# **Rangeland Resources**

## INTRODUCTION

Rangelands are defined as "...those areas of the world, which by reason of physical limitations low and erratic precipitation, rough topography, poor drainage, or cold temperatures are unsuited for cultivation and which are a source of forage for free ranging native and domestic animals, as well as a source of wood products, water and wildlife". This definition includes grasslands, shrublands, and forest areas often used by grazing animals (Stoddart et al. 1955). Rangeland capability, as defined by the Forest Service, represents the physical attributes or characteristics of the landscape that are conducive to livestock grazing. Suitability is defined as those capable National Forest System lands that are allocated to grazing use based on decisions related to social, economic, or environmental choices and uses foregone. These definitions vary from those traditionally used by the Forest Service in managing rangeland resources, due to recent changes in regulations. In past planning activities, capability was usually combined with the term suitability.

The capability determination is made at the programmatic or Forest Plan level only. This determination is not a decision to graze livestock on any specific area of land, nor is it a decision on livestock grazing capacity. Its purpose is to establish a foundation for alternative development and evaluation. Capable acreage remains the same for all alternatives. This determination is not a Forest Plan decision that requires alternative development and public comment.

Suitability determinations are best made at the Forest Plan level. Suitability is established either to provide prescriptive management direction for project-level analysis and subsequent NEPA decisions, or as a decision to not graze specific designated areas. Once capability is determined, livestock grazing is assessed on an area-by-area basis and by alternative in the Forest Plan EIS. Suitable acres may vary by alternative. Typically, the areas reviewed in this assessment are by watersheds or portions of watersheds. The purpose of using this scale is to see if livestock grazing is compatible with management area emphasis, uses, and values identified in the alternative. Suitability also looks at what uses are foregone with livestock grazing. Historical records, site-specific information, and public comments may be sources for providing rationale. Suitability determinations require public comment.

New information and research related to physical and biological impacts of livestock grazing on riparian and aquatic ecosystems have occurred since the approval of the existing Forest Plans. Also, the current scientific understanding embodied in the Interior Columbia River Basin (ICRB) Assessment and interim strategies for managing watersheds producing anadromous fish (Pacfish) and inland fish (Infish) has precipitated a more critical look at grazing use standards. Implementation of new direction from Pacfish and Infish, as well as standards and modifications associated with new science, has affected the way or method in which livestock grazing has been conducted on the three Ecogroup Forests. However, original analyses associated with these decisions stated that implementation of direction would not result in significant changes in livestock stocking or use levels.

Also, when the plans were originally developed, it was assumed that range management, improvement, and development budgets would remain constant. These budgets were expected to maintain intensive range management programs and existing livestock stocking levels. However, range program budgets have not been sustained at the levels assumed. Furthermore, meeting the requirements of Pacfish and Infish decisions have increased management costs for portions of the Forests, and for grazing permittees associated with those areas.

### **Issue and Indicators**

**Issue Statement** – Forest Plan management strategies may affect rangeland resources, including lands considered suitable for livestock grazing and the form of livestock grazing management authorized under permit for the Forests.

**Background to Issue** – A Need For Change related to rangeland resources was identified in the *Preliminary AMS for the Southwest Idaho Ecogroup* (USDA Forest Service 1997) and is summarized here. There is a need to modify current management direction for livestock use of riparian areas to reflect current research and Forest observations. New information regarding the proper functioning condition of rangelands, the identification of areas susceptible to soil erosion, and the risks of livestock/ wildlife disease transmission need to be considered in management direction. The interaction between recreation and livestock needs to be considered, given the large increases in recreational activity. Given that grazing use on the three Forests has been significantly less than prescribed, and increases in administration, monitoring, and permittee operational costs have occurred, direction needs to be modified, since these changes indirectly affect the levels of outputs projected by the Forest Plans. To address Need For Change, modifications in Forest Plan direction have been proposed for rangeland resources, and the effects of those modifications are analyzed in this section.

In addition to the Need For Change described above, issues were considered from responses to public scoping conducted for this EIS. Several comments expressed concern about how revised Forest Plan direction will affect livestock operations and livelihoods. They felt that further restrictions on allotments already financially overburdened, due to high maintenance and operation costs, would have significant financial and social effects. There is a fear that inappropriate or arbitrary broad-scale restrictions and determinations made at the Forest Plan level (capability and suitability) will limit ground level or allotment management flexibility. Another perception was the lack of emphasis on livestock grazing in relation to other resource uses. There is a concern that with the assignment of management prescription categories emphasizing recreation, wildlife, and timber, livestock grazing would be de-emphasized and become a low priority. Capability, suitability, management flexibility, and prescriptions are all addressed by the analysis in this section. The potential social and economic effects of rangeland management options are discussed in the *Socio-economic Environment* section of this chapter.

Other comments were concerned about the effects of permitted livestock grazing on Forest Service system lands and other resources. Most concern revolved around riparian area livestock use and its effect on fisheries, biodiversity, and water quality. One person said that riparian management direction needed to be consistent across all three Forests to prevent a "mish mash" of different levels of management. Although this analysis discusses general effects from livestock grazing on other resources, those effects are analyzed in more detail within the appropriate resource sections of this chapter.

While several internal Forest Service comments referred to the need to conduct rangeland capability and suitability analyses, the viewpoint of a few was that Forest Plan direction needs to establish and display programmatic capability criteria for use by the districts in determining grazing capacities. Others believed that allotment grazing capacity determinations need to be based upon site-specific information related to condition of the rangelands, the quality of management being applied, and the grazing management approach.

