

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 INTRODUCTION

This chapter addresses the likely consequences, both beneficial and adverse, to the natural and human environments in the King Range that could result from implementing the alternatives described in Chapter 3. These include short-term and long-term effects, direct and indirect effects, and cumulative effects. Duration, intensity (or magnitude), and context (local, regional, or national effects) of impacts are interpreted where possible. Mitigation measures designed to avoid or reduce impacts were incorporated into the management alternatives, so impacts in this chapter are considered unavoidable and would result from implementing the management actions and mitigation. If impacts are not discussed, analysis has indicated either that none would occur or that their magnitude would be negligible. Only negligible, if any, impacts have been identified for geology and soils, prime and unique farmlands, hazardous materials, lands and realty, interpretation and education, public safety, and waste management. Therefore, these resources are not discussed as stand-alone resource topics. No specific projects are proposed that would have negative impacts on floodplains or wetlands. Individual watershed restoration activities and other projects that affect wetlands/floodplains would undergo a site-specific permitting/NEPA analysis. Because all on-the-ground actions will be subject to a Visual Resources contrast assessment to ensure that they meet the objectives of the Visual Resources Class where they are located, there are also no impacts identified at this time for visual resources. It has been determined that the plan will not have a direct or adverse effect on Wild and Scenic River values, and is therefore in compliance with Section 7 of the Wild and Scenic Rivers Act (Public Law 90-542 and amendments thereto). Thus, Wild and Scenic Rivers values will be discussed only in relation to the rivers/streams studied for eligibility and suitability in the plan. This plan will undergo a specific review by the California Coastal Commission to determine consistency with the California Coastal Act.

4.1.1 Methodology

Impact analyses and conclusions are based on interdisciplinary team knowledge of resources and the project area, reviews of existing literature, and information provided by experts in the BLM and other agencies. The analyses identify both enhancing and improving effects to a resource from a management action, and actions with potential to degrade a resource. Any impacts described in this section are based on the conceptual plan of the alternatives under consideration as described in Chapter 3, and the baseline used for projecting impacts is the current condition or situation described in Chapter 2. The management alternatives have been configured to maximize benefits and minimize adverse effects on both ecosystem function and the human environment. Effects are quantified where possible. In the absence of quantitative data, best professional judgment prevailed; impacts are sometimes described using ranges of potential effects or in qualitative terms, where appropriate.

4.1.2 Impact Terminology

Terms referring to impact intensity, context, and duration are used in the effects analysis. Unless otherwise stated, the standard definitions for these terms are as follows:

- **Negligible:** the impact is at the lower level of detection; there would be no measurable change.

- **Minor:** the impact is slight but detectable; there would be a small change.
- **Moderate:** the impact is readily apparent; there would be a measurable change that could result in a small but permanent change.
- **Major:** the impact is large; there would be a highly noticeable, long-term, or permanent measurable change.
- **Localized impact:** the impact would occur in a specific site or area. When comparing changes to existing conditions, the impacts would be detectable only in the localized area.
- **Short-term effect:** the effect would occur only during or immediately after implementation of the alternative.
- **Long-term effect:** the effect could occur for an extended period after implementation of the alternative. The effect could last several years or more.

4.1.3 Cumulative Impacts

NEPA requires evaluation of a proposed action's potential to contribute to "cumulative" environmental impacts. A cumulative impact is defined as:

The impact on the environment which results from the incremental impact of the action when added to other past, present, or reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Cumulative impacts can result from similar projects or actions, as well as from projects or actions that have similar impacts (40 CFR 1508.7).

In this case, similar actions external to the King Range could include recreation developments in surrounding State Parks, watershed restoration projects conducted by non-profit groups in other parts of the Mattole, or county plans that allow population growth that would increase traffic levels and visitation.

The objective of cumulative impact analysis is to evaluate the significance of the proposed action's contribution to cumulative environmental impacts. It is accomplished in three steps:

- Step 1: Identify the cumulative impacts study area for each resource evaluated. Unless otherwise indicated, the cumulative impacts study area covers the King Range planning area plus the remainder of the Mattole watershed.
- Step 2: Identify and describe past, present, and reasonably foreseeable future actions in the cumulative impact study area that are similar to the proposed action or have substantial impacts to which the proposed action would contribute.
- Step 3: Evaluate the potential for the proposed action to have a substantial contribution to cumulative environmental impacts with the potential to significantly affect the environment.

The timeframe for the cumulative impact analysis begins at the anticipated time that this RMP will first take effect, in 2005, and extends for the twenty-year life of the plan to 2025. It includes existing conditions of the landscape, particularly alterations from past developments and uses of the land.

4.1.4 Chapter Organization

Because the BLM is not considering the alternatives as stand-alone scenarios, effects from different management actions under all alternatives are considered by the following resource topics:

- Social and Economic Conditions
- Cultural Resources
- Inventory Units and Study Areas (Wild and Scenic Rivers, wilderness characteristic inventory units, ACECs)
- Aquatic Ecosystems and Fisheries Resources (including water quantity and quality)
- Wildlife (including T&E Species)
- Terrestrial Ecosystems and Vegetation Resources (including noxious weeds and T&E Species)
- Forest Resources
- Grazing Resources
- Fire Management
- Transportation and Access
- Recreation
- Air Quality

For each resource, the possible effects from other resource management programs are described and analyzed. Within each section of the resource analysis, effects common to all alternatives are discussed first. Then effects from individual alternatives are described comparatively, to clarify differences between the alternative approaches, and cumulative impacts are considered; where no cumulative impacts are stated, they are considered to be negligible or nonexistent.

4.2 IMPACTS TO SOCIAL AND ECONOMIC CONDITIONS

Under all of the alternatives, impacts to social and economic conditions could result from a wide range of management decisions. The range of potentially affected resources and conditions is extensive; however, only impacts to a few of these resources may be major: two social (potential conflicts between recreationists and local residents, and impacts on ranchers related to the grazing impacts of one of the alternatives), and one economic (income and employment effects on affected ranchers). The socioeconomic conditions that are the focus of this evaluation include: potential employment/job and income effects on affected businesses and the local and regional economies; effects on the fiscal resources of local governments; and changes in the demand for local public services (i.e., law enforcement, fire protection, and search and rescue).

Many human impacts cannot be measured in economic terms, and are considered as social impacts. These include detractions from existing lifestyles, sense of place, community values, and unfair or unjust impacts or burdens on minority and low income populations (environmental justice).

4.2.1 Impacts to Social and Economic Conditions from Visual Resource Management

The Visual Resource Management (VRM) system would be implemented under all of the alternatives, including the completion of visual resource contrast ratings for existing roads and facilities and proposed projects, as well as an inventory of existing and potential key scenic vista points. Protection of scenic qualities of the region would be further enhanced by coordinating with local management agencies to ensure that coastal developments do not detract from the scenic integrity of the area. Similarly, all new site developments within the KRNCA will be designed and located so that they do not detract from the coastal bluff viewshed.

By helping preserve the scenic quality of the region through coordinated management efforts, all of the alternatives would provide moderate, long-term beneficial impacts to local residents and visitors alike. In particular, locals who personally identify with the rugged landscape are likely to experience a minor to moderate, positive impact from the continued protection of unobstructed views. There would also be beneficial impacts to fiscal resources in the County, associated with minor increases in property tax revenue resulting from amenity values positively influencing local property values. These amenity values are associated with a property's proximity to a significant protected open space resource. Those with view lots or homes would enjoy major positive impacts, as open space vistas on the California coastline continue to become a rarer commodity in the future. The visual management policies described above are not expected to lead to employment, income, or public service effects.

Protection of the Lost Coast visual resources of a naturally appearing coastline is also central to the identity and sense of place of local and regional residents. Thus increased protection of the visual resources will have a moderate to major positive social impact.

4.2.2 Impacts to Social and Economic Conditions from Cultural Resources Management

Under Alternatives A and B, there would be no change to existing levels of cultural and historic resource management, so the only impact is likely to be a continuation of the minor, beneficial social impact to people who personally identify with the cultures and/or history represented by these types of resources. Alternatives C and D include policies to increase monitoring and site patrols for additional protection of cultural and historic resources in all three management zones. Such policies would place additional demand on BLM staff that provide monitoring and patrol services. Since the BLM plans on using its staff to meet future monitoring and site patrol needs at KRNCA, there would be no additional demands placed on local agencies for these services.

4.2.3 Impacts to Social and Economic Conditions from Lands and Realty

The acquisition of lands throughout the KRNCA area would continue under a "willing-seller" policy under Alternatives A and D, whereby lands and interests determined to be desirable for consolidation to facilitate management may be acquired from local property owners that have demonstrated an interest to sell their property. If private properties are acquired, thereby removing them from County property tax

rolls, lands and realty practices implemented by the BLM under Alternatives A and D have the potential to negatively affect County revenues if payments in lieu of taxes (PILT) payments are not sufficient or available to compensate the affected jurisdictions. The extent of future property acquisitions is expected to have minor impacts when viewed on a county-wide basis. Therefore, this is considered a potentially minor, long-term, and adverse impact to the fiscal resources of Humboldt County, with negligible impacts to Mendocino County due to the small amount of KRNCA acreage in the county.

Under Alternatives B and C, new policies would be implemented that may restrict the amount of future land acquisitions. No lands would be acquired in the Residential Zone under Alternative B unless specifically proposed by the potentially affected local government (i.e., Humboldt and/or Mendocino County). Under Alternative C, the BLM could propose property acquisitions in the Residential Zone, but would work with affected local governments and local community associations regarding such acquisitions. Nevertheless, under these alternatives, there is the potential for additional land acquisitions by the BLM over time, which would change the existing balance of public and private lands in the project area. Such acquisitions would be a minor, long-term and adverse impact to the fiscal resources of local agencies; however, the potential for such impacts under Alternatives B and C is less than under Alternatives A and D, with the lowest potential for property acquisition occurring under Alternative B.

Any fiscal impacts would likely be offset by property tax revenue increases as property values near open-space areas generally increase over time. Local land trusts and other collaborative organizations could also experience a minor to moderate, long-term, adverse impact if the BLM's flexibility in land acquisition is limited. Some local minor social impacts could occur as less rural private land would be available for home site development in the immediate vicinity of acquisition areas.

In addition, lands and realty practices may affect the quantity, location, and type of rights-of-way (ROW) permitted within the KRNCA. Under Alternatives A and D, applications for all types of new rights-of-way in all management zones will be considered. As a result, additional ROWs may be located in the project area in the future relative to existing conditions. Because these proposed ROWs may include features such as above-ground utility and communication facilities, there is the potential to adversely affect visual resources, which in turn may result in a minor, long-term, and adverse effect on property values. By accommodating such ROWs, the alternatives would continue to provide lower-cost infrastructure options for local utilities that can result in beneficial impacts to local businesses and thus the local economy; however, because this does not represent a change from existing conditions, no impact is anticipated. Alternatives B and C would make Backcountry Zone an exclusion area for new rights-of-way and/or permits, and utility rights-of-way would be restricted to underground locations to preserve aesthetic values. This action would cause no associated adverse effects on property values as described above, but there could be indirect costs borne by utility companies that would either have to re-route facilities or implement higher-cost construction techniques for underground installation. This could result in minor, long-term, and adverse impacts to local utilities and indirect impacts to the local economy.

4.2.4 Impacts to Social and Economic Conditions from Inventory Units and Study Areas

Socioeconomic impacts associated with inventory units and study areas are related to potential changes in income and employment opportunities and local property values. Under Alternative A, there would be

no change in the quantity of land or rivers receiving special protection; therefore, there is no potential for related socioeconomic impacts under this alternative.

Under Alternatives B, C, and D, there would be additional lands identified as having wilderness characteristics, and rivers identified as suitable for Wild and Scenic River designation. Under Alternatives C and D, the Mill Creek area would be designated as an ACEC. The most areas receiving special protection would occur under Alternative B, less would be identified under Alternative C, and the least amount of acreage/areas would occur under Alternative D. However, little or none of the special forest product harvesting that occurs at the KRNCA takes place in the identified areas. Therefore, potential and negative income and employment effects are not expected. Some forest restoration and fuels projects would be foregone by the areas managed for wilderness characteristics under Alternatives B and C. This would reduce funding for local contracts and cooperative agreements to complete the work, resulting in minor, long-term, adverse economic impacts.

Formally identifying land and water areas as protected open space would likely generate amenity values to private properties in the local area. If this value is captured during property tax assessments, there is the potential for Alternatives B, C, and D to generate higher property tax revenues that would be realized by the local county. This is considered a minor, long-term, and beneficial impact to the fiscal resources of Humboldt and to a lesser degree Mendocino County.

4.2.5 Impacts to Social and Economic Conditions from Aquatic Ecosystems and Fisheries Management

All of the alternatives provide for some level of restoration activity for aquatic ecosystems, including up-slope sediment reduction, in-stream habitat enhancement, riparian silvicultural work, and monitoring measures. In addition, Alternatives A, C, and D include an estuary enhancement program. Many of these activities would be implemented in coordination with local watershed restoration groups. In the past this kind of work has been a major source of funding for these groups; from 1995-2003, roughly \$1.5 million was spent on restoration and monitoring. While there are no assurances that this level of funding would be maintained, it is possible. The funding of such local conservation programs would be a long-term, minor, and beneficial impact to the local economy. Such impacts would include temporary increases in income and employment enjoyed by involved individuals and organizations. Indirectly, this increase in income and associated spending by affected individuals and organizations would in turn result in negligible, but positive, impacts to fiscal resources (i.e., state and local sales tax revenues and state and federal income tax revenues). Positive economic impacts would be greatest under alternative D as this alternative would include the largest number of projects.

The communities that surround the King Range have established a serious commitment to restoring watersheds and salmon habitat, as evidenced by the multitude of local restoration groups in the area and their extensive efforts to improve nearby fisheries since the early 1980s (House 1999). Many personally identify with the health of area streams and take delight in seeing the anadromous fish making their annual migrations inland to spawn. Knowing that their work is supported and encouraged by the BLM would give local participants in these restoration groups an additional moderate, long-term, beneficial social impact.

4.2.6 Impacts to Social and Economic Conditions from Wildlife Management

None of the alternatives include wildlife management prescriptions that involve funding of local conservation groups or otherwise actions that would affect socioeconomic resources. The BLM is responsible for habitat management, not wildlife population management. Therefore, habitat improvement projects (e.g. old-growth forest, coastal prairie restoration) are the focus of wildlife management under this plan and impacts are discussed in those respective sections.

4.2.7 Impacts to Social and Economic Conditions from Terrestrial Ecosystems and Vegetation Management

Under all of the RMP alternatives, existing programs that utilize the services of local conservation organizations would continue to help control invasive plant species. The funding of such local programs would be an input to the local economy, thus leading to the same type of positive economic impacts summarized above in Section 4.2.5. However, relative to existing conditions (which already include programs to help manage invasive species), there would be no new impact to socioeconomic resources.

4.2.8 Impacts to Social and Economic Conditions from Forest Management

Forest management practices have the potential to positively affect socioeconomic resources by increasing the income of local contractors or conservation groups, and by causing the types of related and beneficial employment and fiscal resource effects described in Section 4.2.5. Alternatives C and D include silvicultural treatments that would be performed, where possible, by means of cooperative agreements, partnerships and contracts, with local communities or individuals. Salvage timber harvests also would be allowed. If local resources are used in implementing these policies, they would generate direct income and job effects realized by involved individuals, and secondary sales and income tax revenues earned by state and local governments. Because these effects represent enhancements to existing conditions, they are considered a minor, short-term, and beneficial impact to local socioeconomic resources. The regional fiscal impacts would also be positive and short-term, but negligible.

Alternatives A and B are not expected to cause the types of impacts described above because they do not include programs to involve local conservation groups or individuals in the implementation of silvicultural treatments, nor do they include policies calling for salvage timber harvests, which could use local contractors or conservation groups. Because this does not represent a change from current management conditions, no impact to socioeconomic resources would occur under these alternatives.

There is a great deal of community interest in development of a restoration-based forest products industry. Sustainable forest management is an important community value in the Mattole valley and Humboldt County. Therefore, the restoration activities proposed under the alternatives would have moderate positive social impacts.

4.2.9 Impacts to Social and Economic Conditions from Special Forest Products Management

The BLM would continue to issue permits for the collection of mushrooms, beargrass, floral trade species, and fuelwood under Alternative A, thus leading to a continuation of existing and positive economic impacts to harvesters, primarily in the form of income and employment effects that result from the harvest and selling of harvested products in the marketplace.

Under Alternative B, only personal collection permits would be issued for all special forest products, and collection would be restricted to the Frontcountry and Residential Zones; no commercial permits would be issued. As a result, this alternative has the potential to decrease the quantity of specialty forest products harvested from the KRNCA, which in turn, would directly result in lost revenues and job opportunities for harvesters. Since most KRNCA harvesters have other collection opportunities on other public lands in northwest California, this is considered a minor, long-term, and adverse impact to local harvesters. This minor impact would be mostly felt by the Laotian/Hmong communities who are the primary commercial mushroom permittees in the KRNCA. Secondary effects would include reductions in sales and income tax revenues realized by state, federal, and local governments, which is considered a negligible, long-term, and adverse fiscal resource impact.

Implementation of Alternatives C and D may also lead to some restriction of forest product harvesting. Here, issuance of commercial permits would be allowed, but the number of permits would depend on the availability of the resource and maintenance of sustainable populations. Therefore, the number of permits issued under these two alternatives would vary from year to year, but there exists the possibility of lower harvest quantities relative to existing conditions, which would result in harvesters potentially experiencing minor, long-term, and adverse income and employment effects. Fiscal resources may experience a negative but negligible impact.

4.2.10 Impacts to Social and Economic Conditions from Grazing Management

Alternatives A, C, and D would continue existing KRNCA grazing policies. (Note: these alternatives would change the Spanish Flat allotment boundary, but the number of AUMs/amount of grazing on the allotment would remain unaltered.) In addition, four inactive grazing allotments would be administratively changed from “available” to “unavailable” for grazings. The positive economic impacts associated with cattle ranching in the project area and existing conditions, namely income and job generation accrued to local ranching operations utilizing lands within the KRNCA, and to a lesser extent, secondary job, income and sales/income tax effects, would continue under these three alternatives.

Unlike the other alternatives, Alternative B would eliminate all livestock grazing from the KRNCA. The four active grazing allotments would be eliminated, and livestock grazing levels would be reduced from 2,050 AUMs per year to 0 AUMs. Consequently, the direct and indirect income, jobs, and sales/income tax effects that were attributed to cattle grazing activities would be completely lost. Based on the estimated economic value of cattle grazing in Humboldt County (see Chapter 2), the extent of this impact would range between a total of \$10,060–\$13,670 in lost annual income to local ranchers and \$51,140–\$69,470 in total lost annual expenditures that are circulated through the local economy (primarily in the agricultural services sector), which would lead to secondary income and employment effects. It is unclear what level of employment is directly attributable to cattle grazing at KRNCA. Assuming the affected

ranchers do not have readily available grazing alternatives available with grazing costs similar to those associated with their KRNCA allotments, elimination of cattle grazing under Alternative B would be a major, long-term and adverse impact, although quite localized, on the affected ranching businesses, their owners and employees. However, when evaluated from a regional perspective, in the context of the County's income/job base, this would be a negligible adverse impact from a cumulative standpoint. Yet, while the economic impact of vegetation management may be negligible, the cultural impact of eliminating grazing, which has been a tradition in this area since Euro-American settlement in the 1850s, would be negative.

4.2.11 Impacts to Social and Economic Conditions from Fire Management

Because Alternative A would continue existing policies to fully suppress all fires regardless of cause within all Management Zones, there would continue to be a demand for fire protection services from local and state agencies and volunteer fire departments that help the BLM fight fires. These full suppression policies could potentially result in a continuation of adverse fiscal impacts to the affected agencies and volunteer departments if the future demand for fire-fighting services cannot be met by current staffing levels and budgets. In contrast, full suppression policies would also lead to a continuation of beneficial income and employment impacts for paid fire-fighters. It should be noted that in addition to the fire management policies of the BLM, the future demand for fire-fighting services is also affected by BLM's vegetation and forest management policies, hard-to-predict weather events, hydrologic cycles and even climatic change over time. It should be noted that this alternative would not actively manage lands to reduce fuel loads which would potentially provide economic benefits associated with the reduced risk of large-scale fires that could damage personal property (e.g., homes). Because Alternative A would continue existing management programs, it would not lead to new socioeconomic impacts.

Alternative B would only include full fire suppression policies for the Residential Zone. This represents a change from existing conditions and policies where full fire suppression is practiced in all zones. As a result, there would be less demand for state and local fire protection-related services under this alternative relative to existing conditions. This would be a minor, long-term, beneficial impact to the fiscal resources of affected agencies and departments, and possibly a negative but minor income impact for some paid fire fighters who do not have seasonal or permanent jobs with such agencies as CDF. In addition, because Alternative B would actively manage fuel loads in all three management zones, it may reduce the risk of potential property-damaging fire events, thereby resulting in a moderate, long-term, and beneficial economic impact to nearby property owners.

Alternative C would also lead to fewer fire suppression activities than under existing conditions; only fires in the Residential and Frontcountry Zones would be fully suppressed. Therefore its socioeconomic impacts would be similar to those described for Alternative B above, with one exception; this alternative includes policies to explore opportunities for stewardship contracts with local organizations to meet hazardous fuel reduction goals. By contracting with local interests, this policy would generate minor but positive local income and job effects, and negligible but beneficial secondary sales and income tax effects. And similar to Alternative B, this alternative would result in moderate, long-term, and beneficial economic impacts associated with active fuel-load management techniques.

Lastly, Alternative D would continue full fire suppression in all zones, similar to existing policies and Alternative A. However, this alternative would also utilize prescribed fire methods to manage fuel load. As a result, there may be additional demand placed on local fire protection agencies and departments during prescribed burn events, but less demand for such services overall, due to less frequent wildfire events resulting from lower fuel loads. Similar to Alternative C, this alternative would also explore opportunities for stewardship contracts with local interests to meet goals of hazardous fuels reduction; therefore the impacts of this alternative would likely be similar to those discussed above for Alternative C. This alternative would also result in moderate, long-term, and beneficial economic impacts associated with active fuel-load management techniques.

4.2.12 Impacts to Social and Economic Conditions from Transportation and Access

Impacts associated with transportation and access policies would be based primarily on the need for road maintenance services. Road maintenance services are provided primarily by local contractors. Under Alternative A, there would be no change in the BLM's existing road infrastructure and use restrictions; therefore, the same level of demand for road maintenance services would continue, and there would be no impact to socioeconomic resources relative to existing conditions.

Alternative B would lead to more roads being closed to public access relative to existing conditions, which would result in less demand for road maintenance services. Therefore, the need for the use of local contractors for road maintenance services could decline, potentially resulting in related negative but minor income and employment effects (assuming such contractors can easily find other contracts). In addition, Windy Point Road is traditionally used by abalone divers and deer hunters, and Telegraph Road is used by deer hunters. Closure of these routes in Alternative B would result in moderate localized impacts to these users.

