p><u>Balanced Range:</u> Grass/Forb about 10-20% Early Seral about 20-40% Mid Seral about 20-40% Late Seral about 20-40%</p>	20-40% of acres are in mid-seral or later structural stages in patches of >25 acres. Pattern is more or less heterogeneous mosaic of

		structural classes.
Tall Shrub (Mountain Brush)	Multiple vegetation layers with alternating vertical dominance.	Acreages and dispersion within historical ranges.
Tall Forb	Minimum ground cover of 90% leading into the winter season.	Patterns within historical range on area still suitable for tall forb dominance
Sagebrush(Big)/Grassland	Balanced range of structural stages. 40% of area with 15% or more crown cover (as measured by line intercept method).	Patterns are within the historical range.
Riparian	Amount and type of vegetation types present that maintain riparian-dependent resources and provide a high rate of recovery following disturbance.	Plant community type compositions and accompanying riparian ecosystem functions maintain proper ground water recharge, storage, delivery, water tables, channel morphology and bank stability.
<p>(G15) In goshawk habitat, design management activities to maintain, restore, or protect desired goshawk and goshawk prey habitats including foraging, nesting, and movement. (LRMP, p. 4-42)</p>		
<p>(G23) Avoid actions on the Forest that reduce the viability of any population of plant species classified as Threatened, Endangered, Sensitive or recommended sensitive. Use management actions to protect habitats of plant species at risk from adverse modification or destruction. For species that naturally occur in sites with some disturbance, maintain the appropriate level of disturbance. (LRMP, p. 4-43)</p>		
<p>(G71) As a tool to achieve rehabilitation of upland, aspen, and riparian communities away from the greenline that are not meeting or moving toward objectives, maximum allowed forage utilization will be 30-40%. (LRMP, p. 4-52)</p>		
<p>(G72) Modify grazing practices that prevent attainment of desired future conditions for vegetation and/or aquatic resources. (LRMP, p. 4-52)</p>		
<p>(G75) Annual operating instructions (and/or Allotment Management Plans) should be evaluated and additional site-specific objectives defined if needed for any or all of the following five parameters:</p> <ul style="list-style-type: none"> ▪ stubble height on selected key species on the greenline, ▪ stubble height on selected key species and/or the amount of bare ▪ ground within the riparian zone but away from the greenline, riparian woody browse utilization (trees and shrubs), ▪ stream bank trampling on key reaches, and ▪ stubble height and/or incidence of use on key species in the uplands. (LRMP, p. 4-52) 		
<p>(G2.6-2) Grazing is allowed on open allotments to meet site-specifically defined desired conditions. (LRMP, p. 4-67)</p>		
<p>(G3.1A-2) Livestock grazing is allowed with the utilization standard for Riparian Class 1, and to meet site-specifically developed desired conditions. (LRMP, p. 4-69)</p>		
<p>(G4.4-2) Grazing is allowed on open allotments to meet site-specifically defined desired conditions. (LRMP, p. 4-69)</p>		

2.6 Monitoring Activities Common to All Action Alternatives

The following monitoring activities would be conducted by the Forest Service under each of the action alternatives to evaluate range conditions and to ensure compliance with the grazing permit and management requirements listed above.

(1) Livestock management

What: Monitor livestock distribution to ensure cattle are in areas authorized for grazing.

Why: To protect unauthorized areas from cattle grazing to help achieve desired conditions.

How often: Throughout the grazing season

How the results will be used: Information would be documented and shared with the permittees to ensure cattle are in the proper locations. If cattle are found in an unauthorized area it would be considered non-compliance and appropriate administrative action would be taken according to Forest Service Handbook direction (FSH 2209.13, Chapter 10, section 16).

(2) Annual upland and riparian utilization and use

What: Annual monitoring will include collecting and recording the following information:

- a. Utilization on upland and riparian key areas, including:
 - 1) Logan River riparian area near the Beaver Springs fenced area
 - 2) An upland sagebrush area to the west of Beaver Springs
 - 3) Steep Hollow riparian area
 - 4) An aspen stand in lower Steep Hollow

Why: To maintain proper cattle distribution and ensure utilization standards are not exceeded, in order to maintain satisfactory conditions, improve unsatisfactory conditions, and help move toward desired conditions.

How often: Utilization and cattle distribution during and at the end of the grazing season.

How the results will be used: The information will be used to determine when livestock must be moved from one area to another or off the allotment after all areas have been grazed, and to make any necessary adjustments to numbers and/or season of use.

(3) Annual ground cover in lower Steep Hollow

What: Annual monitoring will include collecting and recording ground cover at the end of the season.

Why: Ground cover indicates how well vegetation near the stream channel is able to reestablish and to what degree erosion is being reduced.