**Indicators** - The following indicators will be used to measure the effects on rangeland resources for the three Forests by alternative:

- 1. *Estimated suitable rangeland acres by Forest* This indicator reflects the suitability determinations by alternative, which is a requirement by regulation.
- 2. Estimated suitable rangeland acreage that occurs within More Restrictive and Less Restrictive Management Prescription Categories The assignment of suitable rangelands to certain management prescriptions will affect the response, and influence the rate of recovery for rangelands, and will indirectly display potential effects on grazing permittee operations and community economies. The term "rangelands" refers to lands grazed by domestic livestock, and not the "non-forested vegetation" that is addressed in the Vegetation Diversity section of this EIS.

# **Affected Area**

The affected area for direct and indirect effects for rangeland resources are lands administered by the three National Forests in the Ecogroup within existing allotments. Some management areas may be highlighted in discussions, due to the significance of their contributions to Forest-wide effects. These affected areas represent lands where rangeland resources could exist, and the lands where those resources could receive impacts from management activities, environmental conditions, and natural events.

The affected area for cumulative effects includes lands administered by the three National Forests, and the communities that are dependent upon livestock forage outputs from National Forest System lands. Some discussions about communities may be more detailed, depending upon the significance of their contributions or effects by alternative (see *Socio-economic Environment* section in this chapter). This expanded area is necessary to show the relationship between Forest actions and their effect on local economies.

### **CURRENT CONDITIONS**

# **Rangeland Capability**

The Boise, Payette, and Sawtooth National Forests contain about 6,600,000 acres of National Forest System lands. An estimated 18 percent of those lands are capable for grazing. Table RR-1 displays the acres of capable rangeland by Forest. Shoshone Creek (SNF), Rock Creek (SNF), Trapper/Goose Creek (SNF), Snake River (PNF), Weiser River (PNF), Lower South Fork Boise River (BNF), and Mores Creek (BNF) Management Areas contain the greatest percentage of capable rangelands for their respective Forests (Rangeland Technical Report #3). An estimated 359,752 acres of the capable rangeland (31 percent) occurs within Land Capability Groups 6-9 within the Ecogroup area. Land Capability Groups are defined and mapped in Appendix G to the revised Forest Plans. The Boise National Forest has the most (223,104 acres) within Land Capability Groups 6-9, while the Payette National Forest has the least (43,145 acres). All lands, regardless of slope, are capable and suitable for grazing and browsing by wildlife.

Table RR-1.	Capable	Rangeland	by Forest
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Forest	Total Forest System Acres	Areas Outside Allotments <sup>+</sup>	Acres of Capable Rangeland*	Percent Considered Capable	Percent of Capable Rangeland in Land Capability Groups 6-9
Boise	2,202,490	426,480	398,400	18	56
Payette	2,299,290	1,322,740	227,080	10	19
Sawtoot h	2,110,950	368,230	535,010	25	39
Ecogroup Totals	6,612,730	2,117,450	1,160,490	18	31

<sup>+</sup> Not all National Forest System lands have received an allotment designation. This category includes lands without an allotment designation or where allotments have been officially closed. <sup>\*</sup>Capable rangeland acres within vacant or open allotments.

The Forest Service conducts area or allotment assessment on an ongoing basis to determine the status of rangeland conditions. Table RR-2 and RR-3 display the current status of conditions and trends by Forest. Also, the *Vegetation Diversity* section in this chapter displays Properly Functioning Condition status of certain vegetation cover types used as rangelands.

Forest	Percent of Allotment Range Vegetation Meeting Current Forest Plan Objectives	Percent of Allotment Range Vegetation Moving Towards Current Forest Plan Objectives	Percent of Allotment Range Vegetation Not Meeting Forest Plan Objectives
Boise	46	36	18
Payette	62	33	5
Sawtooth	72	20	8

<sup>#</sup> This includes both upland and riparian vegetation

Forest	Percent of Allotment Riparian Vegetation Meeting Current Forest Plan Objectives	Percent of Allotment Riparian Vegetation Moving Towards Current Forest Plan Objectives	Percent of Allotment Riparian Vegetation Not Meeting Forest Plan Objectives
Boise	43	45	12
Payette	58	36	6
Sawtooth	56	31	13

### Table RR-3. Status of Riparian Vegetation in Allotments

### Factors Affecting Rangeland Management and Suitability

### **Riparian Conservation Areas**

Establishment of Riparian Conservation Areas (RCAs)—or Riparian Habitat Conservation Areas (RHCAs) in Alternative 1B—and their associated riparian management objectives have influenced grazing activities on all three Forests. An estimated 16.6 percent of the lands within the Ecogroup grazing allotments have been designated as being within RCAs/RHCAs (Table RR-4). Current research and management experience on the Forests shows that previous plans' grazing standards for forage use are inconsistent with riparian management objectives (RMOs) established for RHCAs, or riparian management direction established for RCAs. Studies indicate that stream bank compaction and trampling by cattle affects many stream systems more than forage use. Preventing damage to anadromous fish redds is also a concern. Consequently, some standards specifying something other than current utilization levels may be more appropriate in riparian management direction (see Forest-wide direction for Soil, Water, Riparian, and Aquatic Resources in the revised Forest Plans). Most of these types of management adjustments have developed as part of the Annual Operating Instructions and Allotment Management Plans. All three Forests have conducted and continue to participate in consultation with NMFS and U.S. Fish and Wildlife Service about the management of allotments in watersheds with threatened and endangered fish species. Some of the management adjustments have resulted in changes to annual grazing season and numbers of livestock.

