

Table 6-1. Summary of Environmental Consequences

Program and Resource Affected	Effects of Direction Common to the Alternatives		Relative Effects of the Alternatives		Alternatives Resulting in Unavoidable Significant Adverse Effects
	Benefits	Adverse Effects	Benefits	Adverse Effects	
Species Management					
Special-status species	Increased amount and continuity of habitat	None because seasonal closures required	Restoration alternatives accelerate habitat recovery	Extensive trail system alternatives or unescorted hiking risks species disturbance	None
Other species	Increased extent of old-growth habitat for late-successional and old-growth-dependent species	Decreased extent of early-successional habitat	Restoration alternatives accelerate old-growth habitat recovery	Restoration alternatives accelerate loss of early-successional habitat	None
Recreation access	Continued public access	Seasonal and hourly exclusions from portions of Reserve	No change in closures from existing management	No change in closures from existing management	None
Watershed Restoration					
Water quality and aquatic species	Long-term decreases in surface sediment yield and stream sedimentation	Temporary exposure of soils to surface erosion	By removing road prisms, more intensive restoration provides correspondingly greater benefit to mass stability	More intensive restoration slightly increases near-term potential for soil erosion	None
Forest structure and old-growth characteristics	5% increase in old-growth habitat	None	Action alternatives accelerate recovery of old-growth habitat	Removal of existing vegetation under action alternatives	None
Special-status plants	Increased habitat for likely special-status species	Small potential for disturbance to existing populations	Action alternatives accelerate expansion of habitat	Transplanting of any discovered populations may be required under action alternatives	None

Table 6-1. Continued

Program and Resource Affected	Effects of Direction Common to the Alternatives		Relative Effects of the Alternatives		Alternatives Resulting in Unavoidable Significant Adverse Effects
	Benefits	Adverse Effects	Benefits	Adverse Effects	
Invasive nonnative plants and animals	Decreasing opportunity for invasive nonnative plant establishment	None	Action alternatives accelerate decreasing opportunity	Action alternative may increase probability of controllable infestation	None
Common wildlife	Increased amount of habitat for species dependent on old-growth forest riparian habitat	Disturb or harm species adapted to shrub, pole, and edge habitats, occurring at stream crossings, and using roads for movement	More intensive restoration alternatives accelerate development of desirable habitat	More intensive restoration alternatives tend to increase disturbance effects, which may be mitigated. Some residual short-term adverse impacts by mortality of a few individuals	None
Spotted owl and marbled murrelet	Reduction in edge habitat that favors corvid intrusion	On most areas potential for noise disturbance avoided by imposed seasonal closures of operating periods	More intensive restoration alternatives accelerate development of desirable habitat	Potential for noise disturbance avoided by imposed seasonal closures of operating periods	None
Other special-status wildlife	No effect or increase in required habitat	Potential for direct short-term impacts on small, relatively immobile ground dwelling species over a small acreage of the Reserve	More intensive restoration alternatives accelerate development of desirable habitat	Potential for direct disturbance; or mortality of a few individuals over a small area	None
Fire suppression	None	None	--	--	None
Recreation access	Provides opportunity for resource interpretation	Temporary trail closures	More intensive alternatives provide more opportunities	More intensive alternatives entail more temporary closures	None
Cultural Resources	None	None	None	Mitigable potential for disturbance to undiscovered resources	None

Table 6-1. Continued

Program and Resource Affected	Effects of Direction Common to the Alternatives		Relative Effects of the Alternatives		Alternatives Resulting in Unavoidable Significant Adverse Effects
	Benefits	Adverse Effects	Benefits	Adverse Effects	
Forest Restoration					
Forest structure and old-growth characteristics	Action alternatives significantly accelerate recovery of old-growth characteristics	Action alternatives result in mitigatable increase in windthrow in managed stands	More intensive alternative provides benefit more effectively over much larger area	Less intensive alternative may induce greater windthrow and slash disposal; no action increases disease, insect infestation, and fuel build up	2C
Special-status plants	Increased habitat for likely special-status species	Small potential for disturbance to existing populations	Action alternatives accelerate expansion of habitat	Avoidance of discovered populations may be required under the action alternatives	None
Invasive non-native plants and animals	Decreased habitat and individuals over the long term	None	More intensive alternative accelerates benefit more rapidly	Under action alternatives, adjustment of thinning prescriptions and direct removal of invasives may be required	None
Water quality and aquatic species	Long-term improvement in runoff timing, quality, and temperature	On most areas temporary increase in precipitation energy at the forest floor	More intensive alternative accelerates benefit; no action involves long time period for benefit to materialize	Proposed slash disposal mitigates short-term impact; no action allows significant increases in risk of stand-replacing fire (RSRF) and associated risk of degraded runoff conditions	2C

