A READER'S GUIDE TO THE CHAPTER 4 SUPPLEMENT

The Vernal Field Office Draft RMP/Draft EIS (DRMP/DEIS) was released for public review and comment in January 2005. Chapter 4 of the DRMP/DEIS, entitled "Environmental Consequences," analyzes the impacts of the proposed decisions under each alternative in Chapter 2, including Alternative D – No Action, on the resources, resource uses, special designations, and social and economic conditions described in Chapter 3. Assumptions for the impact analysis, where used, are presented in the beginning of each resource section of Chapter 4. Impacts are generally described in terms of direct, indirect, and cumulative impacts.

The DRMP/DEIS provides the full context for this Chapter 4 Supplement. Chapter 4 of the DRMP/DEIS is being supplemented to describe the impacts of applying proposed management decisions under the new Alternative E (as described in the Chapter 2 Supplement) on resources, resource uses, special designations, and social and economic conditions.

The management emphasis, or focus, of Alternative E is to protect non-WSA lands with wilderness characteristics. However, as described in Chapter 2, Alternative E is a complete alternative that includes management decisions for all lands in the Vernal Planning Area, not just for the 277,596 acres of non-WSA lands with wilderness characteristics. Therefore, the analysis of impacts from the decisions in Alternative E is not limited to non-WSA lands with wilderness characteristics, but addresses impacts on resources and uses throughout the planning area.

In addition, this Supplement expands the existing analysis in the four alternatives in the DRMP/DEIS (Alternatives A, B, C, and D – No Action) by addressing the impacts of those alternatives on non-WSA lands with wilderness characteristics in more detail. For all other programs, the analysis in Chapter 4 of the DRMP/DEIS remains the same. Impacts of management decisions from the Alternatives A, B, C, and D – No Action remain the same as in the DRMP/DEIS because no changes have been made to the proposed management decisions under those alternatives in Chapter 2. Only that portion of the DRMP/DEIS Chapter 4 that is being modified and augmented is presented here.

In the DRMP/DEIS, public lands outside of WSAs that have wilderness characteristics were referred to as *Non-WSA Lands with or Likely to Have Wilderness Characteristics*. The document also used other variations of that name, like *Non-WSA Lands with Wilderness Characteristics* and *Non-WSA Lands Likely to Have Wilderness Characteristics*. Further, you may have seen or heard other terms like wilderness inventory areas, reasonable probability determination areas, or simply, areas with wilderness characteristics. All of these terms refer to the same lands: those public lands outside of existing WSAs that the BLM has determined to have wilderness characteristics and that will be considered for management of those characteristics in this planning effort. For consistency and to minimize confusion, these lands will be referred to as *non-WSA lands with wilderness characteristics* throughout this Supplement.

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CHAPTER 4 – ENVIRONMENTAL CONSEQUENCES

4.1 INTRODUCTION

See Section 4.1 of the DRMP/DEIS with the following changes.

NOTE TO READER: The following sentence has been added to the end of the second paragraph of Section 4.1.

Alternative E gives emphasis to protection of non-WSA lands with wilderness characteristics.

NOTE TO READER: A sixth paragraph has been added to Section 4.1.

The environmental consequences resulting from the management actions proposed under each of the five alternatives are summarized in Table 2.5, Summary of Impacts, found at the end of Chapter 2.

4.2 AIR QUALITY

Please refer to Section 4.2 of the DRMP/DEIS with the following changes.

4.2.2.2 Effects of Soil and Watershed, Special Designations, Recreation Management, and Wildlife and Fisheries Management Decisions on Air Quality

NOTE TO READER: A new Section 4.2.2.2.5 has been replaced to reflect the inclusion of non-WSA lands with wilderness characteristics decisions in the analysis and a new Section 4.2.2.2.5 has been added to disclose the effects of Alternative E.

4.2.2.2.5 Alternative E

4.2.2.2.5.1 Direct Effects

Proposed management decisions generally would result in lower overall surface/soil disturbance. Direct air quality impacts from surface-disturbing activities would likely be small and most noticeable in a cumulative fashion when coupled with impacts from other management decisions. Potentially beneficial outcomes from these management decisions include reduced PM_{10} and other windborne particulate from erosion of exposed soils.

Short Term

Short-term benefits to air quality would most likely occur but not be measurable in the planning area.

Long Term

Long-term benefits would include incremental site-specific reductions in windborne particulate from reduced erosion of exposed soils as vegetation/soil cohesion improves over time.

4.2.2.2.5.2 Indirect Effects

Indirect effects on air quality would most likely not be measurable in the planning area.

4.2.2.3 Effects of Livestock Grazing, Rangeland Improvement, Riparian Management, Vegetative Management, and Woodland and Forest Management Decisions on Air Quality

NOTE TO READER: A new Section 4.2.2.3.5 has been added to disclose the effects of Alternative E.

4.2.2.3.5 Alternative E

4.2.2.3.5.1 Direct Effects

Proposed management decisions generally would result in increased vegetation (cover, density, and height) and lower overall surface/soil disturbance. Direct air quality impacts from surface-disturbing activities would likely be small and most noticeable in a cumulative fashion when coupled with impacts from other management decisions. Potential effects from these management decisions include improved vegetative cover in many areas.

Short-term

Short-term benefits to air quality would most likely occur but not be measurable in the planning area.

Long-term

Long-term benefits would include incremental site-specific reductions in windborne particulate from reduced erosion of exposed soils as vegetation improves over time.

4.2.2.3.5.2 Indirect Effects

Potential indirect effects from these management decisions include reduced PM_{10} and other windborne particulate from erosion of exposed soils due to improved vegetative cover.

4.2.2.5 Effects of Fire Decisions on Air Quality

NOTE TO READER: A new Section 4.2.2.5.5 has been added to disclose the effects of Alternative E.

4.2.2.5.5 Alternative E

This alternative identifies the potential for approximately 156,425 acres to be treated by prescribed fire per decade. Because no more specific information on fuel loads, spatial distribution, timing, or vegetative species is available at this time, the evaluation of potential air quality effects is necessarily somewhat general and qualitative rather than quantitative in nature.

4.2.2.5.5.1 Direct Effects

There are several criteria pollutants of concern specific to prescribed burning, chiefly particulate matter and carbon dioxide (CO_2). Particulate matter produced in prescribed burns is predominantly $PM_{2.5}$ (70% of the smoke produced from prescribed burns falls into this category). Fire also produces CO_2, a gas that is potentially related to global climate change in an incremental fashion. Biomass burning contributes to the release of greenhouse gases (such as CO_2) and eliminates a carbon sink.

Direct effects of prescribed fire fall into two general categories: short-term and long-term.

Short-term

Short-term air quality effects projected from prescribed burns would include a general increase in $PM_{2.5}$ particulate and CO_2 emissions specific to the burn area and locations downwind. The magnitude of increase is directly dependent on the size, extent, and controlled intensity of the burn. The type and amount of air pollutants released from burning wildland vegetation varies with type of fuel, moisture content, temperature of the fire, and the amount of smoldering occurring after the fire. If air quality were already approaching the threshold for particulate matter, prescribed burning could cause a region to exceed the daily limits. Since prescribed burning occurs irregularly, it is generally possible to restrict burning in potential non-attainment areas on bad-air-quality days to avoid violating air quality standards.

Long-term

Long-term, direct air quality effects projected from prescribed burns would include a general increase in airborne particulate materials from the burn site as a result of ash dispersion and transport. This increase would occur only until revegetation is complete and growth matures.

4.2.2.5.5.2 Indirect Effects

Short-term and long-term indirect effects on air quality from prescribed burns would include an increase in airborne particulate from the burn site as a result of wind-based erosion of devegetated areas. This effect is expected to be small as vegetation management is an active part of fire management techniques. A greater long-term effect of prescribed burning would be a

reduction in particulate, CO_2, and ozone emissions specific to wildfire in unmanaged areas. Ozone (a product of biomass combustion formed through the interaction of ozone precursors, volatile organic compounds [VOCs], and nitrogen oxides) is a precursor to greenhouse gases and a major constituent of photochemical smog. Although ozone produced by prescribed fire is generally quickly diluted and dispersed into the air, it may act as a contributor to the greenhouse effect. As a criteria pollutant, ozone production may be regulated by a SIP, or burns may be banned under ozone alerts.

The detrimental effects from wildfire would likely be greater than those from prescribed fire and would exert a larger negative effect on air quality in the VPA.

4.2.2.6 Effects of Mineral Decisions on Air Quality

NOTE TO READER: A new Section 4.2.2.6.9 has been added to disclose the effects of Alternative E.

4.2.2.6.9 Alternative E

The following subsections present the CALPUFF modeling results for Alternative E for NAAQS, PSD increments, hazardous air pollutants (HAPs), visibility, deposition, and ANC from BLM sources.

4.2.2.6.9.1 NAAQS

Modeling results show no exceedances of the NAAQS for any pollutant or averaging period from BLM sources for any of the modeled alternatives.

4.2.2.6.9.2 PSD Increment Thresholds

With recommendations from the States of Utah and Colorado, BLM identified three mandatory Federal Class I and six Class II areas within the VPA to be considered in the analysis. These selected sensitive areas are listed in Table 3.2.5 in Chapter 3 of the DRMP/DEIS. The modeling results show no predicted potential concentrations that would exceed the Class I or Class II increments for BLM sources only.

4.2.2.6.9.3 HAPs Emissions

Oil and gas operations have the potential to emit several HAPs: benzene, toluene, ethylbenzene, and xylenes from oil and gas vapors (volatile organic compounds), as well as formaldehyde from compressor engines.

There are no air quality standards for HAPs, therefore, BLM uses a range of threshold levels identified by various states and EPA as indicators of significance (see Table 4.2.2 in the DEIS). Background concentrations of these HAPs are not known within the Vernal Study Area, but data collected in Grand Junction, Colorado indicate that observed data fall within or below the state/EPA threshold levels (see Table 4.2.4 in the DEIS). Annual mean benzene at 2.87 falls within the range of 0.12 to 45 $\mu g/m^3$ thresholds; 24-hour benzene at 8.68 is well below the 35

$\mu g/m^3$ threshold; 24-hour toluene at 125.39 is well below the range of 400 to 6,267 $\mu g/m^3$ thresholds; 24-hour ethylbenzene at 46.35 is well below the 1,000 $\mu g/m^3$ threshold; 24-hour xylenes at 189.48 falls within the range of 100 to 14,467 $\mu g/m^3$ thresholds; and annual formaldehyde at 7.11 falls within the range of 0.077 to 8 $\mu g/m^3$ thresholds.

Direct maximum modeled HAP impacts were as follows: annual benzene at 0.375 $\mu g/m^3$; annual formaldehyde at 0.0557 $\mu g/m^3$; and 24-hour xylenes at 192 $\mu g/m^3$. Benzene and xylenes fall within their respective range of threshold levels; formaldehyde is below the range of thresholds. Other HAP impacts are expected to be minimal.

Since both benzene and formaldehyde are suspected to be carcinogens, BLM performed an incremental cancer risk based on the maximum direct predicted concentrations. The significance thresholds range from 1 to 100 in a million (10^{-6}) increased cancer risk.

For a Maximally Exposed Individual (MEI), such as an on-site worker, the increased cancer risk from maximum benzene exposure ranged from 0.0024 to 0.0084×10^{-6}, and the increased cancer risk from maximum formaldehyde exposure was 0.21×10^{-6}. For a Most Likely Exposure (MLE), such as a resident, the increased cancer risk from maximum benzene exposure ranged from 0.0017 to 0.0061×10^{-6}, and the increased cancer risk from maximum formaldehyde exposure was 0.15×10^{-6}. Since these predicted risks are much lower than the threshold levels, no significant cancer risks are expected to occur. In addition, since the maximum HAP impact levels reduce quickly at distances away from the emission sources, potential impacts are expected to be even less than those presented.

4.2.2.6.9.4 Visibility Analyses

Since emissions from the alternatives comprise many small sources spread out over a very large area, discrete visible plumes are not likely to impact the PSD Class I areas or other designated wilderness areas.

Regional haze is caused by fine particles and gases scattering and absorbing light. The first-level screening analysis for visibility compared daily-modeled primary (PM_{10}) and secondary (sulfate and nitrate) particulate matter concentrations to "natural" background conditions and seasonal relative humidity values in order to calculate the potential change in visibility (FLAG 2000).

A 1.0-deciview (dv) change is considered potentially significant in mandatory Federal PSD Class I areas as described in the EPA Regional Haze Regulations (EPA 1999b, Pitchford and Malm 1994). The results of the screening visibility analysis for all alternatives (Trinity and Nicholls 2004) indicate that emissions from proposed BLM sources are not expected to result in a 1.0-dv reduction in visibility at any of the PSD Class I designated wilderness areas under any of the alternatives.

Comparisons of modeled concentrations to the PSD Class I and II increments in this analysis were intended solely to evaluate a threshold of concern for potential impacts to provide decision-makers with as much information as possible upon which to base their decisions. They do not represent regulatory PSD Increment Consumption Analyses. Such regulatory analyses are the

responsibility of the Utah Division of Air Quality (UDAQ) (under EPA oversight) and would be conducted during permitting processes (Trinity and Nicholls 2004).

In addition, the USDA Forest Service and other members of the stakeholders group requested that a separate analysis be done, comparing the screening visibility results to the Forest Service's 0.5-dv "Limit of Acceptable Change" threshold to evaluate potentially significant visibility impacts at the PSD Class I Areas. The analysis showed that any predicted visibility impacts below 1.0 dv "just noticeable change" threshold would not be perceptible. All visibility results are presented in detail in the TSD (Trinity and Nicholls 2004).

Screening visibility results for a number of Class II areas were generated at the request of various members of the stakeholder group. These Class II designated wilderness areas, parks, and monuments have no visibility protection under state or federal law at this time and, therefore, are not required to be included in the visibility analysis. However, inclusion of these areas in the analysis provides BLM decision-makers with a more complete picture of potential impacts throughout the region.

At this preliminary resource planning stage, the emission sources assumed for this analysis do not have a defined location. In addition, the U.S. Congress has delegated implementation of the Clean Air Act to UDAQ and local tribal entities (with EPA oversight). The regulatory agencies are able to determine the visual impact of the plume from individual emission sources during the new source review process. Therefore, this analysis did not evaluate the near-field visibility impact of the sources at the resource planning stage (Trinity and Nicholls 2004).

Potential 24-hour primary PM_{10} and secondary sulfate and nitrate particulate matter concentrations were calculated within mandatory Federal Class I areas and at specific Class II areas of concern. PSD Increments have not yet been established for $PM_{2.5}$ and therefore were not addressed in this analysis.

The Class II areas included in this analysis were incorporated at the request of some members of the stakeholder group (e.g., National Park Service, U.S. Forest Service, etc.). These Class II areas do not have any visibility protection under local, state, or federal laws. Their inclusion in the analysis is to provide decision makers with sufficient information upon which to make decisions (Trinity and Nicholls 2004).

Calculated values were first compared to "natural" background conditions as recommended in the FLAG Guideline document (FLAG 2000). Since this analysis was conducted for multiple emission sources simultaneously, the FLAG 10% change in extinction (1.0 deciview) "just noticeable change" threshold was used to assess the significance of potential impacts.

No visibility criteria exceedances were projected for any pollutant or averaging period from BLM sources for any of the modeled alternatives (see Table 4.2.5 in the DEIS). Because the visibility impacts for BLM sources for all modeled alternatives was below 10% (1.0 deciview) for all Class I areas, no refined visibility analysis was conducted.

Modeling results were the same as for Alternative A and show no visibility criteria exceedances.

4.2.2.6.9.5 Deposition

All modeled values of sulfur and nitrogen deposition for BLM sources only were well below the applicable thresholds of 3 kilograms per hectare per year (kg/ha-yr) for total sulfur and 5 kg/ha/yr for total nitrogen.

4.2.2.6.9.6 Acid Neutralizing Capacity

Where background lake chemistry data were available, an analysis of potential changes to acid neutralizing capacity (ANC) (the ability of a given lake to neutralize acid precipitation) was performed using the procedure recommended by the USDA Forest Service (2000). This screening methodology takes deposition values of sulfur and nitrogen estimated by CALPUFF and converts these values into a potential change in the ability of a given lake to neutralize acid precipitation.

ANC thresholds were not exceeded for any of the lakes considered in the analysis of modeled BLM source emissions.

4.2.2.7 Discussion

NOTE TO READER: A discussion of the effects of Alternative E has been added to Section 4.2.2.7, and an Alternative E column has been added to Table 4.2.6.

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TABLE 4.2.6. RELATIVE COMPARISON OF MODELED AIR QUALITY PARAMETERS FROM BLM SOURCES FOR PROPOSED MANAGEMENT ALTERNATIVES

Parameter	Alt. E
Physical Characteristics	
Proposed number of wells [a]	6,117
Estimated number of new road miles per year [a]	249.1
Modeled PM_{10} fugitive dust impacts associated with new road use and construction (tons/year)	118.7
Air Quality Impacts	
Total NAAQS exceedances	none
PSD increment exceedances	none
Hazardous air pollutants (HAPs) benzene	none to negligible
Hazardous air pollutants (HAPs) benzene formaldehyde	none to negligible
Visibility impacts	none
Deposition of sulfur and nitrogen	none
Acid neutralizing capacity (ANC) exceedances	none

[a] Please see discussion of well numbers under Section 4.2.2.6.3 Air Quality Modeling Assumptions

4.3 CULTURAL RESOURCES

Please refer to Section 4.3 of the DRMP/DEIS with the following changes.

4.3.2.1 Impacts of Cultural Resource Decisions on Cultural Resources

NOTE TO READER: A new Section 4.3.2.1.5 has been added to disclose the effects of Alternative E.

4.3.2.1.5 Alternative E

Under Alternative E, areas of high cultural resource site density would be closed to both oil and gas leasing and to OHV travel. Alternatives A, B, and D – No Action would permit oil and gas leasing in these areas but would restrict OHV travel to designated routes. The closure of these areas would significantly reduce potential and ongoing impacts to cultural resources as compared to the current management situation and other action alternatives by substantially reducing levels and frequencies of surface disturbance.

Under Alternative E, on- and off-site interpretive facilities would be established at all appropriate cultural resource sites in a manner that would not adversely impact the resource. Such interpretive facilities would be established proactively and independent of mitigation for authorized or permitted undertakings. Sites with high traditional values to Native American tribes still would not be designated for interpretation unless tribal approval was granted.

NOTE TO READER: The original Section 4.3.2.1.5, Summary – Cultural Resource Decisions, in the DEIS has been renumbered here as Section 4.3.2.1.6 and has been replaced with the following.

4.3.2.1.6 Summary – Cultural Resource Decisions

Overall, Alternatives C and E would provide the greatest benefit to cultural resources by eliminating oil and gas development and OHV travel in specific areas of high cultural resource site density and by establishing interpretive facilities at the greatest number of locales. Alternative A provides less positive benefit in that oil and gas development would continue to be allowed in areas of high cultural resource site density. Alternative B and Alternative D – No Action provide the least positive benefit to cultural resources in that many fewer restrictions are placed on oil and gas development and on OHV travel.