Forest	Acres of RCA/RHCAs within Allotments	Acres Outside RCA/RHCAs within Allotments	Percent of Allotment Lands Contained within RCA/RHCAs	Riparian Areas within Allotments	Percent of Allotment with Riparian Veg. Cover Types	
Boise	399,898	1,797,667	18.2	64,272	2.9	
Sawtooth	281,743	1,504,506	15.8	16,392	0.9	
Payette	160,450	914,155	14.9	41,527	3.8	
Ecogroup Totals	842,091	4,216,328	16.6	122,191	2.4	

Table RR-4. RCAs/RHCAs Within Allotments

### **Current Livestock Levels**

Livestock grazing is permitted during the summer months. The normal grazing season is May through the first of October. Currently, an estimated 42,088 cattle and 101,896 sheep are permitted to graze between the three Forests. Authorized use has ranged from 363,116 to 543,742 head months over the last three years (Table RR-5). These numbers reflect annual operating plan changes and variability as a result of compliance with the Endangered Species Act, post-wildfire resource condition recovery, drought management, and voluntary non-use.

Forest	Head Months (Sheep)	Head Months (Cattle)
Boise	65,978 - 128,483	32,727 - 38,927
Payette	35,510 - 56,954	34,709 - 38,883
Sawtooth	116,841 - 181,432	77,351 - 99,063
Ecogroup Totals	218,329 – 366,869	144,787 – 176,873

 Table RR-5. Range of Recent Authorized Livestock Head Months/Yr

### Vacant Allotments

There are eight vacant allotments containing 45,077 acres capable of supporting livestock. Most of these allotments have been vacant since the 1980s. An analysis was conducted to determine which of these allotment or portions of the allotments have value from a livestock grazing standpoint and should be retained, and which ones have little to no value and should be closed. See Technical Report No. 3 for information related to the analysis of the allotments. Table RR-6 displays a summary of the vacant allotments considered in determining rangeland suitability.

Allotment Name	Adjacent to Active Allotments	Livestock Type Best Suited for Use	Other Resource Considerations
Anderson Creek	Yes	Sheep	Yes
Bull Trout	Yes	Sheep	Yes
Deadwood East	Yes	Sheep	Yes
Eight Mile	No	Sheep	Yes
Five Mile	No	Sheep	Yes
Fir Creek	Yes	Sheep	Yes
Sheep Creek	Yes	Sheep	Yes
Whitehawk	Yes	Sheep	Yes

 Table RR-6.
 Existing Vacant Allotments

**Demand Versus Use** - The extent to which the overall demand for livestock forage is being met has not been determined. However, actual average livestock use levels (Head Months per year) are lower than originally anticipated in the original Forest Plans. Some probable contributing factors to this trend are:

- Protection of threatened and endangered species habitat.
- Limited agency funding to implement capital improvements and range developments.
- Voluntary and involuntary reductions for resource protection.
- Permit waivers back to the government that were not re-issued, due to resource concerns.
- Livestock markets and ranch economies reactions to changes in demand and competition.
- Recovery efforts for large wildfire areas that included temporarily reduced grazing use.

#### **Budget Allocations**

The Forest Plans for the three Forests anticipated that annual range budget allocations would be similar to those listed in Table RR-7. Actual allocations were only 42 to 68 percent of those anticipated (USDA Forest Service 1997).

Forest	Anticipated Allocation	Actual Allocation	Percent Funded
Boise	\$654,000	\$272,000	42
Payette	\$445,000	\$302,000	68
Sawtooth	\$736,000	\$410,000	56

### Table RR-7. Anticipated Budgets and Actual Allocations

### ENVIRONMENTAL CONSEQUENCES

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

### **Resource Protection Methods**

Resource protection has been integrated into rangeland management direction at various scales, from national to site-specific. The cumulative positive effect of the multi-dimensional direction described below is beneficial protection and mitigation for all resources that may potentially be adversely affected by livestock grazing activities.

**Laws, Regulations, and Policies** – Numerous laws, regulations, and policies govern the use and administration of rangeland resources on National Forest administered lands. Some of the more important ones are described in Appendix H, Legal and Administrative Framework. National laws and regulations have also been interpreted for implementation in Forest Service Manuals, Handbooks, and Regional Guides. All grazing activities authorized under permit must comply with these laws, regulations, and policies, which are intended to provide general guidance for the implementation of grazing practices, and for protection of rangeland-related resources.

**Forest Plan Direction** – Although Forest Plan management direction for rangeland resources would vary somewhat by alternative, direction for all alternatives has been developed to maintain or improve range land conditions on National Forest administered lands. Direction occurs at both the Forest-wide and Management Area levels. Rangeland resource goals and objectives have been designed to achieve desired rangeland conditions over the long term, and to maintain or restore sustainable levels of forage production, livestock use, and ecosystem functions and

processes. Rangeland standards and guidelines have been designed to protect upland and riparian vegetation, as well as other resources that could be adversely affected by livestock grazing activities. Furthermore, management direction for other resource programs—such as vegetation, soil, water, riparian, aquatic, wildlife, and recreation—provide additional guidance and resource protection in an integrated manner.

**Forest Plan Implementation** - Proper livestock grazing generally depends on current and sitespecific information about biophysical conditions, livestock numbers, season of use, timing and duration of use, livestock management practices, range development and improvement levels, permittee capability, etcetera. These factors are not easily addressed at the programmatic level, or may be similar to all alternatives. The allotment management planning and term grazing permit administration process, however, can and will address all of these factors at the project area or allotment scale. Through this process, which is the same for all alternatives, adjustments in livestock use and management practices would be made to address resource concerns in a timely, effective, and site-specific manner that involves the Forest Service, permittees, and the public in land management actions.

Currently, 59 percent of the allotment rangelands within the Ecogroup area are meeting original Forest Plan objectives, and 29 percent are moving towards those objectives. These objectives include requirements due to Pacfish and Infish. (See the *Vegetation Diversity* section and Technical Report for a discussion on the ecological status of shrubland, grassland, and riparian cover types.) In areas where present rangeland conditions are not meeting previous Forest Plan objectives, conditions are expected to improve under all alternatives with the implementation of Forest Plan management direction. However, the rate of improvement and approach to management are NOT the same as the revised Forest Plan objectives and desired conditions for non-forested vegetation.)