Table 6-1. Continued

Program and Resource Affected	Effects of Direction Common to the Alternatives		Relative Effects of the Alternatives		Alternatives Resulting in Unavoidable Significant Adverse Effects
	Benefits	Adverse Effects	Benefits	Adverse Effects	
Common wildlife	Accelerated recovery of habitat for old-growth-dependent species	Disturb or harm species dependent on shrub and early-successional forest habitat	More intensive alternative accelerates benefit; no action involves long time period for benefit to materialize	More intensive restoration alternative increases potential disturbance effects, which can be mitigated	None
Marbled murrelet and spotted owl	Increase in suitable habitat for these species	Potential for noise disturbance avoided by imposed seasonal operating periods	More intensive restoration alternatives accelerate development of desirable habitat	Potential for noise disturbance avoided by imposed seasonal closures of operating periods	None
Other special-status wildlife	Accelerated recovery of habitat for old-growth-dependent species	Potential for direct disturbance	More intensive restoration alternatives accelerate development of desirable habitat	Potential for direct disturbance; avoided by preactivity survey and avoidance action	None
Fire behavior and fire management	Action alternatives reduce RSRF over the mid- and long-term	Temporary increase in ground fuels, which will be mitigated by proper slash disposal	Alternative 2A addresses the highest risk pole stands; no action allows existing RSRF to increase in mid-term	Alternative 2A maximizes temporary ground fuels but is mitigatable	2C
Recreation activities	Action alternatives enhance old-growth ecosystem—the focus of the recreation program	Action alternatives cause temporary emissions of noise, fumes, dust, and smoke and require temporary trail closures	Alternative 2A provides greatest benefit	Alternative 2A causes greater emissions and closures and cause greater visual change	None
Cultural Resources	None	None	None	Mitigable potential for disturbance to undiscovered resources	None

Table 6-1. Continued

Program and Resource Affected	Effects of Direction Common to the Alternatives		Relative Effects of the Alternatives		Alternatives Resulting in Unavoidable Significant Adverse Effects
	Benefits	Adverse Effects	Benefits	Adverse Effects	
Research Management					
Research activities	Both pure and applied research will be conducted	None	NA	NA	None
Biological resources	Improved understanding of ecosystem functions and processes	Potential to disturb ecosystem functions and processes; avoided by proposal modifications	NA	NA	None
Resource monitoring	Potential contribution to monitoring data needed for plan implementation	None	NA	NA	None
Fire Suppression					
Fire frequency and behavior	Little or no effect	Little or no effect on relatively fire-independent ecosystem	NA	NA	None
Biological resources	Preservation of the Reserve's resources	Habitat losses caused by fire line construction, subject to rehabilitation; noise disturbance to nesting birds during suppression; incidents infrequent	NA	NA	None
Research	Preserve subject of research	Slight diminishing of natural baseline conditions represented by the Reserve	NA	NA	None
Recreation access	Preserve public values	NA	NA	NA	None
Visual Resource Management					

Table 6-1. Continued

Program and Resource Affected	Effects of Direction Common to the Alternatives		Relative Effects of the Alternatives		Alternatives Resulting in Unavoidable Significant Adverse Effects
	Benefits	Adverse Effects	Benefits	Adverse Effects	
Visual quality	Gradual improvement of visual quality	Short-term degradation	NA	NA	None
Recreation Access Management					
Visitors experiences	Good recreation experiences focused on the Elk River corridor	None	Varying degrees of opportunity to experience old-growth ecosystems	Use of southern access for only BLM tours limits individual exploration; closure of southern access eliminates potential old-growth experience otherwise provided by 4A and 4B for the elderly and disabled	4C
			Biking alternatives expand mountain biking opportunities in the region	Biking interferes with contemplative recreation focus of the Reserve, poses threat to walker/hiker safety	5A, 5B
			Equestrian alternatives expand horseback riding opportunities in the region	Horse excrement and trail degradation are annoying to other users; equestrian use requires more-than-minimal facilities, which conflicts with legislative direction	6A, 6B
Special-status plants	None	Losses of populations avoided by prohibition of off-trail hiking and collecting	NA	NA	