4.3.2.2 Impacts of Fire Management Decisions on Cultural Resources

NOTE TO READER: The fourth paragraph of this section has been replaced with the following to include an analysis of the effects under Alternative E.

Under the current management situation (Alternative D – No Action), 27,950 acres in the Book Cliffs RMP and 22,950 acres in the Diamond Mountain RMP would be treated with prescribed fire and related activities for a total of 50,900 acres. Under Alternative E, prescribed fire would be allowed on approximately 156,425 acres per decade, substantially more treated acreage than

that proposed under Alternative D. This would result in a situation that is likely to have greater positive direct impacts on cultural resources and reduced negative direct impacts relative to the current management situation. This is because, as discussed in Section 4.3.2.2, prescribed fire often occurs at lower temperatures than wildland fires and are likely to result in less damage to cultural resources than would wildland fires over the same area. Also, all prescribed fire and associated activities with the potential to negatively impact cultural resources are also subject to review and approval under Section 106 of the NHPA prior to implementation.

4.3.2.3 Impacts of Lands and Realty Decisions on Cultural Resources

NOTE TO READER: A new Section 4.3.2.3.5 has been added to disclose the effects of Alternative E.

4.3.2.3.5 Alternative E

Under Alternative E, BLM would pursue the acquisition of Indian Trust Lands near the confluence of South and Sweet Water Canyons and in the Bitter Creek area and would pursue public access at the mouth of Cowboy Canyon, Bonanza Bridge, and Wagon Hound Road. Because these lands are currently managed under the same federal laws that apply to BLM, there are likely to be minimal changes from the current action in how cultural resource sites are protected or impacted. Additionally, under Alternative E, BLM would pursue a locatable mineral withdrawal or other protective measures that would preclude mineral entry in the Green River Scenic Corridor in Browns Park (8,208 acres), the Lears Canyon relict vegetation area (1,377 acres), the White River area (9,218 acres), the Book Cliffs Natural Area (401 acres), and the lower Green River ACEC (17,063 acres). Furthermore, 277,596 acres of non-WSA lands with wilderness characteristics would be proposed for withdrawal from mineral entry. The BLM would also pursue an easement for the old Uintah Railroad bed from the Utah/Colorado line to Watson (Utah) in Evacuation Wash. The old Uintah Railroad bed is a known and documented historical cultural site. There are likely to be long-term beneficial indirect impacts because withdrawing lands from mineral development would reduce negative impacts over the area. Furthermore, the acquisition of the Uintah Railroad corridor by BLM and the management of this historical site in accordance with federal law and agency guidelines afford some protection to this specific site by reducing potential negative impacts to it from private actions not subject to the same laws and guidelines. In addition, approximately 277,596 acres of non-WSA lands with wilderness characteristics would be excluded from ROW designation. This decision would have long-term, beneficial impacts on cultural resources because these areas would be protected from the surface disturbances associated with ROWs (e.g., utility, oil, and gas transmission line corridors).

These actions would have a long-term, indirect positive impact on cultural resources within the VPA by reducing the number of cultural resource sites that are subject to mineral development. The effect of withdrawal of lands from mineral entry under the 1872 mining law as amended is a decrease in overall surface and subsurface disturbance within the withdrawn area. Because the extent of surface and subsurface disturbance is the single greatest factor in predicting the potential for adverse impacts to cultural resources, an overall reduction in surface and subsurface disturbance through a mineral entry withdrawal would presumably reduce the overall potential negative impact to cultural resources.

NOTE TO READER: The original Section 4.3.2.3.5 of the DEIS has been renumbered here as Section 4.3.2.3.6 and has been replaced with the following.

4.3.2.3.6 Summary – Land and Realty Decisions

In summary, relative to unspecified decisions under the current management situation, Alternatives A, B, C, and E are all likely to provide long-term, indirect, and beneficial impacts to cultural resources in the Vernal planning area. Alternatives A, C, and E are likely to have the greatest beneficial impacts, because both involve withdrawing lands from mineral developments in certain areas, including non-WSA lands with wilderness characteristics.

4.3.2.4 Impacts of Mineral Decisions on Cultural Resources

NOTE TO READER: A new column has been added to Table 4.3.1 to include information under Alternative E.

TABLE 4.3.1. SUMMARY OF MINERALS DEVELOPMENT RELATIVE TO HIGH AND LOW CULTURAL RESOURCE -SITE PROBABILITY ZONES

Oil and Gas Leases	Alternative E
Acres within High Site Probability Zones	
Standard Lease Terms	222,728
Timing and Controlled Surface Use	305,677
Total Open	528,405
No Surface Occupancy	27,298
Closed	153,049
Percent Change Relative to No -Action	-1.0%
Acres within Low Site Probability Zones	
Standard Lease Terms	596,163
Timing and Controlled Surface Use	374,893
Total Open	971,056
No Surface Occupancy	20,331
Closed	213,987
Percent Change Relative to No -Action	-3.1%

TABLE 4.3.1. SUMMARY OF MINERALS DEVELOPMENT RELATIVE TO HIGH AND LOW CULTURAL RESOURCE -SITE PROBABILITY ZONES

Other Minerals (Open)	Alternative E
Acres within High Site Probability Zones	
Mineral Materials	142,469
Percent Change Relative to No -Action	-9.3%
Phosphate	32,591
Percent Change Relative to No -Action	-34.1%
Gilsonite (40' width)	223
Percent Change Relative to No-Action	2.8%
Acres within Low Site Probability Zones	
Mineral Materials	202,205
Percent Change Relative to No-Action	-12.3%
Phosphate	19,472
Percent Change Relative to No-Action	-48.1%
Gilsonite (assume 40' vein width for acreage calculation)	567
Percent Change Relative to No-Action	-5.7%

NOTE TO READER: Acreages were calculated using GIS technology, and there may be slight variations in total acres between the different resource categories discussed in this EIS. These variations are negligible and will not affect analysis.

NOTE TO READER: A new column has been added to Table 4.3.2 to include information under Alternative E.

TABLE 4.3.2. ESTIMATED DISTURBANCE IN HIGH CULTURAL RESOURCE-SITE PROBABILITY ZONES BY OIL, GAS, AND COAL-BED METHANE DEVELOPMENT BY RFD AREA AND ALTERNATIVE

	Alternative E
Open Acres Within High Probability Zones for Cultural Sites*	
Monument Butte	183,232
East Tavaputs	191,251
West Tavaputs	41,429
Altamont	1,963
Tabiona	88,959
Manila	21,571
Total	***528,405***
Percent Potential Disturbance (Projected Total Disturbance based on Wells/Total Open Area)	
Monument Butte	2.3%
East Tavaputs	0.5%
West Tavaputs	0.7%

TABLE 4.3.2. ESTIMATED DISTURBANCE IN HIGH CULTURAL RESOURCE-SITE PROBABILITY ZONES BY OIL, GAS, AND COAL-BED METHANE DEVELOPMENT BY RFD AREA AND ALTERNATIVE

	Alternative E
Altamont	2.7%
Tabiona	0.1%
Manila	0.2%
Total	***1.3%***
Estimated Disturbance in High Probability Zones (Percent Disturbance* Acres in Zone)	
Monument Butte	4,300
Percent Difference from No Action	*11.9%*
East Tavaputs	1,026
Percent Difference from No Action	*17.9%*
West Tavaputs	275
Percent Difference from No Action	*5.8%*
Altamont	52
Percent Difference from No Action	*-2.6%*
Tabiona	55
Percent Difference from No Action	*-16.2%*
Manila	40
Percent Difference from No Action	*-4.7%*
Total	***5,750***
Percent Difference from No Action	*11.9%*

NOTE TO READER: A new column has been added to Table 4.3.3 to include information under Alternative E.

TABLE 4.3.3. ESTIMATED DISTURBANCE IN LOW CULTURAL RESOURCE-SITE PROBABILITY ZONES BY OIL, GAS, AND COAL-BED METHANE DEVELOPMENT BY RFD AREA AND ALTERNATIVE	
	Alternative E
Open Acres Within Low Probability Zones for Cultural Sites*	
Monument Butte	468,709
East Tavaputs	250,332
West Tavaputs	93,795
Altamont	12,215
Tabiona	130,546
Manila	15,458
Total	***971,055***
Percent Potential Disturbance (Projected Total Disturbance Based on Wells/Total Open Area)	
Monument Butte	2.3%
East Tavaputs	0.5%
West Tavaputs	0.7%
Altamont	2.7%
Tabiona	0.1%
Manila	0.2%
Total	***1.3%***
Estimated Disturbance in Low Probability Zones (Percent Disturbance*Acres in Zone)	
Monument Butte	11,000
Percent Difference from No Action	*2.8%*
East Tavaputs	1,343
Percent Difference from No Action	*54.4%*
West Tavaputs	624
Percent Difference from No Action	*139.6%*
Altamont	325
Percent Difference from No Action	*-0.9%*
Tabiona	81
Percent Difference from No Action	*-7.5%*
Manila	29
Percent Difference from No Action	*-5.3%*
Total	***13,402***
Percent Difference from No Action	*9.1%*

NOTE TO READER: A new column has been added to Table 4.3.4 to include information under Alternative E.

TABLE 4.3.4. ESTIMATED NUMBERS OF CULTURAL RESOURCE SITES POTENTIALLY INVOLVED IN OIL, GAS, AND COAL-BED METHANE DEVELOPMENT BY RFD AREA AND ALTERNATIVE	
Estimated Number of Sites Potentially Encountered by Development	
	Alternative E
High Site Probability Zones*	
Monument Butte	33
East Tavaputs	8
West Tavaputs	2
Altamont	0
Tabiona	0
Manila	0
Subtotal	43
Low Site Probability Zones**	
Monument Butte	16
East Tavaputs	2
West Tavaputs	1
Altamont	0
Tabiona	0
Manila	0
Subtotal	19
Grand Total	62
*(Number of acres of potential disturbance/640 acres per square mile)*4.87 sites/square mile **(Number of acres of potential disturbance/640 acres per square mile)*0.93 sites/square mile	

NOTE TO READER: A new Section 4.3.2.4.5 has been added to disclose the effects of Alternative E.

4.3.2.4.5 Alternative E

Under Alternative E, oil and gas leasing would be open under standard lease terms or with timing and controlled surface-use conditions on approximately 528,405 acres within the high site probability areas and approximately 971,056 acres within the low site probability areas (see Table 4.3.1). Based on projections of the numbers of wells and the size of each well, approximately 18,000 acres would be subject to surface and subsurface disturbance over the short term. The majority of this disturbance (approximately 13,000 acres) would be within the Monument Butte–Red Wash RFD area, with approximately 4,000 acres in the East and West Tavaputs and Altamont-Bluebell areas and the remainder of disturbances within the Tabiona–Ashley Valley and Manila–Clay Basin areas.

Alternative E reflects an approximately 11.7 % overall increase in oil, gas, and coal bed methane surface disturbance in the high cultural resource site probability zones relative to the Alternative D – No Action and an approximately 3.8 % increase in disturbance in low cultural resource site probability zones. Relative to the Alternative D – No Action, disturbance in high cultural resource site probability zones would increase by 2.7% in the Altamont-Bluebell and by 2.3% in the Monument Butte–Red Wash RFD areas. Descriptions of what constitutes low and high probability zones for cultural resources are provided in Sections 3.4.5 and 4.3 of the DEIS/DRMP. Alternative E is likely to result in encountering approximately 43 sites within high site probability zones and 19 sites in low site probability zones for approximately 62 sites total (see Table 4.3.4 of this Supplement).

Based on the numbers of acres potentially open to development for oil, gas, mineral materials, phosphate, and Gilsonite, Alternative E would result in a reduction in minerals development of approximately 1% in high cultural resource site probability zones relative to Alternative D – No Action (see Table 4.3.1). Projected development in mineral materials and phosphate decreases between 5% and 48%, the biggest decrease is in the area of phosphate development. In general, any decrease in minerals development, especially within high cultural resource site probability zones, also decreases the potential for direct and indirect impacts on cultural resources because less ground disturbance—the biggest threat of damage to cultural resources—would occur. That is, under Alternative E, fewer cultural resource sites within the VPA would be available for potential direct and indirect impact because fewer acres of areas believed to contain large numbers of sites would be open to ground-disturbing activities associated with minerals development.

NOTE TO READER: The original Section 4.3.2.4.5 has been renumbered here as Section 4.3.2.4.6 and has been replaced with the following.

4.3.2.4.6 Summary – Minerals Decisions

Overall, based on the numbers of acres open for minerals development and in consideration of the likely lease areas, Alternative E, followed by Alternative C, would result in the least opportunity for conflicts between development and cultural resources. Alternatives C and E would result in the smallest increase in potential for conflicts with cultural resource sites from ground-disturbing activities related to minerals development because fewer acres would be open for such development. Alternatives A and B would have the greatest number of acres subject to potential disturbance of any of the alternatives. Alternative D – No Action would have the smallest number of total acres affected, because the Hill Creek Extension (188,500 acres) was not identified as available for mineral leasing in the Book Cliffs RMP and therefore is not included in the total acreage calculations of Alternative D – No Action as presented in the alternative matrix for the DEIS/DRMP. The Hill Creek Extension would be available for leasing under Alternative E, and the addition of these acres to those currently available represents an increase of around 10%, and a small number of additional sites are likely to be identified and subject to avoidance, mitigation, or potential impact through inadvertent discovery. It remains important to reiterate that specific minerals development projects will undergo another level of analysis and will therefore be subject to site-specific Section 106 review. Consequently, the potential for actual negative direct impacts to occur to cultural resources would be low. Furthermore, it should be noted that the greater benefit to cultural resources from minerals

decisions under Alternatives C and E compared to other alternatives is primarily related to preservation of the physical sites themselves. The identification, documentation, and evaluation of cultural resources as part of the site-specific Section 106 process contribute valuable knowledge about the extent and nature of past human uses of the lands within the VPA. The decreased amount of site-specific Section 106 review that would occur as a result of decreased minerals development on non-WSA lands with wilderness characteristics would also contribute to less information about site locations and types being contributed to the overall cultural resources database for the VPA.

4.3.2.5 Impacts of Rangeland Management Decisions on Cultural Resources

NOTE TO READER: A new column has been added to Table 4.3.5 to include information under Alternative E.

TABLE 4.3.5. ESTIMATED ACRES AND POTENTIAL CULTURAL RESOURCE SITES ASSOCIATED WITH RANGELAND CONSTRUCTIONS AND VEGETATION TREATMENTS BY ALTERNATIVE

	Alternative E
From Rangeland Constructions	
Fencing	129
Acres	*64.5*
Pipeline	29.5
Acres	*29.5*
Subtotal Acres	***94***
*Estimated Sites**	*0*
Guzzlers	811
Acres	*811*
Wells	87
Acres	*87*
Subtotal Acres	***898***
*Estimated Sites***	*7*
Total Acres	***992***
Percent Change	*8.2%*
Total Estimated Sites	7
From Vegetation Treatments	
Acres	45,860
Percent Change	*13.5%*
*Estimated Sites**	*208*

*Utilizes a moderate site density estimate of 2.9 sites/square mile
**Utilizes a high site density estimate of 4.87 sites/square mile

NOTE TO READER: A new Section 4.3.2.5.5 has been added to disclose the effects of Alternative E.

4.3.2.5.5 Alternative E

Under Alternative E, a total of 45,860 acres of would be subject to mechanical and chemical vegetation treatment, 129 miles of fencing would be installed, 29.5 miles of water pipeline would be installed, 87 well/spring developments would be undertaken, and 811 guzzler or reservoir projects would be completed. These acreages, miles, and numbers of facilities reflect an approximately 8% increase over the acreages proposed under Alternative D – No Action. Vegetation treatments under Alternative E are likely to involve approximately 210 sites, which is fewer than under Alternative B, approximately the same as under Alternative C, and higher than under Alternatives A and D. Fencing, pipelines, guzzlers, and wells are likely to involve approximately 7 sites, roughly comparable to Alternative D – No Action.

NOTE TO READER: The original Section 4.3.2.5.5 has been renumbered here as Section 4.3.2.5.6 and has been replaced with the following.

4.3.2.5.6 Summary – Rangeland Management Decisions

Overall, Alternatives A and D are likely to have the least potential for negative impacts to cultural resources of all the alternatives because fewer acres would be subject to ground-disturbing activities related to rangeland treatments and improvements. Alternative A would have the lowest total number of acres affected by the combination of vegetation treatment, fencing, and pipelines. Therefore, Alternative A would be expected to have the least potential to impact cultural resources. However, Alternative D – No Action would have the second lowest potential to impact cultural resources based upon the total number of acres that could be affected by the combination of vegetation treatments and rangeland constructions (e.g., fences, guzzlers, and pipelines). Alternatives C and E would have identical potential for impacts to cultural resources, which is greater than Alternatives A and D but less than Alternative B. Alternative B, which has the highest number of acres open to rangeland constructions and vegetation treatments of all the alternatives, would subsequently have the highest potential to impact cultural resources.

However, under all alternatives additional analysis for compliance with Section 106 of the NHPA and agency regulations would be required. Therefore, the actual potential for adverse impacts to cultural resources under any alternative would be low.

4.3.2.6 Impacts of Recreation Decisions on Cultural Resources

NOTE TO READER: A new Section 4.3.2.6.5 has been added to disclose the effects of Alternative E.

4.3.2.6.5 Alternative E

Under Alternative E, 522,636 acres would be specifically managed as SRMAs in the following areas: Book Cliffs (273,486 acres), Fantasy Canyon (69 acres), Browns Park (52,720 acres), Red Mountain–Dry Fork (24,285 acres), Nine Mile Canyon (81,168 acres), White River (47,130

acres), Blue Mountain (42,758 acres), and Pelican Lake (1,020 acres). All of these areas except Fantasy Canyon contain large numbers of acres within high cultural resource site probability zones: Blue Mountain (approximately 26,000 acres), Book Cliffs (approximately 196,000 acres), Browns Park (approximately 38,000 acres), Nine Mile Canyon (approximately 32,000 acres), and White River (approximately 40,000 acres). All of the acreages in Fantasy Canyon are considered low site probability zones. In addition, approximately 157,018 acres within the proposed SRMAs would be managed to protect non-WSA lands with wilderness characteristics, and for primitive, non-motorized/non-mechanized recreational opportunities. These protected areas would be managed under VRM I class objectives, closed to cross-country OHV use, and closed to private wood cutting and seed collection. The impacts on cultural resources from non-WSA lands with wilderness characteristics protection within the proposed SRMAs would be beneficial in the long term because of the prohibitions and limitations on surface disturbances within these areas (to protect wilderness values) that would also have the effect of protecting cultural resources.

Under Alternative E, designated SRMAs that do not overlap non-WSA lands with wilderness characteristics would be managed for other uses, and portions of the Book Cliffs SRMA would be open to oil and gas development. Four hundred miles of non-motorized trails would be improved and/or developed, and restrictions would be placed on the use of OHVs off of designated routes for the retrieval of big game. No motorized OHV trails would be developed under this alternative, and no new cabin construction would be allowed within the VPA. These management prescriptions would have long-term, beneficial impacts on cultural resources by restricting and/or mitigating surface-disturbing actions. Those SRMAs or portions of SRMAs that overlap non-WSA lands with wilderness characteristics would be managed for those characteristics, and this would result in the implementation of greater restrictions on land uses and surface disturbance. The potential effects of those management actions on cultural resources are discussed in Section 4.3.2.12.