### **Grazing Permits and Administration**

Livestock use and its associated activities will be allowed under the Term Grazing Permit system, within all the MPCs described in Chapter Two, Features Common to all Alternatives, except in MPC 2.2. The authority to protect, manage, and administer National Forest System lands for range management will be in accordance to the terms and conditions specified in Parts 1 through 3 of the term grazing permit issued for a specified area. Grazing administration responsibilities will not vary by alternative selection, as they are determined by existing policy (*FS Manual 2230, Term Grazing Permit Administration*) and annual budget priorities.

#### **Capable Rangelands**

Capable rangelands are accessible to livestock, produce forage or have inherent forage-producing capabilities, and can be grazed on a sustained yield basis, under typical and reasonable management practices. They can include forested lands, which, after timber harvest or fire, have become accessible and can produce forage. These lands are called transitory range. Forage may be produced for 10 or more years before changes terminate available production or accessibility.

Rangelands may contain areas that should not be considered part of the grazing base because of site accessibility (availability), low productivity, or soil erosion susceptibility. These areas are deducted from the total acreage within all Forest allotments in order to determine rangeland capability. See Table RR-1 for capable rangelands by Forest.

#### Suitable Rangelands

The three Forests have been analyzed for being suitable to grazing and browsing as required in 36 CFR 219.20. This analysis considered other uses or values of the area. All lands, with the exception of talus slopes, water and rock, are suitable for grazing and browsing by wildlife. Suitable range used by wildlife will remain the same for all alternatives. The availability of forage in localized areas for wildlife (e.g., elk, mule and whitetail deer, bighorn sheep) may vary by alternative, due to some suitability changes. However, no deductions to livestock suitability were made or based on livestock-wildlife ungulate competition for forage, as this was not identified as an issue in any specific location. The analysis does identify areas where grazing under a term permit is not appropriate. Some lands within the Forests are incompatible with domestic livestock grazing or do not allow grazing due to alternative uses foregone (see also Direct Effects). A few situations apply to all forest plan revision alternatives. Research Natural Areas (RNAs) are not included as part of the alternatives' suitable rangelands. This deduction occurs so as to prevent livestock grazing from adversely affecting the vegetation values that the RNAs were established to preserve, and to help maintain these areas for future scientific research. Some of the RNAs have pre-existing decisions prohibiting grazing within their boundaries, or are in areas inaccessible, undesirable, or unsuitable to livestock. There are no proposed changes in permitted livestock numbers as a result of preventing the use of RNAs. Also, existing administrative sites and developed recreation sites are deducted, due to the incompatibility of uses. Livestock head months will not be affected by this deduction.

### **General Effects from Livestock Grazing**

Grazing animals affect plant and aquatic communities in several interrelated ways, including: plant defoliation, nutrient redistribution, and mechanical impact to soil and plant material through trampling. These activities may affect or influence different components of the Ecogroup's Ecosystem Management framework (see Chapter 3, *Introduction*, for explanation of components) in positive, neutral, or negative ways. The affects to ecosystem components can be classified as either direct or indirect:

**Direct Effects -** Grazing and associated activities can directly alter, positively or negatively, the amount of vegetation present at different times of the year (biological); the degree of soil compaction (physical); the amount of ground cover (physical); ungulate forage availability (biological); the effectiveness of terrestrial habitat (biological); the level of reproductive success for some aquatic species (biological); and the annual operation costs and income of individual livestock operations (economic). These are general effects common annually which contribute to short-term indirect and cumulative effects.

**Indirect Effects -** Grazing and associated activities can indirectly alter the composition of herbaceous and shrub vegetation; the degree of shrub canopy closure; vegetative age class patterns; plant productivity; individual plant vigor (biological); surface soil erosion rates; water quality; soil productivity (physical); aquatic and terrestrial habitat effectiveness (biological); fire

regimes (physical), susceptibility to exotic plant invasion, shrub and tree regeneration (biological), forage production, individual and community income (economic), community stability, diversity, demographics, and resiliency (social). These indirect effects become more apparent in the latter portions of the short-term period. Most of these effects become more apparent after 10 to 15 years (long-term) and tend to contribute to cumulative effects.

**Grazing Factors Affecting Plant Physiology and Succession** - Most of the potentially affected elements described above are reliant on or tied to the health of the vegetative community. In most cases, biological and physical elements will respond in a similar manner as what is occurring to plants physiologically and successionally. Therefore, plant physiology, ecology, and response to grazing are key aspects to determining the effects of grazing on rangeland vegetation and forage production.

There are three generally accepted grazing principles that affect plant physiology and succession. They are grazing frequency, intensity, and opportunity. Frequency is generally related to the number of times forage plants are defoliated during a grazing period. It is dependent on the length of time plants are exposed to grazing animals. Intensity is related to the amount of leaf material removed during the grazing period, which influences the plant's ability to recover from grazing during the same growing season. Opportunity is related to the amount of time plants have to grow prior to grazing or to regrow once grazing has occurred. The plant must be able to fully store energy at some time during the active growth period in order to maintain plant vigor.

All three principles will influence and affect plant vigor and reproductive health. They will also have corresponding or parallel influences on other biological and physical elements. A more detailed discussion about the effects of these three influences is contained in the Rangeland Resources Technical Report #3 in the project planning record, and in the Direct and Indirect Effects discussion below.

**Effects by Management Prescription Category** - The Management Prescription Categories (MPCs) described in Chapter 2 have been divided into two groups, based upon their emphasis on the three grazing principles described above.