Under Alternatives C and D, more roads would be open and less restrictions in place relative to Alternative B. These conditions would generate the need for similar levels of road maintenance, some of which would likely be provided by local contractors, thereby resulting in related positive, minor, and long-term income and employment effects. This in turn would lead to negligible, long-term, and beneficial fiscal resource impacts.

4.2.13 Impacts to Social and Economic Conditions from Recreation

Future KRNCA recreation use has the potential to affect local and regional socioeconomic resources. Socioeconomic impacts would primarily be in the form of income and employment effects in sectors of the local and regional economies that serve recreation users. However, future recreation use could also affect the provision of certain services by government agencies, as well as their fiscal resources.

KRNCA recreation use was projected for existing conditions and each of the four RMP alternatives. Detailed information on the methodology and results of the recreation use projections are presented in Section 4.12.13.1. Projected recreation use at KRNCA over the planning period (through 2025) is summarized in Table 4-1.

Table 4-1: Recreation Use Projections (in Visitor Days)

ALTERNATIVE	PROJECTED VISITOR DAYS (2025) ¹	CHANGE IN VISITOR DAYS ²
Alternative A	169,925 (169,925 – 220,903)	25,109 (17.3%)
Alternative B	143,523 (143,523 – 186,580)	-1,293 (-0.9%)
Alternative C	162,858 (162,858 – 211,715)	18,042 (12.5%)
Alternative D	177,938 (177,938 – 231,319)	33,122 (22.9%)

¹ Numbers in parentheses represent range of recreation use projections.

² Represents absolute and percentage increase in recreation use relative to existing conditions.

Source: EDAW 2003

4.2.13.1 Potential Income and Employment Effects

The estimated total number of recreation visitor days (includes casual recreation use and Special Recreation Permits) at KRNCA through 2025 ranges between approximately 143,500 and 178,000 under the four project alternatives; this represents a decrease of roughly 1,300 visitor days under Alternative B at the low end and an increase of roughly 33,100 visitor days under Alternative D at the high end. In order to translate projected recreation use levels into potential income and employment effects associated with the alternatives, it was necessary to make several assumptions regarding future recreation use and spending. It is assumed that the same proportion of existing resident (11 percent) versus non-resident visitors (89 percent) would utilize the recreation resources at KRNCA in the future; there is no change in the participation rates across recreation activities relative to existing conditions; and the proportion of recreation spending “captured” by the local economy remains constant.

Based on these assumptions and following the methodology discussed in Section 4.12.13.1, total recreation expenditures were estimated for the four project alternatives. Table 4-2 summarizes direct recreation expenditures and associated income and job effects by alternative, as well as non-market/consumer surplus value estimates for recreation opportunities at KRNCA. It should be noted that a dollar value can also be placed on other types of environmental benefits associated with the KRNCA; however, doing so requires extensive surveys and other techniques that were not conducted for this analysis. The recreation-related non-market values presented in Table 4-2 are indicative of the value of some of these benefits using readily available study results.

Based on these direct expenditures, and using applicable recreation-based multipliers, recreation use at the KRNCA could generate about \$2.89 million in direct labor and proprietor income in the regional economy (i.e., primarily Humboldt County, and to a lesser extent Mendocino County) and could also directly support approximately 169 jobs under Alternative A; \$2.44 million and 142 jobs under Alternative B; \$2.77 million and 162 jobs under Alternative C; and \$3.03 million and 177 jobs under Alternative D. The total direct, indirect, and induced effect of these expenditures circulating through the regional economy could amount to approximately \$5.05 million in income and 232 jobs under Alternative A, \$4.26 million in income and 196 jobs under Alternative B, \$4.84 million in income and 222 jobs under

Alternative C, and \$5.28 million in income and 243 jobs under Alternative D. In addition, the estimated “willingness-to-pay” value, the value (or worth) of the experience to the recreationists, is estimated to range between \$3.69 million (Alternative B) and \$4.58 million (Alternative D) (all estimates are in 2000 dollars). Because the estimates of future recreation use at KRNCA represent the lower bound of the potential range of future use levels, the associated economic impacts presented above are conservative and could range higher as shown in Table 4-2.

Table 4-2: Potential Socioeconomic Effects from Projected KRNCA Recreation Use

ALTERNATIVE	DIRECT EXPENDITURES ^{1,2}	RELATED INCOME EFFECTS ^{1,2}		RELATED EMPLOYMENT EFFECTS (JOBS) ²		EXAMPLES OF NON-MARKET EFFECTS (Willingness-To-Pay for Recreation-Related Benefits) ^{1,2}
		DIRECT	TOTAL ³	DIRECT	TOTAL ³	
Alternative A	\$8.34 (\$8.34 - \$10.85)	\$2.89 (\$2.89 - \$3.76)	\$5.05 (\$5.05 - \$6.56)	168.6 (168.6 - 219.2)	232.0 (232.0 - 301.7)	\$4.37 (\$4.37 - \$5.68)
Alternative B	\$7.05 (\$7.05 - \$9.16)	\$2.44 (\$2.44 - \$3.17)	\$4.26 (\$4.26 - \$5.54)	142.4 (142.4 - 185.1)	196.0 (196.0 - 254.8)	\$3.69 (\$3.69 - \$4.80)
Alternative C	\$8.00 (\$8.00 - \$10.39)	\$2.77 (\$2.77 - \$3.60)	\$4.84 (\$4.84 - \$6.29)	161.6 (161.6 - 210.1)	222.4 (222.4 - 289.1)	\$4.19 (\$4.19 - \$5.44)
Alternative D	\$8.74 (\$8.74 - \$11.36)	\$3.03 (\$3.03 - \$3.94)	\$5.28 (\$5.28 - \$6.87)	176.6 (176.6 - 229.5)	243.0 (243.0 - 315.9)	\$4.58 (\$4.58 - \$5.95)

¹ Millions of dollars

² Numbers in parentheses represent range of results based on the range of recreation use projections.

³ Includes direct, indirect, and induced impacts.

Under existing conditions, it is estimated that recreation use at KRNCA results in about \$2.46 million in direct income and directly supports approximately 144 jobs; the total (i.e., direct, indirect, and induced) income and job effects are estimated to be \$4.30 million and 198, respectively. When analyzing the project’s socioeconomic impacts, it is important to evaluate the relative change between income and job effects associated with the project alternatives and existing conditions. All of the project alternatives, except Alternative B, are expected to result in an increase in recreation-induced income and jobs at 2025 relative to existing conditions, and thus, would benefit the local and regional economies. Alternative B, on the other hand, would result in lower income and jobs at 2025 relative to existing conditions, and thus, would adversely affect the local economy.

It is also important to consider the magnitude of the income and job effects in the context of the size of the economy which is primarily affected. Under Alternatives A, C, and D, the estimated maximum increase in total KRNCA recreation-induced income relative to existing conditions is \$0.98 million (Alternative D), which represents only 0.03 percent of Humboldt County’s total income base. Similarly, in terms of total jobs, the maximum increase is estimated to be about 45 jobs (also under Alternative D), which represents only 0.07 percent of Humboldt County’s total job base. Therefore, under these three alternatives, inputs to the regional economy from recreation spending associated with KRNCA are considered long-term and minor beneficial impacts. Similar beneficial impacts would be enjoyed by local business owners and their employees, and such impacts could be major depending on a number of

factors, including their specific location relative to visitor travel routes, how much of their existing business capacity is being utilized now, room for expansion, etc.

Alternative B would likely result in lower income and job effects relative to existing conditions. However, the decrease in the County's job and income base would be minimal. In fact, it is estimated that income levels would decline by only .001 percent and jobs would decline by only .003 percent. Because the projected recreation-induced income and job effects represent such a small portion of the regional economy under Alternative B, they would likely be negligible, long-term adverse impacts to the region.

4.2.13.2 Potential Public Services and Fiscal Resources Effects

In terms of public services and fiscal resources potentially affected by changes in KRNCA recreation use, public service-related effects would be related to the provision of law enforcement and search and rescue services. Affected agencies would be the county sheriff departments, BLM, the California Department of Forestry, and the U.S. Coast Guard. The future demand for such services, and therefore likelihood of related effects on these agencies, would be directly proportional to the estimated changes in recreation use shown in the far right column of Table 4-1 above. Alternatives A, C, and D would likely lead to an increase in the demand for law enforcement and search and rescue services, while Alternative B would likely result in a decline for such services.

The budgets/fiscal resources of these agencies also would likely be affected as KRNCA recreation use changes over time. The magnitude of these potential public service and fiscal impacts are very difficult to predict, given the wide range of service capacities and financial conditions of each potentially affected agency; however, based on the experience of local BLM staff, such impacts are not expected to be major.

The fiscal resources of local county governments would also be indirectly affected by future recreation use levels through sales and lodging taxes. Expenditures for recreation-related goods and services are subject to state sales taxes that are collected by the state and distributed to counties. For those recreationists who stay overnight when visiting KRNCA, lodging taxes are also collected at the county level. Because the proportion of total recreation expenditures for goods, services, and lodging is not known, it is not possible to quantify sales and lodging tax effects on the county's fiscal resource base. However, based on the projected recreation use estimates in Table 4-1 above, it can be concluded that tax revenues would likely increase under Alternatives A, C, and D, while declining under Alternative B. These tax revenue impacts would likely be relative to total county tax revenues.

4.2.13.3 Potential Non-Market/Consumer Surplus Effects

Table 4-2 also indicates that the consumer surplus value experienced by recreationists at KRNCA would likely be highest under Alternative D, followed by Alternatives A, C, and B. All the alternatives except Alternative B would result in higher consumer surplus values relative to existing conditions, and therefore, minor, long-term, and positive related impacts. Alternative B would result in lower consumer values, which would be considered a negligible, long-term, and adverse impact.

Minor negative impacts would occur to the rural isolated character of the communities surrounding the KRNCA, particularly for those residents who moved to the area to get away from mainstream society.

These would occur under Alternatives A, C, and D. However, with projected use increases these impacts are expected to be minor. Moderate positive social impacts would be realized by continued expansion of environmental education programs, especially to local school groups. Also, the increase in trails and other recreation opportunities would improve amenities for local residents to enjoy the outdoor resources in their backyards, by providing additional community green space.

4.2.14 Impacts to Social and Economic Conditions from Interpretation and Education

None of the interpretive and education prescriptions under any of the alternatives would cause impacts to social or economic resources.

4.2.15 Potential Cumulative Impacts to Social and Economic Conditions

4.2.15.1 Cumulative Impacts from Land Acquisition Program

BLM has acquired roughly 25,700 acres to date in the KRNCA since it was established in 1970. The present plan is calling for a much smaller BLM acquisition program, since most of the private lands within the KRNCA have already been acquired. Several other acquisition efforts are also ongoing within the Mattole Valley. These programs are in support of the “Redwoods-to-the-Sea” Corridor and Sanctuary Forest efforts, and are led by private conservation organizations. Future acquisitions by these entities are anticipated to be mostly in the form of conservation easements. Thus, the land transferred to public agency management will be minor. However, the acquisitions will still affect county tax revenues. These reductions in taxable properties will be partially offset by payments in lieu of taxes and increased property values on lands adjoining conservation easements, so the net impact is expected to be minor. Overall, it is anticipated that an additional 5-15,000 acres will be placed under easements or public ownership within the King Range and adjoining Mattole watershed within the next 25 years through the combined efforts of public agencies and land trusts. There are approximately 155,000 acres of private land in the Mattole watershed, so this level of public acquisition would have relatively minor impacts on the amount of private land in the region available for homesites and other private uses.

4.2.15.2 Impacts from Increased Visitation and Tourism

Humboldt County has been actively working in recent years to increase tourism, especially ecotourism. Under all alternatives, the King Range would continue to be a destination that attracts visitors to the region and contributes to the natural resource-based tourism economy of the “Lost Coast” and “Redwood Coast.” Communities such as Shelter Cove, Ferndale, and Garberville-Redway are expected to continue to promote the region as a recreation destination. Other recreation attractions in the area such as Sinkyone Wilderness State Park and Humboldt Redwoods State Park are not proposing major changes in management or development that would have dramatic cumulative impacts on visitation levels when combined with proposed actions in this plan. Therefore, cumulative changes in visitation levels to the region are expected to involve moderate increases throughout the life of the plan, mostly attributable to population growth and marketing efforts by community and regional tourism promotion organizations. These changes would result in moderate positive economic impacts to the region, and minor to moderate social impacts. The social impacts would be mixed positive and negative depending

on a specific individual's perspectives; for example, additional recreation amenities will be available to area residents enhancing their quality of life. However, increased tourism could detract from community character and cause crowding and other negative impacts.

4.3 IMPACTS TO CULTURAL RESOURCES

The basic cultural resource preservation goals are the same for all the alternatives and express the King Range's and the local community's desire to employ outreach, educational and interpretive efforts aimed at the protection and study of prehistoric and historic sites, features, and artifacts situated within the KRNCA. All of the alternatives (A through D) consist of policies that place a high priority on the preservation of cultural resources in the Backcountry, Frontcountry, and/or Residential Zones. The need for resource monitoring and cooperation with the local Native American community is also included as a significant element in these efforts.

4.3.1 Impacts to Cultural Resources from Visual Resources Management

Under all alternatives, existing policies would remain in place to maintain or strengthen current management levels of visual resource management (VRM), and the impacts on cultural resources would be negligible. In general, efforts at preserving visual resources can aid in the preservation of cultural resources. In particular, placing new construction away from the coastal bluff viewshed will aid in the protection of prehistoric and historic sites, features, and artifacts, which are frequently situated directly in coastal settings.

4.3.2 Impacts to Cultural Resources from Cultural Resources Management

All four alternatives (A through D) provide some level of protection for prehistoric and historic cultural resources within the KRNCA. In general, the effects of management programs on the resources themselves would result only in positive or "negligible" impacts. Protection of sites through physical means utilizing barriers, fences or erosion control methods and designation of grazing areas away from known sites, etc., would all aid in maintaining resource integrity and significance. Interpretive aids such as educational signs or printed materials for visitor use would enlighten the general public as to the presence of cultural resources and their vulnerability to damage and destruction through man-made or natural processes. Unfortunately, drawing visitor attention to significant cultural sites also raises their visibility and may increase the likelihood of intentional damage or destruction through looting.

Alternatives A and B maintain current cultural resource management programs and policies and contribute to reducing adverse impacts to prehistoric and historic resources in the KRNCA. In contrast to Alternatives A and B (focused on the Backcountry and Residential Zones), Alternatives C and D place equal priority on the preservation of cultural resources in all three zones (Backcountry, Frontcountry, and Residential). Alternative D offers the most proactive actions for documenting and protecting prehistoric and historic resources, including increased levels of resource monitoring, calls for surveys in the Frontcountry Zone in particular, production of a Regional Overview, development of resource stabilization projects, and nomination of King Range historic and prehistoric archaeological districts to the National Register of Historic Places (NRHP). The implementation of Alternative D would, out of all four alternatives, provide for the greatest levels of protection and management of cultural resources

within the KRNCA and would contribute greatly towards reducing adverse impacts to a moderate or negligible level.

4.3.3 Impacts to Cultural Resources from Lands and Realty

The acquisition of additional lands for administration by the KRNCA, particularly those located in the Shelter Cove area, could result in generally positive impacts on cultural resources. Under all alternatives, property purchases from willing landowners would serve to prevent residential or commercial development on those parcels. This could protect documented cultural resources by reducing or eliminating development activities in sensitive areas. In addition, land acquisition would contribute to the preservation of undocumented cultural resources that might exist on acquired parcels. Only a few acquisitions are expected in Shelter Cove, so these positive impacts would be minor.

4.3.4 Impacts to Cultural Resources from Inventory Units and Study Areas

All of the alternatives except Alternative A make some provision for management of parts of the area to protect wilderness characteristics, wild and scenic river values or as Areas of Critical Environmental Concern (ACEC). These areas can and do include significant cultural resources, and the recognition of the unique status of these locations provides for more intensive levels of management. As a result, archaeological materials in these areas would be under greater protection, constituting a minor, positive impact.

4.3.5 Impacts to Cultural Resources from Aquatic Ecosystems and Fisheries Management

All alternatives stress the importance of the ecological health of watersheds and watershed restoration efforts in cooperation with private landowners. Prehistoric resources in particular tend to be located close to perennial fresh water sources such as streams, springs, and wetlands. Efforts to preserve such areas could, by association, benefit documented and unrecorded cultural resources located at or near these well-watered areas. However, active restoration efforts could result in minor, moderate, or major adverse impacts to these same cultural resources if restoration plans include heavy vegetation removal and ground disturbing activities. Such disturbance would consist of localized impacts, particularly in locations such as the Mattole Estuary. Numerous documented prehistoric sites are located within and adjacent to this area and could be vulnerable to grading, exotic plant removal and habitat restoration programs. However, Section 106 of the National Historic Preservation Act requires that all possible ground-disturbing projects be reviewed, with a site visit, by a qualified archeologist. Compliance with this regulation should ensure that no cultural resources or sacred places are disturbed, thus resulting no adverse impacts to cultural resources from aquatic ecosystems and fisheries management.

4.3.6 Impacts to Cultural Resources from Wildlife Management

Impacts to documented or unrecorded cultural resources resulting from the maintenance and enhancement of wildlife populations and habitats in the KRNCA are likely to be negligible under all alternatives. Preservation of amphibian habitats, which would include wetland areas, could have positive

impacts for cultural resources by protecting watered areas more sensitive for containing prehistoric archaeological materials.

4.3.7 Impacts to Cultural Resources from Terrestrial Ecosystems and Vegetation Management

Under all alternatives, the maintenance of coastal dune systems and the eradication of invasive floral species are stressed. In general, the utilization of prescribed burns, the replication of historic fire regimes, and native grass enhancement programs would have negligible, localized impacts on cultural resources. However, manual tree removal as included in Alternative B, could impact subsurface archaeological deposits through the disturbance of soil strata, resulting in minor to moderate impacts with long term effects. Archaeological clearances would be completed prior to any projects to ensure that significant sites are not harmed. Prescribed burns, if not properly controlled, could result in moderate to major impacts to standing historic structures and buildings. This would be of particular concern in areas near historic ranching operations, such as the Chambers Ranch. Prescribed burns would only be done by a qualified “burn boss” working in conjunction with a cultural specialist.

4.3.8 Impacts to Cultural Resources from Forest Management

Alternatives A, B, and C possess little potential for impacting cultural resources in the KRNCA. Tree removal would be limited under Alternatives A, B, and C; under B, no salvage timber harvests would be performed following stand replacement fires, nor would commercial logging be permitted. Such limited timber harvesting could result in negligible or minor impacts to documented and unrecorded cultural resources. Alternative D would allow the reopening of old logging roads and the construction of temporary access roads for timber salvage operations. Due to the ground disturbance involved in road construction and eventual removal under Alternative D, a greater possibility exists that archaeological sites and materials would be subjected to impacts. Archaeological clearances conducted to comply with Section 106 of the NHPA should prevent such disturbances from occurring.

4.3.9 Impacts to Cultural Resources from Special Forest Products Management

Alternative A recognizes the need for preservation of beargrass patches and restricts impacts to this species through the issuance of cultural use collection permits for the Native American community. Alternative C takes a more proactive approach toward expanding beargrass habitat with the establishment of Native American Beargrass Collection Unit(s). Such programs and efforts would have negligible or positive, long term impacts on this particular natural/cultural resource. Use of other special forest products such as the collection of species utilized in the floral trade, fuel wood from firebreak creation, or the personal collection of mushrooms would have negligible impacts on cultural resources.

4.3.10 Impacts to Cultural Resources from Grazing Management

Four active ranching operations currently exist within the KRNCA, some elements of which constitute cultural resources, such as the Chambers Ranch complex. Ongoing livestock grazing has the potential to result in minor to moderate, long-term impacts on significant cultural resource locations; all four alternatives address these impacts. Alternative B would remove all livestock grazing in the King Range,

thereby eliminating any potential impacts to cultural resources, including documented prehistoric and historic sites. Alternatives A, C, and D redefine the Spanish Flat and Randall Creek grazing allotments to protect documented cultural resources. These restrictions would aid in the elimination or minimization of disturbances to archaeological materials and could result in negligible or minor beneficial impacts.

4.3.11 Impacts to Cultural Resources from Fire Management

Alternatives A and D would continue existing policies of full suppression of all fires, regardless of cause, within all three management zones. Alternative B allows natural fires in the Backcountry and Frontcountry Zones to burn, which increases the risk for impacts to prehistoric or historic sites, features, or artifacts. However, any burn plans would include contingencies to protect cultural features, so these impacts are expected to be minor. Alternative C also allows natural wildfires to burn in the Backcountry Zone, but not in the Frontcountry, representing a slight decrease in potential impact on cultural resources.

Alternatives C and D constitute the most aggressive alternatives in terms of fuel management and provide for mechanical fuel reduction methods. If such methods involve the utilization of heavy equipment such as trucks, skidders, earth movers, etc., there is an increased possibility that cultural resources would be subjected to major impacts and long-term effects from fire management practices in all KRNCA zones. However, these impacts could be outbalanced by the overall benefit to cultural resources of decreasing the risk of catastrophic fires and potential damage from fire suppression operations in the King Range, through fuels management that encourages a more natural role for fire in the ecosystem.

4.3.12 Impacts to Cultural Resources from Transportation and Access

All alternatives would continue existing transportation and access policies on the existing road system, with negligible impacts on documented and unrecorded cultural resources. The beach corridor and other locations with sensitive cultural sites would remain closed to vehicle use.

4.3.13 Impacts to Cultural Resources from Recreation

Alternatives B, C, and D all impose more limits on recreation use of the KRNCA than Alternative A. As recreation use can present general levels of adverse impacts to cultural resources, increased limits should result in fewer and less severe impacts to prehistoric and historic sites. This would be particularly relevant with Alternatives C and D which allow increased Backcountry (including coastal area) recreation use. Most identified cultural resources are situated within the Backcountry and, as a result, could be subjected to moderate impacts under Alternatives C and D; because most popular camping places in the Backcountry are located where prehistoric people had seasonal encampments, increases in recreation use could have an adverse effect on cultural resources. However, all of the alternatives make provisions for the placement of barriers and fences, the designation of “group avoidance areas,” and additional management of recreation uses in order to protect resources and reduce impacts. Implementation of recreation management programs discussed in all alternatives would contribute towards reducing impacts from projected increases in the intensity of recreation use of the KRNCA to negligible or minor levels.

4.3.14 Impacts to Cultural Resources from Interpretation and Education

All of the alternatives would continue existing policies and would have minor impact on cultural resources within the KRNCA. By continuing to expand the interpretive program to incorporate cultural resource programs, a positive impact would be realized by increasing public appreciation and protection of the sites.

4.3.15 Potential Cumulative Impacts to Cultural Resources

The cumulative impact study area for cultural resources covers all of Humboldt County. The RMP contributes to area-wide efforts to protect and promote cultural resources. In particular, many areas within the County that lie outside of the KRNCA are privately owned, where cultural resource protections are not legally required, so the King Range contributes a disproportionately large amount to protection of cultural resources in the area. This represents a moderate positive cumulative impact.