Compared to the other alternatives, Alternative E is similar to Alternative C and roughly comparable to Alternative A, although slightly fewer acres would be managed as SRMAs under Alternative A. None of the 69 acres proposed for the Fantasy Canyon SRMA fall within high site probability zones. The proposed designations reflect a substantial increase of acres over the current acres represented by SRMAs in the area.

NOTE TO READER: The original Section 4.3.2.6.5 has been renumbered here as Section 4.3.2.6.6 and has been replaced with the following.

4.2.3.6.6 Summary – Recreation Decisions

Overall, Alternatives A, C, and E have the greatest potential for positive impacts to cultural resources. These alternatives provide for a 400% increase in acres designated as SRMAs over Alternative D. Although there is potential for direct and indirect negative impacts from increased recreation under these designations, the management of the recreational activity within the SRMAs through the designation of activity areas and acceptable uses would help minimize potential impacts to cultural resources from the anticipated increase in number of visitors. Alternative E would have the greatest opportunity for implementing recreational management actions that could actively control potential impacts to cultural resources over a larger area—and

presumably over more cultural resource sites—because more acres would be contained within SRMAs under this alternative than under any other.

4.3.2.7 Impacts of Special Designation Decisions on Cultural Resources

NOTE TO READER: A new Section 4.3.2.7.5 has been added to disclose the effects of Alternative E.

4.3.2.7.5 Alternative E

Under Alternative E, the following acreages are proposed for ACEC designation: Bitter Creek (68,834 acres), Bitter Creek/P.R. Spring (78,591 acres), Browns Park (52,721 acres), Coyote Basin–Coyote Basin (26,590), Coyote Basin–Kennedy Wash (10,670 acres), Coyote Basin–Myton Bench (36,670 acres), Coyote Basin–Shiner (21,957 acres), Coyote Basin–Snake John (28,274 acres), Four Mile Wash (50,280 acres), Lears Canyon (1,377), Lower Green River (10,170 acres), Main Canyon (100,915 acres), Middle Green River (6,768 acres), Nine Mile Canyon (81,168 acres), Pariette (10,437 acres), Red Creek (24,275 acres), Red Mountain–Dry Fork Complex (24,285 acres), and White River (47,130 acres). In these proposed areas between 1,000 and 75,000 acres within high cultural resource site probability zones are present. Decisions under Alternatives C and E would also include the designation of 50,280 acres of land in the Four Mile Wash area as an ACEC/ONA; approximately 7,000 of these acres are within high cultural resource site probability zones. In addition, under Alternative E, approximately 197,171 acres of non-WSA lands with wilderness characteristics that lie within proposed ACECs would have protection measures as discussed above under Section 4.3.2.6.5 for Recreation.

Under Alternative E, three segments of the White River would be recommended for wild and scenic designations, and one segment each of Nine Mile Creek, Argyle Creek, and the middle Green River would be recommended for wild and scenic designation with a classification of recreational. Additionally, one segment each of Evacuation Creek, the lower Green River, Nine Mile Creek, and Bitter Creek would be recommended for wild and scenic designation with a classification of scenic. Furthermore, the segment of the Green River between Little Hole and the Utah-Colorado state line would be managed as a wild and scenic river with a classification of scenic until such time as Congress makes a decision whether or not to include this river segment in the national Wild and Scenic River system.

The impacts on cultural resources from special designations such as ACECs and WSRs would be similar to those for SRMAs in that the management decisions would substantially limit or prohibit surface disturbances within these areas in order to protect their relevant and important and outstandingly remarkable values, and this would also afford long-term beneficial protection to cultural resources. The overall nature of the direct effect of special designation decisions on cultural resources under Alternative E is similar to that described for Alternative C, and greater than that described for Alternatives A and B. This alternative would have more beneficial impacts on cultural resources than Alternative D because, as discussed under the Recreation section above, more protective prohibitions and limitations on surface disturbance would be applied under Alternative E.

NOTE TO READER: The original Section 4.3.2.7.5 has been renumbered here as Section 4.3.2.7.6 and has been replaced with the following.

4.3.2.7.6 Summary – Special Designation Decisions

Overall, Alternative E has the greatest potential long-term direct and indirect benefit to cultural resources of all the alternatives. Alternative C has the second-greatest benefit followed by Alternative A, then Alternative B, and then Alternative D – No Action.

4.3.2.8 Impacts of Travel Decisions on Cultural Resources

NOTE TO READER: A new column has been added to Table 4.3.6 to include information under Alternative E.

TABLE 4.3.6. ESTIMATED NUMBERS OF ACRES OPEN TO OHV TRAVEL AND LIMITED OHV TRAVEL IN HIGH AND LOW CULTURAL RESOURCE-SITE PROBABILITY ZONES, AND ESTIMATED NUMBERS OF CULTURAL RESOURCE SITES POTENTIALLY WITHIN OPEN OHV TRAVEL AREAS BY ALTERNATIVE

	Alternative E
Acres in High Site Probability Zones	
Open	236
Percent Change	-99.9%
Potential Sites	*2*
Limited	469,497
Percent Change	*32.1%*
Acres in Low Site Probability Zones	
Open	5,198
Percent Change	-99.0%
Potential Sites	*8*
Limited	858,904
Percent Change	61.2%
Total Open Acreage	5,434
Total Potential Sites	*10*
(Note: Potential sites for areas associated with limited travel are estimated on the next table)	

NOTE TO READER: A new column has been added to Table 4.3.7 to include information under Alternative E.

TABLE 4.3.7. ESTIMATED ACRES AND POTENTIAL CULTURAL RESOURCE SITES ASSOCIATED WITH TRAVEL ROUTES AND THE 300-FOOT TRAVEL BUFFER BY ALTERNATIVE	
	Alternative E
Within High Cultural Site Probability Zones	
Acres	44,800
Percent Change	*-34.9%*
Potential Sites	*339*
Within Low Cultural Site Probability Zones	
Acres	68,279
Percent Change	-25.5%
Potential Sites	99
Total Acres	*113,079*
Percent Change	*-29.6%*
Total Potential Sites	*438*

NOTE TO READER: A new Section 4.3.2.8.5 has been added to disclose the effects of Alternative E.

4.3.2.8.5 Alternative E

Alternative E provides for the limitation of travel on designated routes for 1,326,024 acres of land currently open to unrestricted OHV travel, or a 99.9% decrease in areas open to travel. Approximately 240 acres would remain open to OHV travel in high cultural resource site probability zones and approximately 5,200 acres would remain open in low cultural resource site probability zones, a nearly 100% decrease in the amount of acreage open to unrestricted travel (see Table 4.3.6 above and in the DEIS). Based on the estimates for sites per square mile described above, approximately 10 sites may be present in these open areas and would continue to see impacts that may be already occurring (see Table 4.3.6). However, not all of these sites would necessarily continue to be impacted or would necessarily be newly impacted. The number of sites is also greatly reduced relative to the Alternative D – No Action, which has approximately 2,600 sites within areas that are currently open to OHV travel.

Under Alternative E, approximately 392,818 acres would be designated as closed to OHV travel. Under this alternative, approximately 228 miles of OHV routes would be closed to travel in order to protect the wilderness values that lie within non-WSA lands with wilderness characteristics, a change that would have long-term, beneficial impacts on cultural resources by reducing the potential for OHV impacts to the resource along designated travel routes. Compared to Alternative D, Alternative E would have more beneficial impacts on cultural resources because

of the reduced opportunities for cross-country OHV travel, with the reduced likelihood for OHV surface disturbances of cultural resources.

Under Alternative E, approximately 113,079 acres of land are located in or within 300 feet of either side of existing routes that would remain open under this alternative (see Table 4.3.7) to allow cross-country travel to dispersed campsites. This represents an approximately 30% reduction in open area relative to the Alternative D – No Action, with an approximately 35% reduction in open area within high cultural resource site probability zones (see Table 4.3.7). Based on reasonable projections of numbers of sites within high and low cultural resource site probability zones, this alternative would potentially expose approximately 438 cultural resource sites to ongoing impacts or potentially new impacts. This number is the lowest of all the alternatives and is approximately 33% lower than the nearly 660 sites that are currently potentially subject to impacts under Alternative D – No Action. Alternative E provides for the greatest reduction in the size of the area open to travel and the number of sites potentially subject to continued impacts.

NOTE TO READER: The original Section 4.3.2.8.5 has been renumbered here as Section 4.3.2.8.6 and has been replaced with the following.

4.3.2.8.6 Summary – Travel Decisions

Alternatives E and C would have the greatest beneficial impacts on cultural resources because of the small areas designated as open to OHV travel, followed by Alternative A and then Alternative B. Alternative D would have the fewest beneficial impacts on travel because approximately 787,859 acres would be managed for unlimited, cross-country OHV use. The large area open to OHV travel under Alternative D – No Action would increase the likelihood for direct and indirect, adverse surface disturbances to cultural resources.

4.3.2.10 Impacts of Visual Resource Management Decisions on Cultural Resources

NOTE TO READER: A new Section 4.3.2.10.5 has been added to disclose the effects of Alternative E.

4.3.2.10.5 Alternative E

Under Alternative E, 331,813 acres would be managed under VRM Class I objectives, 263,285 acres would be managed under VRM Class II objectives, approximately 536,301 acres would be managed under VRM Class III objectives, and 590,262 acres would be managed under VRM Class IV objectives. Compared to the other alternatives, Alternative E provides some protection to cultural resources with a total of 595,098 acres managed as VRM Class I and VRM Class II, the two highest and most restrictive VRM classes. Management for these two VRM classes would either prohibit or greatly restrict surface disturbances on the landscape in order to protect scenic quality. These prohibitions and/or restrictions would also be beneficial in the long term in preserving and protecting cultural resources from surface disturbances. Compared to Alternative D – No Action, this alternative would be more beneficial because it would manage twice as many acres under VRM Class I and II objectives.

4.3.2.11 Impacts of Wildlife and Fisheries Decisions on Cultural Resources

NOTE TO READER: A new Section 4.3.2.11.5 has been added to disclose the effects of Alternative E.

4.3.2.11.5 Alternative E

Under Alternative E, surface disturbance in crucial deer winter range would be capped at 560 acres per township (prorated based upon the percentage of the range within that township that functions as crucial winter range). This 560-acre cap includes both new and existing surface and subsurface disturbance. Because of the limits on surface disturbance, this decision under Alternatives C and E provides greater benefit to cultural resources than do decisions under the other alternatives.

4.3.2.12 Impacts of Non-WSA Lands with Wilderness Characteristics Decisions on Cultural Resources

NOTE TO READER: A new Section 4.3.2.12 has been added to disclose the effects of decisions regarding non-WSA lands with wilderness characteristics on cultural resources.

Management decisions to protect approximately 277,596 acres of non-WSA lands with wilderness characteristics would include closing these areas to oil and gas leasing and mineral material disposal, proposing withdrawals from mineral entry, closing the areas to cross-country OHV travel, prohibiting vegetation treatments by any method other than prescribed fire or wildland fire for resource benefit, prohibiting woodland harvesting and salvage, realty actions that exclude these areas from ROW consideration, and designating these areas for management under VRM Class I objectives. The impacts of these decisions would be to reduce the area in the VPA that would otherwise be open to surface development, and this would primarily have positive effects on cultural resources in that fewer cultural resource sites would be available for potential direct and indirect impacts from surface-disturbing activities. It should be noted, however, that the identification, documentation, and evaluation of cultural resources as part of the site-specific Section 106 process associated with development projects contribute valuable knowledge about the extent and nature of past human uses of the lands within the VPA. It also affords opportunities to identify sites that are being impacted by non-development activities such as recreational use, vandalism, and looting, and it offers opportunities to implement management measures that can minimize or mitigate those effects. The decreased amount of site-specific Section 106 review that would occur as a result of decreased development on non-WSA lands with wilderness characteristics would also contribute to less information about site locations and types being contributed to the overall cultural resources database for the VPA. Additionally, it is possible that management of areas as non-WSA lands with wilderness characteristics could draw additional visitors to those areas. Increased visitation could result in increased levels of damage to sites from visitor-induced erosion, looting, and vandalism. However, visitor densities on these lands would not be expected to be particularly high, and restrictions on the use of motorized vehicles in the areas would limit the severity of potential negative effects from increased visitation.

4.3.2.12.1 Alternatives A, B, C, and D

Under Alternatives A-D, no actions would be prescribed to specifically protect the wilderness characteristics of non-WSA lands with wilderness characteristics. Impacts to cultural resources would be dependant upon management prescriptions for other resources.

4.3.2.12.2 Alternative E

Under Alternative E, all identified non-WSA lands with wilderness characteristics would be protected under management decisions that include those mentioned above. Impacts to cultural resources would be as identified above.

4.4 FIRE MANAGEMENT

Please refer to Section 4.4 of the DRMP/DEIS with the following changes.

4.4.2.1 Effects of Fire Decisions on Fire Management

NOTE TO READER: A new Section 4.4.2.1.3 has been added to disclose the effects of Alternative E.

4.4.2.1.3 Alternative E

In the long term, the use of prescribed fire on 156,425 acres per decade would directly reduce fuel loads and stand densities and, subsequently, the risks of large-scale, catastrophic wildland fires. Management actions under Alternatives A, B, C and E would reduce the risk of catastrophic wildland fire within the VPA more than Alternative D – No Action, which prescribes treatment of only 50,900 acres.

4.4.2.2 Effects of Mineral Development Decisions on Fire Management

NOTE TO READER: A new Section 4.4.2.2.5 has been added to disclose the effects of Alternative E.

4.4.2.2.5 Alternative E

Minerals development under Alternative E would disturb approximately 18,757 acres throughout the BLM-administered areas of the VPA in the short term and long term from minerals-related surface disturbances. Surface disturbances would include seismic exploration, access road and well pad construction, pipeline construction, and the construction of support facilities. Short-term surface disturbances within this area would potentially increase the risk of wildland fire, particularly during clearing and blading of well pads and access roads. The potential risks would be created by spark or heat ignition from vehicles, construction equipment, and construction personnel. However, long-term impacts from minerals development would reduce the risk of wildland fire due to fire breaks formed by well pads, mines, and access roads. Compared to Alternative D – No Action, Alternative E would potentially disturb approximately 545 more acres through minerals surface disturbances with an associated short-term increase and long-term

decrease in fire risks. The increased acreage is a result of the Hill Creek extension that was not open to leasing under the previous RMP as well as additional leasing categories open for development under Alternative E that are not available under Alternative D.

In summary, the relative risks of fire from surface disturbance associated with minerals development would be highest under Alternative B, followed by Alternatives A, C, and E, respectively. Alternative D would pose the lowest relative risk of fire from minerals-related surface disturbances.

4.4.2.3 Effects of Rangeland Improvement Decisions on Fire Management

NOTE TO READER: A new Section 4.4.2.3.5 has been added to disclose the effects of Alternative E.

4.4.2.3.5 Alternative E

Vegetation treatments for rangeland improvements under Alternative E would occur on 45,860 acres. Treatments are designed to reduce fuel loads and, therefore, reduce the risk of catastrophic wildfires. Because Alternative E would treat 5,470 more acres than Alternative D, Alternative E would have more beneficial impacts on fire management compared to Alternative D – No Action (See Table 4.3.5).

4.4.2.4 Effects of Recreation Decisions on Fire Management

NOTE TO READER: A new Section 4.4.2.4.5 has been added to disclose the effects of Alternative E.

4.4.2.4.5 Alternative E

Alternative E would manage the following eight SRMAs and would also manage for protection of the following non-WSA lands with wilderness characteristics within each proposed SRMA:

- 42,758 acres on Blue Mountain (13,308 acres of non-WSA lands with wilderness characteristics)
- 273,486 acres in the Book Cliffs (77,939 acres of non-WSA lands with wilderness characteristics)
- 52,720 acres in Browns Park (23,657 acres of non-WSA lands with wilderness characteristics)
- 69 acres in Fantasy Canyon (0 acres of non-WSA lands with wilderness characteristics)
- 47,130 acres along the White River (21,164 acres non-WSA lands with wilderness characteristics)

- 81,168 acres in Nine Mile Canyon (20,952 acres of non-WSA lands with wilderness characteristics)
- 24,285 acres on Red Mountain–Dry Fork (0 acres of non-WSA lands with wilderness characteristics)
- 1,020 acres around Pelican Lake (0 acres of non-WSA lands with wilderness characteristics)

Under Alternative E, the areas within the SRMAs identified as having wilderness characteristics would be managed as VRM Class I, with long-term beneficial impacts on primitive, non-mechanized recreational opportunities on approximately 157,018 acres. Up to 400 miles of non-motorized trails would be created, with no improvements or development of 800 miles of motorized trails. These management actions would increase recreation-related visitation. Increased visitation would cause indirect long-term, adverse impacts in the form of increased wildland fire risks from human- and vehicle-caused ignitions. Remote and dispersed camping fires within the existing and proposed SRMAs would pose an increased risk of wildland fire. Alternative E would pose the highest human-caused fire risk compared to the other action alternatives and Alternative D – No Action, based on the increased number of acres designated as SRMAs.

4.4.2.5 Effects of Woodland and Forest Decisions on Fire Management

NOTE TO READER: A new Section 4.4.2.5.4 has been added to disclose the effects of Alternative E.

4.4.2.5.4 Alternative E

Under Alternative E forests and woodlands would be managed to promote biodiversity and multiple use/sustained yield. In addition, woodlands and forests within the VPA would be managed so that disturbances would not exceed levels normally expected within healthy woodland and forest ecosystems. The reduction in the number of acres open to woodland and forest harvesting from harvesting restrictions on approximately 131,809 acres of non-WSA lands with wilderness characteristics would result in less reduction of stand densities and salvaging of dead or downed wood, resulting in less reduction of fuel loads. This would increase the risks of large-scale, catastrophic wildland fires which would have direct, long-term, adverse impacts on fire management.

4.4.2.6 Impacts of Non-WSA Lands with Wilderness Characteristics Decisions on Fire Management

NOTE TO READER: A new Section 4.4.2.6 has been added to disclose the effects of decisions regarding non-WSA land with wilderness characteristics on fire management.

4.4.2.6.1 Alternatives A, B, C, and D

Under these alternatives, there would be no management decisions to protect non-WSA lands with wilderness characteristics, and thus, there would be no impacts on fire management.

4.4.2.6.2 Alternative E

Under Alternative E, the impacts of managing non-WSA lands with wilderness characteristics on fire management would be both beneficial and adverse. Because prescribed burning would still be permitted in these areas, long-term beneficial impacts would result from reducing fire risks by reducing understory vegetation. Long-term, adverse impacts on fire management in non-WSA lands with wilderness characteristics would result from prohibitions on the private and commercial salvaging or harvesting of woodlands, which would contribute to and maintain the risks of wildland fire by not allowing fuel load reductions through woodland thinning or removal of dead wood.

4.4.2.7 Summary

NOTE TO READER: Section 4.4.2.6 Summary has been renumbered as 4.4.2.7 Summary and a subsection 4.4.2.7.5 added to disclose the effects of Alternative E.