• *MPCs Where Livestock Grazing Management is More Restrictive* (MPCs 1.1, 1.2, 2.1, 2.4, 3.1, 3.2, 4.3) - The areas where these prescriptions are applied tend to have more restrictive or constraining direction at the Management Area level, and could be more restrictive than the Forest-wide standards and guidelines. Grazing *frequency* and *opportunity* may be part of management direction but are not emphasized to same the degree as *intensity*. Direction usually places more emphasis on controlling grazing *intensity*, typically through the use of standards and guidelines for utilization, stubble heights, streambank stabilization or disturbance requirements, seasonal restrictions of use, the establishment of conservative stocking rates, etc. This direction may translate into shorter grazing periods or seasons for livestock grazing, and/or lower livestock numbers, and more management by livestock operator costs could be higher if specific management options conflict with the emphasis or direction of the MPC. These restrictions could indirectly affect the management or use of private lands surrounding the Forest. This assumption is based upon the likelihood that livestock will have

to leave the Forest early, due to restrictive standards, and return to the permittee's property or leased private lands earlier than planned. An early return would increase forage demand for a longer duration, thus causing potential management adjustments or detrimental resource effects to the private or leased lands (Knize 1999). The areas where these prescriptions are applied may also have specific management requirements; such as pasture occupation may be restricted at certain times of the year (e.g., for protection of redds from livestock trampling). These requirements would be based on site-specific desired conditions, goals, and objectives for a watershed or Forest Plan Management Area. In these situations, the use of grazing *opportunity* may be limited. Generally, riparian resource improvement would occur at a higher rate in these areas, particularly in areas of past grazing-related impacts.

MPCs Where Livestock Grazing Management is Less Restrictive (MPCs 4.1, 4.2, 5.1, 5.2, 6.1, 6.2) - Using a combination of several best management practices in conjunction with Forest-wide standards, a more flexible approach to managing grazing *frequency*, *intensity*, and *opportunity* would generally allow for a broader range of management options. Vegetation treatments, structural range improvements, livestock herd management, increasing the number of pastures, and enhancing pasture rotations, are all considered important practices in creating this flexible approach. Forest-wide standard and guidelines are generally effective in protecting other resource values, and compliment other practices. However, in some specific situations, additional standards or practices, or adjustments in seasons and numbers may be needed to prevent degradation of properly functioning conditions. These standards or practices would need to be determined at the site-specific or allotment level. As a result, the approach under these MPCs would likely translate into changes in how livestock are managed. Temporary and short-term adjustments may occur depending upon drought, wildfire effects, and sagebrush community conditions. In most situations, riparian resource improvement may have a somewhat lower rate of recovery, depending upon goals and objectives for a specific area.

# **Direct and Indirect Effects by Alternative**

#### **Rangeland Suitability**

The three Forests' capable rangelands were analyzed for grazing suitability by alternative. This analysis considered other uses or values of the area, and also identified areas where grazing may not be appropriate. See Rangeland Resources Technical Report No. 3 for more detailed information. Table RR-8 through RR-10 display the acres of suitable rangelands by Forest and the deductions used to determine suitability, by category, for each alternative. Overall, Alternatives 4 and 6 have the least amount of suitable rangelands. The following paragraphs identify the other resource considerations and their effects on the rangeland environment:

Acres Deducted Due to Recreation Conflicts - Recreation is expected to increase under all alternatives. As recreation increases, more conflicts between recreation users and livestock grazing are likely to occur. In many situations, site-specific mitigations or changes to recreation or livestock management can reduce or eliminate the conflict. However, in some situations where conflicts continue to persist, there will be continued pressure to reduce grazing. This will most likely occur in a few areas where recreation visitation is very high throughout the grazing season, where specific management area goals and objectives emphasize recreation use, where

multiple recreation opportunities are occurring, and/or when recreation or livestock management flexibility is limited. Increased recreation use within an area will disrupt livestock distribution and the effectiveness of management systems, directly affecting grazing *frequency* and *intensity*, and indirectly affecting vegetative response.

Livestock grazing would also likely affect the recreational experience of some users. There are two areas on the Sawtooth National Forest (small portions of MA 4, Big Wood River; and MA 16, Howell Canyon) where this situation occurs (Table RR-10). Alternatives 2, 3, 4, 6, and 7 deduct these areas from the Sawtooth Forest's total suitable rangelands. This deduction will likely decrease the amount of head months expected in these alternatives. The deduction for the Adams/Fox Gulch area would have the greatest potential effect, as it includes the largest amount of capable acres. Also, as described in Effects Common to All Alternatives, domestic livestock grazing would be prohibited in developed recreation sites under all alternatives.

Acres Deducted Due to Closing Vacant Allotments - Closing vacant allotments eliminates the use of these areas for domestic livestock production in the future. All the allotments considered under this category are on the Boise National Forest. Areas capable of supporting livestock would be removed from the suitable grazing land base. Closures could have positive effects on other resources, but could also have negative effects on livestock management, depending on site-specific conditions. Vegetative composition and vigor would be expected to improve with these deductions, due to the limited amounts of arid or semi-arid vegetation cover types. Some southern exposures may not see significant long-term vegetative recovery due to the potential spread of non-native plants and the semi-arid conditions. Big-game winter and summer range would follow a similar pattern. Ground cover would continue to increase on more mesic sites, providing for improved soil stability, thereby reducing potential sedimentation to bull trout and other fish habitat. Vegetation management options with livestock would not necessarily be precluded with the closing of allotments. Permits could still be issued for other purposes (FSM 2234, Livestock Use Permits), such as vegetation management, research, and livestock transportation or crossing access. Nor would closing the vacant allotments automatically reduce head months currently permitted. However, closures could potentially reduce future management flexibility by eliminating the possibility of using the allotments to resolve future conflicts between livestock grazing and other resources on active allotments, or to provide alternative forage in drought years. This reduction could indirectly affect the management or use of private lands surrounding the Forest, based on the likelihood that livestock would have to leave the Forest early and return to privately owned or leased lands.