4.4 IMPACTS TO INVENTORY UNITS AND STUDY AREAS (WILD AND SCENIC RIVERS, WILDERNESS CHARACTERISTIC INVENTORY UNITS, ACECS)

This section focuses on the affects that management actions would have on the suitability of the lands for a respective designation or protective management, and not on the impacts to the resource values themselves. For example, all of the eligible Wild and Scenic River segments have anadromous fisheries as the Outstandingly Remarkable values that contribute to their eligibility. The impact assessment in this section does not identify impacts from the various programs to the anadromous fisheries themselves (these are discussed in the Aquatic Ecosystem and Fisheries section), but only their impacts on the eligibility/suitability on the river for the designation. In most cases, the alternatives have minimal impacts on the inventory units and study areas. Also, none of the alternatives include actions that would result in an irreversible or irretrievable impact, i.e., an impact that would make a particular inventory unit or study area unsuitable for consideration for protective management under later land use planning efforts.

4.4.1 Impacts to Inventory Units and Study Areas from Visual Resources Management

Implementation of the visual resources management program would not impact the inventory units and study areas.

4.4.2 Impacts to Inventory Units and Study Areas from Cultural Resources Management

No impacts would occur to the inventory units and study areas from cultural resources management.

4.4.3 Impacts to Inventory Units and Study Areas from Lands and Realty

No impacts would occur to the inventory units or study areas from the lands and realty program.

4.4.4 Impacts to Inventory Units and Study Areas from Inventory Units and Study Areas

No impacts would occur.

4.4.5 Impacts to Inventory Units and Study Areas from Aquatic Ecosystems and Fisheries Management

No impacts would occur.

4.4.6 Impacts to Inventory Units and Study Areas from Wildlife Management

No impacts would occur.

4.4.7 Impacts to Inventory Units and Study Areas from Terrestrial Ecosystems and Vegetation Management

No impacts would occur.

4.4.8 Impacts to Inventory Units and Study Areas from Forest Management

Minor to moderate short-term impacts would occur to wilderness characteristic inventory subunits 1 H and 1 I under Alternatives C and D. Proposed forest and watershed restoration activities in parts of these units impacted from past timber harvesting would reduce naturalness and opportunities for solitude during and for a time after the operational period. However, these projects would result in long-term beneficial impacts by improving the ecological character of the units, and returning them to a forest structure that more closely approximates natural conditions.

4.4.9 Impacts to Inventory Units and Study Areas from Special Forest Products Management

No or negligible impacts would occur.

4.4.10 Impacts to Inventory Units and Study Areas from Grazing Management

No or negligible impacts would occur.

4.4.11 Impacts to Inventory Units and Study Areas from Fire Management

Minor to moderate short-term impacts would occur to the wilderness inventory subunits from fuels management projects that could occur in the Frontcountry Zone in Alternatives B, C, and D. However,

in the long-term, these projects will serve to create a landscape that more closely approximates natural conditions and is more resistant to catastrophic wildfire. This will serve to increase the naturalness of the units in the long-term.

4.4.12 Impacts to Inventory Units and Study Areas from Transportation and Access Management

No impacts would occur.

4.4.13 Cumulative Impacts from Inventory Units and Study Areas

In terms of cumulative impacts, with a study area identified as the North Coast region, these inventory units and study areas contribute to systems of protected lands already in place. For example, a number of wilderness areas have already been designated within fifty miles of the KRNCA, including the North Fork Wilderness, the Yolla Bolly Middle-Eel Wilderness, and Humboldt Redwoods State Park Wilderness. However, the King Range and adjoining Sinkyone Wilderness State Park are the only coastal lands with wilderness characteristics. A number of BLM Wilderness Study Areas are also within fifty miles of the King Range. There is one other ACEC/RNA in the Mattole Valley (The Gilham Butte ACEC/RNA). This area complements the old growth forest and watershed protection of the Mill Creek area, resulting in a positive cumulative impact. The cumulative impacts of Wild and Scenic River designation (Regional Summary of Rivers) are described in Appendix C.

4.5 IMPACTS TO AQUATIC ECOSYSTEMS AND FISHERIES RESOURCES

The description of potential impacts to fisheries resources described below is based on the assumption that allowable uses that could potentially affect aquatic habitat in the KNRCA will be guided by determining consistency with aquatic and fisheries goals, management objectives and Aquatic Standards and Guidelines (Appendix G), which are specific to ongoing or future proposed land management activities. Chapter 3 described the aquatic and fisheries goals and objectives, which are common to all alternatives. Riparian Reserves (RRs) include lands along streams and associated areas necessary for maintaining hydrologic, geomorphic, and ecological processes. The fisheries goals and objectives, along with the Aquatic Standards and Guidelines, limit or exclude land use activities under all alternatives so that riparian and aquatic habitat is maintained and restored. The goals, objectives, standards and guidelines, and RRs would be used to screen all future projects under all alternatives and were designed to operate together to maintain productivity and resiliency of riparian and aquatic ecosystems and the species that depend on them.

The alternatives contain actions that are ongoing within the KRNCA (existing grazing management, fuels reduction actions, road maintenance actions, existing recreation facilities, timber stand improvement actions, etc.) but may be modified by the alternatives. Ongoing actions have already undergone Endangered Species Act Section 7 consultation with NOAA Fisheries and have been analyzed on a programmatic or project basis. Thus, additional direction relevant to protection of riparian and aquatic habitat in the KRNCA includes, but is not limited to, measures contained in existing biological assessments and ESA consultation documents specific to these ongoing actions. If any of the proposed activities discussed under the alternatives are outside of the scope of existing Section 7 consultations,

and/or if an activity could affect a listed species but has not undergone Section 7 consultation, that activity would be subject to Section 7 consultation prior to implementation.

4.5.1 Impacts to Aquatic Ecosystems and Fisheries Resources from Visual Resources Management

All VRM actions and inventory procedures would need to move conditions of riparian and aquatic ecosystems toward attainment of the fisheries goals and objectives. Examples of management actions that would reduce existing visual impacts were given in Section 3.4.2.3 and included painting of culverts and removing road berms. These types of actions have the potential for adverse impacts to aquatic habitats and fisheries if not conducted properly. However, because all proposed VRM actions would be screened for consistency with the aquatic goals and objectives prior to implementation, and because these were designed to prevent degradation of riparian and aquatic habitat, there would be no impact to fisheries from visual resources.

4.5.2 Impacts to Aquatic Ecosystems and Fisheries Resources from Cultural Resources Management

Under all alternatives, existing policies would remain in place to protect cultural resources from the management actions identified to restore or maintain desired conditions for fisheries resources, so there would be no change in BLM's ability to implement fisheries restoration projects. Policies to maintain or increase monitoring, site patrols and collaboration with Native Americans under Alternatives A, B, C, and D would have no impact on fisheries resources. Policies encouraging surveying, regional overviews, stabilization of historic structures and development of National Register nominations under Alternative D would have no impact on fisheries resources.

4.5.3 Impacts to Aquatic Ecosystems and Fisheries Resources from Lands and Realty

Policies to obtain lands, specifically lands within anadromous watersheds, could facilitate watershed protection, restoration, and recovery of fisheries. Land acquisitions could have major beneficial impacts to fisheries by increasing the extent of watershed area that is specifically managed to maintain and restore riparian and aquatic habitat. The Aquatic Guideline LH-5 directs BLM to use land acquisition to meet fisheries objectives and to facilitate the restoration of fish stocks and other species at risk.

Policies to consider new rights-of-way for roads in the Frontcountry Zone under Alternative B and C and in all zones under Alternative D could have moderate adverse impacts to fisheries due to potential watershed disturbance that could occur on private lands as a result of a change in access (i.e., road construction, timber harvest, water withdrawals). Issuance of rights-of-ways would be screened using the fisheries goals, objectives, and standards and guidelines. Aquatic Guideline LH-4 directs that rights-of-way and other permits must avoid adverse effects that retard or prevent attainment of fisheries objectives. However, because of associated activities on private land, issuance of rights-of-ways could result in moderate adverse impacts to fisheries. Activities on private lands would be consistent with State and County regulations.

BLM's assertion of water rights under Alternatives B, C, and D would not have any immediate impact on the watershed or other water users. The effects of these alternatives would only occur if the watershed becomes more developed in the future and water rights are adjudicated or if the watershed is determined to be "fully-allocated" by the state. Parties with a proven senior water right would be unaffected by BLM assertion of water rights.

4.5.4 Impacts to Aquatic Ecosystems and Fisheries Resources from Inventory Units and Study Areas

4.5.4.1 *Wild and Scenic Rivers*

Alternative A will continue existing policies that protect RRs and aquatic habitat along rivers and streams within the KRNCA, and thus would have no impact to fisheries. In addition to these policies, Alternative B would recommend 28 river segments for inclusion in the National Wild and Scenic River System (NWSRS); Alternative C would recommend fifteen segments, and Alternative D would recommend seven. Under Alternatives B, C, and D, future management prescriptions for eligible river segments would protect the free-flowing values of river segments, thereby precluding stream impoundments, diversions, channelization, and/or rip-rapping. River segments would also be managed to protect identified "outstandingly remarkable values."

Fisheries goals, objectives, and standards and guidelines were designed to protect free-flowing values of rivers including instream flows, channel conditions, and RRs. Thus, beneficial impacts of the designations are expected to be minimal on most stream segments relative to most of the fisheries management actions. Designation under the Wild and Scenic Rivers Act would require the Federal Government to protect the "outstandingly remarkable" values of each stream segment. Since the anadromous fishery is identified as the outstandingly remarkable value in all of the segments, designation would provide beneficial impacts.

4.5.4.2 *Wilderness characteristic inventory units*

All of the alternatives would continue current policies for existing WSAs until congressional designation or release occurs. Lands outside of the King Range and Chemise Mountain areas that have identified wilderness characteristics would be managed to protect these values. Lands within WSAs are subject to special management constraints and are managed to not impair their suitability for designation as wilderness. The only permissible activities are temporary uses that avoid surface disturbance, do not require reclamation, nor involve permanent placement of structures. Exceptions are granted for emergencies or existing activities that enhance wilderness values. Alternative A would continue present policies on existing lands that have been identified as having wilderness characteristics. No additional wilderness units would be identified. Alternatives B and C would each result in additional lands outside of the King Range and Chemise Mountain WSAs being managed to protect wilderness characteristics. The Chemise Mountain area drains into the South Fork Bear Creek. Bear Creek provides important spawning and rearing habitat for salmonids and is a significant tributary of the Mattole River. Thus, Alternatives B and C would provide further protection from future surface disturbances, such as roads, and would have beneficial impacts on fisheries. Alternative D protects 200 acres of acquired lands within the existing WSAs, and would have a negligible to minor beneficial impact to fisheries.

4.5.4.3 ACECs

Designation of the Mill Creek ACEC would provide positive impacts to the Mill Creek Watershed. The relevant and important values identified for protection under this designation are the cold water, fishery and old-growth forest values.

4.5.5 Impacts to Aquatic Ecosystems and Fisheries Resources from Aquatic Ecosystems and Fisheries Management

Management actions identified in the alternatives include upslope sediment reduction, instream habitat enhancement, riparian silviculture, monitoring, and estuary enhancement. All of these actions would have major, long term, and beneficial impacts to fisheries through improved habitat quantity and quality. Upslope sediment reduction would reduce the amount of fine sediment that deposits in pools and spawning habitat, which decreases suitability of Pacific salmonid habitat and may adversely affect survival of fish. Instream habitat enhancement would provide more rearing, holding, and spawning habitat. Riparian silviculture would enhance the function of riparian zones to provide increased filtering capacity, increased nutrient input to streams, and increased stream cover and large wood recruitment potential. Silviculture treatments would be screened to ensure that they benefit riparian dependent species, and methods would be constrained so that treatments do not retard or prevent attainment of fisheries goals and objectives. Estuary enhancement would benefit salmonids by increasing cover from predators and causing scour around structures, and would particularly benefit juvenile salmonids rearing in the estuary.

There could be minor short-term adverse impacts to fisheries as well as the beneficial impacts due to localized disturbance that may occur when restoration projects are implemented. For example, during road decommissioning, stream crossings are pulled out and soils are disturbed making them vulnerable to settling and erosion, especially the first winter following restoration. Sediment could be washed downstream and impact fisheries habitat. However, the minor short-term disturbances that may be associated with the management actions proposed are expected to be minimized through project-level design, and it is expected that potential impacts would be outweighed by the substantial beneficial impacts of restoration.

The alternatives vary with respect to the extent of restoration that may occur and the types of restoration that would be implemented. All alternatives, with the exception of Alternative B, would allow implementation of estuary enhancement. Estuary habitat is crucial to the life cycle of Pacific salmonids and estuary residence time may be an important determinant of ocean survival of young salmonids. There is little documentation of the historical condition of the Mattole River estuary and lagoon, but currently this area is aggraded, shallow and changes in response to environmental factors such as flood events. Studies in the Mattole estuary have indicated that the summer carrying capacity of the estuary is low, and that the estuary may be a significant bottleneck with respect to the life cycle of Chinook salmon. Limiting factors are not clear, but are likely related to water temperatures, food and predation, which are related primarily to patterns of sediment deposition in the watershed and estuary and secondarily to the quality of riparian and large wood elements within and along the estuary. Erosion control work in the watershed, as proposed under all alternatives, which reduces the input of sediment in the Mattole basin, will benefit estuary habitat and fisheries especially if coupled with estuarine enhancement work that

increases the summer carrying capacity of the estuary. Estuary enhancement would include placement of large wood structures. These structures would benefit fisheries by providing cover from predators and by causing scour that would increase water depths around the structures and act as refuge for migrating or rearing salmonids. Thus, all alternatives, with the exception of Alternative B, would have major beneficial impacts to fisheries through enhancement of estuary habitat. Alternative B would not enhance estuary habitat, but would minimize upslope sedimentation in fish bearing streams thereby indirectly helping to restore estuary habitat.

Alternatives A and C allow for the full complement of restoration actions (upslope sediment reduction, instream habitat enhancement, riparian silviculture) but only in fish bearing watersheds in the Mattole basin. Both Alternative A and C would benefit fisheries in the Mattole basin through enhancing watershed condition and fish habitat but streams in the backcountry would not benefit under these alternatives.

Similar to Alternatives A and C, Alternative B allows only upslope sediment reduction projects in fish bearing watersheds tributary to the Mattole River, with similar impacts. However, Alternative B also excludes instream enhancement, riparian silviculture and estuary enhancement would also not occur under Alternative B, thus this alternative would result in less beneficial impacts to fisheries when compared to Alternative A, C, or D.

Alternative D allows for the full complement of restoration activities to occur across the KRNCA and thus would have a substantial beneficial impact to fisheries. However, it is unknown to what extent restoration actions could benefit streams in the Backcountry Zone due to their steep gradients, high stream energy and high sediment supply and transport. The area is also essentially unroaded, so road decommissioning would likely not occur, even under Alternative D.

Monitoring is not a restoration activity but provides crucial information to managers regarding the effectiveness of restoration activities and aids in prioritizing future restoration projects. Monitoring is allowed under all of the alternatives, with the exception of Alternative B. Thus habitat, water quality condition and trends, and fisheries data would not be tracked under Alternative B and appropriate responses may not be formulated and implemented. This could result in adverse impacts to fisheries in watersheds that are managed but lack fisheries monitoring data. Alternative A and C allow monitoring in fish bearing streams in the Mattole basin only, and Alternative D allows monitoring across streams in the KRNCA. Thus, Alternative D would have a significant beneficial impact to fisheries through increased information for potentially all streams in the KRNCA; information that would be used to guide management decisions and further the fisheries goals and objectives.

4.5.6 Impacts to Aquatic Ecosystems and Fisheries Resources from Wildlife Management

Under all alternatives, existing policies would remain in place to maintain and enhance natural wildlife populations. Also, existing policies would remain in place to reduce or eliminate the need for listing of additional wildlife species under the ESA and to contribute to the recovery of listed species. Limited operating periods to protect owls and/or murrelets from noise generated by watershed restoration projects could, if implemented, constrain the amount of restoration work that can be implemented in a given year and thus would indirectly result in adverse impacts to fisheries. This would continue under all

alternatives. (However, disturbance distances can be minimized with topographic or vegetative screening around projects, which could reduce or eliminate any adverse impacts.) Actions specific to various listed species identified under all alternatives would not impact fisheries, and in general wildlife species protection benefits fisheries as well. Policies enacted under Alternatives C and D to facilitate research and monitoring of wildlife would have no impact on fisheries resources.

4.5.7 Impacts to Aquatic Ecosystems and Fisheries Resources from Terrestrial Ecosystems and Vegetation Management

Under all alternatives, existing programs would be continued to eradicate invasive plant species. However, it is unknown to what extent invasive species have colonized RRs. Thus, the potential benefits to riparian plant species associated with removal of invasive species are not known. If eradication occurred in RRs, manual methods could cause ground disturbance and potential sedimentation to streams and/or herbicide use could contaminate surface waters and adversely affect fisheries. However, projects would be screened and modified to ensure that they do not retard or prevent attainment of fisheries goals and objectives.

Under Alternative B, prescribed fire and manual tree removal would be used to maintain healthy and productive grasslands; this would have no effects on fisheries due to the fact that these actions would occur outside of RRs, and standards and guidelines would screen and modify projects to minimize site and watershed scale effects to fisheries. Manual tree removal would cause insignificant soil disturbance and would not occur in RRs. Prescribed fire methods and effects to fisheries have been previously analyzed and mitigated through Section 7 consultation. Thus, prescribed fire and manual tree removal would not impact fisheries.

The impact of limited grazing outside of allotments under Alternatives C and D is not known at this time, because it is not known whether streams would be in the vicinity, to what extent grazing outside of allotments would be allowed, and in what season grazing would occur. All ongoing grazing-related activities in the KRNCA have undergone Section 7 consultation and adverse effects have been minimized. Thus, any changes to the ongoing grazing management would cause reinitiation of consultation to ensure that effects of modifications are minimized. Thus, if limited grazing outside of allotments is proposed in the future, it is expected that streams and RRs would be protected from impacts, and upslope impacts would be minimized through project design.

Specific types of vegetation may be burned under Alternatives B and C, which could decrease soil cover and cause erosion in areas burned. However, prescribed burns and their potential effects to fisheries in the KRNCA have been analyzed and mitigated through the ongoing program and through Section 7 consultation, such that adverse impacts to fisheries are not expected.

4.5.8 Impacts to Aquatic Ecosystems and Fisheries Resources from Forest Management

Under all alternatives, existing policies would remain in place to maintain and enhance old growth forests. RRs would be protected from timber harvest under all alternatives, and projects would be screened to ensure that they don't retard or prevent attainment of fisheries goals and objectives prior to

implementation. The Aquatic Standards and Guidelines prohibit silvicultural activities in RRs except where catastrophic events have degraded riparian conditions and forest health treatments would help attain desired riparian conditions. RR widths in the KRNCA would be consistent with RR widths in the NWFP ROD, designed to protect riparian ecosystems, potentially unstable areas, inner gorges, and floodplains from management activities.

Potential impacts of silvicultural treatments under Alternatives C and D are unknown since methods of treatment and extent of treatments are not known at this time. However, it is known that silvicultural treatments may increase erosion in harvest units, roads, and landings. The risk of impacts to fisheries would be primarily related to the potential for sediment delivery to streams. Activities associated with timber harvest can substantially increase delivery of sediments to streams through both surface erosion and mass wasting. Thus, Alternatives C and D would allow increases in watershed disturbances, which may result in temporary impacts to fisheries depending on the extent, location, and characteristics of the landscape treated. Alternative B defines the extent of silvicultural treatments (the Bear Trap Plantation) and would have no impact on fisheries. Helicopter salvage harvest included in Alternative C would result in less ground disturbance than other harvest methods. Alternative D has the highest potential for adverse impacts to fisheries due to opening and use of old logging roads and construction of new temporary roads. However, these projects would only be completed if they serve to meet the primary goals of restoring forest and watershed health, and so would provide long-term positive impacts.

Timber Stand Improvement (TSI) projects could occur under all alternatives and methods have been analyzed and mitigated through the ongoing TSI program and through Section 7 consultation. Thus, TSI activities would have no impact on fisheries. All projects allowed under all of the alternatives would be designed by an interdisciplinary team and land management activities would be guided by determining consistency with fisheries goals and objectives and standards and guidelines designed to protect RRs and aquatic habitat.

4.5.9 Impacts to Aquatic Ecosystems and Fisheries Resources from Special Forest Products Management

Issuance of permits to collect mushrooms, beargrass, floral trade species, and fuelwood proposed under all alternatives would not impact fisheries. Fuelwood cutting would be prohibited in RRs unless it could be used as a tool to attain fisheries objectives. Alternative C and D would prohibit fuelwood cutting in the Mattole estuary area, which would result in significant beneficial impacts. Large wood may be recruited to the estuary during high flows, if fuelwood cutters do not remove it.

All of the alternatives could impact fisheries if road use occurs or increases during the wet season for purposes of collecting special forest products. Winter road use accelerates erosion on unsurfaced roads, and winter rains carry the fines from road surfaces to streams.

Policies to monitor mushroom collection methods, coordinate with local tribes regarding use of beargrass, and manage beargrass resources proposed in Alternative C would have no impact on fisheries.

4.5.10 Impacts to Aquatic Ecosystems and Fisheries Resources from Grazing Management

Under Alternatives A, C, and D, existing policies would remain in place. Existing policies and allotments have been analyzed and mitigated through the ongoing program and through Section 7 consultation. Aquatic Guidelines GM-1 through GM-3 would be used to guide grazing practices and placement of grazing facilities to protect aquatic habitat. Thus, Alternatives A, C, and D would have no adverse impacts to fisheries. Under Alternatives A, C, and D, the Spanish Flat allotment boundary would be adjusted to exclude 500 acres of a terraced prairie between Spanish and Randal Creeks to protect significant cultural sites, but the number of Animal Unit Months (1,105 AUMs) would remain unaltered. This represents roughly a 5 percent decrease in size of this allotment, and would not impact fisheries. Under Alternatives A, C, and D, four expired grazing leases would be administratively changed from available to unavailable for grazing. This action would result in beneficial impacts to fisheries, as it would ensure protection of streams in the lease areas from future grazing impacts. However, these leases are inactive and have not been used for grazing for several years, thus relative to existing on-the-ground impacts, this action would have no impact on fisheries.

Under Alternative B, all livestock grazing would be eliminated from the KRNCA. The four active grazing allotments would be eliminated, and livestock grazing levels would be reduced from 2,050 AUMs to zero. This would result in negligible impacts to fisheries, because the existing program has already been mitigated to minimize adverse impacts to fisheries.

4.5.11 Impacts to Aquatic Ecosystems and Fisheries Resources from Fire Management

Alternative A would continue existing policies to fully suppress all fires regardless of cause within all zones. Aquatic Guidelines FM-1 through FM-5 limit fire suppression strategies and practices to minimize impacts to fisheries. Fire suppression activities can result in adverse impacts to fisheries through construction of dozer lines and new road construction, retardant drops and water withdrawals. However fire suppression may benefit fisheries because current forest fuel loads are higher now than during the last 150 years or more. When wildland fires now occur in watersheds, the fires are dramatically different from those that occurred in the past. Many present day wildfires tend to become stand replacement fires in areas that 100 years ago would only carry small low-intensity ground fires. Fish populations that have evolved in these areas may not be able to survive the intense wildfires that can occur in these areas today. Thus, protection of aquatic habitat from the impacts of stand replacing wildfire may outweigh the short-term impacts of suppression activities.