How often: Annually for the next 3-5 years or until average ground cover conditions in Steep Hollow are meeting or moving toward DFC.

How the results will be used: This information will be used to determine when conditions in this area have improved sufficiently and grazing here no longer needs to be avoided.

(4) Long-term upland condition and trend

What: Long-term trend monitoring will be conducted on the upland sagebrush and aspen sites identified above under (2). Additional sites may be determined through field assessment. Long-term sites will include:

- 1) An upland sagebrush area to the west of Beaver Springs
- 2) An aspen stand in lower Steep Hollow

Why: To evaluate vegetation conditions and identify whether or not they are at or moving toward desired conditions in riparian and upland areas.

How often: About every 10 years.

How the results will be used: Information will be used to determine if the area is meeting or moving toward desired conditions. Long-term trend data will be used to evaluate timing, intensity, frequency and management of grazing. As necessary, annual triggers affecting the timing, intensity, frequency and management of grazing would be adjusted to meet long-term desired resource conditions.

(5) Riparian area/water/aquatic habitats

What: Multiple Indicators Monitoring System (MIMS) on the following:

- 1) Logan River riparian area near the Beaver Springs fenced area
- 2) Steep Hollow riparian area

Why: To ensure that riparian environments are protected from trampling and vegetation loss and that water quality and aquatic habitats are maintained.

How often:

- Annual protocol: Stream-bank alteration and green-line utilization
- Every 5-10 years: other MIM protocols, as needed, for long-term monitoring of riparian areas/water/aquatic habitats

How the results will be used: The information will be used to evaluate movement toward desired conditions in riparian areas. If monitoring indicates that degraded riparian areas are developing and/or existing degraded riparian areas have not improved in condition (using indicators such as increased riparian vegetation diversity and structure, streambank disturbance, and channel width) then an alternative management strategy such as fencing key riparian areas would be implemented. Fencing would require further NEPA analysis on the site-specific environmental effects of the fencing.

2.7 Comparison of Alternatives

Table 2.7 Comparison of differences among Alternative 1 (Proposed Action), Alternative 2 (No Grazing), and Alternative 3 (Current Management)

	Alternative 1 (Proposed Action)	Alternative 2 (No Grazing)	Alternative 3 (Current Management)
Permitted Numbers	Approximately 607 cow/calf pairs; monitor for adjustments	Approximately 607 cow/calf pairs until grazing is eliminated from the allotment, then no grazing	Approximately 607 cow/calf pairs
Grazing System	Deferred rotation	No grazing	Season-long
Grazing Season	Approximately June 25 – October 10	Approximately June 25 – October 10 until grazing is eliminated, then no grazing	Approximately June 25 – October 10
Utilization	50 percent use on uplands in satisfactory condition; 30-40 % use on uplands in unsatisfactory condition; riparian greenline stubble heights at the end of the growing season of 4-5 inches on Class 2 riparian areas and 5-6 inches on Class 1 riparian areas	Same as Alternative 1, until grazing is eliminated, then no grazing	Same as Alternative 1

2.8 Comparison of Effects of Alternatives

Table 2.8 Comparison of the effects of Alternatives 1 (Proposed Action), 2 (No Grazing), and 3 (Current Management)

Issue	Alternative 1 (Proposed Action)	Alternative 2 (No Grazing)	Alternative 3 (Current Management)
<p>Issue #1 – Aquatics</p> <p>Effect on aquatic species and their habitat</p>	<p>For the Bonneville cutthroat trout a determination of “may impact individuals or habitat, but will not likely contribute to a trend towards Federal listing or cause a loss of viability to the population or species” was made.</p> <p>With some improvement in riparian areas, strong populations of tiger salamanders and boreal chorus frogs would continue to exist in water features within the allotment.</p>	<p>For the Bonneville cutthroat trout a determination of “no impact” was made.</p> <p>Riparian areas would move toward potential in the shortest amount of time under this alternative.</p>	<p>For the Bonneville cutthroat trout a determination of “may impact individuals or habitat, but will not likely contribute to a trend towards Federal listing or cause a loss of viability to the population or species” was made.</p> <p>No improvement in vigor and carbohydrate reserves in riparian vegetation outside of exclosures.</p>
<p>Issue #2 – Rangeland Resources</p> <p>Effect on rangeland vegetation within the Franklin Basin Allotment</p>	<p>Deferred rotation of grazing would be expected to provide gradual improvement in species composition.</p>	<p>Some improvements in species composition would be expected and likely in a shorter period of time than under Alternatives 1 or 3.</p>	<p>Range conditions would remain about the same since no deferred rotation grazing system would be implemented.</p>