See Table RR-6 for the complete list of vacant allotments considered in this suitability deduction, and see Table RR-8 for the acres associated with the allotments removed from suitable rangeland by alternative. Alternatives 2, 3, 4, 6, and 7 would remove 32,041 acres from the suitable rangelands, based on the closure of eight vacant allotments. Alternatives 1B and 5 would not remove any acres.

Criteria	Alt. 1B	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7
Capable Acres	398,400	398,400	398,400	398,400	398,400	398,400	398,400
Vacant Allotment Acres Deducted	0	32,041	32,041	32,041	0	32,041	32,041
Anadromous Agreement Deducted	5,575	0	0	5,575	0	0	5,575
Total Deductions	0	32,041	32,041	37,616	0	32,041	37,616
Total Suitable Acres	398,400	366,359	366,359	360,784	398,400	366,359	360,784

Table RR-8.	<b>Boise NF</b>	Rangeland S	Suitabilitv	Acres by	/ Alternative

Acres Deducted Due to Bighorn Sheep Habitat - Discontinuing domestic sheep grazing in overlapping areas used by domestic sheep and bighorn sheep would reduce the risk of disease being transmitted to bighorn sheep. Domestic sheep grazing would be discontinued by phasing out, on an opportunity basis, suitable rangeland portions of domestic sheep allotments that overlap current bighorn sheep habitat, or by converting use to cattle, where feasible. This action may help existing bighorn sheep populations stabilize or increase in these areas. See the *Terrestrial Habitat and Species* section for more information. Deducting the areas from the suitable rangelands for sheep may have a long-term effect on overall head months for domestic sheep within the Ecogroup area. However, the potential effect on existing sheep operators will be minimal, as this will occur on an opportunity basis only, and in relatively small areas. There are two areas where this situation exists in the Ecogroup. One area occurs in MA 11 (Rock Creek), MA 12 (Cottonwood Creek), and MA 13 (Trapper Creek/Goose Creek) of the Sawtooth Forest (66,506 acres). The other is in MA 1, Hells Canyon, on the Payette Forest (15,329 acres). Therefore, a total of 81,835 total acres of suitable range could be affected by this deduction (Tables RR-9 and RR-10). Alternatives 3, 4, and 6 include these deductions; Alternatives 1B, 2, and 5 have no deductions. Alternative 7 included only the deduction on the Sawtooth. The purpose of this change was to recognize the 1997 agreement reached by members of the Hells Canyon Bighorn Sheep Restoration Committee with the Idaho Woolgrowers Association and to identify an alternative that recognizes the Payette National Forest System lands were not considered as part of the original restoration plan.

Criteria	Alt. 1B	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7
Capable Acres	227,080	227,080	227,080	227,080	227,080	227,080	227,080
Bighorn Habitat Acres Deducted	0	0	15,329	15,329	0	15,329	0
Total Deductions	0	0	15,329	15,329	0	15,329	0
Total Suitable Acres	227.080	227.080	211.751	211.751	227.080	211.751	227.080

 Table RR-9. Payette Rangeland Suitability Acres by Alternative

Acres Deducted Due to Noxious Weed Spread and Establishment - This category pertains to sites where noxious weeds are spreading and livestock use or management has been identified as a major contributing factor, or the potential benefit of using livestock to contain and control weeds would be offset by potentially greater negative affects to other resources. Two sites fall into this category, one in the Wood River drainage, and one in the South Fork Boise River

drainage, both on the Sawtooth Forest. The spread on the Wood River site can be contributed in part to concentrated livestock use in large relatively dense infestations during a time when seed dissemination from the plants occurs. As a result, livestock become carriers of noxious weed seed when they are moved. The site in the Big Wood River drainage lies just above the Sawtooth NRA Headquarters. The area consists of 2,498 suitable acres and is deducted from Alternatives 4 and 6 (Table RR-10).

The South Fork Boise River site has other concerns. The occupied sites are typically dominated by leafy spurge. While it has been documented that sheep can be effective in reducing leafy spurge infestations (Olson and Lacey 1994, Non-native Plant Technical Report No. 2), some of the sites are located in areas with unstable slopes and soils within Landtype Capability Groups 6-9, which have a higher susceptibility to erosion (see Appendix G of the Forest Plans). While leafy spurge densities could be reduced through grazing treatments, the potential for additional erosion from concentrated grazing on the sites and the increased potential for new spurge seedbeds would likely offset any gains of treatment. This erosion could result in sediment delivery to the South Fork of the Boise River, particularly on south and west aspects. An estimated 3,213 suitable rangeland acres are identified within this area of concern and are deducted from Alternatives 4, 6, and 7 (Table RR-10).

Noxious weed spread will continue to occur, but likely at a lower rate. Livestock management mitigations or adjustments may or may not be practical or feasible. Therefore, preventing use by livestock in certain areas may be an appropriate management option in conjunction with other tools. Deductions would affect the amount of area available for late season grazing, the number of head months provided, and how the sheep driveway is used or managed in the fall. They could also slightly affect the amount of area available for summer grazing on five S&G allotments, and the number of head months provided. These effects could have short-term and long-term indirect impacts on some individual operators. Alternative routes or trucking with shortened grazing seasons may be part of the options for the site in the Big Wood River. If so, then livestock operation costs would likely increase and forage availability would decrease. Any decrease in forage under Alternatives 4, 6, and 7 could indirectly affect the management or use of private lands surrounding the Forest. This is based on the likelihood that livestock would have to leave the Forest early, and would return to lands privately owned or leased by the permittees. An early return would increase forage demand for a longer duration, thus causing potential management adjustments or detrimental resource effects to the private or leased lands (Knize 1999).