Alternative B would allow naturally ignited fires to burn in both the Backcountry and Frontcountry Zones. Managing fuels to create a landscape resistant to damaging high intensity wildfires would have beneficial impact to fisheries in treated areas. However, due to the extent of overstocked stands and high levels of fuels, treatments would likely be limited in the watershed context and would be concentrated along roads. Thus, allowing naturally ignited fires to burn could have adverse impacts to fisheries due to forest stand conditions that have not been thinned by fire or mechanical substitutes. The relative potential impacts of wildfires that are allowed to burn versus suppression activities that could also impact fisheries must be considered in the context of existing watershed conditions. The Frontcountry is roaded and provides existing roads from which to stage suppression activities. Thus, the effects of suppression

would be lower than in the Backcountry Zone. The Backcountry Zone is essentially unroaded and suppression activities along the west slope of the KRNCA could have significant adverse impacts to fisheries in the small coastal drainages in this area if emergency suppression requires dozer lines or roads. This zone also has a different vegetation mosaic than much of the Frontcountry Zone, and fires may burn at different intensities. Thus, Alternative C may be most beneficial from a fisheries impact perspective since suppression activities may cause more adverse impacts than allowing a wildfire to burn. Alternative C allows fire suppression in the Frontcountry Zone, but would allow naturally ignited fires in the Backcountry Zone to burn. Alternatives C and D would utilize prescribed fire and mechanical methods in the Frontcountry Zone to manage fuels, and this would likely be targeted on woody vegetation outside of RRs, so riparian function would be maintained and streams would be protected from disturbance.

Alternative D would allow suppression of all wildfires in all zones, and thus could prevent a stand replacing wildfire and associated adverse impacts to fisheries. However, as mentioned above, fire suppression in the Backcountry may cause significant adverse impacts to fisheries because it is unroaded, steep and unstable.

4.5.12 Impacts to Aquatic Ecosystems and Fisheries Resources from Transportation and Access

All alternatives would continue existing policies to provide a network of roads that complement the rural character of the KRNCA. Aquatic Guidelines RF-1 through RF-7 would be used to guide road management activities in the KRNCA. Under Alternative D the seasonal limitation (April 1 to December 31) on certain roads would allow wet weather (November and December) use of roads and could impact fisheries. However, improving the road base is also included in this alternative. Thus, if the road were paved or rocked, the extended season of use would have less impact on fisheries.

Alternative B would allow closure of the Telegraph Ridge Road and decommissioning of the road alignment. As discussed above, decommissioning can have minor impacts on aquatic habitat, but these minor impacts are outweighed by significant sediment savings from road erosion and road or crossing failures. Telegraph Ridge Road is a ridgetop road so has less potential to impact fisheries, but does include one stream crossing that would be removed. Thus, removing this road would preclude future stream crossing failure and associated sediment delivery to streams. This would have a beneficial impact on fisheries.

The Mattole estuary road and spur provide access to the estuary for recreation use and firewood cutting. Alternatives B would close this road and protect large wood from firewood cutters, and protect vegetation from user traffic. Thus, this alternative would result in beneficial impacts to fisheries through increased protection from vehicular access. Alternative C and D would provide benefits to fisheries through directing use onto the main access road and other routes that do not impact riparian vegetation. If the area received increased patrol, and firewood cutting within the high tide line was prohibited, vehicle access that is contained on the main road (Alternatives C and D) and spurs that avoid riparian vegetation would have fewer impacts to fisheries. It is unknown whether poaching of adult salmonids occurs in the Mattole estuary. If so, access roads into the estuary can indirectly impact fisheries by allowing increased numbers of anglers into the area. Alternative B would close access and would have the significant beneficial impact to fisheries.

4.5.13 Impacts to Aquatic Ecosystems and Fisheries Resources from Recreation

All four alternatives would continue existing policies regarding visitor information, road and trail maintenance, resource protection, visitor safety, special recreation permits, cooperative management, exclusionary fence and barrier construction, enforcement, and Universal Accessibility Standards, so there would be no impact to fisheries.

The ongoing recreation program in the KRNCA has undergone Section 7 consultation and adverse effects have been mitigated. Thus, Alternative B, which would keep use and development at present levels, would have no adverse impacts to fisheries. Alternatives C and D would allow moderate (Alternative C) and higher use numbers (Alternative D) in the Backcountry Zone. This would increase the potential for adverse effects to fisheries in the small coastal drainages on the western slope, such as impacts related to human waste in the floodplains and trampling of habitat. Alternative C and D would also promote heavier visitor use in the Frontcountry Zone. However, existing recreation facilities in the Frontcountry Zone have been mitigated through the ongoing programs and Section 7 consultation, and new facilities would be screened to ensure that they do not retard or prevent attainment of fisheries goals and objectives, so this would have no impact on fisheries. Alternative A contains no provisions to manage use levels in the backcountry, and could result in moderate impacts to fisheries. However, impacts would be limited since almost all visitors concentrate at the mouths of the coastal streams and impact upstream riparian corridors at a much lower level.

4.5.14 Impacts to Aquatic Ecosystems and Fisheries Resources from Interpretation and Education

All the alternatives would continue existing policies to provide information to visitors. If this information included posting of fishing regulations and recommended methods to avoid surface water contamination (from human waste), the alternatives would have beneficial impacts to fisheries. If this information were not included, there would be no impacts from interpretation and education.

4.5.15 Potential Cumulative Impacts to Aquatic Ecosystems and Fisheries Resources

Within the Mattole watershed, there are numerous agencies and organizations—the Mattole Restoration Council, Mattole Salmon Group, Sanctuary Forest, Middle Mattole Conservancy, CDFG, and others—performing watershed restoration activities on both public and private lands. BLM actions proposed in this plan contribute to this coordinated effort, constituting a major beneficial cumulative impact.

In addition, BLM's exercise of water rights under this RMP would reduce future water diversions from the Mattole watershed, which otherwise could contribute to higher summertime temperatures and its drying out seasonally. This also represents a major beneficial cumulative impact to aquatic resources.

4.6 IMPACTS TO WILDLIFE

Under all alternatives, existing policies would remain in place to maintain and enhance natural wildlife populations. Also, existing policies would remain in place to minimize or eliminate the need for listing of additional species under the Endangered Species Act and to contribute to the recovery of listed species. Because these alternatives would continue existing policies, there would be a negligible negative impact on wildlife species.

4.6.1 Impacts to Wildlife from Visual Resources Management

Impacts from management of visual resources across all alternatives would have a negligible long-term impact on wildlife populations. Alternative A would continue to keep the western coastal slope in the VRM Class II designation (management activities and uses can be seen but should not attract the attention of the casual observer) and the remainder of the non-residential KRNCA in VRM Class III (management activities may attract attention but should not dominate the view of the casual observer). Because this would continue existing visual policies, there would be no impact on wildlife.

Alternatives B and C would keep the Frontcountry Zone in the Class III designation, a continuation of existing policies with negligible impact on wildlife. Alternative B would change the VRM designation in the Backcountry Zone from Class II to Class I (this class allows only for very limited types of management activities). This change in management could have a minor positive impact on habitat management and wildlife species. Alternative C would change the VRM designation in the portion of the Backcountry Zone south of Cooskie Creek to Class I, while leaving the area north of the Creek as Class II. This could result in minor positive impacts to wildlife south of Cooskie Creek and negligible impacts in other areas.

Alternative D would maintain the designation of Class III in the Frontcountry Zone, with negligible impact on wildlife. Alternative D would also maintain VRM Class II designation for the Backcountry Zone. This alternative could result in minor positive impacts to habitat management and wildlife.

4.6.2 Impacts to Wildlife from Cultural Resources Management

Under all alternatives, existing policies would remain in place to protect cultural resources, so there would be negligible impact on wildlife. Policies to maintain or increase monitoring, site patrols and collaboration with Native Americans under all alternatives would have negligible impact on wildlife. Policies encouraging surveying, regional overviews, stabilization of historic structures and development of National Register nominations under Alternative D would have negligible impact on wildlife.

4.6.3 Impacts to Wildlife from Lands and Realty

Policies to obtain lands and interests determined to be desirable for consolidation to facilitate management in Backcountry and Frontcountry Zones under all alternatives could have a minor to moderate long-term beneficial impact on wildlife by increasing the land base and providing greater protection to some habitats types (e.g., riparian zones will be managed to protect anadromous fish, thereby benefiting wildlife species within these habitats). Lands acquired in the Residential Zone will have minimal impacts on wildlife. Under Alternative B and C, policies to make the Backcountry Zone an

exclusion area for new rights-of-way and/or permits would have minor to moderate long-term benefits to wildlife by limiting habitat fragmentation and frequency of human disturbance. Under Alternative D rights-of-way and permits would be less restrictive and could have a minor to moderate long-term negative impact on wildlife by increasing habitat fragmentation and frequency of human disturbance in the Backcountry and Frontcountry.

4.6.4 Impacts to Wildlife from Inventory Units and Study Areas

4.6.4.1 *Wild and Scenic Rivers*

Alternative A would continue existing management policies along the rivers, and so would have negligible impact on wildlife populations. Protective management of various rivers under Alternatives B, C, and D would also have minor beneficial impacts on wildlife populations by affording an added level of protection of water quantity and quality and riparian habitat to meet wildlife needs.

4.6.4.2 *Wilderness characteristic inventory units*

All the alternatives would continue existing policies for management of lands currently designated as WSAs under the BLM's "Interim Management Policy (IMP) For Lands Under Wilderness Review" (H-8550-1) until Congressional designation as Wilderness or release from WSA status.

Wilderness characteristics will be protected on additional land (10,259 acres, Alternative B; 6,612 acres, Alternative C; and 200 acres, Alternative D) adjacent to the existing King Range and Chemise Mountain WSAs. This would have a major positive impact on wildlife in these areas.

4.6.4.3 *ACECs*

Alternatives A and B will continue current management of the 655 Acre Mattole Estuary ACEC. As no changes will be made to current management wildlife will not be impacted.

Alternatives C and D would designate the Mill Creek Watershed as an ACEC to protect the water quality of this important anadromous fish stream/cold water tributary to the Mattole River, and the low-elevation old-growth Douglas fir forest. This policy will have a major beneficial impact on wildlife.

4.6.5 Impacts to Wildlife from Aquatic Ecosystems and Fisheries Management

Under all alternatives, existing policies would remain in place to restore and maintain ecological health of watersheds and aquatic habitats and implement up-slope sediment reduction resulting in a minor to moderate long-term positive impact to wildlife species that occupy riparian habitats (e.g., riparian birds, aquatic amphibians). Implementation of estuary enhancement program in the Mattole Estuary would have a moderate long-term benefit to wildlife species including marine mammals and numerous species of birds.

4.6.6 Impacts to Wildlife from Wildlife Management

Under all alternatives, existing policies would remain in place to maintain and enhance natural wildlife populations, protect habitat, prevent damage, and increase public education. Alternative B, C, and D would encourage habitat for federally threatened western snowy plovers at the Mattole River mouth. The localized impacts could result in long term moderate positive effects.

Alternative B differs from current management (Alternative A) as it would drop periodic surveys for federally threatened northern spotted owls and would not increase suitable habitat. This change in management would have minor negative impacts on spotted owls within the KRNCA. Alternatives C and D would have a major positive impact on spotted owls as both would provide sufficient habitat to attract and maintain 20 breeding pairs.

Alternatives C and D would have minor positive impact for Steller's sea lions by protecting haul-out sites through cooperative management with the California Coastal National Monument.

Alternative C and D both plan to design and implement a long-term "all bird" monitoring plan that would provide managers data necessary to responsibly manage wildlife. In Alternative C this plan would be implemented opportunistically resulting in a moderate beneficial effect. Alternative D would design and implement the monitoring plan immediately; the long term effect could result in a major positive impact to some bird populations.

Alternative C and D would facilitate research and monitoring of wildlife populations within the KRNCA to increase the knowledge base. This would provide managers with species and local population data necessary to responsibly manage wildlife species within the KRNCA; the short term minor effect on wildlife would be positive; the long term effect could result in a major positive impact to some wildlife species.

Additionally, in Alternatives C and D BLM would work cooperatively with CDFG to maintain a natural diversity of intertidal organisms and educate visitors to intertidal habitat resulting in a long term major beneficial impact to wildlife using intertidal habitats.

4.6.7 Impacts to Wildlife from Terrestrial Ecosystems and Vegetation Management

Under all alternatives existing programs would be continued to eradicate invasive plant species, maintaining a mosaic of compositionally and structurally diverse habitat types; this would have a minor to moderate beneficial impact on a wide range of wildlife species. Alternative C and D would have a moderate positive impact to wildlife; Alternative D would be slightly more beneficial as it would manage for higher quality habitats resulting in a greater natural diversity of native wildlife within the King Range.

4.6.8 Impacts to Wildlife from Forest Management

Under all alternatives, existing policies would remain in place to maintain and enhance old growth forests, resulting in a positive impact on old-growth dependant wildlife. Goals to conduct silvicultural treatments and promote forest restoration (tree planting) under Alternatives B, C, and D could have a minor, short-

term negative impact on some wildlife, but should have a moderate long-term positive impact. Alternative D would allow silvicultural treatments and post-fire salvage operations, reopening old logging roads and build new temporary roads; this could have a moderate negative localized impact to wildlife species by causing habitat fragmentation, and removal of downed woody debris and snags which are important components of forest ecosystems and beneficial to wildlife.

4.6.9 Impacts to Wildlife from Special Forest Products Management

Issuance of permits to collect mushrooms, beargrass, floral trade species, and fuelwood proposed under all alternatives would have a negligible effect on wildlife.

4.6.10 Impacts to Wildlife from Grazing Management

Under Alternatives A, C, and D, existing policies would remain in place to preclude loss or reductions in grazing allotments or AUMs, resulting in no changes to current rangeland management and negligible impact to wildlife.

Under Alternative B, all livestock grazing would be eliminated from the King Range. This could result in a minor localized positive impact on some wildlife species. However, depending on the intensity of management after removal of livestock grazing, there could be minor to moderate localized negative impacts on 'prairie' associated wildlife such as raptors and small carnivores.

4.6.11 Impacts to Wildlife from Fire Management

Activities common to all alternatives would have minor positive long term effects on wildlife, due to reduction in the risk of fire. The geographic extent of this effect would depend on the number and extent of future fires and the associated rehabilitation.

Under Alternative A, moderate long-term negative effects are anticipated on wildlife, especially in the Backcountry Zone as aggressive suppression can lead to increased fuel levels, habitat changes, and the potential for stand replacing fires. In addition, aggressive suppression activities could have a moderate localized negative impact on wildlife, depending on the nature and extent of a fire and its suppression activities. Some of these effects could have a long-term negative effect on wildlife populations.

Suppression of fires within the Residential Zone under Alternative B would have negligible impact on wildlife. Alternative B would likely have a long-term moderate to major positive impact on wildlife populations, depending on the size and extent of future fires. It is possible that long-term negative impacts could occur locally as a result of the loss of valuable wildlife habitat to a fire, but re-establishing the natural role of fire would have moderate to major positive long-term effects on wildlife as a result of creating a landscape resistant to intense and/or stand-replacing type fires.

Under Alternative C, effects to wildlife in the Backcountry would be the same as under Alternative B, but Frontcountry activities could lead to minor, long-term negative effects on wildlife in that zone, negatively impacting wildlife that depends on snags and downed woody debris. Alternatives C and D would utilize prescribed fire and mechanical methods in the Frontcountry Zone to manage fuels, which could have a moderate long-term beneficial impact on wildlife.

4.6.12 Impacts to Wildlife from Transportation and Access

All alternatives would continue existing policies to provide a network of roads that complement the rural character of the King Range, so there would be negligible impact on wildlife.

4.6.13 Impacts to Wildlife from Recreation

All four alternatives would continue existing policies regarding visitor information, road and trail maintenance, resource protection, visitor safety, special recreation permits, cooperative management, exclusionary fence and barrier construction, enforcement, and Universal Accessibility Standards, so there would be negligible impact on wildlife. Alternatives C and D would increase the visitor use allocation system to allow moderate (Alternative C) and higher use numbers (Alternative D) in the Backcountry and Frontcountry Zones. This increase in use could have a minor to moderate negative impact on sensitive wildlife species, especially during the spring/summer breeding season.

Alternative C and D would prohibit motorized watercraft landings, with the exception of emergencies and work cooperatively to establish parameters for commercial touring flights over the KRNCA, and to discourage low-flying aircraft. Both policies would greatly benefit marine wildlife such as seabirds and marine mammals roosting or breeding within the King Range.

4.6.14 Impacts to Wildlife from Interpretation and Education

All the alternatives would continue existing policies to provide information to visitors and could have a minor to major beneficial impact on sensitive wildlife.

4.6.15 Potential Cumulative Impacts to Wildlife

The KRNCA, in conjunction with the nearby Sinkyone Wilderness State Park, Gilham Butte Public Lands, and Humboldt Redwoods State Park, provides a protected corridor for the movement of wide-ranging, dispersing, and migratory animals, which is a moderate positive cumulative impact. For the northern spotted owl in particular, the study area for cumulative impacts is the entire California Coastal Province. The KRNCA is one of several public land areas with designated critical habitat. Managed in a coordinated fashion with these other areas, the King Range contributes to a solid chunk of habitat for this species, as well as other species associated with the same ecosystem type. In contrast, private lands in the province are generally managed intensively for timber production, which provide very limited suitable habitat. This represents a major beneficial cumulative impact.

4.7 IMPACTS TO TERRESTRIAL ECOSYSTEMS AND VEGETATION RESOURCES

Impacts on the vegetation resources of the King Range are variable, as these resources are present in one form or another throughout the entire study area. The BLM is responsible for assessing the effects of any proposed activities associated with the various resource management activities and to insure that any

effects from these activities do not result in significant adverse effects to these species under current and proposed management regimes.

4.7.1 Impacts to Terrestrial Ecosystems and Vegetation Resources from Visual Resource Management

The impacts from the visual resources would likely not impact the vegetation under any of the alternatives, as the conditions imposed by all of these alternatives appreciate the integrity of the vegetation as a fundamental element of the viewshed.

4.7.2 Impacts to Terrestrial Ecosystems and Vegetation Resources from Cultural Resources Management

Impacts to the vegetative resources from cultural resources management would be common across all alternatives, and most likely be long-term and very localized (site-specific). The impact would be negative, from negligible to minor, and most likely as a result of efforts to stabilize or prevent environmental degradation to important sites. The impact would come both as a result of the efforts to stabilize, and possibly also from indirect effects as a result of the alteration of the natural vegetation successional processes due to such stabilization efforts.

4.7.3 Impacts to Terrestrial Ecosystems and Vegetation Resources from Lands and Realty

The only foreseen impact on the vegetation of the King Range from the management of Lands/Realty Resources would be an increased level of habitat management requirements, particularly if new acquisitions include populations of sensitive species, or suitable habitat contiguous with known occurrences of such species. These impacts would be minor to moderate and positive as vegetation stands are managed over a larger area and in a more comprehensive manner. The amount of lands acquired increases from Alternative A to D, as would the relative impact of management mentioned above.

4.7.4 Impacts to Terrestrial Ecosystems and Vegetation Resources from Inventory Units and Study Areas

All alternatives (except for A) provide for protective management of Wild and Scenic Rivers, wilderness characteristics, and ACEC values and would likely have long-term moderate positive effects.

4.7.5 Impacts to Terrestrial Ecosystems and Vegetation Resources from Aquatic Ecosystems and Fisheries Management

All proposed watershed enhancement project alternatives relative to aquatic and fisheries resources should have a similar level of impact to the vegetation resources of the King Range, and are likely to result in long-term moderate beneficial impacts to all affected habitats.

Upslope sediment reduction (road decommissioning, landslide rehabilitation, and road drainage maintenance and upgrades) activities could have short-term adverse impacts to sensitive botanical species associated with these elements, but would likely be outweighed by the overall moderate long-term beneficial impacts that would result, and that contribute to the overall watershed integrity. Instream habitat enhancement improvement projects would likely only pose negligible, localized adverse impacts to sensitive botanical species and habitats, if any.

Thinning projects associated with riparian silviculture activities could have long-term localized minor to moderate adverse impacts to sensitive botanical species that might occur in these habitats, but would also result in moderate long-term benefits to habitat quality.

4.7.6 Impacts to Terrestrial Ecosystems and Vegetation Resources from Wildlife Resource Management

All proposed alternatives for management of the Wildlife Resources should have a negligible effect on the vegetative resources, aside from those addressed in the vegetation management section.

4.7.7 Impacts to Terrestrial Ecosystems and Vegetation Resources from Terrestrial Ecosystems and Vegetation Resource Management

4.7.7.1 Impacts to Habitats

The impacts to the different dominant habitats in the King Range vary with each alternative, but on the whole, offer beneficial impacts as the alternatives specify various levels of management activities to maintain and encourage a diversity of native habitats, with the exception of Alternative A.

Alternatives A and B are likely to have impacts common to all habitats. Alternative A carries forward the current level of habitat management, which does not specify particular prescriptions, and is a more passive approach that allows for current “habitat-degrading” trends (e.g., succession in “prairie” habitats) to continue. Alternative B offers more of a positive impact in that it allows for specific management for the various habitats.

Alternative C would have a minor to moderate positive impact to the coastal dunes, scrub, and grassland habitats because it would implement some level of monitoring and allow for a wider diversity of management activities (prescribed burning, manual means, and limited grazing) to be utilized to contribute to “within-habitat diversity.”

Alternative D would have the most beneficial impact of all the alternatives for both coastal dunes and coastal scrub, by restricting habitat-degrading activities in the dunes and implementing a more rigorous habitat monitoring plan, and by allowing for an additional management prescription in the coastal scrub (mechanical means), but the beneficial impact would be similar to both coastal grassland and chaparral habitats.

With respect to management of invasive plant species and sudden oak death, all alternatives should have a similar minor to moderate beneficial impact on all habitat types.

4.7.7.2 *Special-Status Plant Species*

All alternatives share the common goal of maintaining viable and healthy populations of Special Status species, a management program that will undoubtedly benefit these species. The various levels of management activities proposed in the various alternatives will have differential impacts on Special Status species. These management prescriptions have the potential to cause short-term adverse effects on these species, but would result in long-term benefits, by increasing the quality of the associated habitats.

Alternative A could potentially have long-term moderate adverse effects as a result of the “habitat-degrading” trends discussed above. Alternative B would have minor impacts discussed above, with an increase in the extent of the impact to moderate from Alternative C to Alternative D, the latter having the most significant effects.

With respect to management of invasive plant species and sudden oak death, all alternatives should have a similar long-term beneficial impact on Special Status species, although the extent of the short-term negative impact will vary with the mechanism utilized in the removal of invasive plant species.