4.4.2.7.5 Alternative E

Under Alternative E, the risk of wildland fire due to minerals development would be lower than Alternatives A and B. The number of vegetation treatments for rangeland improvements under Alternative E would be more beneficial in decreasing the risk of fire when compared to Alternative D, though not as beneficial as those under Alternative B. Recreation decisions under Alternative E would result in the highest risk of wildland fire because it has the highest number of proposed SRMAs which would result in increased recreation-related visitation. Additionally, mineral development would reduce the risk of wildland fire due to fire breaks formed by well pads, mines, and access roads. Overall, Alternatives C and E (with impacts similar to Alternative A) would have more long-term direct beneficial impacts on fire management than would Alternative D.

4.5 HAZARDOUS MATERIALS

Please refer to Section 4.5 of the DRMP/DEIS with the following changes.

4.5.2.1 Impacts of Minerals Decisions on Hazardous Materials

NOTE TO READER: A new Section 4.5.2.1.5 has been added to disclose the effects of Alternative E.

4.5.2.1.5 Alternative E

4.5.2.1.5.1 Oil, Gas, and Coal-bed Methane (CBM)

Approximately 1,499,461 acres of land would be administratively available for oil, gas, and CBM leasing under Standard Stipulations or Timing and Controlled Surface Use. This represents a 2% decrease in the total acreage available for leasing and potential number of wells, compared to Alternative D – No Action. The impacts of a 2% decrease in the number of available acres

would reduce the risks associated with use, generation, storage, transportation, and/or disposal of oil and gas drilling–related and extraction-related hazardous materials.

4.5.2.1.5.2 Gilsonite and Phosphate

Approximately 163 miles would be open for exploration and development of Gilsonite resources. The potential impacts of hazardous materials from Gilsonite and phosphate mining would continue at approximately current levels with hazardous materials risks at levels similar to present conditions. Approximately 52,063 acres would be open for phosphate development, which would be a decrease of 38% in the total acreage open for prospecting, leasing, and developing phosphate, compared to Alternative D – No Action. If this decrease in available acreage were equivalent to a decrease in actual mining, then there would be a proportional decrease in the potentially adverse impacts associated with hazardous materials used for vehicle and equipment operations.

4.5.2.1.5.3 Mineral Materials

Approximately 344,682 acres would be open for mineral material development. This represents an 11% decrease in the total acreage available for development of mineral materials, compared to Alternative D – No Action. A decrease in the total number of acres available for mineral materials development would decrease the use, generation, storage, transportation, and/or disposal of hazardous materials, with a proportional decrease in potential impacts from the aforementioned hazardous materials activities.

4.5.2.2 Impacts of Non-WSA Lands with Wilderness Characteristics Decisions on Hazardous Materials

NOTE TO READER: A new Section 4.5.2.2 has been added to disclose the effects of decisions regarding non-WSA lands with wilderness characteristics on hazardous materials.

4.5.2.2.1 Alternatives A, B, C, and D – No Action

Under these alternatives, there would be no management decisions to protect non-WSA lands with wilderness characteristics, and thus there would be no impacts on hazardous materials.

4.5.2.2.2 Alternative E

Under Alternative E, approximately 277,596 acres of non-WSA lands with wilderness characteristics would be closed to minerals leasing and mineral materials disposal and would be recommend for withdrawal from mineral entry. This would reduce the area available for minerals development and thus reduce the potential for the handling and transportation of hazardous materials, and it would reduce the need to dispose of these materials, with long-term, beneficial impacts from the reduced potential for hazardous materials impacts to natural resources within the VPA. Compared to Alternative D – No Action, this alternative would result in a greater reduction in risks from hazardous materials use.

4.5.2.3 Summary

NOTE TO READER: The original Section 4.5.2.2 has been renumbered here as Section 4.5.2.3 and replaced with the following.

Minerals management decisions made under Alternative B would have the highest potential to generate hazardous materials in the VPA when compared to Alternative D – No Action. Minerals management decisions made under Alternative A would have the second highest potential, followed by Alternative C. Alternative E would have the lowest potential to generate hazardous materials of all the alternatives, including Alternative D – No Action.

4.6 LANDS AND REALTY

Please refer to Section 4.6 of the DRMP/DEIS with the following changes.

4.6.2.1 Impacts of Recreation Decisions on Lands and Realty

NOTE TO READER: A new Section 4.6.2.1.5 has been added to disclose the effects of Alternative E.

4.6.2.1.5 Alternative E

Easements would be acquired from state and/or willing private landowners to increase public recreation access to trail systems where trails cross non-federal lands. As under Alternative A, a public access easement would be pursued for the White River at the mouth of Cowboy Canyon, Bonanza Bridge, and Wagon Hound Road, thereby allowing public access to a portion of the White River, which has been nominated for Wild and Scenic River status. Acquisition of Indian Trust Lands in Bitter Creek and near the confluence of South and Sweet Water Canyons would be sought from willing partners, which would allow the public to access this area, as well as permit the BLM to better manage the area by consolidating landscape-level issues without having to consider administrative boundaries. Under Alternative E, an easement for the old Uintah Railroad bed from the Utah-Colorado state line to Watson (Utah) in Evacuation Creek would be pursued, providing further public access in Evacuation Creek for recreation and other uses.

Under Alternative E, approximately 157,018 acres of non-WSA lands with wilderness characteristics that lie within proposed SRMAs would be excluded from ROW consideration in order to protect their wilderness values. These protected areas would also be retained in federal ownership. The impacts on lands and realty would be such that areas eligible for exchanges or disposal would be reduced, easements would not be permitted, and public use and access would be restricted to non-mechanized activities. Compared to Alternative D – No Action, Alternatives C and E would have more adverse, long-term impacts on lands and realty because the range of land uses would be more restricted.

4.6.2.2 Impacts of Mineral Decisions on Lands and Realty

NOTE TO READER: A new Section 4.6.2.2.5 has been added to disclose the effects of Alternative E.

4.6.2.2.5 Alternative E

Under Alternative E, a locatable mineral withdrawal and other protective measures would be pursued that would preclude mineral entry in the Green River Scenic Corridor in Browns Park (8,208 acres), White River (9,218 acres), Lears Canyon relict vegetation areas (1,375 acres), the Book Cliffs Natural Area (401 acres), and the lower Green River ACEC (17,063 acres). This alternative would also close approximately 277,596 acres to oil and gas leasing, geophysical exploration, ROW permits, and new road construction in order to protect non-WSA lands with wilderness characteristics. Off-lease roads and pipelines related to oil and gas development are a major contributor to lands and realty actions within the VFO planning area, so this alternative would result in fewer ROWs being applied for and granted than in Alternatives A-D, and this would have the effect of less surface disturbance to lands within the VFO planning area.

4.6.2.3 Impacts of Non-WSA Lands with Wilderness Characteristics Decisions on Lands and Realty

NOTE TO READER: A new Section 4.6.2.3 has been added to disclose the effects of decisions regarding non-WSA lands with wilderness characteristics on lands and realty.

4.6.2.3.1 Alternatives A, B, C, and D

Under these alternatives, there would be no management decisions prescribed specifically to protect non-WSA lands with wilderness characteristics. Thus, there would be no impacts on lands and realty actions in the VFO planning area.

4.6.2.3.2 Alternative E

Approximately 277,596 acres within the VFO planning area would be managed to preserve non-WSA lands wilderness characteristics. In addition to these areas being managed as realty-action ROW exclusion/avoidance areas, these areas would be managed as closed for oil and gas development (subject to prior existing rights), not available for disposal or exchange, recommended for withdrawal from mineral entry, and under VRM Class I objectives. The proposed management prescriptions to protect the wilderness values in these areas would result in fewer realty actions, including a reduction in the number of ROWs and easements applied for and granted, and retention in federal ownership. Although 277,596 acres of non-WSA lands with wilderness characteristics would be ROW exclusion areas, approximately 124,215 of these acres (45%) are already leased for oil and gas development (see Section 4.21.2.5.5). Therefore, ROWs might be granted through these areas, subject to valid existing leases.

4.7 LIVESTOCK AND GRAZING MANAGEMENT

Please refer to Section 4.7 of the DRMP/DEIS with the following changes.

4.7.2.1 Impacts of Fire Management Decisions on Livestock Grazing

NOTE TO READER: A new Section 4.7.2.1.3 has been added to disclose the effects of Alternative E.

4.7.2.1.3 Alternative E

Under Alternatives A, B, C, and E, approximately 156,425 acres per decade potentially would be treated by prescribed fire. Overall, while the use of prescribed burning as a management tool would result in some short-term losses of grazing areas, the long-term beneficial impacts of its application far outweigh the projected short-term impacts. Prescribed fire would maintain and restore vegetation communities, improve forage available for grazing, and present a much lower risk to livestock grazing than would wildland fire burning over the same area. Please refer to Section 4.7.2.1 of the DEIS for disclosure of the potential impacts and to Section 4.7.1 of the DEIS for additional discussion of Fire Management Decisions on Livestock Grazing impacts common to all alternatives.

4.7.2.2 Impacts of Forage Management Decisions on Livestock Grazing

NOTE TO READER: A new Section 4.7.2.2.5 has been added to disclose the effects of Alternative E.

4.7.2.2.5 Alternative E

The determination of season of use under Alternative E would be based on how grazing was adjudicated (judicially assigned) in the 1960s. Within the VPA, a total of 77,294 AUMs would be allocated to livestock, a total of 106,196 AUMs would be allocated to wildlife, and a total of 3,960 AUMs would be allocated to wild horses. The number of livestock AUMs was determined by removing historic non-use AUMs (available AUMs not used over the past 10 years) from Alternative D – No Action for the life of the management plan. Non-use by permittees would be the result of factors such as private business reasons, livestock market fluctuations, and drought conditions. This would result in an approximate 47.1% permitted reduction for livestock under Alternative E as compared to Alternative D – No Action, which would have a major adverse impact on the livestock and grazing resource. Overall reductions in forage use would be 24.3%. Within the uplands of the VPA, up to 50% use of forage would be allowed unless otherwise specified by a management plan. All of the action alternatives would reduce forage availability from current conditions for livestock, and Alternatives C and E are the alternatives least favorable to livestock from the standpoint of total available AUMs. However, from a rangeland health perspective, Alternatives C and E would result in the least use by livestock of the forage. Proper levels of use sustain a healthy vegetation condition that would support continued livestock grazing.

Since the number of AUMs is directly related to the amount of available forage for grazing, the short- and long-term direct impacts can be similarly anticipated whenever AUMs are used as a quantitative measure of impact. In the short term, Alternative E would provide forage for livestock for roughly half of the AUMs as compared to Alternative D – No Action, due to the 47.1% removal of historic non-use AUMs. This reduction would have a major impact on the livestock industry within the VPA. However, the total use of AUMs would not realistically differ from current conditions based on the levels of non-use. As with the other alternatives, grazing management criteria would be followed (see Chapter 2, Alternatives of the DRMP/DEIS) to maintain or improve rangeland conditions. A long-term, direct, adverse impact of Alternative E would be the limitation of permittees to expand the size of their operations above current levels within the allotments. This limitation would not allow the number of livestock to increase as markets improve, but increases would be driven by rangeland health and the capacity of the vegetation to support grazing. Forage production would likely increase under Alternative E, resulting in increased feed for foraging animals and an improvement in rangeland health. Alternative E would result in indirect impacts to ranchers and their families, to the local economy due to the reduction in livestock AUMs, and to local businesses due to the slowed economy. The reduction in permitted AUMs could affect the ability of ranchers to obtain adequate financial resources since federal permits are a recognized value to lending institutions. Fire ecology would also change due to the limited amount of grazing that would be authorized. The increased amount of forage would increase fuel loads, thereby affecting rangeland fire conditions.

Rangeland health would be the driving force under Alternative E and would be monitored to ensure that rangeland health standards would be met. As a result, the number of AUMs could increase under Alternative E on a case-by-case basis as directed by improved rangeland health. Under Alternative E, allowable utilization levels of 50% on uplands would be targeted to provide for plant health and adequate root growth. This level is expected to vary from year to year due to climatic changes, and the 50% utilization target could be modified in site-specific management plans considering allotment-specific conditions. Because of their lower utilization limits (50%), Alternatives A, C, and E would result in less livestock use of forage, compared to Alternative B. Proper levels of use sustain a healthy vegetation condition that would support continued livestock grazing. A comparison to Alternative D – No Action is not possible because there is no specified utilization target. However, healthy rangeland standards would be targeted under all of the alternatives.

4.7.2.3 Impacts of Mineral Decisions on Livestock Grazing

NOTE TO READER: A new Section 4.7.2.3.6 has been added to disclose the effects of Alternative E.

4.7.2.3.6 Alternative E

General impacts to livestock grazing from this alternative are projected to be primarily the loss of grazing land from the construction of well pads, other extraction facilities, and roads; the loss of vegetation available for grazing due to surface disturbance in areas associated with extraction activities; and the disruption of livestock management practices due to extraction activities. Under Alternative E, the total number of AUMs that would be lost in the short term due to oil

and gas well (includes coal bed methane) construction and associated facilities would be 344. With 77,294 AUMs allocated for livestock, the impact would be less than 1%. Each exploration or extraction site would be unique and would present a different set of specific circumstances. Impacts specific to exploration are expected to be short-term; impacts from extraction activities are expected to last as long as those activities occur.

Fugitive dust from new and existing roadways and from other areas of surface disturbance would have adverse impacts on livestock grazing because dust would tend to settle onto forage, especially along roadway corridors with heavy traffic. Dust has the potential to affect the quality and regenerative capacity of grasses and forbs. Generally, such effects are most severe in an area extending up to 0.25 mile from the roadway. Given the 0.25-mile assumption for dust effects, this equates to an area of impact of approximately 350,000 acres, which represents approximately 20% of the field office. However, the effects of dust on vegetation as livestock forage would not result in any reductions to AUMs for livestock use.

4.7.2.4 Impacts of Rangeland Improvement Decisions on Livestock Grazing

NOTE TO READER: A new Section 4.7.2.4.5 has been added to disclose the effects of Alternative E.

4.7.2.4.5 Alternative E

More favorable grazing conditions would result from three kinds of improvement actions. These improvement actions include vegetation treatments; fence construction for improved livestock control; and the development of guzzlers and/or reservoirs, wells and/or springs, and pipeline construction within cattle allotments. Cattle would be displaced for two growing seasons from a total of 45,860 acres for vegetation treatments. Cattle would be temporarily and intermittently displaced from a very small area during construction of 129 linear miles of fenceline. Cattle would be temporarily and intermittently displaced during the development of 811 guzzlers and/or reservoirs and 87 wells and/or springs, and during the construction of 29.5 linear miles of water pipeline. After two growing seasons, a total of 45,860 acres of improved/increased forage would be available, grazing areas would be more clearly delineated, and more water would be available to cattle.

Under Alternative E, direct impacts include the short-term, adverse impacts of displacement of livestock while improvements are made and the long-term, beneficial impacts of improvements to grazing allotments. Rangeland improvement actions under Alternatives C and E will improve current rangeland more than under Alternatives A and D – No Action but less than under Alternative B.

4.7.2.5 Impacts of Vegetation Management Decisions on Livestock Grazing

NOTE TO READER: A new Section 4.7.2.5.3 has been added to disclose the effects of Alternative E.

4.7.2.5.3 Alternative E

Vegetation in the Vernal planning area would be managed by using prescribed burning on approximately 156,425 acres per decade and by using rangeland improvements, with impacts similar to those described in Sections 4.7.2.1 and 4.7.2.4 of the DEIS. Under all alternatives, no short- or long-term indirect effects of vegetation management, except those associated with Fire Management and Rangeland Improvement, are expected to impact grazing.

4.7.2.6 Impacts of Non-WSA Areas with Wilderness Characteristics Decisions on Livestock Grazing

NOTE TO READER: New Sections 4.7.2.6.1 and 4.7.2.6.2 have been added to disclose the effects of decisions regarding non-WSA lands with wilderness characteristics on livestock grazing.

4.7.2.6.1 Alternatives A, B, C, and D – No Action

Under these alternatives, there would be no management decisions to specifically protect non-WSA lands with wilderness characteristics. Thus, there would be no impacts to livestock grazing.

4.7.2.6.2 Alternative E

Under Alternative E, non-WSA lands with wilderness characteristics, which represent approximately 16% of public lands in the Vernal planning area, would be protected from impacts that would degrade their wilderness characteristics. Management decisions to protect these values include prohibitions on changes in class of livestock (e.g., sheep to cattle) when fencing or other structures would be necessary, if the conversion would result in resource conflicts, or if the action was not consistent with the goals and objectives of protecting the non-WSA lands with wilderness characteristics. However, new livestock facilities can be constructed in non-WSA lands with wilderness characteristics if consistent with the goals and objectives of managing non-WSA lands with wilderness characteristics. At the programmatic level of analysis, the impacts to livestock grazing are difficult to predict, and any impacts would be analyzed at the site-specific activity level and/or at the time of proposed conversions or construction of new facilities.

4.7.2.7 Summary

NOTE TO READER: Section 4.7.2.6 Summary has been renumbered as Section 4.7.2.7 Summary, and a new Section 4.7.2.7.5 has been added, which summarizes the effects of Alternative E on livestock grazing.

4.7.2.7.5 Alternative E

Under Alternative E, the short-term adverse impacts on livestock grazing would be greater than under the other alternatives by removing the most AUMs from livestock grazing; however, it would result in the most beneficial long-term impacts to rangeland health. Adverse impacts from AUMs lost to minerals development would be the same as under Alternative C, which has the least impacts of all the action alternatives. Rangeland improvement management actions would be less beneficial than under Alternative B, but greater than under Alternatives A and D – No Action.

4.8 MINERALS AND ENERGY RESOURCES

Please refer to Section 4.8 of the DRMP/DEIS with the following changes.

4.8.1.1 Oil and Gas Resources

NOTE TO READER: The first paragraph of Section 4.8.1.1 Oil and Gas Resources has been replaced with the following to include an analysis of Alternative E.

Under Alternatives A, B, C, and E, approximately 188,500 acres of split-estate lands (federal minerals - Tribal surface) within the Hill Creek Extension of the Uintah and Ouray Indian Reservation would be available for mineral leasing. The Hill Creek Extension is not available for mineral leasing under Alternative D – No Action. Therefore, Alternatives A, B, C, and E would have more acreage available for mineral leasing than would Alternative D – No Action, as well as more wells predicted for development.

4.8.2 Alternative Impacts

NOTE TO READER: A new column has been added to Table 4.8.1 to include information under Alternative E.

TABLE 4.8.1. ACRES OR MILES OF LAND AVAILABLE TO ENERGY AND MINERAL DEVELOPMENT UNDER ALL ALTERNATIVES

Resource	Alternative E
Oil, Gas, and Coal-bed Methane	
Standard Stipulations	818,891
Timing and Controlled Surface Use	680,570
No Surface Occupancy	47,629
Closed to Leasing	367,037

TABLE 4.8.1. ACRES OR MILES OF LAND AVAILABLE TO ENERGY AND MINERAL DEVELOPMENT UNDER ALL ALTERNATIVES	
Resource	**Alternative E**
Gilsonite (Miles)	
Open	163
Closed	12
Phosphate	
Open	52,063
Closed	39,332
Oil Shale	
Open	286,105
Closed	31,277
Mineral Materials	
Open	344,682
Closed	104,523

4.8.2.1 Impacts of Mineral Decisions on Mineral Resources

NOTE TO READER: A new Section 4.8.2.1.5 has been added to disclose the effects of Alternative E.