Alternatives 1B, 2, 3, 5, and part of 7 would address weed spread by changing livestock management and mitigating the effects of spread at the site-specific level by modifying annual operating instructions and/or part III of the term grazing permit (FSH 2209.13, Sections 16.1-16.15).

Criteria	Alt. 1B	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7
Capable Acres	535,010	535,010	535,010	535,010	535,010	535,010	535,010
Recreation Conflict Acres Deducted	0	1,253	1,253	1,253	0	1,253	1,253
Bighorn Habitat Acres Deducted	0	0	66,506	66,506	0	66,506	66,506
Noxious Weed Acres Deducted	0	0	0	5,711	0	5,711	3,213
Total Deductions	0	1,253	67,759	73,470	0	73,470	70,972
Total Suitable Acres	535,010	533,757	467,251	461,540	535,010	461,540	464,038

 Table RR-10.
 Sawtooth NF Rangeland Suitability by Alternative

Acres Deducted Due To Agreements Implemented To Close Allotments Containing

Anadromous Fish Habitat - All the allotments considered under this category are on the Boise National Forest. Closing these allotments would eliminate the use of these areas for domestic livestock production under the term grazing permit system in the future. Areas capable of supporting livestock would be removed from the suitable grazing land base. Table RR-8 displays the acres associated with the allotments removed from suitable rangeland by alternative. Alternatives 1B, 4, and 7 would remove the 5,575 acres from the suitable rangeland base and close three allotments (See Current Condition Section). Alternatives 2, 3, 5 and 6 would not remove any acres. Closures would continue to have positive and potential negative effects on other resources. Riparian vegetative composition and vigor is expected to improve at a slightly faster rate with these deductions. Most of the suitable lands are associated with riparian areas, and valley bottom meadows. Ground cover would continue to increase on more mesic sites, providing for improved soil stability and long-term productivity, thereby reducing some potential sedimentation to anadromous and bull trout habitat. Hydric and riparian woody vegetation establishment and composition would continue to improve. Vegetation management options with livestock would not necessarily be precluded with the closing of allotments. Permits could still be issued for other purposes (FSM 2234, Livestock Use Permits), such as vegetation management, research, and livestock transportation and crossing access. However, the closures would have a negative indirect effect on livestock management and forage availability. Closing the allotments would reduce 2,265 head months of permitted use. It would also potentially reduce management flexibility for sustaining livestock productivity by eliminating allotments that could be used to lower overall Forest allotment stocking.

### **Rangeland Vegetation Response to Grazing**

The MPCs were sorted into two groups (More Restrictive and Less Restrictive) based on their approach to grazing management and their likely effects. The extent any one group is applied across the landscape varies by alternative. These alternative variations may indirectly affect the number of allotments by implementing potentially more constraining or intensive management.

Under the current term grazing permit system, authorized seasons of use and livestock numbers have generated a range of 363,116 to 543,742 head months of livestock grazing annually on the three Forests in recent years (Alternative 1B). The determination of authorized type and class of livestock, the number of head, and the season of use is analyzed at the allotment or site-specific decision level where grazing principles can be best judged. The extent that Forest Plan MPCs management direction (e.g., for protection of threatened and endangered species, improvement in water quality, reduction of soil surface erosion, improvement of aquatic and terrestrial wildlife

habitat, and enhancement of rangeland vegetation) are applied, in combination with compatible livestock management practices to a specific area, will most likely determine what changes are expected to the total number of head months. Changes or adjustments in authorized head months may or may not be necessary to achieve the change or restoration needed to reach desired conditions. A simple site-specific change in one of the grazing principles (frequency, intensity or opportunity) explained in the "Factors Affecting Plant Physiology and Succession" section above, may be more effective. Actual use changes will ultimately depend on implementation of forest plan direction in conjunction with site-specific allotment planning and term grazing permit administration. Some adjustments or changes are already occurring administratively within specific watersheds and Management Areas due to the implementation of recent annual operating instructions, management plans and biological opinion terms and conditions issued by U.S. Fish and Wildlife Service and NMFS in compliance with the Endangered Species Act.

However, the concept of suitable rangelands within Less and More Restrictive MPC groupings (See Effects by Management Prescription Category section) does provide an indicator to the extent of potential adjustments in head months and authorized use for each alternative, and this concept also help defines the range of alternatives more effectively. Each alternative and its associated mix of MPCs, particularly those in the More Restrictive group, will likely have some influence on indirect short-term and long-term effects to head months. The different proportions and variations between alternatives provides a more important reference rather than what the actual numbers are. Also, the indirect effects ultimately translate into possible changes to livestock herd management, increased range improvement construction and maintenance costs, general allotment management costs, changes in seasons of use, and numbers of livestock at the site-specific level. Table RR-11 displays the amount of suitable rangeland acres occurring within grazing with Less Restrictive and More Restrictive prescriptions. This table also is a good depiction of the potential effects from the Forest Plan alternatives.

Forest	MPC Grouping	Alt. 1B	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7
Boise	More restrictive	26,000	40,020	62,180	232,180	11,250	113,380	32,430
	Less restrictive	372,390	326,340	304,180	128,600	387,140	252,980	328,360
Payette	More restrictive	11,360	19,120	59,630	206,120	16,560	79,590	62,080
	Less restrictive	215,720	207,960	152,120	5,640	210,520	132,160	165,000
Sawtooth	More restrictive	36,950	82,850	94,680	255,560	7,090	271,580	116,370
	Less restrictive	498,060	450,910	372,570	205,980	527,920	189,960	347,670
Ecogroup Totals	More restrictive	74,310	141,990	216,490	693,860*	34,900	364,550	210,880
	Less restrictive	1,086,170	985,210	828,870	340,220	1,125,580	575,100	841,030

Table RR-11.	Suitable Range	and Acres With	Less Restrictive	and More Restrictive MPC	Cs
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\*Bold lettering indicates whether largest proportion of acreages occurs in either More Restrictive or Less Restrictive category.