4.7.8 Impacts to Terrestrial Ecosystems and Vegetation Resources from Forest Management

Forest improvement projects designed to accelerate the development of late-seral forest stand characteristics that are proposed in (and common to all three) Alternatives B, C, and D could cause short-term minor to moderate adverse impacts to Special Status plant species, but would likely result in moderate long-term beneficial effects to both these habitats and any associated Special Status species. Alternative A would avoid both of these short- and long-term impacts, but would, alternatively, avoid the long-term adverse impacts associated with the timber salvage activities proposed in Alternatives C and D.

Both Alternatives C and D could have moderate, short-term adverse impacts on Special Status plant species as a result of timber salvage activities, with Alternative D having the larger impacts due to the level of road construction and maintenance. However, botany clearances would be conducted prior to operations, and salvage would only be conducted for benefits to ecosystem management objectives, so long-term impacts would be negligible or beneficial.

4.7.9 Impacts to Terrestrial Ecosystems and Vegetation Resources from Special Forest Products Management

Alternatives A, C, and D could have minor adverse impacts on Special Status plant species (particularly fungi) and habitats if habitat-destructive mushroom harvest methods are used illegally, particularly as a result of commercial collection. Alternative B is likely to have negligible impacts to vegetative resources.

All other aspects of special forest products management, common across all alternatives, would likely have a negligible impact on the vegetation resources.

4.7.10 Impacts to Terrestrial Ecosystems and Vegetation Resources from Grazing Management

Impacts related to grazing management will be localized to the grassland and scrub habitats that occur in the specific allotments. The effects of grazing on the native species diversity and abundance of grasslands vegetation has been shown to be quite variable (Harrison et al. 2003, Jutila 1999, etc.). The level of grazing proposed in Alternatives A, C, and D (all the same) allow for an appropriate level of disturbance necessary to maintain these habitats and therefore represent a moderate positive long term impact on grassland habitats. These alternatives also exclude grazing from specific areas where this activity compromises the integrity of the unstable substrates, an added beneficial impact to this habitat. It is anticipated that the proposed level of grazing would have only negligible impacts to the scrub habitats.

Alternative B would result in a moderate to major long term, adverse impact to grassland habitats, as it could remove a level of disturbance necessary to maintain current levels of these early successional habitats and the associated diversity of native species, without providing for any replacement of the needed disturbance (such as grazing by other ungulates, or more intensive vegetation management).

Some Special Status plant species occur or have the potential to occur in these habitats. The relative contribution of grazing towards maintaining these early successional habitats that will continue to be available to these species is believed to mitigate any lesser adverse impacts to Special Status species as a result of grazing, and is therefore considered a beneficial impact on these species.

4.7.11 Impacts to Terrestrial Ecosystems and Vegetation Resources from Fire Management

The use of fire as a management tool is well documented, although the effects can be quite variable. For the most part, fire will help to maintain a diversity of naturally occurring habitat types and also any associated Special Status species. Although some short-term minor to moderate negative impacts could occur as a result of wildfire and prescribed burns, the long-term positive effect they have on habitat maintenance would likely be moderately beneficial both to these habitats, and any associated sensitive flora. All alternatives prescribe the completion and maintenance of fuel breaks, which could pose local negative impacts to sensitive botanical species, particularly those species with unique dispersal limitations.

Alternative A specifies all fire suppression in all management zones which would result in negative impacts to all habitat types, except possibly coastal dunes, by removing a major mechanism of habitat maintenance. The lack of fire would have a moderate long term negative effect on both the extent and native species diversity of these habitats.

Alternative B allows for wildfires to occur in all but the residential management areas. This would likely result in minor to moderate long term beneficial impacts to habitats and associated sensitive species to the majority of the King Range, depending on the nature and extent of future fires. The exclusion of prescribed burns as a management tool, and reliance on naturally occurring wildfires in this alternative reduces the positive aspects of this alternative in that it gives up a level of precision in the use of fire as a vegetation management tool.

Alternative C allows for wildfires to occur only in the Backcountry, but does allow for the use of prescribed burns to manage specific habitats in all zones. This alternative would result in positive impacts to all habitats and associated sensitive species, particularly in the level of precision allowed for the use of fire as a vegetation management tool. The suppression of naturally occurring fires in the Frontcountry does detract from the positive impacts (variation in burn area, intensity, etc.) to the diversity of habitats in this management zone as a result of such an event.

Alternative D prescribes suppression of all fires in all management zones. This alternative does allow for the use of prescribed burns to manage specific habitats. This alternative would result in minor benefit to all habitats and associated sensitive species in that the prescribed burns would lend precision to the use of fire as a management tool. The suppression of naturally occurring fires in the all management zones, however, reduces the potential positive impacts (variation in burn area, intensity, etc.) that result from of naturally occurring fires event.

4.7.12 Impacts to Terrestrial Ecosystems and Vegetation Resources from Transportation and Access

The creation and maintenance of access roads/trails and associated parking areas across all areas has the potential to have long term moderate adverse localized impacts on sensitive species.

Alternative A would likely result in a moderate negative effect to the vegetation by allowing continued vehicle access to the sensitive areas in the vicinity of the Mattole River Estuary. Alternative B would benefit estuary resources by closing this route. Roughly 3.2 miles of road decommissioning in the Telegraph Ridge area as a result of this alternative could cause some short-term localized adverse impacts to Special Status plant species, but would likely result in long-term beneficial effects to the watershed, associated habitats, and subsequently, any associated sensitive botanical species.

Alternative C would reduce existing impacts to habitat quality and Special Status plant species known to occur in the vicinity of the Mattole River Estuary, by reducing off-road access in this area.

Alternative D could result in minor adverse impacts to habitat quality and Special Status plant species. This alternative would require road improvements and upgrades in the Telegraph Ridge, Paradise Ridge, Windy Point, and Smith-Etter Roads which could cause short-term impacts, although most improvements would occur on the existing road prism. This alternative would provide minimal protection and allow continued impacts to the botanically sensitive Mattole River Estuary (although it would reduce access over Alternative A).

4.7.13 Impacts to Terrestrial Ecosystems and Vegetation Resources from Recreation

Alternative A could have a moderate adverse long term impact to habitat quality and Special Status plant species, as a result of current management of recreational resources proving to be inadequate for an increase in use of the King Range.

Alternative B would likely have moderate long term beneficial impact on the vegetative resources of the King Range resulting from restrictions on group size, facility use, access by mountain bikes, a reduction in the extent of usable facilities and locations, and the lack of proliferation of new trails and facilities.

Alternative C would likely result in a variety of impacts. Some would have a minor beneficial effect, such as the restrictions in group size. Others would have a long term localized and non-localized minor negative adverse impacts. Localized impacts would result from the construction of new trails and associated facilities. Non-localized adverse impacts would result from overall increased use, in addition to the type of use (i.e., mountain bikes).

Alternative D would result in long-term minor adverse impacts to habitat quality and Special Status plant species as a result of intensified use, trail additions (and associated impacts), and some limited new facility construction.

4.7.14 Impacts to Terrestrial Ecosystems and Vegetation Resources from Interpretation and Education

As long as interpretive signs and structures are appropriately located, Interpretive/Educational resource management is likely to have negligible effect on the vegetation across all alternatives, other than a positive effect as a result of increased appreciation for the vegetative resources.

4.7.15 Potential Cumulative Impacts to Terrestrial Ecosystems and Vegetation Resources

Under these alternatives, through management done in the KRNCA in concert with a County-wide noxious weed management strategy and associated private efforts, invasive weed rates of spread will be reduced. This represents a moderate beneficial cumulative impact. Similarly, coordinated efforts to reduce the spread of sudden oak death will result in positive cumulative impacts.

4.8 IMPACTS TO FOREST RESOURCES

Under all alternatives, policies described under the Northwest Forest Plan would remain in place to maintain and enhance the late successional characteristics of KRNCA forests. Alternative A would continue present management activities, which are primarily maintaining undisturbed late successional/old growth forests and taking minimal action to return late successional attributes to previously harvested stands or stands impacted by fire. Alternatives B, C, and D have increasing amount of active management designed to hasten the return of late successional attributes to forest stands and range from having a moderate to major positive long-term impact on KRNCA forests.

4.8.1 Impacts to Forest Resources from Visual Resources Management

Impacts from management of visual resources across all alternatives could have a minor short-term negative impact on forest ecosystem restoration as some alternatives may be limited, in so far as certain forest management activities are not visually pleasing. Alternative A would continue to keep the

Backcountry in the VRM Class II designation (management activities and uses can be seen but should not attract the attention of the casual observer) and allotments in the other zones in VRM Class III (management activities may attract attention but should not dominate the view of the casual observer). Because this would continue existing visual policies, there would be no impact on forest management.

Alternatives B and C would keep the Frontcountry Zone in the Class III designation, a continuation of existing policies with negligible impact on forest management. Alternative B would change the VRM designation in the Backcountry Zone from Class II to Class I (this class allows only for very limited types of management activities). Alternative C would change the VRM designation in the portion of the Backcountry Zone south of Cooskie Creek to Class I, while leaving the area north of the Creek as Class II. This could result in negligible negative impacts south of Cooskie Creek and minor negative impacts in other areas.

Alternative D would maintain the designation of Class III in the Frontcountry Zone, with negligible impact on forest resources. Alternative D would maintain the Backcountry Zone VRM Class II designation. This alternative would result in negligible impacts to forest management because there are no proposed forest management projects in the Backcountry Zone.

4.8.2 Impacts to Forest Resources from Cultural Resources Management

Under all alternatives, existing policies would remain in place to protect cultural resources, so there would be negligible impact on forest management. Policies to maintain or increase monitoring, site patrols and collaboration with Native Americans under all alternatives could have minor negative short-term impacts on forest restoration activities, if management alternatives were restricted. Policies encouraging surveying, regional overviews, stabilization of historic structures and development of National Register nominations under Alternative D would have negligible impact on forest ecosystems.

4.8.3 Impacts to Forest Resources from Lands and Realty

Policies to obtain lands and interests determined to be desirable for consolidation to facilitate management in Backcountry and Frontcountry Zones under all alternatives could have a minor to moderate long-term positive impact on forest management activities by increasing the land base and providing greater opportunities for forest rehabilitation. Lands acquired in the Residential Zone will have minimal impacts on forest management activities.

4.8.4 Impacts to Forest Resources from Inventory Units and Study Areas

4.8.4.1 Wild and Scenic Rivers

Alternative A would continue existing management policies along the rivers, and so would have negligible impact on forest management activities. Designation of various rivers under Alternatives B, C, and D, would also have negligible impacts on forest management activities, since existing policies already determine forest management activities in and around watercourses.

4.8.4.2 Wilderness

All the alternatives would continue existing policies for management of lands currently designated as WSAs under the BLM's "Interim Management Policy (IMP) For Lands Under Wilderness Review" (H-8550-1) until Congressional designation as Wilderness or release from WSA status.

Wilderness characteristics will be protected on additional land (10,259 acres, Alternative B; 6,612 acres, Alternative C; and 200 acres in Alternative D) adjacent to the existing King Range and Chemise Mountain WSAs. Alternatives B and C will have minor negative impact on forest restoration goals in these areas by precluding forest management activities in previously harvested stands within the recommended unit lands.

4.8.4.3 ACECs

Alternatives A and B will continue current management of the 655 acre Mattole Estuary ACEC. As no changes will be made to current management, forest management activities will not be impacted.

Alternatives C and D would designate the Mill Creek Watershed as an ACEC to protect the water quality of this important anadromous fish stream/cold water tributary to the Mattole River, and the low-elevation old-growth Douglas fir forest. This policy could have a positive impact on forest resources, and would not preclude BLM from proposing low-impact forest management projects in the future.

4.8.5 Impacts to Forest Resources from Aquatic and Fisheries Management

Under all alternatives, existing policies would remain in place to restore and maintain ecological health of watersheds and aquatic habitats and implement up-slope sediment reduction resulting in a potential minor long-term negative impact to forest management activities.

4.8.6 Impacts to Forest Resources from Wildlife Management

Under all alternatives, existing programs will continue to protect wildlife during forest management activities, resulting in negligible impact to forest management.

4.8.7 Impacts to Forest Resources from Terrestrial Ecosystems/Vegetation Management

Under all alternatives existing programs would be continued to eradicate invasive plant species, maintaining a mosaic of compositionally and structurally diverse habitat types; this would have a negligible impact on forest management activities.

4.8.8 Impacts to Forest Resources from Forest Management

Under all alternatives, existing policies would remain in place to maintain and enhance old growth forests, resulting in a major positive impact on forest ecosystem management and restoration. Goals to conduct silvicultural treatments and promote forest restoration (tree planting) under Alternatives B, C, and D would have a long-term positive impact. Alternative D would allow silvicultural treatments and post-fire

salvage operations, reopen old logging roads, and build new temporary roads; these actions would only be conducted if they were anticipated to have a moderate to major positive impact to forest management and ecosystem restoration.

4.8.9 Impacts to Forest Resources from Special Forest Products Management

Issuance of permits to collect mushrooms, beargrass, floral trade species, and fuelwood proposed under all alternatives would have a negligible effect on forest resources and management activities, and a minor to moderate positive effect on special forest products.

4.8.10 Impacts to Forest Resources from Grazing Management

Under Alternatives A, C, and D, existing policies would remain in place to preclude loss or reductions in grazing allotments or AUMs, resulting in no changes to current rangeland management and negligible impact to forest resources.

Under Alternative B, all livestock grazing would be eliminated from the King Range. This would have a minor impact on forest resources. The acreage of forested lands would likely increase as trees encroach upon coastal prairies formerly kept open by grazing.

4.8.11 Impacts to Forest Resources from Fire Management

Activities common to all alternatives would have minor positive long term effects on forest management activities, due to reduction in the risk of fire. The geographic extent of this effect would depend on the number and extent of future fires and the associated rehabilitation.

Under Alternative A, negligible effects are anticipated on forest management activities, especially in the Backcountry Zone. Aggressive suppression activities could have a moderate localized negative impact on forest management, depending on the nature and extent of a fire and its suppression activities. Some of these effects could have a long-term negative effect on forest management.

Suppression of fires within the Residential Zone under Alternative B would have negligible impact on forest ecosystems. Alternative B would likely have a long-term moderate positive impact on forest resources, depending on the size and extent of future fires. It is possible that long-term negative impacts could occur locally as a result of the loss of valuable forests to a fire, but re-establishing the natural role of fire would have moderate to major positive long-term effects on forest management as a result of creating a landscape resistant to intense and/or stand-replacing type fires.

Under Alternative C, effects to forest management in the backcountry would be the same as under Alternative B, but Frontcountry Zone activities could lead to minor, long-term positive effects on forest management in that zone. Alternatives C and D would utilize prescribed fire and mechanical methods in the Frontcountry Zone to manage fuels; this could have a moderate long-term beneficial impact on forest resources.

4.8.12 Impacts to Forest Resources from Transportation and Access

All alternatives would continue existing policies to provide a network of roads that complement the rural character of the King Range, so there would be negligible impact on forest management.

4.8.13 Impacts to Forest Resources from Recreation

All four alternatives would continue existing policies regarding visitor information, road and trail maintenance, resource protection, visitor safety, special recreation permits, cooperative management, exclusionary fence and barrier construction, enforcement, and Universal Accessibility Standards, so there would be negligible impact on forest management activities. Alternatives C and D would increase the visitor use allocation system to allow moderate (Alternative C) and higher use numbers (Alternative D) in the Backcountry and Frontcountry Zones. This increase in use could have a minor negative impact on forest resources.

4.8.14 Impacts to Forest Resources from Interpretation and Education

All the alternatives would continue existing policies to provide information to visitors and could have a minor to moderate beneficial impact on forest management activities.

4.8.15 Potential Cumulative Impacts to Forest Resources

Efforts to maintain and increase old-growth forest habitat in the KRNCA, and linking this habitat to other old-growth forest areas in the region (Humboldt Redwoods State Park, Gilham Butte, Sanctuary Forest), will result in a moderate beneficial cumulative impact to late successional forest management. Removal of certain tracts of timber from the regional forest harvest base through combined efforts of land conservancies, the BLM, and other public agencies will result in minor cumulative impacts to the forest products production (see Lands and Realty section for anticipated land/easement acquisition acreage in the area).

4.9 IMPACTS TO GRAZING RESOURCES

Under all alternatives, with the exception of Alternative B which eliminates livestock grazing in the King Range, decisions relating to grazing management are constrained by current BLM grazing regulations and the California Standards for Rangeland Health and Guidelines for Livestock Management. Grazing management decisions are based on existing allotment management plans.

4.9.1 Impacts to Grazing Resources from Visual Resources Management

Alternative A would continue to keep the allotments on the western coastal slope in the VRM Class II designation (management activities and uses can be seen but should not attract the attention of the casual observer) and allotments in the other zones in VRM Class III (management activities may attract attention but should not dominate the view of the casual observer). Because this would continue existing visual policies, there would be no impact on grazing resources.

Alternatives B and C would keep the Frontcountry Zone in the Class III designation, a continuation of existing policies with no impact on grazing resources. Alternative B would change the VRM designation in the Backcountry Zone from Class II to Class I (this class allows only for very limited types of management activities). VRM Class I designation would not preclude livestock grazing, as this activity is part of the characteristic cultural landscape in the northern part of the KRNCA. However, designation would cause moderate impacts to grazing management, as it would limit the locations and extent of the construction of fencing and other needed improvements. A Class I designation would also require use of historic/native materials (wooden fence posts etc.) in construction of improvements which would cause cost increases to livestock operators. Alternative C would change the VRM designation in the portion of the Backcountry Zone south of Cooskie Creek to Class I, while leaving the area north of the Creek as Class II. This would result in only minor impacts to grazing management since almost all of the fencing and other allotment improvements would be located north of Cooskie Creek.

Alternative D would maintain the designation of Class III in the Frontcountry Zone, with no impact on grazing resources. Alternative D would maintain the Backcountry Zone VRM Class II designation. Although grazing activities are consistent with VRM designation II, possibly requiring slight modifications to future improvements, could result in a minor adverse impact on grazing resources.

4.9.2 Impacts to Grazing Resources from Cultural Resources Management

Under all alternatives, existing policies would remain in place to protect cultural resources from grazing impacts, so there would be no impact on grazing management. Policies to maintain or increase monitoring, site patrols and collaboration with Native Americans under Alternatives A, B, C, and D would have no impact on grazing resources. Policies encouraging surveying, regional overviews, stabilization of historic structures and development of National Register nominations under Alternative D would have negligible impacts on grazing resources, unless they required fencing off some site areas, which could have a minor negative impact.

4.9.3 Impacts to Grazing Resources from Lands and Realty

Policies to obtain lands and interests determined to be desirable for consolidation to facilitate management in Backcountry and Frontcountry Zones under all alternatives could have a minor beneficial impact on grazing resources by increasing grazing operator flexibility. Policies to consider new rights-of-way for roads in the Frontcountry Zone under Alternative B and C and in all zones under Alternative D could have a minor beneficial impact on grazing resources by increasing grazing operator flexibility.

4.9.4 Impacts to Grazing Resources from Inventory Units and Study Areas

Under all alternatives, there would be no impact on grazing resources from Wild and Scenic River designations because authorized livestock grazing use is compatible with that designation and protection of wild and scenic river values under that designation is subject to valid existing rights.

Under all alternatives, there would be no impact on grazing resources from protective management for wilderness characteristics because grazing is a valid use in wilderness.

Under all alternatives there would be no impact on grazing resources from Areas of Critical Environmental Concern (ACEC) designations because no active grazing allotments occur in the proposed Mill Creek Watershed ACEC.

4.9.5 Impacts to Grazing Resources from Aquatic Ecosystems and Fisheries Management

Under all alternatives, existing policies would remain in place to restore and maintain ecological health of watersheds and aquatic habitats and implement up-slope sediment reduction, so there would be no impact on grazing resources.

4.9.6 Impacts to Grazing Resources from Terrestrial Ecosystems and Vegetation Management

Under all alternatives existing programs would be continued to eradicate invasive plant species, thereby potentially leading to slight improvements in forage quality. This could result in a minor beneficial impact on grazing resources. Under Alternative B, prescribed fire and manual tree removal would be used to maintain healthy and productive grasslands; this could result in minor beneficial impacts to grazing resources. Under Alternatives C and D, prescribed fire, limited conservation grazing outside of existing grazing allotments, and native grass enhancement projects would be used to maintain healthy and productive grasslands; this could result in moderate beneficial impacts to grazing resources.

4.9.7 Impacts to Grazing Resources from Wildlife Management

Under all alternatives, existing policies would remain in place to maintain and enhance natural wildlife populations. Also, existing policies would remain in place to minimize or eliminate the need for listing of additional species under the ESA and to contribute to the recovery of listed species. Because these alternatives would continue existing policies, there would be no impact on grazing resources. Actions specific to various listed species identified under all alternatives would not affect grasslands within active grazing allotments, so would result in no impact on grazing resources. Policies enacted under Alternatives C and D to facilitate research and monitoring of wildlife would have no impact on grazing resources.

4.9.8 Impacts to Grazing Resources from Forest Management

Under all alternatives, existing policies would remain in place to maintain and enhance old growth forests; as this would not affect grazing allotments, there would be no impact on grazing resources. Goals to conduct silvicultural treatments and promote forest restoration (tree planting) under Alternatives B, C, and D would not affect the grasslands within the active grazing allotments, so there would be no impact on grazing resources from forest management.

4.9.9 Impacts to Grazing Resources from Special Forest Products Management

Issuance of permits to collect mushrooms, beargrass, floral trade species, and fuelwood proposed under all alternatives would not affect the grasslands within the active grazing allotments, so there would be no

impact on grazing resources from special forest products. Policies to monitor mushroom collection methods, coordinate with local tribes regarding use of beargrass, and active management of beargrass resources proposed in Alternatives C and D would also have no impact on grazing resources.

4.9.10 Impacts to Grazing Resources from Grazing Management

Under Alternatives A, C, and D, existing policies would remain in place to preclude loss or reductions in grazing allotments or AUMs, resulting in no impact on grazing resources. Under Alternatives A, C, and D, the Spanish Flat allotment boundary would be adjusted to exclude 500 acres of a terraced prairie between Spanish and Randall Creeks to protect significant cultural sites, but the number of Animal Unit Months (1,105 AUMs) would remain unaltered. Because this only represents about a 5% decrease in size of this allotment, and the Residual Dry Matter (RDM) target levels have been consistently exceeded on this allotment (implying more than adequate levels of forage), the adverse impact on grazing resources would be minor. Under Alternatives A, C, and D, four expired grazing leases would be administratively changed from available to unavailable for grazing. Because these leases are inactive and have not been used for grazing for several years, and are unsuitable for livestock grazing because of forest regrowth, this would have no impact on grazing resources.

Under Alternative B, all livestock grazing would be eliminated from the King Range. The four active grazing allotments would be eliminated, and livestock grazing levels would be reduced from 2,050 AUMs to zero. This would result in a major adverse impact on grazing resources, and a social and economic impact to several livestock operators.