4.8.2.1.5 Alternative E

4.8.2.1.5.1 Oil, Gas, and Coal-bed Methane (CBM)

Approximately 818,891 acres would be administratively available for oil, gas, and CBM leasing with Standard Stipulations. Approximately 680,570 acres would be administratively available for oil, gas, and CBM leasing with Timing Limitations and/or Controlled Surface Use stipulations. Combined, these areas total approximately 1,499,461 acres of land that would be administratively available for oil, gas, and CBM leasing with Standard, Timing Limitations, and/or Controlled Surface Use stipulations. This represents a 2% decrease in the total acreage available for leasing, compared to Alternative D. Thus, Alternative E would have the smallest area open to oil and gas development out of all of the alternatives. Under Alternative E, approximately 277,596 acres within non-WSA lands with wilderness characteristics would be closed to oil and gas leasing and closed to disposal of mineral materials in order to protect the wilderness characteristics within these areas. This would have long-term, adverse impacts on minerals development and extraction because these areas would be closed to minerals-related surface disturbances. However, the Hill Creek Extension would be open to leasing, as described above.

Under this alternative, oil and gas development is expected to occur within each of the six exploration-and-development areas shown in Table 4.8.5e. CBM development would occur only in the East and West Tavaputs Plateaus, with the predicted number of wells linked to the RFD discussed in the Mineral Potential Report. Although Alternative E would have fewer acres

available for leasing than Alternative D – No Action, the areas open for lease under Alternative E would be located in areas with slightly greater potential for oil, gas, and CBM development. Therefore, if Alternative E were implemented there would be a 4% increase in the total number of predicted oil and gas wells, compared to Alternative D – No Action.

TABLE 4.8.5E. PREDICTED OIL AND GAS WELLS WITHIN RFD AREAS UNDER ALTERNATIVE E[1]

Exploration and Development/RFD Area	Percent of Open Area	Predicted Oil Wells	Predicted Gas Wells	Predicted CBM Wells
Altamont-Bluebell	99.96%	175	250	0
East Tavaputs Plateau	83.17	62	499	67
Manila-Clay Basin	91.03	0	41	0
Monument Butte-Red Wash	95.08	1,616	2,948	0
Tabiona-Ashley Valley	91.80	28	0	0
West Tavaputs Plateau	91.00	68	318	45
Total		**1,949**	**4,056**	**112**

[1] Note: Calculations based on all land-type jurisdictions occurring in the VPA (Bureau of Land Management, State of Utah, Tribal, Private, U.S. Fish and Wildlife Service, Bureau of Reclamation, Utah Division of Wildlife Resources, and U.S. Forest Service).

Direct impacts of mineral resources decisions on oil and gas development would be a small increase in the potential number of oil and gas wells drilled. Alternative E could result in a small increase in the commercially available supply of oil and natural gas, in comparison to Alternative D – No Action. This would have a direct and beneficial, long-term economic impact on the minerals industry by potentially reducing the quantity of mineral resources available for extraction. Indirect impacts of mineral resources decisions on oil and gas development would be marginally beneficial and economically related, because a slight increase in the potential number of oil and gas wells under Alternative E would lead to a slight increase in the royalties paid to the federal government and/or the State of Utah.

4.8.2.1.5.2 Other Mineral Resources

The impacts of mineral resource decisions on mineral resources other than fluid minerals are described below. Impacts are the same for each resource. The following analysis provides a comparison of mineral resources decisions under Alternative E with those under Alternative D – No Action.

Direct impacts of mineral resources decisions on tar sands, Gilsonite, phosphate, oil shale, and mineral materials development would be adverse as compared to Alternative D – No Action. A decrease in the total linear miles available for Gilsonite development and the total acreage available for tar sands, oil shale, phosphate, and mineral materials development would have a short-term, adverse socioeconomic impact on the minerals and energy industries and on the local economies that support these industries resulting from an decrease in the amount of mineral resources available for extraction and commercial sale. The reduction of minerals availability compared to Alternative D – No Action would also indirectly decrease the royalties paid to the federal government and/or the State of Utah.

The long-term indirect impacts of mineral resources decisions on tar sands, Gilsonite, phosphate, oil shale, and mineral materials development could be beneficial. A decrease in the linear miles available for Gilsonite and phosphate development and the total acreage available for tar sands, oil shale, and mineral materials development under Alternative E would conserve the amount of the finite mineral resources found in the VPA, producing indirect, long-term, beneficial economic impacts from future mineral extraction and development. However, these impacts would remain adverse as long as non-WSA lands with wilderness characteristics were managed with prescriptions that prohibited mineral leasing, development, and disposals.

Coal

Coal mining has not occurred on public lands in the VPA due to lack of demand and the poor quality of the deposits. There is a moderate potential for the occurrence of economically mineable coal deposits within the VPA, but it is unlikely that coal exploration or development will occur during the next 15 years due to the low-grade quality of the coal. Therefore, it is unlikely that mineral resource decisions made under this alternative would have impacts, either beneficial or adverse, on coal resources.

Gilsonite

Approximately 163 miles would be available for prospecting, leasing, and development of Gilsonite. Additional new veins located via field study or prospecting would also be available if they are located within lands already categorized as "open" for Gilsonite development. This represents a 5.7-acre (3%) decrease in the total acreage open for prospecting, leasing, and developing Gilsonite, compared to Alternative D – No Action. Although the Hill Creek Expansion increases the area open for Gilsonite leasing by several miles, 10.2 miles of Gilsonite are unavailable under Alternative E because they are within non-WSA lands with wilderness characteristics, which are closed to mineral leasing.

Phosphate

Approximately 52,063 acres would be open for prospecting, leasing, and development of phosphate within areas known to contain phosphate deposits. This represents a 32,537-acre (38%) decrease in the total acreage open for prospecting, leasing, and developing phosphate, compared to Alternative D. This reduction is due to more restrictive leasing under Alternative E, as well as a total of 11,719 acres of phosphate deposits that would be unavailable under Alternative E because they are within non-WSA lands with wilderness characteristics, which are closed to mineral leasing.

Direct impacts of mineral resources decisions on phosphate development would be adverse. A decrease in the total acreage available for phosphate development under Alternative E (compared to Alternative D – No Action) would result in a decrease in the amount of phosphate available for mining and commercial sale, which would have a long-term, adverse economic impact on the phosphate mining industry in the VPA. Indirect impacts of mineral resources decisions on phosphate development would be economically adverse in the long term. A reduction in the acreage available for phosphate development under Alternative E (when compared to Alternative D) would lead to a decrease in the royalties paid to the federal government and/or the State of

Utah. However, a decrease in the total acreage available for phosphate development would also prolong the availability of finite phosphate resources found in the VPA for future use, which would reduce the long-term adverse impacts on the phosphate mining industry by ensuring that the resource was available to support a viable, long-term phosphate mining industry.

Mineral Materials

Approximately 344,681 acres would be available for mineral material development. This represents a 43,018-acre (11%) decrease in the total acreage available for development of mineral materials, compared to Alternative D – No Action. A total of 66,956 acres of mineral materials are unavailable under Alternative E because they are within non-WSA lands with wilderness characteristics, which are closed to mineral leasing.

Locatable Minerals

As identified in the Mineral Potential Report (Vernal Field Office 2004), there is moderate potential for the occurrence of locatable minerals within the VPA. Very little development activity for locatable minerals is anticipated during the next 15 years; therefore, it is unlikely that mineral resource decisions under this alternative would have an impact—beneficial or adverse—on locatable mineral resources.

4.8.2.2 Impacts of Cultural Resource Decisions on Mineral Resources

NOTE TO READER: A new Section 4.8.2.2.5 has been added to disclose the effects of Alternative E.

4.8.2.2.5 Alternative E

Cultural resource decisions under Alternative E would close 48,801 acres of land to oil and gas leasing in the Uintah Foothills, Little/Devil's Hole, Upper Willow Creek, and Four Mile Wash areas. The 48,801 acres in this leasing category is included in the total number of acres available for oil and gas leasing (Table 4.8.1).

Cultural resource decisions under all of the alternatives would have long-term, indirect, adverse impacts to mineral resources. Impacts include increasing the costs associated with mineral exploration, extraction, and development, and these increases would have economically adverse impacts on the mineral materials industry in the VPA. Increased costs are associated with directionally drilling for subsurface resources in No Surface Occupancy (NSO) areas, the rerouting of access roads and pipelines, and relocating well pads.

4.8.2.3 Impacts of Recreation Resource Decisions on Mineral Resources

NOTE TO READER: A new Section 4.8.2.3.5 has been added to disclose the effects of Alternative E.

4.8.2.3.5 Alternative E

Recreation resource decisions to mitigate noise and light pollution adjacent to Dinosaur National Monument would have long-term, indirect, adverse impacts to mineral resources. Minimizing noise and light pollution would impact development by increasing its costs. However, these costs would be minimal in comparison to total operation and development costs. Recreation resource decisions under this alternative would also lead to decreased opportunities for exploration adjacent to Dinosaur National Monument. In this case, impacts—beneficial or adverse—would be based on mineral potential adjacent to Dinosaur National Monument. It is unlikely that requirements to minimize noise and light pollution would lead to the denial of a proposed project.

The decision to have NSO for oil and gas activities within 0.5 mile of Dinosaur National Monument would have a long-term, direct and indirect, adverse impact to minerals, in an indirect relationship with the potential for minerals in those areas. Impacts include an increase in development costs associated with directional drilling operations. The recreation resource decisions under this alternative are substantially more restrictive to mineral and energy resources development than those under any other alternative.

Under Alternative E, approximately 157,018 acres of non-WSA lands with wilderness characteristics that lie within proposed SRMAs would be protected. These areas would be closed to minerals leasing and to mineral materials disposal, excluded from ROW permitting, and closed to new road construction. The impacts on mineral resources would be adverse in the long term because these areas would not be available for minerals leasing and disposal. Compared to Alternative D – No Action, this alternative would have more adverse impacts on minerals resources because more area within the VPA would be closed to minerals leasing.

4.8.2.4 Impacts of Soil Resources Decisions on Mineral Resources

NOTE TO READER: A new Section 4.8.2.4.5 has been added to disclose the effects of Alternative E.

4.8.2.4.5 Alternative E

Soils resource decisions that require an approved erosion-control strategy (surveyed and designed by a certified engineer and approved by BLM) prior to construction and maintenance on slopes 21–40% would have a long-term, indirect, economically adverse impact on the mineral resources industry by potentially increasing the costs of mineral exploration, extraction, and development associated with these requirements, when compared to soils resource decisions under Alternative D – No Action.

Soils resource decisions that do not allow surface disturbance on slopes greater than 40% (unless it is determined that it would cause undue or unnecessary degradation to pursue other placement alternatives [if available]) would have a long-term, direct, economically adverse impact on the mineral resources industry. Adverse impacts would include a potential decrease in the number of wells or other mineral developments permitted, which in turn would lead to decreased royalties to the federal government and/or the State of Utah and a potential loss of revenue for minerals operators.

4.8.2.5 Impacts of Special Status Species Resource Decisions on Mineral Resources

NOTE TO READER: A new Section 4.8.2.5.5 has been added to disclose the effects of Alternative E.

4.8.2.5.5 Alternative E

4.8.2.5.5.1 Raptors

Management of raptors under Alternative E would be the same as that under Alternative C. This management would implement the spatial and seasonal buffers for raptors described in Table 2 of the USFWS *Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances* (see DEIS Appendix A). This is more restrictive than management of raptors under Alternative D – No Action and would likely impact mineral resources more than would Alternative D – No Action. Impacts to mineral and energy resources include an increase in development costs and a temporary delay in royalties paid to the federal government and/or the State of Utah. Under Alternative E, there would be the potential that fewer wells would be permitted, given the more stringent protection guidelines on raptor protection (see Section 4.8.3.6.1 Alternative A, Raptors; Table 4.8.8 in the DEIS) and the protection afforded raptor habitat in non-WSA lands with wilderness characteristics from restrictions on surface disturbances.

4.8.2.5.5.2 Sage Grouse

Management of sage grouse under Alternative E would be more restrictive than under Alternative D – No Action, and it is likely that sage grouse management decisions under Alternative E would have a greater impact on mineral and energy development than decisions under Alternative D – No Action because of prohibitions on minerals leasing within non-WSA lands with wilderness characteristics. Impacts to mineral and energy resources include an increase in development costs and temporary delay in royalties paid to the federal government and/or the State of Utah. Spatial and temporal buffers may preclude mineral and energy development in some cases, thereby temporarily reducing the potential number of wells drilled or other mineral developments and temporarily decreasing/delaying royalties to the federal government and/or the State of Utah. Economic impacts to mineral and energy development would depend on the same factors considered for raptors (see Section 4.8.3.6.1 Alternative A, Raptors). The impacts of management decisions for sage grouse are similar to those for raptors.

4.8.2.6 Effects of Wildlife Decisions on Mineral Resources

NOTE TO READER: A new Section 4.8.2.6.5 has been added to disclose the effects of Alternative E.

4.8.2.6.5 Alternative E

Wildlife resource decisions to implement timing restrictions on activities that could adversely impact deer and elk winter range would have a long-term, indirect, adverse impact to mineral resources. Impacts include increasing the costs associated with mineral exploration, extraction, and development, as well as decreasing opportunities for development.

Under Alternative E, 560 acres per township (prorated based on percentage of the range within the township [approximately 2.4%]) of deer and elk winter habitat would be subject to surface disturbance compared to 10% for Alternative B, 2.4% for Alternative C, and an unspecified amount in Alternative D – No Action. Because Alternative D – No Action does not specify what percentage of new surface-disturbing activity would be allowed in deer and elk winter habitat, it is unclear if wildlife resource decisions under this alternative would restrict mineral resources development more or less than Alternative D – No Action.

4.8.2.7 Effects of Visual Management Decisions on Mineral Resources

NOTE TO READER: A new column has been added to Table 4.8.10 to include information under Alternative E.

TABLE 4.8.10. VISUAL RESOURCE MANAGEMENT CLASS ACREAGES BY ALTERNATIVE

VRM Class	Alternative E
VRM I and II	854,691
VRM III and IV	1,620,247
Total	**2,474,938**

NOTE TO READER: A new Section 4.8.2.7.5 has been added to disclose the effects of Alternative E.

4.8.2.7.5 Alternative E

Under Alternative E, approximately 854,691 acres would be managed under VRM Classes I and II objectives compared to approximately 286,457 acres under Alternative D – No Action. This represents an increase of approximately 198%.

An increase in the number of acres managed under VRM Classes I and II objectives would have an adverse impact on mineral resource development with direct, adverse impacts that would include increased production costs associated with mineral development and the exclusion of mineral development from areas where minerals activities would not meet VRM objectives. An

increase in the number of acres in VRM Classes I and II would also lead to a decrease in the number of locations where potential wells could be drilled. This loss of potential drilling locations could indirectly lead to a decrease in the supply of oil and natural gas produced in the VPA.

Indirect impacts of visual resources decisions on mineral development would be adverse. A decrease in the number of potential oil and gas wells would lead to a decrease in royalties paid to the federal government and/or the State of Utah.

4.8.2.8 Impacts of Non-WSA Lands with Wilderness Characteristics Decisions on Minerals Resources

NOTE TO READER: A new Section 4.8.2.8 has been added to disclose the effects of decisions regarding non-WSA lands with wilderness characteristics on mineral resources.

4.8.2.8.1 Alternatives A, B, C, and D

Under these alternatives, non-WSA lands with wilderness characteristics would not be managed for protection of their wilderness values, so there would be no impacts related to non-WSA lands with wilderness characteristics areas on minerals resources.

4.8.2.8.2 Alternative E

Alternative E would manage approximately 277,596 acres of non-WSA lands with wilderness characteristics for the protection of the wilderness characteristics within these areas. Management decisions to protect these values would include minerals leasing and minerals disposal prohibitions, prohibitions on cross-country OHV travel, no new road construction, and management under VRM I class objectives. These decisions would reduce the leasing acreage for minerals development within the VPA in the long term (except for valid, existing rights within these areas, see Table 4.21.1) and would exclude ROWs and new road construction within these areas, which would have long-term, adverse impacts on minerals exploration and development within most of the RFD areas.

Although Alternative E would have fewer acres available for leasing than would Alternative D – No Action (because of management prescriptions within non-WSA lands with wilderness characteristics), the areas open for lease under Alternative E would occur in areas with slightly greater potential for oil, gas, and CBM development. Therefore, if Alternative E were implemented, a total of 6,117 wells are predicted to be developed, this represents a 4% increase compared to the 5,856 predicted under Alternative D – No Action.

In addition, management prescriptions for non-WSA lands with wilderness characteristics under Alternative E would have adverse impacts on the leasing and development of several other mineral resources. A total of 11,719 acres of phosphate deposits would be closed to leasing within non-WSA lands with wilderness characteristics, as would 10.2 miles of Gilsonite deposits. Alternative E would also close 66,956 acres within non-WSA lands with wilderness characteristics to mineral material disposal. These closures would have an adverse socioeconomic impact on the minerals and energy industries and the local economies that

support these industries, resulting from a decrease in the amount of mineral resources available for extraction and commercial sale. The reduction of minerals availability compared to Alternative D – No Action would also indirectly decrease the royalties paid to the federal government and/or the State of Utah.

Table 4.8.11, below, shows the number of acres of non-WSA lands with wilderness characteristics protected under this alternative that would adversely impact minerals resource leasing within each RFD area.

TABLE 4.8.11 ACRES OF NON-WSA LANDS WITH WILDERNESS CHARACTERISTICS, BY RFD

RFD Area	Non-WSA Lands with Wilderness Characteristics Acres
Altamont-Bluebell	0
East Tavaputs Plateau	106,785
Manila-Clay Basin	12,360
Monument Butte-Red Wash	27,572
Tabiona-Ashley Valley	86,802
West Tavaputs Plateau	43,453

NOTE TO READER: The original Section 4.8.2.8 has been renumbered here as Section 4.8.2.9, and a new Section 4.8.2.9.5 has been added to summarize the effects of Alternative E.

4.8.2.9 Summary of Impacts from Alternatives

4.8.2.9.5 Alternative E

Resource decisions under Alternative E would have a long-term, indirect, adverse impact on mineral resource development in the VPA, as compared to the other action alternatives. There would be a decrease in the potential number of oil and gas wells that could be drilled in five of the six RFD areas, and minerals resource decisions would be more restrictive than those under the other action alternatives because of stipulations to protect non-WSA lands with wilderness characteristics.

As compared to Alternative D – No Action, Alternative E would have some beneficial impacts and some adverse impacts. Beneficial impacts would be due to differences in the mineral potential of those areas open to leasing, development, and disposals, as well as the availability of the Hill Creek Extension under Alternative E. Under Alternative E, approximately 4% more wells would be predicted, and 8% more special tar sand areas would be available.