Issue	Alternative 1 (Proposed Action)	Alternative 2 (No Grazing)	Alternative 3 (Current Management)
<p>Issue #3 – Recreation</p> <p>Qualitative analysis of areas where cattle and dispersed recreation coincide; public perception of cattle induced resource impacts</p>	<p>Recreation experiences would improve for those individuals who do not like to see or interact with cattle since there would be locations available within the allotment that are deferred from cattle grazing for a period of time each year.</p>	<p>Recreation experiences would improve after grazing is eliminated, for those who do not like to see or interact with cattle while on recreation outings.</p>	<p>Recreation experiences would continue to be affected for those who prefer not to see or interact with cows while in dispersed recreation areas.</p>
<p>Issue #4 – Soil</p> <p>Effect on soils within the Franklin Basin Allotment</p>	<p>Litter, as a component of ground cover, would increase slightly as a result of lightly grazed vegetation as grazing times are deferred to later dates on a rotational basis.</p>	<p>Litter, as a component of ground cover, would increase slightly as a result of un-grazed vegetation. No trampling of streambanks by livestock would occur after grazing is eliminated.</p>	<p>It is expected that ground cover values would remain the same, with little or no improvement occurring, since grazing would not be deferred on a rotational basis.</p>
<p>Issue #5 - Water</p> <p>Effect on water resources within the Franklin Basin Allotment</p>	<p>Improvements would occur to specific areas of the allotment that have water resource concerns such as in portions of Steep Hollow. Avoidance of the steep, v-shaped canyon in lower Steep Hollow would minimize impacts to this area; water quality in the Logan River would be expected to continue to meet State water quality standards.</p>	<p>Some changes to water resource features (such as no streambank trampling) would occur as a result of no grazing of livestock on the allotment. The Logan River meets State water quality standards now and is expected to continue to do so under all alternatives.</p>	<p>No appreciable improvements to the steep, v-shaped canyon in lower Steep Hollow would be expected; water quality in the Logan River would be expected to continue to meet State water quality standards.</p>

Issue	Alternative 1 (Proposed Action)	Alternative 2 (No Grazing)	Alternative 3 (Current Management)
<p>Issue #6 – Wildlife</p> <p>Effect on threatened, endangered, proposed, and candidate wildlife species and their habitats</p>	<p>Slight improvements in available forage and cover would occur during the summer because of deferred rotation grazing. A finding of “may affect individuals, but is not likely to adversely affect the lynx or its habitat” has been given for the lynx. A finding of “no effect” has been given for the yellow-billed cuckoo.</p>	<p>For lynx, elimination of grazing would result in the greatest positive effect on available forage and cover and prey species abundance and diversity.</p>	<p>For lynx, essentially no change to the current condition.</p>
<p>Effect on wildlife MIS species and their habitats</p>	<p>The effects on MIS species (northern goshawk and snowshoe hare) are related to effects on small mammals. Small mammal diversity and overall species abundance may improve slightly over existing condition with a deferred rotation system. Beaver numbers are not likely to change from current condition for any of the alternatives.</p>	<p>The potential for small mammal diversity and overall species abundance would be the greatest among all the alternatives, as grazing would be eliminated under this alternative.</p>	<p>The potential for small mammal diversity and overall species abundance would be the least among all the alternatives, as there would be no deferred rotation implemented under this alternative.</p>

Issue	Alternative 1 (Proposed Action)	Alternative 2 (No Grazing)	Alternative 3 (Current Management)
<p>b. Effect on sensitive wildlife species and their habitat</p>	<p>For sensitive species a finding of “may impact individuals or habitat, but will not likely contribute to a trend towards Federal listing or cause a loss of viability to the population or species” is given for the northern goshawk, flammulated owl, wolverine, and Townsend’s big-eared bat. A finding of no impact is given to the, sage grouse, Columbia sharp-tailed grouse, great gray owl, three-toed woodpecker, pygmy rabbit, boreal owl, peregrine falcon, wolf, bald eagle, and spotted bat.</p>	<p>Potential effects to habitat for sensitive species are related to potential effects on their prey species. Potential effects to prey species and their habitat would be slightly improved over other alternatives as grazing is eliminated from the allotment.</p>	<p>Potential effects to habitat for sensitive species are related to potential effects on their prey species. Potential effects to prey species and their habitat would be slightly greater than other alternatives as grazing would not be on a deferred rotation.</p>
<p>c. Effect on Neo-tropical migratory birds</p>	<p>This alternative would provide habitat conditions for a range of species, those that prefer habitat with higher amounts of cover and those which prefer less.</p>	<p>This alternative would provide habitat conditions for those species that prefer habitat with high amounts of understory cover.</p>	<p>This alternative would provide habitat conditions for those species that prefer habitat with less understory cover.</p>