With the exception of Alternative 4, the variation between the alternative's different MPC groupings and their effect on domestic sheep would not be expected to vary the head months greatly for the Boise and Payette Forests. However, the Sawtooth National Forest, mostly in the northern portion, has greater variations, due to the wider range of MPC differences between the

alternatives. The differences reflect changes in alternative standards and guidelines for grazing capacity determinations, the emphasis on other resource values, specific resource protection measures, and utilization standards. The changes do not necessarily reflect an "across the Forest" effect. The greatest potential changes to cattle pasture seasons of use, numbers of livestock, head months and management costs across the three Forests would most likely be associated with Alternative 4 and Alternative 6 (Sawtooth N.F. only). Changes would be due to the likelihood of an increased number of standards, mostly relating to grazing *intensity* (see Grazing Factors Affecting Plant Physiology and Succession). The intent of these standards would be to ensure greater and faster recovery of upland and riparian communities across a broader extent of the Forests' landscapes (See Table RR-11). Alternative 6 reflects the next greatest change, although it is significantly less than Alternative 4. The indirect effects of this alternative would be similar to Alternative 4, but would be more confined to specific watersheds or management areas where threatened and endangered aquatic species habitat exists. Individual and community effects would depend on their connection to these watersheds or management areas. Alternative 3 and 7 are fairly similar but would have a smaller scale of effects. Alternatives 1B and 5 are relatively comparable in their outcomes and would produce the least amount of change over time. However, additional and more range-related investments and structural mitigations by the permittees and Forest Service would likely be needed under these two alternatives in order to sustain forage levels. As a result, more demands would likely occur on permittee and Forest budgets, which are already strained (see Budget Allocations, in the Current Condition section).

As stated earlier, direction for all alternatives has been developed to maintain or improve rangeland conditions on National Forest administered lands. However, the rates of improvement and the number of practices available for application may vary depending on specific Management Area direction and emphasis. In most situations, riparian resource improvement may have slightly higher short-term rates of recovery for Alternatives 4 and 6. However, those management areas with low-elevation, arid and semi-arid upland vegetation types that contain the More Restrictive MPC groupings will likely see some initial surges in riparian recovery followed by slower recovery, due to upland influences on instream and channel processes.

### **Cumulative Effects**

Many ranchers depend on allotments administered by the Forest Service, Bureau of Land Management, and State of Idaho Department of Lands to provide a portion of their year-round grazing operations. The three Ecogroup Forests will continue to support many viable livestock operations. Overall, a slight decline in the demand for livestock grazing can be expected over the life of this plan (short term), as private land development, higher property values, and conflicts between livestock operations and recreation uses increase in the more urban areas close to the Forests. This decline could lead to a slight decline in the desirability and feasibility of some allotments to be used for livestock production.

Over the last two decades, the Forests have seen a decline in the amount of forage authorized under term grazing permits, due to several reasons. This trend is expected to continue, but at a slower rate during the short term. Livestock operation costs are expected to continue rising, and livestock market price fluctuations—in what has become an international market—will continue

to occur. As result, operation economies of scale will become more important. The number of small livestock operators and permittees will become fewer in number, as base properties or livestock are sold for financial reasons. This will contribute to the current declining trend for ranches. Over 40 years, the number of ranches in the west has dropped 56 percent, from 2.3 million to one million (Slivka and Barker 2002). The number of permittees on the three Forests will become fewer with this likely trend. The remaining permittees will have larger livestock holdings and greater numbers of permitted livestock. The combining of some allotments will occur as a part of this process, thus increasing the number of pastures available for use during the grazing season. This situation will allow for greater seasonal management flexibility and shorter pasture durations, both of which will lead to improved grazing opportunity and frequency (See *Effects Common to All Alternatives*, above). If sagebrush treatment occurs at the necessary levels identified in the Vegetation Diversity section, forest plan management direction will lead to improved rangeland conditions and a stable and sustainable level of forage production under all alternatives. Otherwise, livestock forage production can expect further declines with the implementation of Forest-wide utilization standards and continued declines in sagebrush understory vegetation.

As ranches are sold and subdivided, there will continue to be a net loss of open space that contributes to an existing annual western states land consumption growth rate of 3.6% (Christensen 2002). The demand for subdivided land is not expected to decrease in the short and long term (see the expected population growth rates for this region during the next two decades in the Socio-Economic section of this chapter). The subdividing of lands will likely continue to occur in the short term for Blaine and Ada Counties. Valley County could experience this situation also, depending on the level of resort, recreation, and second home growth experienced. Adams, Camas, Boise, Gem and Elmore Counties may experience similar but lower growth rate conditions in the long term. In some cases, a loss of big-game winter and spring range may occur, particularly in Ada, Blaine, Elmore, and Gem counties, resulting in marginal winter habitat being used more frequently. This loss may lead to increases in localized competition between livestock and wildlife. Also, overall plant and animal diversity on private ownership would be expected to decline with the reduction of open space (Christensen 2002, Knight 2003, McDonald 2003, Maestas et al. 2002, Maestas et al. 2003, Mitchell et al. 2002, Odel and Knight 2001). Research in Colorado, Montana, and New Mexico has demonstrated that the presence of certain species of wildlife and plants decrease, and invasive plant species increase, with fragmentation of land ownership into 40 acre parcels or less (see Rangeland Resources Technical Report No. 3 for more detailed information). An indirect long-term consequence of this trend may be localized areas of reduced grazing *opportunity* and *frequency*.