Adverse impacts would result from both minerals decisions and management stipulations for non-WSA lands with wilderness characteristics. Compared to Alternative D – No Action, impacts would include a 38% reduction in the area open to phosphate leasing, a 3% reduction in

the miles of Gilsonite deposits open to leasing, a 2% reduction in the area open to oil shale leasing, and an 11% reduction in the area open to mineral material disposal.

4.9 PALEONTOLOGY

Please refer to Section 4.9 of the DRMP/DEIS with the following changes.

4.9.2.1 Impacts of Lands and Reality Decisions on Paleontological Resources

NOTE TO READER: A new Section 4.9.2.1.5 has been added to disclose the effects of Alternative E.

4.9.2.1.5 Alternative E

Under Alternative E, the BLM would pursue the acquisition of Indian Trust Lands near the confluence of South and Sweet Water Canyons and in the Bitter Creek area and would pursue public access at the mouth of Cowboy Canyon, Bonanza Bridge, and Wagon Hound Road. The BLM would also pursue an easement for the old Uintah Railroad bed from the Utah-Colorado state line to Watson (Utah) in Evacuation Wash. Land acquisition–related actions under Alternative E would have potential direct, long- and short-term, beneficial effects on paleontological resources as compared to actions under Alternative D – No Action, because the paleontological resources in these areas would be brought under BLM management. These land and easement acquisitions would affect paleontological resources by increasing public access to areas that contain geological units that are rich in fossil localities. Public access to these areas could result in increased unauthorized use or vandalism, which would have more adverse impacts than under Alternative D – No Action.

Under this alternative, approximately 277,596 acres of non-WSA lands with wilderness characteristics would be designated as ROW-exclusion areas to protect the wilderness characteristics in these areas. This would have long-term, beneficial impacts on paleontological resources by reducing surface disturbance–related impacts to the resource.

4.9.2.2 Impacts of Mineral Decisions on Paleontological Resources

NOTE TO READER: A new Section 4.9.2.2.5 has been added to disclose the effects of Alternative E.

4.9.2.2.5 Alternative E

Direct effects to paleontological resources resulting from the proposed mineral decisions under Alternative E would be related to the level of surface disturbances in Condition 1 and Condition 2 areas that would be permitted under the decisions. The greater the level of permitted surface disturbance in these areas, the greater is the potential for adverse impacts to paleontological resources. Potential indirect adverse effects on paleontological resources under Alternative E would include vandalism and unauthorized fossil collection that result from increased human activity within areas of mineral development in Condition 1 and Condition 2 areas.

Under Alternative E, 1,499,461 acres of BLM-administered lands would be open to oil and gas minerals development. Compared to the other action alternatives, Alternative E would have the lowest number of acres open to surface disturbance related to oil and gas development and the highest number of acres closed to minerals development. However, Alternative E would have more acres open to disturbance than would Alternative D – No Action. The impacts to the resource, either adverse or beneficial, would depend on the number of Condition 1 and Condition 2 acres that would be developed under this alternative. Based on the number of acres open to minerals development and subsequent surface disturbance, the long- and short-term direct impacts possible under Alternative E would be similar to those under Alternative A, less than those under the other action alternatives, and more than those under Alternative D – No Action. Alternative E (and the other action alternatives) would have greater potential surface disturbance due to mineral development because the Hill Creek Extension would be open to development under the action alternatives, but it would not be open under Alternative D – No Action, since it was acquired after the adoption of the Diamond Mountain RMP.

4.9.2.3 Impacts of Paleontological Decisions on Paleontological Resources

NOTE TO READER: Section 4.9.2.3.1 has been replaced with the following to include an analysis of Alternative E.

4.9.2.3.1 Alternatives A, B, C, D – No Action, and E

Paleontological resource decisions for each of the alternatives would have direct, beneficial impacts on paleontological resources within the VPA. Alternatives E and C would provide the greatest protection for paleontological resources through predictive modeling and broad-scale sampling and would also require assessment (and, where needed, mitigation) in all Condition 1 and Condition 2 areas. Under Alternative A, the use of predictive modeling and broad-scale sampling would streamline the process of assessment and mitigation of adverse effects caused by surface disturbance and would make it more effective; this alternative would provide the third-highest degree of protection to paleontological resources. Alternatives B and D – No Action are similar to each other in that impacts would be mitigated as fossils are found. These alternatives would provide the least protection for paleontological resources.

Paleontological Resource Use Permits administered by the BLM, Utah State Office for scientific study would provide important information to the VPA about the location and kinds of significant paleontological resources. Providing websites, local interpretive sites, and written information to the public about fossils and hobby collection has the potential to directly increase the public knowledge of the earth sciences, encourage good stewardship, reduce illegal collection, and increase the likelihood that important discoveries would be reported to the BLM.

4.9.2.4. Impacts of Rangelands Improvement Decisions on Paleontological Resources

NOTE TO READER: A new Section 4.9.2.4.5 has been added to disclose the effects of Alternative E.

4.9.2.4.5 Alternative E

Under Alternative E, a total of 45,860 acres would be subject to vegetation treatment, 129 miles of fencing would be installed, 29.5 miles of water pipeline would be installed, 87 well/spring developments would be undertaken, and 811 guzzler or reservoir projects would be completed. Improvements increase surface disturbance, therefore beneficially increasing the probability of new discoveries. It is anticipated that the primary indirect impact would be to increase the adverse potential for concentrated trampling of paleontological localities located in areas adjacent to fencing or reservoirs on barren bedrock. Where livestock congregate, they could damage or destroy fossils in Condition 1 or Condition 2 areas. The direct effects of rangeland improvement decisions on paleontological resources under Alternative E would be the same as those under Alternative C and would be slightly less in magnitude than those under Alternative C, owing to the overall lower degree of potential surface disturbance under Alternative E from surface disturbance restrictions within non-WSA lands with wilderness characteristics, where new roads or ROWs would be prohibited to service improvements. Under Alternative E, new livestock facilities in non-WSA lands with wilderness characteristics would be permitted only where they meet objectives for management of wilderness characteristics. Rangeland improvements under Alternative E would affect slightly more area and have slightly greater impacts than would rangeland improvements under Alternatives A and D – No Action (therefore increasing the probability of new discoveries) but would have fewer impacts than would rangeland improvements under Alternative B.

4.9.2.5 Impacts of Recreation Decisions on Paleontological Resources

NOTE TO READER: A new Section 4.9.2.5.5 has been added to disclose the effects of Alternative E.

4.9.2.5.5 Alternative E

Under Alternatives C and E, 47,130 acres in the White River Corridor and 42,758 acres on Blue Mountain would be designated as new SRMAs, and 52,721 acres in Browns Park and 24,285 acres on Red Mountain–Dry Fork would be maintained as existing SRMAs. Additionally, under Alternatives C and E, 400 miles of non-motorized trails would be improved and/or developed, and restrictions would be placed on the use of OHVs off of designated routes for the retrieval of big game. No motorized OHV trails would be developed or improved under Alternatives C and E. Under Alternative E, 157,018 acres of non-WSA lands with wilderness characteristics within the proposed SRMAs would be managed for primitive, non-mechanized recreational opportunities rather than for developed recreation. The lack of OHV trail development under Alternative E would lower the probability of new discoveries of paleontological resources.

Long- and short-term direct and indirect adverse effects on paleontological resources under Alternative E would be less than those described for Alternatives A and D – No Action due to

the more restrictive management of non-WSA lands with wilderness characteristics within the proposed SRMAs. Therefore, Alternative E would result in less surface disturbance and less adverse, direct impacts on paleontological resources.

4.6.2.6 Impacts of Travel Decisions on Paleontological Resources

NOTE TO READER: A new Section 4.9.2.6.5 has been added to disclose the effects of Alternative E.

4.9.2.6.5 Alternative E

Alternative E would provide the greatest benefit to paleontological resources in Condition 1 and Condition 2 areas by closing the greatest amount of acreage to OHV use, restricting OHV travel to designated routes, and constructing or improving the shortest length of roadway. Under Alternative E, 5,434 acres would be open to unrestricted cross-country OHV travel. Approximately 1,326,024 acres would be managed to restrict OHV travel to designated routes, and 392,818 acres would be closed to OHV travel. Because non-WSA lands with wilderness characteristics would be closed to OHVs, Alternative E would have fewer miles of OHV routes than would any other alternative.

Long- and short-term direct impacts on paleontological resources from travel decisions under Alternative E would include increased protection of paleontological resources through the overall reduction of surface-disturbing activities associated with general travel and OHV use. Paleontological resources in Condition 1 and Condition 2 areas that are closed to OHV use or where restrictions are placed on OHV use would receive the greatest benefit. The long- and short-term, direct and indirect impacts on paleontological resources from travel decisions under Alternative E would be similar to those described for Alternative A but would be of greater magnitude owing to the increased numbers of acres and miles of routes closed to OHV use. This alternative would have fewer potentially adverse impacts to paleontological resources than would Alternative D – No Action due to the fact that fewer acres would be open to OHV use.

4.9.2.7 Impacts of Visual Resource Management Decisions on Paleontological Resources

NOTE TO READER: A new Section 4.9.2.7.5 has been added to disclose the effects of Alternative E.

4.9.2.7.5 Alternative E

The direct and indirect, long- and short-term beneficial effects of visual resource management decisions on paleontological resources under Alternative E would be greater than for any other alternative. Under Alternative E, 331,813 acres would be managed as VRM Class I; 263,285 acres would be managed as VRM Class II; 536,301 acres would be managed as VRM Class III; and 590,262 acres would be managed as VRM Class IV. Because it has the highest number of acres designated under VRM I and II classes (approximately 595,098 acres) to restrict surface disturbances, Alternative E would have the fewest adverse impacts on paleontological resources, as compared to Alternative D – No Action.

4.9.2.8 Impacts of Non-WSA Lands with Wilderness Characteristics Decisions on Paleontological Resources

NOTE TO READER: A new Section 4.9.2.8 has been added to disclose the effects of non-WSA lands with wilderness characteristics decisions on paleontological resources, and a new Section 4.9.2.8.1 has been added to disclose those effects under Alternatives A, B, C, and D – No Action.

4.9.2.8.1 Alternatives A, B, C, and D – No Action

Under these alternatives, no actions would be prescribed to directly protect the natural values or opportunities for solitude or primitive recreation of non-WSA lands with wilderness characteristics, and thus, no additional protection would be afforded to paleontological resources. Under these alternatives, paleontological resources within non-WSA lands with wilderness characteristics would be subject to the disturbances and impacts allowed under other proposed management decisions, as described throughout this chapter.

NOTE TO READER: A new Section 4.9.2.8.2 has been added to disclose the effects of Alternative E.

4.9.2.8.2 Alternative E

Under Alternative E, non-WSA lands with wilderness characteristics would be managed under VRM I class objectives, closed to cross-country OHV use, closed to oil and gas leasing and mineral materials disposal, closed to solid mineral leasing, and excluded from ROW designation and new road construction. All of these decisions would either prohibit or restrict surface disturbances to paleontological resources, a situation that would have long-term, beneficial impacts on the resource. This alternative would have more beneficial impacts on the resource than would Alternative D because approximately 277,596 acres of non-WSA lands with wilderness characteristics would be managed to protect their wilderness characteristics within the VPA, and this would also preserve paleontological resources.

Permits for paleontological excavations would be granted for non-WSA lands with wilderness characteristics when compatible with the goals and objectives of management of these areas. This would adversely limit the availability of permits for larger and more surface-disturbing excavations over 277,596 acres. However, the availability of permits for smaller excavations whose surface impacts could be reclaimed would not be adversely affected.

4.10 RECREATION

Please refer to Section 4.10 of the DEIS with the following changes.

4.10.2.1 Impacts of Cultural Resource Decisions on Recreation

NOTE TO READER: A new Section 4.10.2.1.5 has been added to disclose the effects of Alternative E.

4.10.2.1.5 Alternative E

Under Alternative E, the development of on- and off-site interpretive facilities at archaeological and historic sites would broaden the scope of recreation opportunities available to visitors and serve as a draw for additional visitation to the VPA. Closing the Uintah Foothills, Little/Devils Hole area, Four Mile Wash, and Upper Willow Creek area to OHV use would have long-term, adverse effects on OHV recreational opportunities, when compared to Alternative D – No Action. This action would potentially intensify OHV use in other areas of the VPA because additional trail development for motorized uses is not a component of Alternative E. The restrictions on OHV use and on oil and gas leasing would have indirect, long-term beneficial impacts to non-motorized recreation by increasing solitude and wildlife viewing opportunities in these areas, when compared to Alternative D – No Action.

4.10.2.2 Impacts of Fire Management Decisions on Recreation

NOTE TO READER: Section 4.10.2.2.1 has been replaced with the following to include Alternative E and disclose its effects.

4.10.2.2.1 Alternatives A, B, C, and E

Permitting prescribed fire on 156,425 acres per decade would limit the number of acres available for recreational activities in a prescribed burn area, during and after burning. These areas would most likely be less desirable for recreation in the short-term until vegetation regrowth occurs. Long-term benefits would result in these areas because of reduced fuel loads, improved wildlife habitat, more diverse landscape variety (scenic quality), and the decreased probability of wildland fire damage to recreation areas, which would enhance opportunities (settings, activities, and experiences) for hunting, wildlife viewing, sightseeing, and similar activities. The action alternatives would have a higher probability of adverse short-term impacts and beneficial long-term impacts, when compared to Alternative D – No Action because of the larger area planned for prescribed burning.

4.10.2.3 Impacts of Land and Realty Management Decisions on Recreation

NOTE TO READER: A new Section 4.10.2.3.5 has been added to disclose the effects of Alternative E.

4.10.2.3.5 Alternative E

Securing legal public access to White River and in Evacuation Creek would provide additional opportunities for motorized, mechanized, and primitive recreation activities, as would acquiring Indian Trust Lands in Bitter Creek and at the confluence of South and Sweet Water Canyons. Pursuing mineral withdrawals in the Green River Scenic Corridor (Browns Park), Lears Canyon, and the lower Green River ACEC would reduce surface disturbance and maintain the settings needed to support primitive and non-motorized forms of recreation like hiking, backpacking, river floating, wildlife viewing, and hunting as well as the desired experiences that accompany these activities.

Retention of public lands in federal ownership in non-WSA lands with wilderness characteristics would ensure protection of wilderness characteristics and the setting needed to support primitive and unconfined forms of recreation, including hiking, backpacking, wildlife observation, river floating, etc. Exclusion of non-WSA lands with wilderness characteristics from the issuance of new of rights-of-way (ROWs) would retain the undeveloped character of these landscapes and the primitive forms of recreation dependent on those settings. Exclusion of ROWs, however, would not provide added motorized recreation opportunities commonly available along the access roads to and within the ROWs.

4.10.2.4 Impacts of Minerals Decisions on Recreation

NOTE TO READER: A new column has been added to Table 4.10.1 to include information under Alternative E.

TABLE 4.10.1. MINERAL LEASING ACREAGES

	Alternative E
Oil and Gas – Standard Stipulations, Timing and Controlled Surface Use	1,499,460
Mineral Materials – Open	344,682
Phosphate – Open	52,063
Total	**1,896,205**
Gilsonite (miles)	163

NOTE TO READER: A new Section 4.10.2.4.5 has been added to disclose the effects of Alternative E.

4.10.2.4.5 Alternative E

Under Alternative E, non-WSA lands with wilderness characteristics would be closed to leasing for oil, gas, mineral materials, and phosphate (277,596 acres) and Gilsonite (163 miles). This alternative would allow leasing for oil, gas, phosphate, and mineral materials on 1,896,205 acres. For oil and gas development only, this represents a 2% decrease in the total acreage available for leasing. However, areas open to oil and gas leasing have a slightly greater potential for production and would result in about a 4% increase in the number of wells and the resulting surface disturbance, as compared to Alternative D. Thus, Alternative E would have the smallest area open to oil and gas development of all of the alternatives but slightly more potential for development and related impacts to recreation opportunities.

Closure to mineral leasing of non-WSA lands with wilderness characteristics would place recreation emphasis on opportunities for primitive and unconfined activities (e.g., hiking, backpacking, river floating, hunting, wildlife viewing, nature study) and opportunities for solitude, as well as the undeveloped settings needed to support these non-motorized activities and experiences. Opportunities for motorized forms of recreation activities such as backcountry driving and vehicle-supported camping at developed recreation sites such as campgrounds, picnic areas, and interpretive exhibits would be reduced with the closure of 228 miles of vehicle routes and restrictions on recreation developments in the non-WSA lands with wilderness characteristics. In those portions of the VPA where mineral leasing continues, exploration and development would contribute to an expanded road system for motorized forms of recreation (e.g., backcountry driving, vehicle-supported camping, and hunting).

Under Alternative E, proposed withdrawals from mineral entry in non-WSA lands with wilderness characteristics and other areas like the Green and White River corridors would prevent mining-related disturbances that impact opportunities for primitive forms of recreation, the undeveloped settings needed to support those activities, and the experience people seek while participating in those activities. In those areas open to mineral entry, future exploration and development would facilitate motorized forms of recreation.

4.10.2.5 Impacts of Paleontology Decisions on Recreation

NOTE TO READER: A new Section 4.10.2.5.3 has been added to disclose the effects of Alternative E.

4.10.2.5.3 Alternative E

Under Alternative E, the following activities would increase and provide additional, long-term recreational opportunities related to paleontology: providing information on paleontology, local sites, fossil collecting, and the rules of fossil collecting to the public via websites, publications, and personal contacts; allowing collection of common invertebrate and plant fossils for personal, non-commercial use; issuing Paleontological Resources Use Permits for scientific study; and promoting or supporting paleontological investigations in poorly known areas. The increased

recreational opportunity provided under Alternative E would be more beneficial than that provided under Alternative D. Fossil excavations would be limited in non-WSA lands with wilderness characteristics to those actions that meet the goals and objectives for management of the non-WSA lands with wilderness characteristics. Limitations on excavations in non-WSA lands with wilderness characteristics would limit the growth (number of sites) of these potential recreation opportunities.

4.10.2.6 Impacts of Recreation Decisions on Recreation

NOTE TO READER: A new Section 4.10.2.6.5 has been added to disclose the effects of Alternative E.

4.10.2.6.5 Alternative E

4.10.2.6.5.1 Backcountry Byways

No backcountry byways would be designated under this alternative, providing no added backcountry driving or OHV opportunities.

4.10.2.6.5.2 SRMAs

Eight SRMAs (Book Cliffs, Nine Mile, White River, Fantasy Canyon, Pelican Lake, Blue Mountain, Red Mountain, and Browns Park) would be designated under Alternative E, focusing recreation management on a variety of opportunities. However, management of non-WSA lands with wilderness characteristics to protect their wilderness characteristics would shift the focus of recreation to primitive and unconfined activities (e.g., hiking, backpacking, river floating, hunting, and wildlife viewing), opportunities for solitude, and the settings needed to achieve these opportunities. Within the Blue Mountain, Book Cliffs, Browns Park, Nine Mile, and White River SRMAs, there are one or more areas considered to be non-WSA lands with wilderness characteristics; the protection of these areas' wilderness characteristics would enhance opportunities for primitive recreation (see Table 4.10.2 below).