Table 6-1. Continued

Program and Resource Affected	Effects of Direction Common to the Alternatives		Relative Effects of the Alternatives		Alternatives Resulting in Unavoidable Significant Adverse Effects
	Benefits	Adverse Effects	Benefits	Adverse Effects	
Invasive nonnative species	None	None	None	Wider trails to accommodate bicycles or equestrians increase opportunities for infestation; horse entry may provide sources of infestation	None (reconsider in 5 years)
Aquatic ecosystems	Increased public stewardship resulting from tours and other outreach	Streambank erosion along Elk River	None	Unescorted southern access or an extensive trail system increase soil erosion, direct disturbance to fish, bicycle or equestrian use beyond the Elk River corridor increases soil erosion and stream sedimentation	3A, 4A, 5A, 6A
Common wildlife	Increased public stewardship resulting from tours and other outreach	Direct habitat loss from any new trails; noise disturbance and species changes along all trails; dog disturbances in Elk River corridor	No-southern-access alternatives eliminate human intrusion over large areas of both old-growth and second-growth habitat	Unescorted southern access or an extensive trail system increases illegal off-trail hiking, system alternatives would results in from 1.9% to 13.4% of Reserve being subject to human disturbance effects, compared to 4.9% existing	3A, 4A
Marbled murrelet and spotted owl	Increased public stewardship resulting from tours and other outreach	Increasing potential for corvid expansion and Marbled murrelet disturbance in Elk River corridor	No-southern-access alternatives substantially reduce potential for nesting disturbance	Unescorted southern access or an extensive trail system increases off-trail hiking, discarding of food wastes that attract corvids	3A, 4A

Table 6-1. Continued

Program and Resource Affected	Effects of Direction Common to the Alternatives		Relative Effects of the Alternatives		Alternatives Resulting in Unavoidable Significant Adverse Effects
	Benefits	Adverse Effects	Benefits	Adverse Effects	
Other special-status wildlife	Increased public stewardship resulting from tours and other outreach	Direct habitat loss from any new trails; noise disturbance and species changes along all trails	No-southern-access alternatives eliminate potential disturbance effects	Unescorted southern access or an extensive trail system increases off trail hiking. See also trail-use disturbance area percentages above	3A, 4A
Cultural Resources	Commitment of financial resources to extracting resource values and fostering public support for protection, evaluation, and interpretation	Mitigable potential for disturbance to undiscovered resources from various improvements	Use of the historic military ridge trail may enhance its preservation	<p>1. Alternatives expanding trail system tend to increase mitigable potential for disturbance to undiscovered resources</p> <p>2. Alternatives expanding public access tend to increase potential for resource disturbance, which is generally mitigable. However, public use of the historic military ridge trail may result in uncontrollable damage to an adjacent prehistoric site.</p>	Alternative 4A

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Program and Resource Affected	Effects of Direction Common to the Alternatives		Relative Effects of the Alternatives		Alternatives Resulting in Unavoidable Significant Adverse Effects
	Benefits	Adverse Effects	Benefits	Adverse Effects	
Socioeconomic effects	Slight economic stimulus to Eureka	Traffic annoyance to residents of Elk River Road	Extensive and limited trail alternatives and unescorted southern access alternative provide slight economic stimulus to Fortuna; no-southern-access alternatives would eliminate traffic annoyances to residents of Newburg Road	Extensive and limited trail alternatives increase traffic annoyances to residents of Elk River Road, and these trail alternatives and the unescorted southern access alternative increase traffic annoyances to residents of Newburg Road; introduction of equestrian use further increases traffic annoyances to residents of Elk River Road	6A, 6B
Fire behavior and management	None	Fire ignition risk caused by human entry	No-southern-access alternatives eliminates human fire ignition risk over large portion of Reserve	Extensive and limited trail system alternatives allow human contact with most flammable second-growth stand	4A and 4B, unless 2A or 2B selected
Resource monitoring	None	None	None	None	None
Management of Designated Special Areas					
Wilderness Study Area	Preserves wilderness values in area currently meeting wilderness criteria	Disallows forest restoration and bicycle use	Area designated varies from 80% to 60% to none of the Reserve	Most extensive designation significantly reduces extent of both forest restoration alternatives and disallows bicycle use option on Salmon Creek Trail. Preserves and protects outstandingly remarkable values	7A, 7B

Table 6-1. Continued

Program and Resource Affected	Effects of Direction Common to the Alternatives		Relative Effects of the Alternatives		Alternatives Resulting in Unavoidable Significant Adverse Effects
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Wild and Scenic River	NA	NA	None	None	None
State ecological reserve	NA	NA	Provides authority to ban firearms and campfires from the Reserve and prevent hovercraft/aircraft from affecting nesting murrelets and owls	Precludes wading/swimming in South Fork Elk River and use of aircraft for fire suppression or logging of adjacent timberland, unless specifically allowed in the designation	None
Resource Monitoring and Evaluation					
Ecological resources	Informs management of Reserve's resources	None	NA	NA	None
Recreation access	Informs management of visitation	None	NA	NA	None
Use Fees					
Recreation access	None	None	None	None	None