4.9.11 Impacts to Grazing Resources from Fire Management

Because Alternative A would continue existing policies to fully suppress all fires regardless of cause within all zones, there could possibly be minor negative impacts on grazing resources, lost to spreading forest habitats. Suppression of fires within Residential Zone under Alternative B would have no impact on grazing resources because there are no grazing allotments within that zone. Alternative B would manage fuels for variable intensity wildfires in the Backcountry Zone. By creating a landscape resistant to damaging high intensity wildfires, this could have a minor beneficial impact on grazing resources in that zone. Alternative C would suppress all fires in the Frontcountry, a continuation of existing policies in that zone with no impact on grazing resources. Alternatives C and D would utilize prescribed fire in the Frontcountry and Backcountry Zones for unique habitat improvement such as maintaining coastal prairies in an early successional stage. This would have a significant beneficial impact on grazing resources in those zones.

4.9.12 Impacts to Grazing Resources from Transportation and Access

All alternatives would continue existing policies to provide a network of roads that complement the rural character of the King Range, so there would be no impact on grazing resources.

4.9.13 Impacts to Grazing Resources from Recreation

All four alternatives would continue existing policies regarding visitor information, road and trail maintenance, resource protection, visitor safety, special recreation permits, cooperative management,

exclusionary fence and barrier construction, enforcement, and Universal Accessibility Standards, so there would be no impact on grazing resources. Alternatives C and D would increase the visitor use allocation system to allow moderate (Alternative C) and higher use numbers (Alternative D) in the Backcountry Zone. This would increase the potential for vandalism of grazing management facilities (fences, water developments etc.) from recreational visitors, but the allotments in this zone are not located near heavily used trails, so this would only cause a minor adverse impact. Alternative C and D would also allow heavier visitor use in the Frontcountry Zone, but allotments in this zone are also not located in proximity to heavily used trails, so the impact to grazing resources from potential vandalism would be minor in that zone also.

4.9.14 Impacts to Grazing Resources from Interpretation and Education

All the alternatives would continue existing policies to provide information to visitors, so there would be no impact on grazing resources.

4.9.15 Potential Cumulative Impacts to Grazing Resources

Cumulative impacts to grazing resources are expected to be negligible or nonexistent.

4.10 IMPACTS TO FIRE MANAGEMENT

Under all alternatives, Fire Management program and activities are guided and constrained by existing fire management policies that are contained in BLM national regulation, state directives, unit management plans and supplemented by cooperative agreements for fire protection.

4.10.1 Impacts to Fire Management from Visual Resources Management

Under all alternatives, the Visual Resources Management program will have no impacts on the Fire Management program.

4.10.2 Impacts to Fire Management from Cultural Resources Management

Under all alternatives, the Cultural and Historic Resources management program with its existing and proposed policies will have negligible impacts on the Fire Management program.

4.10.3 Impacts to Fire Management from Lands and Realty

Under all alternatives, the Lands and Realty management program will have minimal impacts on the Fire Management program. Acquisition of additional lands surrounding the KRNCA could have minor beneficial impacts by increasing the opportunities for implementing the fuels management/fuel break program.

4.10.4 Impacts to Fire Management from Inventory Units and Study Areas

Under all alternatives, the Wild and Scenic River protective management and ACEC designations will have no impact on the Fire Management program. In Alternatives B and C, protective management of wilderness characteristic inventory units would not preclude fire and fuels management activities in situations where private land protection, public safety and other priority issues arise. However, comprehensive fuels reduction activities would not be considered compatible with the protective management goals of the wilderness inventory subunits, resulting in moderate impacts to this aspect of the fire program.

4.10.5 Impacts to Fire Management from Aquatic Ecosystems and Fisheries Management

Under all alternatives, the existing policies for the Aquatic Ecosystems and Fisheries Management programs will remain in place for restoring and maintaining the ecological health of watersheds, aquatic habitats, and up-slope sedimentation reductions. The constraints found in these policies are considered in the current suppression and fuels management programs, and would be continued under implementation of any proposed alternative, thereby creating negligible impacts on the Fire Management program.

4.10.6 Impacts on Fire Management from Terrestrial Ecosystems and Vegetation Management

Under all alternatives, the Terrestrial/Vegetative Ecosystems Management programs will have negligible impacts on the Fire Management program.

4.10.7 Impacts to Fire Management from Wildlife Management

Under all alternatives, the Wildlife Management program requirements in habitat protection for marbled murrelets and northern spotted owls potentially conflicts with wildfire suppression actions and would have a minor impact on the Fire Management program. Under Alternatives C and D, the fuels management program activities would provide beneficial long-term effects that enhance vegetative conditions favorable for wildlife introduction for species such as the Roosevelt elk.

4.10.8 Impacts to Fire Management from Forest Management

Alternatives A and B would have no impacts on the Fire Management program. Under Alternatives C and D there are some beneficial effects to the Fire Management program as the development of mosaic and old growth patterns expand. These vegetative changes enhance the capability for the use of natural ignitions thereby allowing for the more natural role of fire to occur across the landscape.

4.10.9 Impacts on Fire Management from Special Forest Products Management

Under all alternatives, the Special Forest Products program will have no impacts on the Fire Management program.

4.10.10 Impacts to Fire Management from Grazing Management

Under all alternatives, the Grazing Management program will have no impacts on the Fire Management program.

4.10.11 Impacts to Fire Management from Fire Management

Under all alternatives, existing policies would remain in place and result in no impacts on the Fire Management program. In all alternatives, human caused fires will be suppressed. Under Alternatives B and C, re-establishing the natural role of fire in the Backcountry and Frontcountry Zones by allowing natural caused fires to burn within defined suppression actions and constraints provides a long-term beneficial effect to the Fire Management program. Under Alternatives C and D, prescribed burning (broadcast and pile burning) is used to reduce fuels and create mosaic vegetative patterns. Wildfires would burn with variable fire intensities across the landscape thereby minimizing damage associated with large high intensity fires and results in major long-term beneficial effects for the Fire Management program. Under Alternative B, no broadcast burning is allowed and results in a major negative impact to the Fire Management program. Under Alternatives C and D, the use of broadcast burning to expand the width of fuelbreaks provides a larger suppression structure and therefore an improved capability in suppression actions. This would provide a major long-term beneficial effect to the Fire Management program.

4.10.12 Impacts to Fire Management from Transportation and Access

Under Alternatives A, C, and D, the Transportation and Access Management program will have no impacts on the Fire Management program. Under Alternative B, the road closure and decommissioning of the Telegraph Ridge Road would have a moderate impact and a long-term effect on the Fire Management program. This road provides access to the area when suppression actions are required to address wildfires in the general area. This impact would be mitigated if an alternate route (Such as the ridgetop along Telegraph Ridge) were kept open as a fuel break/access route for fire vehicles for suppression efforts.

4.10.13 Impacts to Fire Management from Recreation

Under Alternative B, the Recreation Management program will have negligible impact on the Fire Management program. Under Alternatives A and C, minor impacts will occur because of the projected increase in use of recreation trails, camping, and developed campgrounds. Under Alternative D, a moderate impact would occur because the greatest projection of use is in this alternative. With increasing numbers of users there is a commensurate increase in wildfire occurrence and risk.

4.10.14 Impacts to Fire Management from Interpretation and Education

Under all alternatives, the Interpretation and Education programs will have minor to moderate beneficial impact on the Fire Management program as fire safety is a key message in KRNCA interpretive/educational programs.

4.10.15 Potential Cumulative Impacts to Fire Management

A number of organizations and agencies in Humboldt County—including local Fire Safe councils, State Parks, etc.—have recently been developing fuels management reduction plans. Improved management of fuels in the King Range will contribute to a moderate cumulative impact with these larger efforts.

4.11 IMPACTS TO TRANSPORTATION AND ACCESS

Under all alternatives, County roads within the KRNCA are public routes and are managed by Humboldt County, with the exception of a short segment of Chemise Mountain Road at the southern tip of the NCA, which is managed by Mendocino County. All other roads are managed under the jurisdiction of the BLM.

4.11.1 Impacts to Transportation and Access from Visual Resources Management

Under all alternatives, visual contrast ratings for existing roads and facilities would be conducted and opportunities for reducing existing visual impacts through modifications (e.g., painting culverts, removing road berms, etc.) identified. Modifications would serve to blend roads and facilities into the landscape, minimizing their visual impact and resulting in a minor, beneficial, localized impact. A complete inventory of existing and potential key scenic vistas along road and trail corridors would be undertaken and opportunities identified for enhancing these locations. Construction of scenic pullouts would result in moderate, beneficial, localized impacts to roads and facilities by increasing opportunities for viewing scenic vistas. Impacts to roads and facilities, including through modifications and construction of scenic pull-outs would be considered long-term.

Alternative A would continue the designation of the western coastal slope in the VRM Class II (management activities and uses can be seen but should not attract the attention of the casual observer), and the Uplands area classified as VRM Class III (management activities may attract attention but should not dominate the view of the casual observer). Because this continues existing visual policies, there would be no impact on transportation facilities.

Alternatives B and C would keep the Frontcountry Zone in the Class III designation, a continuation of existing policies with no impact on transportation facilities. Alternative B would change the VRM designation in the Backcountry Zone from Class II to Class I (this class allows only for very limited types of management activities) and would not impact existing roads or facilities. Designation of the Residential Zone as Class IV would allow for transportation improvements needed for vehicular safety and operations and would be a moderate, beneficial, localized impact. This impact would be long-term.

Alternative D would maintain the designation of Class III in the Frontcountry Zone, with no impact on transportation facilities. Alternative D would maintain the Backcountry Zone VRM Class II designation. The few administrative/inholder access roads in the Backcountry Zone are unimproved and there would be no impact resulting from this change in designation.

4.11.2 Impacts of Transportation and Access from Cultural Resources Management

Under all alternatives, policies proposed to protect cultural resources would have minor impacts to road maintenance activities by limiting road grading and facility construction near cultural and historic resources. Proposed policies to protect the character of historic resources, such as Chambers Ranch and hunting cabins located on King Peak Road, would impact transportation by limiting the extent of improvements allowed on those roads. This impact would be minor, localized, and long-term (no major road improvements are foreseen in any of the alternatives). In addition, policies to protect subsurface cultural resources under all alternatives would have a minor, localized, long-term impact to road grading and roadway improvements construction (culverts, crossings, etc.) activities by requiring avoidance of cultural resources.

4.11.3 Impacts to Transportation and Access from Lands and Realty

Under Alternative D, if access were acquired from a willing seller(s), Johnny Jack Ridge Road would be opened to a trailhead parking area near its intersection with Cooskie Creek. This impact would be moderate, localized, and long-term.

There would be no additional impacts on Transportation and Access from the Lands and Realty Program. All private land inholders are assured reasonable access to their properties through existing laws and statutes.

4.11.4 Impacts to Transportation and Access from Inventory Units and Study Areas

The Wild and Scenic Rivers or ACEC designations would have no impact on transportation, as roads that pass through or near those proposed areas are compatible with their management. Wilderness inventory units would also not impact transportation, as there are no roads in the proposed areas.

4.11.5 Impacts to Transportation and Access from Aquatic Ecosystems and Fisheries Management

Under all alternatives, existing policies for restoring and maintaining ecological health of watersheds and aquatic habitats and implementing up-slope sediment reduction would remain in place and would not create impacts to transportation. New standards and guidelines proposed under Alternatives B, C, and D could have minor, localized, long-term beneficial impacts to roadways crossing streams by possibly requiring changes to existing culverts. Alternatives A, B, and C would keep Smith-Etter Road closed to vehicles during the winter and would be a minor, localized, long-term impact.

4.11.6 Impacts to Transportation and Access from Terrestrial Ecosystems and Vegetation Management

Under Alternative A, general vegetation guidelines from current planning documents would remain. These vegetation guidelines would apply to transportation during road decommissioning activities, when

roads are revegetated. Continuation of the existing policies would not create an impact. Under Alternatives B, C, and D, specific management plans would be followed for individual habitat types. Roads would be revegetated following the guidelines listed for the specific habitat that the road passes through. This impact would be moderate, localized, and long-term.

4.11.7 Impacts to Transportation and Access from Wildlife Management

Under all alternatives, existing policies would remain in place regarding road maintenance to avoid disturbance of special status species. There would be no impact to transportation from continuation of these policies.

4.11.8 Impacts to Transportation and Access from Forest Management

Under all alternatives, decommissioned roads would be subject to reforestation through tree planting. Reforestation would eliminate decommissioned roads and simplify the road network. Since none of the routes are currently open to public access, there would be no impact. Under Alternative D, old logging roads may be reopened and new temporary roads built to remove burned or fire-killed lumber. This would temporarily expand the road network but would not affect public access. Although all temporary roads would be removed upon completion of the salvage operation and decommissioned and temporary roads revegetated, this impact would be major and long-term due to the time required for re-establishment of vegetation upon decommissioning.

4.11.9 Impacts to Transportation and Access from Special Forest Products Management

Permits are currently issued to collect special forest products in the KRNCA. Seasonal access of some roads (particularly Smith-Etter Road and Etter Road) would be extended under Alternative D. This impact would be moderate, localized, and long-term.

4.11.10 Impacts to Transportation and Access from Grazing Management

Use of some unimproved roads by grazing permittees (Johnny Jack Ridge, Telegraph Ridge, and Cooskie Creek) would continue under all alternatives. Several of these routes are in landslide-prone areas and subject to failure. If routes fail, permittee access opportunities would need to be reevaluated for alternatives. This could result in moderate localized impacts to these administrative routes. None of the other proposed grazing management policies would impact transportation.

4.11.11 Impacts to Transportation and Access from Fire Management

All alternatives propose completing and maintaining a planned fuel break system. Some roads in the KRNCA are considered fuel breaks (King Range Road, Smith-Etter Road, Paradise Ridge Road, and Saddle Mountain Road) and would be maintained as part of the system. Inclusion of roads as part of the fuel break system would require consideration of impacts to fuel breaks in any discussion of modifications to road alignments or potential decommissioning actions. This impact would be minor and long-term.

4.11.12 Impacts to Transportation and Access from Transportation and Access

Under all alternatives, Prosper Ridge, Nooning Creek, and King Range Roads would have a limited designation and would be open year-round to all vehicle types. Finley Ridge Road would be open year round to 4-WD vehicles. This would be a continuation of existing conditions and there would be no impact to transportation on these roads.

Under Alternative A, all roads would continue to operate under existing conditions and there would be no impact to transportation. Under Alternative B, all roads with the exception of Windy Point and Telegraph Ridge Roads would continue to operate under existing conditions. Windy Point and Telegraph Ridge Roads would be closed under Alternative B. This would be a localized and long-term negative impact due to the loss of vehicle access and change in travel patterns. The impact is considered moderate due to the low volume of vehicle traffic using these routes. Under Alternative C, all roads with the exception of Etter Road, Saddle Mountain, and Mattole Estuary Roads would operate under existing conditions. Etter Road would be opened to 4-WD vehicles from April 1 through October 31, and Mattole Estuary Road would be opened. These changes would represent a minor, localized, long-term positive transportation impact by increasing access on these roads.

Alternative D proposes the most changes to roads. Under Alternative D, Smith-Etter and Etter Road would be open from April 1 to December 31 to all types of vehicles, Johnny Jack Road would be open April 1 to October 31 to 4-WD vehicles, Windy Point Road would be open to 4-WD vehicles, and Telegraph Ridge Road would be open from April 1 to December 31 and would be open to 2-WD vehicles to Spanish Ridge and to 4-WD vehicles the rest of the way. Paradise Ridge Road would be open for 1.5 miles to 2-WD vehicles and the rest of the way to 4-WD vehicles, Saddle Mountain Road would be open to all types of vehicles, and Mattole Estuary Road would be open. These changes would represent a moderate long-term positive impact to transportation by increasing access to areas to more types of vehicles and for longer periods of time.

4.11.13 Impacts to Transportation and Access from Recreation

All four alternatives would continue existing policies regarding visitor information, road and trail maintenance, Universal Accessibility Standards, and monitoring of visitor use so there would be no impact on transportation. All alternatives would provide barriers such as gates and fences, as needed, to block vehicular access to designated closed areas.

Alternatives B, C, and D would provide trailhead facilities, including parking which would create a moderate, localized, long-term impact. Alternative C and D would possibly create a new trailhead at Bear Creek, requiring reopening/hardening of the existing road. This road work would be a moderate, localized, and long-term impact. Alternative D would expand trailhead parking as needed. Expansion of parking facilities would involve construction and physical change, which would be considered a moderate, localized, long-term impact.

Alternative A would maintain existing facilities in the Residential Zone, including Mal Coombs Park and Black Sands Beach, and there would be no impact. Alternatives B, C, and D would possibly upgrade the parking lot at Mal Coombs Park to make more efficient use of space. Expansion of the parking lot

would involve construction and would be considered a moderate, localized, long-term impact. Alternative B would maintain the existing parking at Black Sands Beach. Alternatives C and D would add parking spaces at Black Sands Beach when opportunities arise. This expansion would involve construction and would be considered a moderate, localized, long-term impact.

4.11.14 Impacts to Transportation and Access from Interpretation and Education

All the alternatives would continue existing policies to provide information to visitors and there would be no impact on transportation.

4.11.15 Potential Cumulative Impacts to Transportation and Access

Population growth in southern Humboldt County over the life of this plan could result in minor to moderate traffic impacts, by adding pressure on the King Range transportation network, particularly in Alternatives A and D.

4.12 IMPACTS TO RECREATION

All four alternatives would continue policies regarding visitor information and adequate maps, road and trail maintenance, resource protection, visitor safety, special recreation permits, cooperative management, exclusionary fence and barrier construction, enforcement, Universal Accessibility Standards, and stressing compliance with coastal “leave no trace” principles. These policies would have a long-term minor beneficial impact on recreation.

Policies would remain in place to provide supplementary rules and regulations to protect resources, visitor safety, and the surrounding community. Examples of such rules could include campfire prohibitions during extreme fire conditions, requiring bear proof food containers in the backcountry, and requiring weed free livestock feed on equestrian trails. Rules such as these would have minor impacts on recreation because visitor behavior or equipment usage would only have to change slightly to comply with the new rules.

Policies regarding special recreation permits would have a negligible beneficial impact on recreation by maintaining consistent use within the management zones, and prohibiting incompatible use which could create conflicts with other recreational users in that zone.

Policies to control unauthorized visitation from public land onto private land and to restrict vehicle use within designated areas would have a long-term minor beneficial impact on recreation. Enforcing existing regulations and applying other regulations for visitor safety or resource protection would have a long-term moderate beneficial impact, because the regulations would help to reduce visitor safety incidents, conflicts with other users, and would ensure additional protection of sensitive resource areas.

Policies ensuring that Universal Accessibility Standards under the Americans with Disabilities Act are met would have a long-term moderate beneficial impact on recreation. Visitors with disabilities would have an improved recreational experience at KRNCA, because of improved access to recreational areas, trails, campgrounds and other facilities.

Use allocation measures would have a long-term beneficial impact on the quality of the recreation experience by reducing noticeable resource impacts and user encounters. However, implementation of such a system would displace users geographically and temporally.

4.12.1 Impacts to Recreation from Visual Resources Management

Policies common to all alternatives which would complete visual contrast ratings, inventory existing and proposed scenic vista points, and ensure non-detracting coastal development, would have a positive impact on recreation by ensuring that the scenic quality of the King Range is maintained—a primary feature that attracts visitors to the area.

Under Alternative A, VRM classes would continue as currently managed and would have no impact on recreation. Alternative B would manage the Backcountry Zone as VRM Class I which may require some facilities or structures including fences, and dilapidated buildings to be removed in order to maintain the Class I rating. This would result in a minor positive impact to recreation by removing unnatural features. Visitors and local residents who recreate in the Backcountry Zone because of its primitive qualities, relative solitude, and natural scenic character, would continue this experience resulting in a moderate beneficial and long-term impact on recreation. Maintaining the Frontcountry Zone as VRM Class III and the Residential Zone as VRM Class IV would result in no impacts on recreation under Alternative B. Alternative C would have the same VRM classes as Alternative B and therefore would also have a minor positive impact on recreation in the Backcountry Zone and no impact to recreation in the Frontcountry and Residential Zones. Minor impacts on recreation under Alternatives B and C would be short-term in effect. The difference between Alternatives C and B would be that a portion of the Backcountry Zone north of Cooskie Creek would be managed as VRM Class II under Alternative C. This would result in no impact on recreation in this area of the Backcountry Zone. As in Alternatives B and C, Alternative D would manage the Frontcountry and Residential Zones as VRM Classes III and IV respectively, which would result in no impact on recreation in either of these zones. However, as opposed to Alternatives B and C, Alternative D would manage the Backcountry Zone as VRM Class II, resulting in no impact on recreation in the Backcountry Zone.

4.12.2 Impacts to Recreation from Cultural Resources Management

Under all alternatives, existing policies involving issuance of permits, field evaluations, and use allocations, safeguards against incompatible uses, and archaeological inventories will have no impact on recreation. Policies encouraging appropriate educational and interpretive outreach will have a long-term minor beneficial impact on recreation by providing additional cultural information and opportunities that would enhance visitors' recreational experiences at the KRNCA.

Alternatives A and B would continue existing policies that protect cultural and historic resources, so there would be no impacts on recreation. However, priorities for protection would be placed on resources within the Backcountry and Residential Zones, where particularly relevant prehistoric and historic sites are located. Under Alternative C, all three management zones (Backcountry, Frontcountry, and Residential) would have priority for protection, which would result in minor to moderate beneficial impacts on recreation, due to visitors and local users who are interested in viewing and learning about historic resources and their preservation. These impacts would be long-term.

Alternative C would also incorporate policies to increase resource monitoring, site patrols and collaboration with Native American tribes and individuals. Implementation of these policies would not impact recreation. Alternative D is similar to Alternative C, but provides for additional actions encouraging further surveying of the Frontcountry Zone, regional overviews, stabilization of historic properties, and development of National Register nominations for historic and prehistoric districts. These policies and actions under Alternative C and D would result in long-term moderate and beneficial impacts on recreation, because of the positive interest expressed by visitors and local users who visit KRCNA towards the preservation of cultural and historic resources, opportunities for volunteer outreach, and the opportunities for education and interpretation of these resources.

4.12.3 Impacts to Recreation from Lands and Realty

Policies to acquire lands and interests determined to be desirable for consolidation to facilitate management in the Backcountry and Frontcountry Zones (Alternatives B, C, and D), and in the Residential Zone and adjacent or outside the boundary lands (Alternatives C and D), could impact recreation depending upon whether the acquisitions facilitate public access, provide opportunities to open new recreation areas, and/or provide new linkages to adjacent recreation areas. Impacts would vary by acquisition type and could range from negligible to moderate depending on the location of the acquisition and how much it modifies current recreation experiences. Impacts would be considered beneficial and long-term with respect to providing additional land for recreational use.

Policies to consider new rights-of-way and/or permits for roads/utilities in the Frontcountry and Residential Zones under Alternatives B, C, and D could impact recreation positively (for those visitors wanting roaded opportunities) if access is improved by the new roads. However, since the majority of the recreation areas in the Frontcountry and Residential Zones are currently accessible by road, additional road rights-of-way would have only long-term negligible negative impacts. The level of impact would depend on each individual case and location relative to the KRNCA; however, it is possible that additional road rights-of-way would open some areas to increased vehicle access where none exists currently, potentially increasing the level of visitation and corresponding negative impacts to recreational areas.