TABLE 4.10.2. NON-WSA LANDS WITH WILDERNESS CHARACTERISTICS IN SRMAS - ALTERNATIVE E

SRMA (Acres)	Non-WSA Lands with Wilderness Characteristics	Non-WSA Lands with Wilderness Characteristics in SRMA – Acres
Blue Mountain (42,758 acres)	Bourdette Draw	13,328
Book Cliffs (273,486 acres)	Bitter Creek	33,484
	Cripple Cowboy	13,603
	Hells Hole Canyon	2,125
	Rat Hole	11,367
	Sweet Water	6,994

TABLE 4.10.2. NON-WSA LANDS WITH WILDERNESS CHARACTERISTICS IN SRMAS - ALTERNATIVE E

SRMA (Acres)	Non-WSA Lands with Wilderness Characteristics	Non-WSA Lands with Wilderness Characteristics in SRMA – Acres
	Wolf Point	10,461
Browns Park (52,720 acres)	Cold Spring Mountain	8,649
	Dead Horse Pass	1,666
	Lower Flaming Gorge	11,296
	Mountain Home	2,102
Nine Mile (81,168 acres)	Desolation Canyon	20,989
White River (47,130 acres)	White River	21,167

With the shift in focus to primitive forms of recreation in portions of these SRMAs, however, opportunities for motorized recreation (backcountry driving, vehicle-supported camping, etc.) and activities at developed recreation sites (campgrounds, interpretive exhibits, etc.) would be reduced with the closure of 57 miles of vehicle routes and restrictions on recreation developments to maintain a natural landscape.

4.10.2.6.5.3 Trails

Signing and improving existing trails and developing new hiking, horseback, and mountain biking trails would increase the total number of trail miles to 400, an increase of 727% when compared to Alternative D – No Action. The increased number of trail miles would reduce user densities on the trails, potentially alleviating user conflicts and improving individual users' experiences. Increased development of trails and the ensuing increase in human activity could cause increased adverse impacts to cultural and paleontological sites and the recreational and educational value of such sites. Increased visitation would also increase the potential for wildland fire and could lead to temporary closure of affected recreational areas and the temporary reduction of scenic quality in the affected area. New areas for mountain biking are currently being sought. Additional non-motorized trails would provide additional mountain biking opportunities outside of existing and often overcrowded areas elsewhere in the VPA and the state.

Alternative E would not develop or improve motorized trails as is prescribed in Alternative D. Thus, opportunities for backcountry driving and OHV recreation would be limited to the road and trail system that currently exists. Red Mountain Trail is the only trail currently managed and maintained for motorized use. The lack of additional trails could produce an increase in cross-country travel, thereby increasing the adverse impacts to vegetation, soil, water, wildlife habitat, and scenic quality within the VPA. Without further OHV opportunities, overland riding, user

conflicts, elevated user densities, and the decline in visitor safety would continue within the VPA.

Limiting OHV recreation, however, would have a long-term, beneficial effect on soils, riparian and upland vegetation, and wildlife habitat (and the recreational experiences dependent on these resources), by reducing surface disturbance to these resources. Reducing the opportunity for OHV use would also have long-term beneficial impacts on non-motorized forms of recreation (e.g., hiking, mountain biking, backpacking) by decreasing user conflicts on trails. Please refer to Section 4.10.2.8 of the DEIS for a further analysis of OHV management decisions and impacts.

4.10.2.6.5.4 Mitigation of Lights and Noise

The BLM would work in conjunction with the National Park Service and the energy industry to mitigate noise and light pollution adjacent to Dinosaur National Monument. Currently, there are no mitigation procedures in place. Mitigation would have long-term beneficial effects on recreation opportunities by limiting noise and light pollution and the corresponding enhancements in the recreation setting and desired visitor experience.

4.10.2.6.5.5 Cabins

Under Alternative E, no new cabins would be developed, providing no additional support for hunting, mountain biking, hiking, horseback riding/packing, or backcountry driving and OHV use. Without additional cabins for visitor to use, use seasons would not be extended.

4.10.2.7 Impacts of Special Designation Decisions on Recreation

NOTE TO READER: A new Section 4.10.2.7.5 has been added to disclose the effects of Alternative E.

4.10.2.7.5 Alternative E

Fourteen ACECs, totaling about 681,310 acres would be designated under Alternative E:

- Bitter Creek: 68,834 acres
- Bitter Creek/P.R. Spring: 78,591 acres
- Browns Park: 52,721 acres
- Coyote Basin Complex: 124,161 acres
- Four Mile Wash: 50,280 acres
- Lower Green River: 10,170 acres
- Middle Green River: 6,768 acres
- White River: 47,130 acres
- Main Canyon: 100,915 acres
- Red Mountain–Dry Fork: 24,285 acres
- Nine Mile Canyon: 81,168 acres

- Lears Canyon: 1,375 acres
- Pariette: 10,437 acres
- Red Creek: 24,475 acres

These ACECs would be designated and managed for a variety of relevant and important values, including natural landscapes and scenery, wildlife, critical wildlife habitat, riparian and wetland ecosystems, old growth forests, cultural and historic properties, and relict vegetation communities. These values provide for a wide variety of recreation opportunities, from motorized to non-motorized activities and developed to dispersed activities in a variety of settings. Management of these values varies from protection of unmodified landscapes and special status wildlife species to development of oil and gas and vegetation manipulation.

Ten of the ACECs designated under this alternative include non-WSA lands with wilderness characteristics (see Table 4.10.3). Non-WSA lands with wilderness characteristics would be managed to protect their wilderness characteristics and to provide opportunities for primitive forms of recreation (e.g., hiking, backpacking, river floating, hunting, wildlife viewing, and nature study) and experiences of solitude in natural, undeveloped settings. Opportunities for motorized recreation (e.g., OHV and backcountry driving) and developed facilities (e.g., interpretive and wayside exhibits) would be provided outside non-WSA lands with wilderness characteristics.

TABLE 4.10.3. NON-WSA LANDS WITH WILDERNESS CHARACTERISTICS IN ACECS - ALTERNATIVE E

ACEC	Non-WSA Lands with Wilderness Characteristics	Acreage of Non-WSA Lands with Wilderness Characteristics
Bitter Creek	Bitter Creek	33,433
	Cripple Cowboy	13,579
	Hells Hole Canyon	38
	Rat Hole	11,337
	Sweet Water	4
Bitter Creek/P.R. Spring	Bitter Creek	7
	Cripple Cowboy	15
	Hells Hole Canyon	2,087
	Sweet Water	6,982
Browns Park	Cold Spring Mountain	8,649
	Diamond Breaks	1
	Dead Horse Pass	1,665
	Lower Flaming Gorge	11,274
	Mountain Home	2,089
Coyote Basin–Snake John	Bourdette Draw	13
Four Mile Wash	Desolation Canyon	43,014
Lower Green River	Desolation Canyon	5,242

TABLE 4.10.3. NON-WSA LANDS WITH WILDERNESS CHARACTERISTICS IN ACECS - ALTERNATIVE E

ACEC	Non-WSA Lands with Wilderness Characteristics	Acreage of Non-WSA Lands with Wilderness Characteristics
Main Canyon	Wolf Point	11,783
Nine Mile Canyon	Desolation Canyon	19,470
Red Creek Watershed	Cold Spring Mountain	76
	Mountain Home	4,976
White River	White River	21,167

4.10.2.8 Impacts of Travel/Roads and Trails Decisions on Recreation

NOTE TO READER: A new Section 4.10.2.8.5 has been added to disclose the effects of Alternative E.

4.10.2.8.5 Alternative E

Under Alternative E, 5,434 acres would be open to cross-country OHV travel, the same as under Alternatives B and C and a reduction of 782,425 acres from Alternative D – No Action. Under this alternative, motorized travel would be focused on designated routes, not cross-country. While the experience of cross-country driving would be limited to 5,434 acres, motorized travel for access and recreation would still be available on 4,654 miles of road and trails.

The area limited to designated routes for OHV travel would increase to 1,326,024 acres (an increase of 438,749 acres) from current management described in Alternative D – No Action. Limiting motorized travel to designated routes would emphasize an "on-road/trail" experience of varying degrees of challenge and risk, depending on the quality of the route traveled. Further limiting motorized travel to designated routes would place more management controls on the traveler, but sustaining the existing levels of OHV use is anticipated. The number of miles of routes formally designated for motorized use would increase from 0 miles under existing conditions (Alternative D – No Action) to 4,656 miles under Alternative E, although these routes would still be driven under Alternative D – No Action.

Areas closed to OHV travel would increase to 392,818 acres (an increase of 342,430 acres) from current management in Alternative D – No Action. Closure to cross-country travel would have direct long-term beneficial impacts on soils, water, and wildlife habitat and on the primitive and non-motorized forms of recreation dependent on those resources and settings. In the areas closed to OHV travel, the focus would be placed on primitive and non-motorized forms of recreation, including hiking, backpacking, river floating, hunting, wildlife viewing, nature study, sightseeing, and others. Included in the areas closed to OHV travel would be the 24 non-WSA lands with wilderness characteristics (277,596 acres). Here, recreation emphasis would be placed on primitive forms of recreation, experiences of solitude, and the undeveloped settings that support those activities and experiences.

There are 228 miles of routes that exist in the non-WSA lands with wilderness characteristics. Under this alternative, these routes would be closed to motorized travel, foreclosing the opportunity for backcountry driving, vehicle-supported camping, and other motorized forms of recreation.

4.10.2.9 Impacts of Visual Resource Management Decisions on Recreation

NOTE TO READER: A new Section 4.10.2.9.4 has been added to disclose the effects of Alternative E.

4.10.2.9.4 Alternative E

Under this alternative, there would be approximately 595,098 acres managed by VRM Class I (preserve the landscape character) and Class II (retain the landscape character) objectives. Class III (partially retain the landscape character) and Class IV (provide for landscape modification) objectives would be prescribed for about 1,126,563 acres. Class I and II objectives would limit landscape change but would provide for dispersed and undeveloped recreation opportunities. The opportunities would include a variety of motorized and non-motorized activities like camping, hiking, backpacking, river floating, wildlife viewing, hunting, nature study, and picnicking. Backcountry driving and OHV use would be permitted on designated roads and trails. However, recreation requiring developed sites like campgrounds, picnic areas, or interpretive sites would not be permitted in Class I areas. Non-WSA lands with wilderness characteristics (277,596 acres) would be managed by VRM Class I objectives and provide the same recreation opportunities as described above, except backcountry driving or OHV use. Routes in non-WSA lands with wilderness characteristics would be closed to motorized use in these areas.

4.10.2.10 Impacts of Non-WSA Lands with Wilderness Characteristics Decisions on Recreation

NOTE TO READER: A new Section 4.10.2.10 has been added to disclose the effects of non-WSA lands with wilderness characteristics decisions on recreation.

4.10.2.10.1 Alternative A, B, C, and D

Under these alternatives, no actions would be prescribed to specifically protect the wilderness characteristics of non-WSA lands with wilderness characteristics, and therefore there would be no direct impacts to recreation opportunities.

4.10.2.10.2 Alternative E

Under Alternative E, 277,596 acres in 25 areas would be managed to protect wilderness characteristics of size, naturalness, opportunities for solitude, and opportunities for primitive forms of recreation (see Section 3.22 Non-WSA Lands with Wilderness Characteristics of this Supplement). This form of management would provide opportunities for primitive forms of recreation (e.g., hiking, backpacking, river floating, hunting, wildlife viewing, and nature study) and experiences of solitude in natural, undeveloped settings. Opportunities for motorized recreation (e.g., backcountry driving and OHV use) and developed facilities (e.g., campgrounds, picnic areas, and interpretive and wayside exhibits) would not be provided in these areas. Those

recreation opportunities would be provided outside non-WSA lands with wilderness characteristics.

4.10.2.11 Summary

NOTE TO READER: The original Section 4.10.2.10, Summary, of the DEIS has been renumbered here to 4.10.2.11, and a new sub-section 4.10.2.11.5 has been added to summarize Alternative E.

4.10.2.11.5 Alternative E

The focus of this alternative would be the protection of non-WSA lands with wilderness characteristics. That protection would benefit primitive and non-motorized recreation activities like hiking, backpacking, river floating, hunting, wildlife viewing, nature study, and sightseeing, but it would exclude backcountry driving and OHV use on 228 miles of routes and activities dependent on developed sites (e.g., campground and interpretive facilities).

- Designation of ACECs and protection of suitable Wild and Scenic River segments would benefit undeveloped forms of recreation dependent on those settings.
- OHV travel would be limited under this alternative, reducing opportunities for cross-country driving, focusing motorized travel to designated routes, and creating added opportunities for non-motorized recreation.

Management for preservation and retention of the existing landscape character (VRM Classes I and II objectives) would provide the most opportunity for activities and experiences dependent on natural and undeveloped settings.

4.11 RIPARIAN AND WETLAND RESOURCES

Please refer to Section 4.11 of the DRMP/DEIS with the following changes.

4.11.2.1 Impacts of Fire Management Decisions on Riparian Resources

NOTE TO READER: Section 4.11.2.1.1 has been replaced with the following to include a discussion of the effects of Alternative E.

4.11.2.1.1 Alternatives A, B, C, and E

Alternatives A, B, C and E would have approximately three times more surface disturbance in the short term than would Alternative D – No Action (156,425 acres versus 50,900 acres). However, in the long term, these fire management activities would reintroduce the natural fire-return interval to an area three times greater than that proposed in Alternative D – No Action. Treatment in these areas through prescribed fire and other means of vegetation manipulation are likely to reduce the intensity and size of fires in the treated areas while promoting more productive rangelands and reducing sedimentation and erosion in the long term.

4.11.2.2. Impacts of Forage and Wild Horse Management Decisions on Riparian Resources

NOTE TO READER: Section 4.11.2.2.2 has been replaced with the following to include a discussion of the effects of Alternative E.

4.11.2.2.2 Alternatives C and E

Alternatives C and E would have the most beneficial impacts to riparian resources relative to Alternative D – No Action through reductions in AUMs allocated for livestock and retention of AUMs for watershed in many localities. Reduced forage use by livestock and fewer AUMs would reduce stress on riparian areas through reduction of cover and trampling and the potential loss of PFC.

4.11.2.3 Impacts of Lands and Realty Decisions on Riparian Resources

NOTE TO READER: A new Section 4.11.2.3.5 has been added to disclose the effects of Alternative E.

4.11.2.3.5 Alternative E

Alternative E would pursue public access to the White River at the mouth of Cowboy Canyon, Bonanza Bridge, and Wagon Hound Road. Additionally, this alternative would pursue acquisition of Indian Trust Lands in Bitter Creek and near the confluence of South and Sweet Water Canyons. These actions would have greater long-term, indirect adverse impacts to riparian resources than Alternative D – No Action by increasing visitor use, thereby increasing trampling of banks and spread of noxious weeds. Alternative E would preclude mineral entry in the Green River and White River corridors and would have the same indirect beneficial impacts to riparian resources as would Alternative D – No Action, which also precludes mineral entry in these river corridors. Also under Alternative E, 277,596 acres of non-WSA lands with wilderness characteristics would not be available for disposal or exchange. Riparian areas that lie within non-WSA lands with wilderness characteristics would remain in public ownership and be managed as ROW exclusion areas, a situation that would have additional long-term, beneficial, protection-related impacts on riparian resources.

4.11.2.4 Impacts of Livestock and Grazing Decisions on Riparian Resources

NOTE TO READER: Section 4.11.2.4.3 has been replaced with the following to include a discussion of the effects of Alternative E.

4.11.2.4.3 Alternatives C and E

Alternatives C and E would use an adjudicated system for timing livestock use. This system would provide the shortest season of livestock use, compared to all alternatives. The direct, long-term, beneficial impacts to riparian resources would be the highest for these alternatives, as compared to Alternative D – No Action.

4.11.2.5 Impacts of Minerals Decisions on Riparian Resources

NOTE TO READER: A new Section 4.11.2.5.5 has been added to disclose the effects of Alternative E.

4.11.2.5.5 Alternative E

Alternative E would potentially develop approximately 6,117 oil, gas, and CBM wells; this would be 262 more wells than under Alternative D. Compared to Alternatives A, B, and C, this alternative would have the lowest risk of indirect, short- and long-term, adverse impacts to riparian resources due a relatively lower number of RFD-predicted wells, fewer miles of access roads, and fewer acres of minerals-related surface disturbances. Compared to Alternative D, the impacts of this alternative to riparian resources would be more beneficial in the long term because of the greater protection afforded to riparian resources.

The potential for development of solid leasables - Gilsonite, phosphate, and mineral materials - is moderate to high, and exploration and development is likely. Development potential for locatable minerals is moderate, but little development is expected. Potential for coal is low, given the low-grade quality of the resource. If these resources were developed, exploration and production would generally result in small to moderate sized, localized surface disturbances. Mitigation measures would minimize disturbance to riparian zones, but vegetation would still be lost.

4.11.2.6 Impacts of Rangeland Improvement Decisions on Riparian Resources

NOTE TO READER: Section 4.11.2.6.1 has been replaced with the following to include a discussion of the effects of Alternative E.

4.11.2.6.1 Alternatives A, B, C, D – No Action, and E

Vegetation treatments for rangeland improvement under Alternatives A, B, C/E, and D – No Action would total 34,640 acres; 50,900 acres; 45,860 acres; and 40,390 acres, respectively. Therefore, Alternative B would be the most beneficial to riparian resources, and Alternative A would be the least beneficial, as compared to Alternative D – No Action. Fencing would provide for timed grazing and would have an indirect beneficial effect on riparian areas, except for trampling effects along the fenceline. Water developments would provide water to upland range sites, keeping livestock and other ungulates out of sensitive riparian areas. Guzzlers, reservoirs, wells, and springs would attract livestock away from riparian areas and would decrease soil disturbance and sedimentation around riparian areas.

4.11.2.7 Impacts of Recreation Decisions on Riparian Resources

NOTE TO READER: A new Section 4.11.2.7.5 has been added to disclose the effects of Alternative E.

4.11.2.7.5 Alternative E

Alternative E would have direct and indirect, short- and long-term, beneficial impacts to riparian resources by designating the White River SRMA, which would be managed as VRM II, limiting surface disturbance within line of sight or up to 1/2 mile either side of the river. The designation of Blue Mountain and the Book Cliffs SRMAs would provide management of OHV use, which would not be managed in these areas under Alternative D – No Action, limiting vehicle disturbance to soil and riparian vegetation. The expansion of Browns Park SRMA (52,721 versus 18,474 acres) would further protect riparian resources in this area, as compared to Alternative D – No Action, by managing parts of the SRMA as closed to OHV use; for VRM Class I landscape objectives; and for primitive, non-motorized, and undeveloped types of recreation. Additionally, under Alternative E the Bitter Creek drainages and the head of Sweet Water Canyon would be closed to leasing. Long-term, indirect, adverse impacts would occur to these areas due to increases in visitor traffic.