Excluding the Backcountry Zone from consideration of new rights-of-way under Alternatives B and C would not impact recreation because new rights-of-way would not be required to meet the objectives and resource conditions of the management zones, Interim Guidelines for Wilderness Study Areas, and the Standards and Guidelines for the Northwest Forest Plan. As a result, new rights-of-way would not affect recreational opportunities or experiences within the KRNCA.

Under Alternative D, consideration of applications for rights-of-way and permits would be similar to Alternatives B and C, in that they would have to meet the same requirements for resource conditions, management zones, standards, and guidelines, resulting in no impact on recreation. Utilities rights-of-way under Alternatives B and C would result in no impact on recreation, as rights-of-way would be restricted to existing and/or underground locations to maintain aesthetic values. Alternative D actions are slightly different compared to Alternatives B and C, in that all applications for rights-of-way (roads, utility corridors, water facilities, and communication sites) would be considered on a case-by-case basis for any management zone, and therefore less restrictive than Alternatives B and C in the Backcountry

Zone. This has the potential for negative impacts on recreation. These impacts are expected to be moderate based on anticipated demand for rights-of-way.

4.12.4 Impacts of Recreation from Inventory Units and Study Areas

Recreation impacts associated with inventory units and study areas would be related to potential changes in access and allowable uses, existing and proposed trail routes, and location of existing or proposed facilities.

4.12.4.1 Wild and Scenic Rivers

Under Alternative A, there would be no change in the quantity of river segments proposed for designation under the National Wild and Scenic Rivers System (NWSRS); therefore, there would be no impact on recreation under this alternative. Under Alternatives B, C, and D, there would be additional river (eligible) segments recommended as suitable for inclusion in the NWSRS, with all 28 river segments being recommended under Alternative B; fifteen river segments recommended under Alternative C; and seven river segments recommended as suitable under Alternative D.

Under all alternatives, the BLM would place all suitable river segments under protective management until a final decision is made by Congress. Under these alternatives, there would be minimal impacts to recreation as few actions are planned along rivers that would impact designation. The only exception is a proposed group camping area at the Mattole River Estuary, which could be impacted by Wild and Scenic River designation.

Under Alternatives B, C, and D, the mouth of the Mattole River and estuary would receive preliminary classification as a scenic river area, as well as Mill Creek and South Fork Bear Creek, north of Shelter Cove Road. The remaining portion of South Fork Bear Creek, south of Shelter Cove Road, would be preliminarily classified as a recreational river area.

4.12.4.2 Wilderness Study Areas and Wilderness Characteristic Inventory Units

Under all alternatives, lands currently designated as WSAs would be managed under the BLM's "Interim Management Policy (IMP) for Lands under Wilderness Review" (H-8550-1), until Congressional designation as Wilderness or release from WSA status. Under all alternatives, there would be no impact on recreation within the Backcountry Zone, which is most affected by WSA status. This is because the alternatives propose minimal to no new recreational facilities or development within the Backcountry Zone.

Wilderness characteristics would be protected on land adjacent to the existing King Range and Chemise Mountain WSAs as identified by alternative; 10,259 acres under Alternative B; 6,612 acres under Alternative C; and 200 acres under Alternative D. All parcels would be managed to protect their wilderness characteristics and incorporated into the Backcountry Management Zone. Protective management of additional lands outside of the existing WSAs under Alternatives B and C would preclude development of mountain bike trails in these locations. Although the plan does not specifically call for development of mountain bike trails in these locations, a management goal is to explore opportunities to develop more trails for this sport outside of the WSAs. This restriction on trail development would

result in a minor impact to mountain biking, as other portions of the Frontcountry Zone would remain open for trail consideration.

4.12.4.3 ACECs

Alternatives A and B would continue current management of the 655 Acre Mattole Estuary ACEC, protecting significant archaeological sites, fragile sand dune ecosystem, and riparian areas/wildlife values and coastal strand south to Sea Lion Gulch. There would be no additional ACEC designations under Alternatives A and B; therefore, there would be no impact on recreation from ACECs.

Alternatives C and D would be similar to actions under Alternatives A and B, except an additional ACEC designation would be proposed for Mill Creek Watershed (approximately 680 acres) including all BLM managed lands within the watershed in order to protect water quality important to anadromous fish stream/cold water tributary; and the low-elevation old-growth Douglas fir forest. There would be minor impacts on recreation as ACEC designation would not preclude any planned recreational development and primitive recreation would still be allowed. Some restrictions to visitor use such as a ban on campfires may cause minor impacts to recreation if implemented to protect ACEC values.

4.12.5 Impacts to Recreation from Aquatic and Fisheries Management

Under all alternatives, existing policies would remain in place to restore and maintain the ecological health of watersheds and aquatic habitats on public lands, so there would be no impact on recreation. The proposed standards and guidelines included in Alternatives B, C, and D would not create impacts on recreation.

Implementing projects pertaining to in-stream habitat enhancement, riparian silviculture and monitoring measures as outlined under Alternatives A, C, and D would not impact recreation. Not implementing these actions under Alternative B would also not impact recreation. However, recreation could be affected by road decommissioning, which is potentially related to several of the up-slope sediment reduction projects included under all four alternatives. However, roads selected for decommissioning are not open to vehicle travel so impacts are negligible. For other recreational users, decommissioning of some roads for habitat enhancement provides opportunities for experiencing a healthier and naturally functioning ecosystem, which would enhance their own recreational experience. In this regard, impacts on recreation from habitat enhancement could also be minor, beneficial, and long-term.

Implementing the estuary enhancement program in Alternatives A, C, and D would result in long-term, negligible beneficial impacts on recreation, related to the value placed on visitors being able to view enhanced estuarine ecosystems. Not implementing the estuary enhancement program in Alternative B would result in no impacts on recreation.

4.12.6 Impacts to Recreation from Wildlife Management

Under all alternatives, policies would remain in place to maintain and enhance natural wildlife populations. In addition, existing policies would remain in place to minimize or eliminate the need for listing of additional species under the ESA, and to contribute to the recovery of listed species. Because these alternatives would continue existing policies, there would no impact on recreation. Actions specific

to bald eagles, snowy plovers, marbled murrelets, spotted owls, and Steller's sea lions (Alternatives C and D only) would not impact recreation. Additional policies on facilitating research and monitoring of wildlife (Alternatives C and D only), special-status amphibians and reptiles, game species, would not impact recreation. Support of wildlife reintroductions could benefit recreation by providing additional viewing opportunities. Intertidal habitat policies to educate visitors in Alternatives C and D would have long-term minor beneficial impacts on the recreational experience from learning new information and helping to reduce visitor impacts on intertidal species. Other intertidal habitat policies would not impact recreation under any of the four alternatives.

4.12.7 Impacts to Recreation from Terrestrial Ecosystems and Vegetation Management

Alternative A would continue current management conditions, and would carry forward general vegetation guidelines which would not impact recreation. Alternatives B, C, and D have specific management actions for different habitat types. Policies to maintain coastal dunes under Alternatives B and C would not impact recreation. Under Alternative D, recreation use may be restricted to meet coastal dune habitat objectives, which could potentially impact recreation. Depending upon how recreational use was altered, a trail relocation could have a negligible adverse impact, whereas closure of a recreation area could have a minor to moderate localized impact depending on the location and visitor use level of the area.

Prescribed burning policies for coastal scrub (Alternatives C and D), grassland (Alternatives B, C, and D), and chaparral (Alternatives B, C, and D) may have very localized short-term impacts on recreation if recreational use was temporarily suspended in areas where burns were taking place, or access to other recreation areas was prohibited due to prescribed burning. Visually, the burned area could have a short-term minor adverse impact on the recreational experience if it is very close to a trail or campground. If prescribed burns are done so they are sensitive to location, timing and frequency, impacts on recreation would be short-term and minor to moderate. Additionally, there could be negligible to minor beneficial impacts following a prescribed burn, depending on location, due to the effects of revitalized vegetation and the appearance of wildflowers within the burned area. These impacts could be long or short-term.

Limited grazing for coastal scrub and grassland management in Alternatives C and D could have minor localized negative impacts on recreation depending on where it took place. If grazing were to take place in the Backcountry Zone near a trail or campground, the impact to recreation would be short-term and minor adverse due to the sight and smell of domestic animals in a wilderness environment, and having to avoid cow feces. There would be no impacts to recreation if grazing were done so that it was not detectable to recreational users on trails and in campsites.

Using mechanical means to maintain coastal scrub in Alternative D and manual removal of trees to maintain grassland habitat in Alternative B may result in impacts to recreation depending on the timing and location of projects. If the projects are close to recreation areas, especially during periods of high visitor use, the noise and visibility of the projects would result in short-term minor adverse impacts. If projects were done to avoid popular recreation areas and high use times of the year, impacts would be localized and negligible.

Other policies for habitat management of coastal scrub, grasslands, and chaparral under Alternatives B, C, and D would not impact recreation. Policies regarding efforts to map, monitor and eradicate invasive plant species in all four alternatives would not impact recreation. Additionally, all policies regarding sudden oak death across all four alternatives would not impact recreation.

4.12.8 Impacts to Recreation from Forest Management

Under all alternatives, policies to maintain forest stand characteristics and late-successional/old growth forest habitat would not affect existing recreational facilities or trails, so there would be no impact on recreation. Silvicultural treatments under Alternatives A and B would not impact recreation. Under Alternative C, and especially under Alternative D, policies on salvaging timber in the Frontcountry and Residential Zones could impact the recreation experience if access were affected or closed, recreational use temporarily suspended in some areas, or if operations were visually distracting or disturbing to the traditional landscape scene. Long-term moderate to major adverse impacts would occur if timber salvaging operations were carried out close to popular recreation areas during peak use periods. Short-term negligible impacts would occur if access roads were temporarily closed or restricted, and no impact would occur if timber salvaging was carried out away from recreation areas, and the salvaging operations were not visible to recreational users. Management goals of promoting a natural mosaic of forest vegetation with a large component of old-growth forest would be a major beneficial impact, as the large forests of Northwest California are a major visitor attraction.

As for specific areas requiring treatments, thinning or pile burning in Noonung Creek and Finley Ridge, Bear Trap Creek, and Kaluna Cliff could potentially cause impacts to recreation. If these projects are carried out near recreation areas such as trails or campgrounds, long-term moderate to major adverse impacts could occur.

4.12.9 Impacts to Recreation from Special Forest Products Management

Issuance of permits to collect mushrooms, beargrass, floral trade species, and fuelwood under all the alternatives would not impact recreation. Policies regarding beargrass in Alternatives A and B would not impact recreation. Most policies regarding beargrass in Alternatives C and D would not impact recreation, except the policy to coordinate with local tribes to increase awareness and education regarding cultural use of beargrass and implementation of active management efforts. Increased awareness and education could have a long-term negligible beneficial impact on the visitor experience at KRNCA. Implementation of active management efforts, such as prescribed burns in a designated “Native American Beargrass Collection Unit” as proposed in Alternatives C and D, could have a localized minor to moderate short-term adverse impact on recreation. This could occur if the prescribed burns were carried out in close proximity to trails or campground areas, resulting in temporary closure of the recreation area.

4.12.10 Impacts to Recreation from Grazing Management

Under Alternatives A, C, and D, existing policies would remain in place to preclude loss or reductions in grazing allotments or AUMs, resulting in no impact on recreation. Under Alternative B, all livestock grazing would be eliminated from the King Range, which could result in long-term minor to moderate

beneficial impacts on recreation for those recreational users who prefer not to share trail and campground areas with grazing livestock.

4.12.11 Impacts to Recreation from Fire Management

Under all of the alternatives, policies regarding campfire permits would remain the same and therefore would not impact recreation. Wildfire prevention and education programs would have a long-term negligible beneficial impact on visitor experience by increasing the awareness and knowledge of visitors and local recreational users. Policies regarding utilization of prescribed fire and mechanical fuel reduction methods to manage fuels for low intensity wildfires, and to reduce fire spread within the Frontcountry and Residential Zones, and completing and maintaining planned fuel break systems would not impact recreation. Under all four alternatives, prescribed burning activities could impact recreational use based on their location, timing, and frequency. As with prescribed burning to maintain habitat, burning may have very localized short-term minor adverse impacts on recreation if recreational use was temporarily suspended in areas where burns were taking place, effects of smoke and reduced visibility were present in adjacent areas, or if access were restricted/prohibited due to burning (see Section 4.12.7, Impacts from Terrestrial Ecosystems and Vegetative Management).

Visually, the prescribed burn areas could have an impact on the recreational experience if it is very close to a trail or campground. Broadcast burning (Alternatives A, C, and D) would have these impacts more than pile burning would since pile burning is typically localized. If prescribed burns are carried out frequently and close to high use trails, campgrounds, or access roads, impacts could be long-term and moderate adverse. If done so they are planned and announced in advance to the public, and are sensitive to location, timing and frequency, potential impacts on recreation would be long-term negligible and adverse.

Mechanized fuel reduction may result in impacts to recreation depending on the timing and location of projects. If the projects are close to recreation areas, especially during periods of high use, the noise and visibility of the projects could result in short-term minor adverse impacts. If projects were carried out to avoid popular recreation areas and peak use times of the year, impacts would be short-term and negligible.

In Alternatives B and C, naturally occurring fires in the Backcountry Zone would be allowed to burn. This policy may impact recreation due to temporary trail, campground, access closure, damage to recreational facilities, and alteration of the visual landscape setting. If a fire is allowed to burn along a trail or around a recreation area, the visual setting could potentially be altered as well as recreational facilities damaged. Depending upon the extent of the fire, the burned area could negatively affect the recreational experience of visitors and local users at KRNCA. The level of impact could range from no impact to major adverse. Management activities that reduce the likelihood of a catastrophic fire decrease the likelihood that impacts from fires will be severe.

4.12.12 Impacts to Recreation from Transportation and Access

All alternatives would continue existing policies to provide a network of roads that complement the rural character of the King Range. Under all alternatives, Prosper Ridge, Noonung Creek, and King Range Roads would have a limited designation and would be open year-round to all vehicle types. Finley Ridge

Road would be open year round to 4-WD vehicles. This would be a continuation of existing conditions and there would be no impact on recreation.

Under Alternative A, all roads would continue to operate under existing conditions resulting in no impact on recreation. Under Alternative B, all roads with the exception of Windy Point and Telegraph Ridge Roads would continue to operate under existing conditions. Windy Point and Telegraph Ridge Roads would be closed under Alternative B, resulting in a long-term moderate adverse impact on some recreation users due to the loss of access and change in travel patterns to recreation areas at Mattole Beach and overlook areas. Other visitors would view these closures as beneficial impacts by increasing the non-motorized use zones. Under Alternative C, all roads with the exception of Etter Road, Saddle Mountain, and Mattole Estuary Roads would operate under existing conditions. Etter Road would be opened to 4-WD vehicles, Saddle Mountain Road would be improved to allow 2-WD access along 1.4 miles of roadway, and Mattole Estuary Road would be opened. These changes would have a negligible beneficial impact on recreation, except to 4-wheel-drive users who may view the road upgrades as negative.

Alternative D proposes the most changes to roads. Under Alternative D, Smith-Etter and Etter Road would be open to all types of vehicles, Johnny Jack Road would be open to 4-WD vehicles, Windy Point Road would be open to 4-WD vehicles, and Telegraph Ridge Road would be open to 2-WD vehicles to Spanish Ridge and to 4-WD vehicles the rest of the way. Paradise Ridge Road would be open for 1.5 miles to 2-WD vehicles and the rest of the way to 4-WD vehicles, Saddle Mountain Road would be open to all types of vehicles, and Mattole Estuary Road would be open. These road changes would have a minor beneficial impact on recreation, as visitors interested in scenic touring by car will have greater access. OHV users would view the road improvements as negative impacts by reducing 4-wheel drive opportunities.

4.12.13 Impacts to Recreation from Recreation Management

All four alternatives would continue policies regarding visitor information and adequate maps, road and trail maintenance, resource protection, visitor safety, special recreation permits, cooperative management, exclusionary fence and barrier construction, enforcement, Universal Accessibility Standards, and stressing compliance with coastal “leave no trace” principles. These policies would have a long-term moderate beneficial impact on recreation. By providing improved visitor information and maps, visitors would leave recreational areas and trails in better condition and fewer visitors would get lost in the rugged terrain. Adequate and timely maintenance of roads, facilities, trails and signs would also have a long-term moderate beneficial impact on recreation by providing opportunities for visitors to easily obtain directional information and avoid access constraints which could detract from the visitor overall experience.

Under all of the alternatives, policies would remain in place to provide supplementary rules and regulations to protect resources, visitor safety, and the surrounding community. Examples of such rules could include campfire prohibitions during extreme fire conditions, requiring bear proof food containers in the Backcountry, and requiring weed free livestock feed on equestrian trails. Rules such as these would have minor impacts on recreation because visitor behavior or equipment usage would only have to change slightly to comply with the new rules.

Policies regarding special recreation permits would have a negligible beneficial impact on recreation by maintaining consistent use within the management zones, and prohibiting incompatible use which could create conflicts with other recreational users in that zone.

Encouraging and promoting cooperative management effort policies would result in no impacts on recreation.

Policies to control unauthorized visitation from public land onto private land and to restrict vehicle use within designated areas would have a long-term minor beneficial impact on recreation. These policies would maintain recreational use within the appropriate BLM boundaries, and reduce boundary conflicts due to unauthorized recreational use as well as to reduce conflicts between unauthorized vehicle use and other allowable uses.

Enforcing existing regulations and applying other regulations for visitor safety or resource protection would have a long-term moderate beneficial impact, because the regulations would help to reduce visitor safety incidents, conflicts with other users, and would ensure additional protection of sensitive resource areas. These benefits would allow visitors to have an improved recreational experience.

Policies ensuring that Universal Accessibility Standards under the Americans with Disabilities Act are met would have a long-term moderate beneficial impact on recreation. Visitors with disabilities would have an improved recreational experience at KRNCA, because of improved access to recreational areas, trails, campgrounds and other facilities.

Any visitor use allocation system would redistribute and modify visitor use patterns. These measures would result in a long-term beneficial impact by increasing the quality of the recreational experience for those visitors. Encounters with other visitors, competition for prime camping locations, and noticeable resource impacts would be diminished. However, some visitors would be displaced by applying use allocation measures, both geographically and temporally.

4.12.13.1 Methodology for Impact Assessment

In determining impacts on recreation, the following visitor use allocation assumptions were prepared to support each alternative theme and objective for management, along with a corresponding projection for baseline and proposed visitor use growth. Projected recreation visitor days were estimated as follows:

- Determination, by survey data, of popular recreational activities (e.g. backpacking, hiking, and camping)
- Determination of use projections for these activities, based on visitor trends
- Adjust the percentage of increase for a weighted average population increase based on top ten counties that contribute to KRCNA visitation
- Adjust what activities are contributing to growth based on assumptions for each alternative
- Adjust based on the “uniqueness” of the KRNCA as a backcountry coastal recreation destination with few substitute areas available

Assumptions by Alternative

Alternative A – No Action; Continue Current Management

- No use allocation system – so no limits on the numbers of visitors
- Developed campgrounds will hit carrying capacity around 2020 because no new campgrounds will be built and therefore camping no longer contributes to increased growth
- Continued opportunities for growth of day-use visitors to Shelter Cove and other sites
- Continued opportunities for growth in upland trail use, as these routes are just getting discovered by the public

**Table 4-3: Recreation Projections—
Alternative A**

YEAR	% GROWTH	RANGE OF VISITOR DAYS
2002	Base	144,816
2005	3.77%	150,279 – 165,307
2010	4.83%	157,542 – 181,173
2015	3.63%	163,254 – 195,905
2020	1.99%	166,495 – 208,119
2025	2.06%	169,925 – 220,903

Alternative B – Low Resource Intervention and Limited Recreational Use

- Use allocation system starts in 2008 and reduces visitation levels to what they were in 1997 in order to have high opportunity for solitude
- Backpacking numbers will be limited in order to maintain high opportunities for solitude, so backpacking no longer contributes to growth starting in 2008
- Developed campgrounds hit carrying capacity in 2015 because of use restrictions and no new development (two campgrounds are eventually eliminated) so camping no longer contributes to increased growth

**Table 4-4: Recreation Projections—
Alternative B**

YEAR	% GROWTH	RANGE OF VISITOR DAYS
2002	Base	144,816
2005	3.77%	150,279 – 165,307
2008	2.32%	153,765 – 173,754
	-11.59%	135,940 – 153,612
2010	1.54%	138,034 – 158,739
2015	1.15%	139,615 – 167,538
2020	1.32%	141,463 – 176,829
2025	1.46%	143,523 – 186,580

Alternative C – Moderate Resource Intervention and Moderate Recreational Use

- Use allocation system starts in 2010 when backpacking numbers will be restricted to maintain moderate opportunities for solitude so backpacking no longer contributes to growth
- Developed campgrounds hit carrying capacity in 2020 – no new campgrounds are built, so primitive camping no longer contributes to increased growth

**Table 4-5: Recreation Projections—
Alternative C**

YEAR	% GROWTH	RANGE OF VISITOR DAYS
2002	Base	144,816
2005	3.77%	150,279 – 165,307
2010	2.30%	153,731 – 176,791
2015	3.05%	158,424 – 190,109
2020	1.32%	160,521 – 200,651
2025	1.46%	162,858 – 211,715

Alternative D – Active Resource Intervention and Higher Recreational Use

- Use allocation system starts in 2010 but its high use and low opportunities for solitude will allow growth across all activities
- New development will be done on a needs basis and therefore developed campgrounds will not hit carrying capacity

**Table 4-6: Recreation Projections—
Alternative D**

YEAR	% GROWTH	RANGE OF VISITOR DAYS
2002	Base	144,816
2005	3.77%	150,279 – 165,307
2010	4.83%	157,539 – 181,170
2015	3.63%	163,253 – 195,904
2020	4.19%	170,096 – 212,620
2025	4.61%	177,938 – 231,319

4.12.13.2 Backcountry Zone

Under all alternatives, policies and actions on specific topics are proposed under the alternatives regarding recreational uses in the Backcountry Zone. Topics include visitor use management, special use management, facility development, trails, signage and interpretation, and resources monitoring.

Visitor Use Management

Alternative A would continue current management practices with no permit requirement or use allocation limits on visitation. This would have a long-term major adverse impact on recreation, because uncontrolled numbers of visitors entering the Backcountry would degrade the future visitor experience of finding opportunities for solitude and getting away from the sights and sounds of human development and activity. Unlike Alternative A, Alternatives B, C, and D would implement a visitor use allocation system.

Under Alternative B, a visitor use allocation system would be implemented within three years, designed to restrict visitor use numbers and provide high opportunities for solitude. Alternatives C and D would both increase the visitor use allocation system to allow moderate use numbers (Alternative C), and higher use numbers (Alternative D) within the Backcountry Zone. Both systems would be implemented within five years. Alternative B would restrict use the most in order to provide higher opportunities for solitude. This would decrease the number of visitors to the Backcountry Zone, but would offer a very high quality backcountry experience. This would result in a long-term major beneficial impact on recreation in the Backcountry Zone for those visitors that receive permits, while restricting freedom of access for other visitors until they receive permits for backcountry travel.

Alternative C would restrict visitor use to a level to provide for moderate opportunities for solitude. There would be more opportunity for visitors to experience solitude under this alternative than under Alternatives A and D, but less than Alternative B. Under Alternative C, visitor experiences in the Backcountry would not have the same level of quality as they would under Alternative B, but would allow for higher visitor use levels. Opportunities for solitude would be of higher quality than under Alternatives A and D. As a result, although there would be some loss in the quality of the backcountry experience, impacts on recreation would be long-term moderate and beneficial.

Under Alternative D, visitor use levels would be implemented to allow for high use numbers and only minimal opportunities for solitude. As with Alternative A, this alternative would present the potential to impact the Backcountry experience the most, because although there would be few restrictions on visitor use, there would be little opportunity for solitude and getting away from the sights and sounds of human development and activity. This would result in a long-term major adverse impact on recreation in the Backcountry Zone. Before the visitor use allocation system is implemented in any of the proposed alternatives, a self-registration system would be implemented that would result in a short-term negligible beneficial impact on recreation, by helping to better count recreational users and to aid in disseminating information to the public who would be recreating in KRNCA.

Under Alternative A, maximum group size for organized/commercial groups of 15 “heartbeats” (people and livestock), and a maximum number of 25 people departing from any given trailhead in one day, would continue as currently managed. Under Alternatives B, C, and D, group size would increase to 15 “heartbeats” on all trails (although there are only ten people allowed on all trails in Alternative B). The number of people that can leave from a trailhead in one day increases from 25 in Alternative A (current management), to 30 in Alternative C (two groups of 15) and 45 in Alternative D (three groups of 15). Increasing these numbers over what is proposed under Alternative B would have a long-term minor adverse impact on recreation for Alternative C, and a long-term moderate adverse impact for Alternative

D due to the increased numbers of visitors allowed on the trails in one day, resulting in less opportunity for solitude.

In Alternatives C and D, specific group camping locations would be promoted within the Backcountry Zone. This would direct group camping opportunities in the Backcountry resulting in a long-term moderate beneficial impact on recreation. Group avoidance areas would also be proposed under Alternative C that would be managed for lower visitor levels and limited to specific areas, but would retain other areas at high opportunities for solitude, reducing conflicts between larger groups and people looking for solitude and quiet.

In regard to commercial groups (businesses who charge fees for organized activities), Alternatives A, B and C would not allow commercial group usage on Memorial Day or July 4th weekends, which would limit opportunities for commercial groups, but enhance the recreational experiences of the general public. Under Alternative D, there would be no restrictions on commercial groups, resulting in a long-term minor to moderate adverse impact on recreation; depending upon the size of the commercial groups and frequency by which they access the recreation areas (a group is defined as having two or more persons recreating as part of an established organization).

Although there would be increased recreational opportunities for this segment of the visitor population, there would potentially be more congestion and crowding in campsites and on trails during these two popular holiday weekends, resulting in less opportunity for solitude for other users.

Alternatives C and D would propose charging a nominal fee for overnight use, for reinvestment in management of resources and visitor services. Although some people may not be able to afford to recreate overnight if fees were required, the benefit from reinvesting this money to maintain the visitor experience in the KRNCA would result in this policy having a long-term moderate beneficial impact on recreation.

Under Alternative A, current management practices would remain in place, resulting in long-term minor adverse impacts on recreation from continuing conflicts between hunters, visitors, and adjacent landowners. Alternatives B, C, and D would all propose moving the hunting season to after Labor Day, which would result in long-term minor beneficial impacts on recreation by removing conflicts and safety concerns, as many of the conflicts between hunters, recreational users, and adjacent landowners occur during the holiday weekend. This would have a moderate, adverse impact on hunting enthusiasts who enjoy the start of the hunting season at KRCNA in the late summer months instead of the fall. It would also shorten the hunting season, since the dates could not be extended later due to biological (deer rutting season) considerations.

Concerning Special Use Management, Alternatives B, C, and D address proposed actions for mountain biking within the KRNCA. Under Alternative A, mountain biking is permitted on all roads and trails within the planning area except for Horse Mountain and Chinquapin. Current use is fairly limited due to the rough terrain within KRNCA, and would not be impacted under alternative A. Alternative B would prohibit mountain biking in anticipation of possible wilderness designation. This would have a long-term beneficial impact on recreation users who are impacted by mountain bikes on trails. However, this impact will be negligible due to the low use of mountain bikes within KRNCA. For mountain bikers, this would represent an adverse impact. Alternatives C and D would permit mountain bikes on existing trails,

but not on any new trails within the Wilderness Study Areas (WSAs). Comparatively, this would result in less of an adverse impact on biking enthusiasts.

Watercraft landings in remote areas have become more common in recent years. Alternatives B and C would propose to prohibit motorized watercraft landings except for emergencies, which reinforces access to remote beach recreation areas by land only. This policy would have a long-term moderate beneficial impact on recreation due to removing opportunities for watercraft to randomly access remote beach areas, thus improving the Backcountry natural scene and visitor experience. Although using watercraft helps some people access recreation opportunities, motorized watercraft landings diminish the Backcountry experience by allowing motorized entry into a remote place that is managed to be a natural place away from the sights and sounds motorized equipment. Eliminating these landings would also help decrease trash left behind, thus improving the look and maintenance of the Backcountry. Alternative D would manage landings to minimize conflicts with other Backcountry users. This would result in a long-term moderate adverse impact on recreation within the Backcountry, because these landings would continue to detract from the Backcountry experience through their noise, trash, and invasion of a remote natural area.

Only Alternatives B and C would have policies regarding overhead flights. These policies would help improve the Backcountry experience by reducing the sight and sound of humans by discouraging low-flying aircraft, resulting in a long-term minor beneficial impact on recreation.

Facility Development

Each of the four alternatives would allow for a different level of facility development. Alternative A would maintain existing facilities at current levels, with no new facilities. Since visitation would continue to increase under Alternative A, existing recreational facilities would be affected and visitor use would exceed their designed carrying capacity. This would create overcrowding conditions that would eventually displace some recreational users to seek other locations for their recreational experience. This would result in a long-term moderate adverse impact on recreation. Alternative B would be similar to Alternative A, but would go further by removing existing shelters and fire rings on the coast to maintain a more natural setting. While this would provide for a more natural setting and experience for visitors who prefer to see a more natural “untouched” landscape, it would force some visitors to find other locations for use of shelters, and would require using a low impact approach for fire ring activities while on the beach. This would result in a long-term negligible adverse impact on recreation.

Alternative C would propose development of minimal facilities for visitor safety and resource protection, but not for visitor convenience. Facilities that could be added include Backcountry campsites, a bear proof food storage system, and Backcountry toilets, but only if alternative solutions have proved unsuccessful. Additional facilities would help with issues such as sanitation and could balance use among other sites, however, this could also change the look and feel of areas which did not have development previously. Impacts on recreation would be long-term minor adverse if only a few facilities were added, or long-term moderate adverse if more facilities were added. Alternative D also would develop minimal facilities for visitor safety and resource protection. Facilities include those in Alternative C along with a Backcountry ranger station along the coast. Again, facilities may help with management issues such as sanitation or wildlife encounters, but could also change the look and feel of areas by adding development to primitive areas. Impacts would depend on the extent of constructed facilities; resulting in long-term

minor adverse impacts if only a few facilities were added, and long-term moderate adverse impacts if more facilities were constructed.

In regard to fences and barriers, Alternative A would maintain existing fences and barriers for resource protection that would have no impact on recreation, since these elements are currently in place. Under Alternative B, the focus would be only to maintain low impact fences and barriers where absolutely necessary for resource protection. This would result in no impact on recreation. Alternative C would construct or maintain fences and barriers only if alternative means of protection have proved unsuccessful. This could result in long-term minor impacts on recreation due to the visual effect on primitive areas in the backcountry. Alternative D would construct or maintain fences and barriers where necessary to protect sensitive natural or cultural areas. Impacts would be the same as Alternative C.

Trails

All four alternatives would maintain existing trails. Under Alternative A, the current network of trails would be maintained, resulting in no impact on recreation. Alternative B would be the same as Alternative A, but would also provide gates and fences to block vehicular access with added horse passes, resulting in a long-term minor beneficial impact on recreation due to the elimination of unauthorized vehicle access and recreational use. Alternatives C and D would develop new trails as needed, including trails for a wider range of visitors, development of potable water sources near upland trails, and improving horse trails, and creating a horse camp at Miller Flat. Alternative C would develop an “easy-grade” interpretive trail at Hidden Valley; where as Alternative D would develop a wheelchair accessible trail at Hidden Valley. These policies would result in long-term moderate beneficial impacts on recreation due to new opportunities for recreation, an increase in the range of users that could access trails, and more increased visitor comfort on trails (water available, more horse facilities).

Signage and Interpretation

All alternatives would maintain the existing signs and interpretive information, as required, to provide for visitor safety and resource protection. Alternatives A and B would both maintain these actions, which would result in no impacts on recreation. Alternative C would also propose installation of way-finding signage at campsites, water sources or other important features, which would result in long-term moderate beneficial impacts, since these actions would enhance way-finding for visitors, prevent trespassing onto private land, or suffering health risks (such as drinking untreated water from developed water sources). However, unless properly designed to blend into the surrounding landscape, additional signage could also detract from a natural primitive experience present in the Backcountry Zone. Alternative D would be similar to Alternative C, except proposed actions would include interpretive signage, signboards, or mini-kiosks at major camping areas to highlight regulations, safety issues, and low impact camping techniques. Although these improvements would also help with visitor safety and responsibility, they could also detract from the natural setting and primitive experience that the Backcountry offers, unless sensitively designed. This would result in long-term minor beneficial impacts on recreation.

Monitoring

All of the alternatives would continue ongoing monitoring programs with some minor changes in Alternatives B, C, and D, which would have no impacts on recreation.

4.12.13.3 Frontcountry Zone

Under all alternatives, policies and actions on specific topics are proposed under the alternatives regarding recreational uses in the Frontcountry Zone.

Visitor Use Management

Under Alternative A, a maximum of eight people would be allowed per campsite at developed campgrounds, as currently managed. Group size at Nadelos group camp could range from 20 to 60 people. Under Alternatives B, C, and D, maximum use levels at recreational facilities would be determined on a site-by-site basis. Determining maximum use levels on a site-by-site basis over what is currently managed under Alternative A would have no impact on recreation for Alternatives B, C, and D.

Alternatives B, C, and D, propose incorporating the Lost Coast Trail segment from Mattole trailhead to the Punta Gorda lighthouse into the Backcountry visitor use allocation system. This could be used to restrict visitor use numbers along this highly used trail segment, providing for increased opportunities for quiet and solitude. This would result in long-term minor beneficial impacts on recreation.

Facility Development

Each of the four alternatives would provide and maintain existing facilities, including trailheads, parking, and information kiosks. Under Alternatives A and B, no new facilities would be proposed. Since visitation would continue to increase under Alternatives A and B, existing recreational facilities would be affected and visitor use would exceed their designed carrying capacity. This would create overcrowding conditions that would eventually displace some recreational users to seek other locations for their recreational experience. This would result in a long-term moderate adverse impact on recreation.

Alternative C would propose development of a new trailhead at Bear Creek, which would provide for additional hiking opportunities for visitors to the Frontcountry Zone. Impacts on recreation would be long-term minor beneficial. Alternative D would also propose development of a new trailhead at Bear Creek, but would also provide for expanded trailhead parking at existing trailheads as needed. These expansions would help to mitigate parking and overcrowding problems at popular trailheads, as would a new trailhead at Bear Creek to provide additional hiking opportunities for visitors. This would result in long-term minor beneficial impacts on recreation if only limited trailhead parking was expanded. If expansion increased beyond the existing trails' carrying capacity for hiking, it is possible that some long-term minor adverse impacts could occur due to the increased level of use.

In regard to campgrounds in the Frontcountry Zone, Alternative A would continue current management practices with no change to campground areas. Since visitation would continue to increase under Alternatives A, existing campground facilities would be affected and visitor use would exceed their designed carrying capacity. This would eventually displace some recreational users to seek other locations for their recreational experience, which is considered a long-term moderate adverse impact on recreation.

Under Alternative B, the focus would be to maintain campgrounds at Nadelos, Wailaki, Tolkan, and Mattole, and to provide potable water at all four of these sites if feasible. Existing facilities would be retrofitted where possible to meet Universal Accessibility Standards. Horse Mountain and Honeydew Campgrounds would be removed, with Honeydew being maintained as a day-use area only. Camping would also be prohibited within a quarter-mile of Mattole campground. This would result in a long-term negligible beneficial impact on recreation, since the quality of the camping experience would be improved at four of the existing campgrounds, but would also result in a long-term minor adverse impact for potential campers who will no longer be able to find a campsite due the removal of campground sites. Alternative C would be similar to Alternative B, except that all campgrounds in the Frontcountry Zone would be maintained and improved to the same conditions, and upgrades would be made to Horse Mountain and Mattole campgrounds. This would result in a long-term moderate beneficial impact on recreation.

Alternative D would meet all of the actions outlined in Alternative C, would propose to expand campground areas as needed to accommodate increasing visitor use, and would propose to develop a group/overflow campsite near the river. This would result in a long-term moderate beneficial impact on recreation, because all campgrounds would be improved to the same conditions, with some expansion to accommodate increasing visitor and group camping use. The impact intensities would be basically the same for Alternatives C and D for campgrounds, because while Alternative D would provide for some potential expansion, it would be limited to the constraints of the existing sites and resource conditions which may restrict expansion at some locations.

Trails

Under Alternative A, the current network of trails would be maintained, resulting in no impact on recreation. Alternative B would only establish and maintain a minimal network of trails, including expanding and improving the interpretive trail between Wailaki and Nadelos as a loop trail with wheelchair accessibility. Alternative B would also provide adequate barriers against illegal OHV use while providing for horse passes. This would result in a long-term minor beneficial impact on recreation since only a minimal network of trails would be maintained.

Alternatives C and D would be similar to actions proposed under Alternative B, except that they would also develop additional trails as needed, and would improve the linkage between the north and south segments of the Lost Coast Trail; reestablish the trail from Tolkan to Bear Creek. This would improve the hiking experience for a wider range of visitors and would help to balance the carrying capacity on some of the more popular trails, thus reducing impacts to other uses and resource areas. These policies would result in long-term moderate beneficial impacts on recreation due to new opportunities for recreation, and an increase in the range of users that could access trails.

Signage and Interpretation

Alternatives A, B, C, and D would maintain and install signs as needed for visitor safety, orientation, education, and resource protection. This would result in no impact on recreation.

Monitoring

Alternatives A, B, C, and D would continue ongoing monitoring of use levels and consider special uses on a site-by-site basis, which would have no impact on recreation.

4.12.13.4 Residential Zone

Under all alternatives, policies and actions on specific topics are proposed under the alternatives regarding recreational uses in the Residential Zone. Proposed actions and impacts for Alternatives C and D would be the same throughout the Residential Zone.

Visitor Use Management

Under Alternative A, group use events would be continued on a case-by-case limited basis, if such use does not result in resource damage or impacts to nearby residents. This would result in no impact on recreation. Under Alternative B, group events may be authorized at Mal Coombs Park on a case-by-case basis, which do not unduly impact local residents or other recreational users. Non-traditional and newly emerging recreational uses would be allowed as long as they are consistent with zone management objectives. This would result in no impact on recreation. For Alternatives C and D, specific areas and sites may be identified as special use areas to accommodate specific visitor needs, including development of a group use area in Mal Coombs Park. Non-traditional and newly emerging recreational uses would be the same as under Alternative B, and as a result, there would be no impact on recreation.

Facility Development

Alternative A would maintain existing recreational and interpretive facilities at Mal Coombs Park, including restroom, parking lot, picnic tables, the relocated Cape Mendocino lighthouse, monuments, interpretive panels, barriers, and steps down to the beach and tidepools; maintain existing Black Sands Beach parking, restroom, informational kiosks and other facilities, and ensure visitor safety along the cliff; maintain Seal Rock and Abalone Point areas for individual and small group day use, providing opportunities for picnicking, wildlife viewing, interpretation, and other compatible recreational and educational activities. With continued maintenance of these recreational areas under Alternative A, there would be no impact on recreation.

Under Alternative B, the restroom at Mal Coombs Park would be upgraded to meet provisions for persons with disabilities and to accommodate heavy seasonal use, with possible upgrade to the parking lot. Cooperative efforts would be proposed with local groups to maintain the Cape Mendocino lighthouse, memorials, and joint projects. Existing pedestrian access to the tidepools would be maintained as well as providing information and interpretation for tidepool ecology and diversity; The Black Sands Beach parking facility would be maintained, as well as improved landscaping and views from the overlook and visitor safety along the cliff. Alternative B would also disallow all camping within ¼ mile from the Black Sands Beach trailhead; Actions to maintain Seal Rock and Abalone Point would be the same as Alternative A. With upgrades and improvements to existing facilities and access, and restriction on camping too close to the trailhead, there would be an improvement to the visitor experience resulting in a long-term minor beneficial impact on recreation. Implementation of Alternative B would also displace some camping due to the ¼ mile restriction from the Black Sands Beach trailhead, resulting in long-term, minor adverse impacts on recreation due to these visitors having to locate

alternate camping opportunities within KRCNA or in adjacent areas. However, it would improve the recreational experience for day users and local residents wishing to enjoy the beach without a lot of people camping in the immediate vicinity

Alternative C and D would propose a similar list of upgrades and improvements to facilities as outlined in Alternative B, would provide for development of a group use area, and would consider opportunities for additional vehicle parking and parking for horse trailers. Alternatives C and D would also require commercial groups to camp at least ¼ mile from Black Sands Beach trailhead, and individuals and non-commercial groups to camp north of Telegraph Creek. They would also allow group use events on a case-by case basis at Seal Rock and Abalone Point. These upgrades and expansions would help to mitigate parking and overcrowding problems at these popular day-use and overnight destinations, and would also further increase opportunities for improving the visitor experience within the Residential Zone without impacting local residents. This would result in long-term moderate beneficial impacts on recreation only if limited day-use parking was expanded. If expansion increased beyond the existing carrying capacity of these facilities, it is possible that some long-term minor adverse impacts could occur due to the increased level of use.

Trails

Under all alternatives, the wheelchair accessible trail in Mal Coombs Park would be maintained to provide access between facilities, along with maintaining a safe and adequate beach access trail at Black Sands Beach trailhead. This would result in no impact on recreation.

Signage and Interpretation

Under Alternative A, existing signs and interpretive information will be maintained to provide for visitor orientation, safety, education, and to promote resource protection resulting in no impact on recreation. Alternatives B, C, and D would install and maintain adequate signs and interpretive information, to provide for visitor orientation, safety, education, and to promote resource protection. This would result in a long-term negligible beneficial impact on recreation, because improved signage would assist visitors and local users with better information with which to plan their activities at the KRNCA.

Monitoring

All alternatives would continue monitoring of use levels, vehicle parking, and lighthouse visitation, which would have no impact on recreation.

4.12.14 Impacts of Recreation from Interpretation and Education

Policies under all of the alternatives to provide information through a variety of formats and venues would have a long-term major beneficial impact on recreation. By providing visitors with enhanced interpretive background and up-to-date site information, visitors would be better able to plan their recreational trip to the KRNCA. Visitors would also be better prepared for the weather and the remote rugged nature of the area, thus allowing them to have a better recreational experience.

Under all four alternatives, policies to provide improved safety and orientation information to visitors before they enter the Backcountry would have a moderate beneficial impact on recreation. If visitors were provided improved trip planning information, there would potentially be fewer problems and accidents, resulting in a much improved visitor experience.

Policies to provide support for BLM King Range programs utilizing a variety of outreach approaches would have a long-term minor beneficial impact on recreation under all alternatives, due to enhancement of the recreation experience and exposure to the significant resources of the KRCNA. More interpretation projects that increase the information and opportunities available to visitors would help them become more knowledgeable about the KRNCA, and would enhance the recreation experience.

Under all of the alternatives, policies to engage children in learning about the King Range by developing curriculum based education opportunities would have a long-term moderate beneficial impact on recreation. These policies would offer children new information and opportunities to experience King Range, thus improving their visitor experience, and perhaps secondarily enhancing their family's own visitor experience to the KRNCA.

4.12.15 Potential Cumulative Impacts to Recreation

This RMP complements the Sinkyone Wilderness plan, currently in progress, by linking the two areas to form a unique coastal experience. It also contributes to a range and "critical mass" of recreation opportunities in the Humboldt County region, creating a beneficial cumulative impact for recreational visitors who travel to the area as a destination.

4.13 IMPACTS TO AIR QUALITY

Only a few management programs will have impacts on air quality; all others not described can be assumed to have negligible or nonexistent impacts.

4.13.1 Impacts to Air Quality from Fire Management

Under all alternatives pile burning along fuel breaks and all prescribed fire activities would be completed under permit from the California Air Resource Board and the North Coast Unified Air Quality Management District (California Health and Safety Code Section 41855). Specific smoke management concerns/impacts would be addressed in prescribed fire plans. Although use of prescribed fires in Alternatives C and D would result in short-term negative air quality impacts, these impacts would be minor, as burns would be conducted during periods with high smoke dispersion potential (due to requirements of the burn permit). The long-term net effect on air quality would be positive in all of the alternatives because management activities would reduce the risk of catastrophic high-intensity wildfires and their associated impacts on air quality. Alternatives C and D would have the largest beneficial impacts.

4.13.2 Impacts to Air Quality from Recreation Management

Air quality impacts from recreation management would be minor under all alternatives and associated with increases in vehicle traffic on the area road system. Impacts from increased dust along unpaved road corridors would be mitigated in sensitive locations such as near residences and recreation sites, through the application of dust abatement materials.

4.13.3 Impacts to Air Quality from Transportation Management

Alternative B would result in minor beneficial localized impacts to air quality (reduced PM-10, or dust) by closing Windy Point and Telegraph Ridge Roads to vehicle use. Alternative D would result in minor negative localized PM-10 impacts if the Johnny-Jack Ridge Road were opened to public vehicle use. These impacts would be mitigated through the application of dust abatement materials where the route passes near residences and public use site(s).

4.13.4 Impacts to Air Quality From Grazing Management

None of the alternatives call for increased levels of grazing or activities from grazing operations, so there will be no negative impacts on air quality. None of the alternatives would affect the ozone air quality standard, as methane production from livestock production is not a criterion for non-attainment (not meeting a given standard). Methane levels are inventoried regularly from a Eureka monitoring site in Humboldt County because it is an organic gas that contributes to ozone formation. Alternative B would eliminate cattle grazing and associated methane production, providing negligible beneficial air quality impacts.

All other activities proposed under the plan would have negligible or no impacts on air quality, and so are not discussed further.

4.13.5 Cumulative Impacts To Air Quality

Prescribed fire has the potential to cause cumulative impacts to air quality, as other public agencies and private timber companies also conduct burns during optimal conditions. However, impacts are kept to minor levels through the permit program/requirements of the North Coast Unified Air Quality Management District.

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