Development of up to 400 miles of non-motorized trails would have long-term, indirect adverse impacts due to increasing visitor traffic in riparian zones. This would be 345 more miles of trails developed than under Alternative D – No Action and the same as under Alternative C. Not allowing OHV use for big game retrieval off designated routes would have long-term indirect beneficial impacts to riparian resources by limiting trampling of riparian vegetation and spread of noxious weeds. OHV use off of designated trails for big game retrieval is unspecified under Alternative D – No Action.

4.11.2.8 Impacts of Riparian Management Decisions on Riparian Resources

NOTE TO READER: Section 4.11.2.8.1 has been replaced with the following to include a discussion of the effects of Alternative E.

4.11.2.8.1 Alternatives A, C, and E

Alternatives A, C, and E would offer the most protection for riparian resources where key streamside herbaceous vegetation, non-streamside herbaceous vegetation, and woody riparian vegetation utilization would be managed for proper functioning riparian condition. These alternatives would have more long-term, direct, beneficial impacts to riparian resources than would Alternative D – No Action, which specifies lower stubble heights, does not specify utilization limits for woody riparian vegetation, and has no utilization requirements.

4.11.2.9 Impacts of Soils and Watershed Decisions on Riparian Resources

NOTE TO READER: A new Section 4.11.2.9.5 has been added to disclose the effects of Alternative E.

4.11.2.9.5 Alternative E

Alternative E would use oil and gas industry slope disturbance guidelines (Gold Book) to limit surface disturbances from oil and gas activities, which would provide indirect, long-term beneficial impacts to riparian resources by reducing soil erosion on steep hillsides and thus reducing the potential for increased stream sedimentation. Soils and watershed decisions under Alternative E would have the same indirect beneficial impacts on riparian and wetland resources as Alternative C, under which surface disturbances on slopes between 21–40% would require erosion control, GIS modeling, and surveying; and surface disturbances on slopes greater than 40% would be prohibited, thus reducing the risk of increased stream sedimentation from such slopes. These actions would provide more indirect, long-term, beneficial impacts to riparian and wetland areas than would Alternatives A, B, and D – No Action, by reducing surface disturbances that cause soil erosion and subsequent stream and wetland sedimentation.

4.11.2.10 Impacts of Special Designation Decisions on Riparian Resources

NOTE TO READER: Section 4.11.2.10.1 has been replaced with the following to include a discussion of the effects of Alternative E.

4.11.2.10.1 Alternatives A, C, and E

Alternatives C and E would offer the greatest protection to riparian resources through ACEC management prescriptions, protecting approximately 515,186 acres more than Alternative D would protect. Alternative A offers the next best level of protection to riparian resources with approximately 182,072 more acres than Alternative D. Alternatives C and E recommend the most miles (216 miles) of riparian corridor for protection in a free-flowing condition as either wild or scenic under the Wild and Scenic Rivers Act. Alternatives A (72 miles), B (52 miles), and D – No Action (52 miles) would recommend designation of fewer miles of wild and scenic rivers than would Alternatives C and E.

4.11.2.11 Impacts of Special Status Species Decisions on Riparian Resources

NOTE TO READER: Section 4.11.2.11.1 has been replaced with the following to include a discussion of the effects of Alternative E.

4.11.2.11.1 Alternatives A, C, and E

Alternatives C and E would offer the greatest protection to riparian resources through protection of special status species (fish and raptors) habitat when compared to Alternative D – No Action. The alternatives are similar with respect to raptors; however, Alternatives C and E would offer slightly more protection than would Alternative A and greater protection than would Alternative D.

4.11.2.12 Impacts of Travel Decisions on Riparian Resources

NOTE TO READER: A new Section 4.11.2.12.5 has been added to disclose the effects of Alternative E.

4.11.2.12.5 Alternative E

Alternative E would rehabilitate new roads or trails when they no longer serve their permitted purpose. Additionally, roads causing resource damage would be repaired or closed, and water crossings would be designed and built to allow for the free passage of aquatic life. These actions would provide more long-term direct and indirect beneficial impacts to riparian resources by limiting surface disturbance and sediment input into riparian systems than would the other alternatives. Alternative E would manage 782,425 fewer acres as open to cross-country OHV travel, 438,749 more acres as limited to designated routes, and 342,430 more acres as closed to OHV travel than would Alternative D – No Action. Under Alternative E, 4,650 miles of routes would be designated for OHV travel (57 fewer miles of OHV routes than Alternative C in order to protect areas with non-WSA lands with wilderness characteristics). Alternative E would provide the most protection to riparian areas of any alternative by having the least acreage accessible to OHV use and potential riparian surface disturbances.

4.11.2.13 Impacts of Vegetation Management Decisions on Riparian Resources

NOTE TO READER: Section 4.11.2.13.1 has been replaced with the following to include a discussion of the effects of Alternative E.

4.11.2.13.1 Alternatives A, B, C, D – No Action, and E

The health and function of riparian communities are directly connected to the overall health of the watershed and adjacent upland vegetation communities. Actions taken to restore, maintain, and enhance upland vegetation communities would directly benefit the riparian zones in the VPA. Generally, Alternative A would provide more protection for riparian resources than would Alternative B and less protection than would Alternatives C and E. Alternative D – No Action would provide less protection for riparian resources than would any other alternative.

4.11.2.14 Impacts of Visual Resource Management Decisions on Riparian Resources

NOTE TO READER: A new Section 4.11.2.14.5 has been added to disclose the effects of Alternative E.

4.11.2.14.5 Alternative E

Alternative E would designate 331,813 and 263,285 acres as VRM Classes I and II, respectively, a total that is 275,686 more acres of VRM I and 32,955 more acres of VRM II land, when compared to Alternative D – No Action, with greater limitations on surface disturbance. This alternative would have the most long-term indirect beneficial impacts to riparian resources by managing the most acreage under the VRM I class objectives that would impose the most restrictions on surface disturbances to riparian resources.

4.11.2.15 Impacts of Woodlands and Forest Management Decisions on Riparian Resources

NOTE TO READER: A new Section 4.11.2.15.3 has been added to disclose the effects of Alternative E.

4.11.2.15.3 Alternative E

Woodlands treatment and harvesting would have long-term adverse impacts on riparian resources caused by soil erosion. Alternative E would have 552,663 acres of woodlands treated or harvested; this is the same number of acres as Alternatives A and C; 264,363 more acres than Alternative D – No Action; and 1,445 fewer acres than Alternative B.

4.11.2.16 Impacts of Non-WSA Lands with Wilderness Characteristics Decisions on Riparian Resources

NOTE TO READER: New Sections 4.11.2.16.1 and 4.11.2.16.2 have been added to disclose the effects of non-WSA lands with wilderness characteristics decisions on riparian resources.

4.11.2.16.1 Alternatives A, B, C, and D – No Action

Under these alternatives, no actions would be prescribed to directly manage for protection of non-WSA lands with wilderness characteristics, so there would be no effect on the riparian resources of the VPA.

4.11.2.16.2 Alternative E

Under this alternative, approximately 1,753 acres of riparian woodlands within non-WSA lands with wilderness characteristics would be managed as exclusion areas for ROW realty actions, managed under VRM I class objectives (preserve the characteristic landscape), closed to OHV travel, closed to mineral material disposal, and closed to oil and gas and other mineral leasing. The impacts would be beneficial in the long term because these potential surface disturbances to riparian resources within non-WSA lands with wilderness characteristics would not be allowed. Compared to Alternative D – No Action, this alternative would be more beneficial because it would indirectly protect riparian areas that lie within non-WSA wilderness characteristics areas.

4.11.2.17 Summary

NOTE TO READER: The original Section 4.11.2.16 of the DEIS has been renumbered here as Section 4.11.2.17 and has been replaced with the following to include a discussion of the effects of Alternative E.

In general, the greatest adverse impacts to riparian resources would be due to livestock grazing; oil, gas, and coal bed methane leasing; and OHV use. Management alternatives under which there would be more acres open to livestock use and mineral leasing, and fewer restrictions on surface disturbing activities in riparian vegetation would pose the greatest potential adverse impacts to riparian resources. Alternative D – No Action would have the greatest direct adverse impacts compared to the other alternatives due to unrestricted OHV use and limited restrictions

on riparian grazing. Alternative B would have the greatest indirect adverse impacts to riparian resources from oil, gas, and CBM leasing. Of any of the management alternatives, Alternatives C and E would have the fewest direct and indirect adverse impacts to riparian resources.

4.12 SOCIOECONOMICS

Please refer to Section 4.12 of the DRMP/DEIS with the following changes. For resources not discussed in the following section, a negligible impact to socioeconomics should be assumed.

4.12.3.2 Effects of Minerals on Socioeconomics

NOTE TO READER: A new Table 4.12.0 has been added to include information under Alternative E.

TABLE 4.12.0. ESTIMATED NUMBER OF WELLS UNDER ALTERNATIVE E, BY RESOURCE TYPE

Resource Type	Alternative E
Oil	1,949
Gas	4,056
Coal Bed Methane	112
Total	**6,117**

NOTE TO READER: A new Section 4.12.3.2.5 has been added to disclose the effects of Alternative E.

4.12.3.2.5 Alternative E

Alternative E would open 1,547,090 acres with standard, timing and controlled surface use, and NSO stipulations for coal bed methane and oil and gas development. The total number of predicted wells under Alternative E would be 6,117. Of the 6,117 total predicted wells, 1,949 would be oil, 4,056 would be gas, and 112 would be coal bed methane.

According to the Utah Energy Office (UEO), the drilling and completion of one well would create 14.8 jobs. Consequently, under Alternative E, there would be 90,532 jobs resulting from 6,117 wells, or 4,527 jobs annually if distributed evenly over 20 years (assuming that all 6,117 wells were in operation at the same time). Alternative E would provide the least amount of oil and gas related jobs compared to the other Action Alternatives and slightly more compared to Alternative D – No Action.

Minerals decisions under Alternative E would increase the costs of developing the total predicted oil and gas wells by $0.6 billion, compared to Alternative D – No Action because there would be more wells drilled under Alternative E. Such development would potentially create a total cost of development of $12.5 billion over 20 years, or approximately $623 million over one year.

Compared to Alternative D – No Action, an increase in the total number of potential wells under Alternative E would have a long-term, beneficial effect on state and local revenue. Gross state

revenue generated as a result of development costs is estimated to be $453.6 million with the drilling and completion of 6,117 wells under Alternative E. Local revenue is estimated to be $281.3 million with the completion of all wells under Alternative E. Sales tax contributions from oil and gas developers and their employees would be slightly less than under Alternative C because the total amount of predicted wells is 108 less than under Alternative C. With 261 more wells proposed than under Alternative D – No Action, sales tax revenues would be greater under Alternative E.

In comparison to Alternative D – No Action, royalties paid to the state and counties from oil and gas sales on federal lands (including mineral lease revenue, severance taxes, and ad valorem taxes) would increase in proportion to the increase in production, which would be a long-term, beneficial effect on economics in the region. Royalty and tax revenue paid to the state and local governments resulting from oil and gas development would increase by 4.5% compared to Alternative D – No Action.

Annual recovery value for 6,117 wells under Alternative E is $1.116 billion; of this, 45% (or $502.4 million) would be royalty revenue for the federal government and 40% (or $446.6 million) in royalty revenue would be distributed back to the counties. The overall contributions from royalty revenues under Alternative E would be greater than under Alternative D – No Action but slightly less than under Alternative C.

NOTE TO READER: A new column has been added to Table 4.12.1 to include information under Alternative E.

TABLE 4.12.1. SUMMARY OF THE EFFECTS OF OIL AND GAS DEVELOPMENT IN THE VPA

	Alternative E
Predicted Wells	
Total Acreage	1,914,000
Acreage Open	1,547,090
% of Total Acreage Open	81%
Total Well Potential	6,117
Difference in Well Potential w/ Alternative D	-214
% Difference from No Action	3.4%
Jobs (based on 14.8 employees per well)	
Total Jobs over 20 Years	90,532
Jobs per Year (if distributed evenly over 20 years)	4,527
Development Costs (based on average $2,035,891 development cost per well)	
Development Cost over 20 Years (billions of dollars)	12.5
Development Cost per Year (if distributed evenly over 20 years; millions of dollars)	623
Total Recovery Value Annually*	
Recovery Value based on wells per alternative (billions)	1.116

TABLE 4.12.1. SUMMARY OF THE EFFECTS OF OIL AND GAS DEVELOPMENT IN THE VPA	
	Alternative E
Gross Annual Royalty Revenue **	
Federal Revenue (millions of dollars)	502.4
County Revenue (millions of dollars)	446.6
** Assuming wells are at maximum production	

4.12.3.3 Effects of Recreation and OHV Decisions on Socioeconomics

NOTE TO READER: Section 4.12.3.3.3 has been replaced with the following to include a discussion of the effects of Alternative E.

4.12.3.3.3 Alternative E

Under Alternative E, the management 277,596 acres of non-WSA lands with wilderness characteristics to protect their characteristics would focus on primitive and unconfined recreation activities (e.g., hiking, backpacking, river floating, hunting, wildlife viewing). Opportunities for motorized recreation and developed recreation sites (e.g., campgrounds, interpretive kiosks) would be reduced with the closure of 288 miles of vehicle routes and restrictions on recreation-related development in order to maintain the wilderness characteristics of non-WSA lands with wilderness characteristics.

Under Alternative E, 5,434 acres would be open to cross-country OHV travel (the same as under Alternatives B and C), a reduction of 782,425 acres from Alternative D – No Action. Under this alternative motorized travel would be focused on designated routes, not cross-country travel. While the experience of cross-country driving would be limited to 5,434 acres, motorized travel for access and recreation would still be available on 4,654 miles of road and trails. Areas closed to OHV travel would increase to 392,818 acres (an increase of 342,430 acres) from the current management in Alternative D – No Action.

The overall management prescriptions associated with this alternative would have a stronger emphasis on primitive, semi-primitive, and non-motorized uses than any of the other alternatives. Fewer recreational facilities would be developed. Expenditures by individuals who either desire increased OHV access or developed recreational facilities might decline relative to the other alternatives. These expenditure reductions could cause a loss of income and jobs in the socioeconomic study area. For individuals seeking more primitive and non-motorized recreational experiences, visitation and resulting expenditures and related economic activity, as well as satisfaction, would likely be greatest under this alternative.

Recent research has shown that the very existence of wilderness characteristics within an area can provide economic benefits to the local economy. To the extent that managing additional lands to preserve wilderness characteristics attracts clients and employees to the planning area, there could be corresponding positive economic benefits to local communities. Local businesses that benefit from the preservation of non-WSA lands, such as wilderness therapy groups or river running outfitters, would benefit the most from Alternative E.

There is an extensive body of literature that argues that protecting lands as wilderness provides local, regional, and national economic benefits. A briefing paper entitled *The Net Economic Value of Wilderness* (Bowker 2005) summarizes the relevant research on this topic. For example, some research suggests that private property located next to or near protected lands increases the value due to this proximity. Other research suggests that areas with protected lands are more likely to attract higher-income individuals, as wells as businesses, who value the types of recreation activities provided in protected areas. Still other research suggests that areas with certain types of high-dollar recreation, such as hunting, are enhanced by wilderness protection. While most of these studies have focused on the benefits accruing to designated wilderness, it is applicable to non-WSA lands with wilderness characteristics.

NOTE TO READER: A new Section 4.12.3.4 has been added to disclose the effects of non-WSA lands with wilderness characteristics decisions on socioeconomics. A new Table 4.12.2 has also been added.

4.12.3.4 Effects of Non-WSA Lands with Wilderness Characteristics Decisions on Socioeconomics

4.12.3.4.1 Alternatives A, B, C, and D – No Action

In these alternatives, it is not proposed to protect wilderness characteristics outside of designated WSAs. Because there are no proposed decisions regarding management or protection of wilderness characteristics, there would be no impact on social or economic conditions of the planning area.

4.12.3.4.2 Alternative E

The restrictions on natural resource development under this alternative have the greatest potential to restrict economic opportunities for those whose livelihood depends completely, or in part, on the restricted activities. This would be particularly true in the case of minerals development and motorized recreation. Conversely, those whose livelihood or even sense of well-being depends on values associated with wilderness characteristics and primitive recreation would receive the greatest benefit under Alternative E. Alternative E could benefit those businesses which rely on those recreation visitors who value wilderness qualities.

It is difficult to predict whether the potential socioeconomic gains described above will outweigh the socioeconomic losses which could result from this alternative. Managing lands for wilderness characteristics may have some positive benefits to the local economy, above and beyond benefits to individual users of these areas.

As stated above, mineral development would be substantially limited under Alternative E, because 277,596 acres of non-WSA lands with wilderness characteristics would be closed to exploration and extraction. Oil and gas development would be limited to that which could be accomplished with NSO (e.g., directional drilling). See Table 4.12.2 for non-WSA lands with wilderness characteristics by mineral leasing categories. The areas would also be closed to mineral material disposal and solid mineral leasing, and would be proposed for withdrawal from locatable mineral entry.

TABLE 4.12.2. ACRES AND PERCENTAGE OF NON-WSA LANDS WITH WILDERNESS CHARACTERISTICS BY MINERAL LEASING CATEGORY

Leasing Category	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Standard Stipulations	66,972 (24%)	144,013 (52%)	39,843 (14%)	122,114 (44%)	0 (0%)
Controlled Surface Use	169,225 (61%)	123,341 (45%)	87,927 (32%)	98,383 (36%)	0 (0%)
No Surface Occupancy	22,479 (8.1%)	9,471 (3.4%)	11,041 (4.0%)	56,330 (20%)	0 (0%)
Closed	18,280 (6.6%)	149 (0.1%)	138,166 (50%)	146 (0.1%)	277,596 (100%)

Protection of non-WSA lands with wilderness characteristics would have minor to substantial negative impacts upon extraction and development, as it would exclude lands from minerals development and lower the number of locations where potential wells could be drilled. The lower number of locations could indirectly lead to a lower yield and commercial supply of oil and natural gas and fewer royalties paid to the federal government and/or the State of Utah. An approximate monetary impact would be difficult to propose because desired future locations of development in proposed non-WSA lands with wilderness characteristics sites are unknown.

It should be noted that as a result of valid existing rights within the non-WSA lands with wilderness characteristics, approximately 124,215 acres could lose their wilderness characteristics. Of the 13 non-WSA areas, 14–89% of the land could be disturbed as a result of mineral exploration and extraction. While these existing leases could potentially lead to increased short-term revenue for local governments, the wilderness characteristics that appeal to visitors and local residents who value the wilderness qualities would be subject to degradation. The loss of wilderness characteristics could have long-term adverse impacts on economic contributions from recreation and tourist-based revenue, and this could adversely impact the quality of life to those who value the naturalness of landscapes.

NOTE TO READER: A new Section 4.12.3.5 has been added to disclose a summary of the effects of socioeconomics.

4.12.3.5 Summary

Under Alternative E, impacts to socioeconomics would be varied. For those whose livelihood depends restricted activities, such as mineral development or OHV use, impacts would be most adverse under Alternative E compared to the No Action Alternatives. Local revenues from oil and gas development would be least under Alternative E. Expenditures by individuals who are part of the oil and gas industry or who desire increased OHV access or developed recreational facilities would possibly decline relative to the other alternatives. These expenditure reductions could cause a loss of income and jobs in the socioeconomic study area.

For those whose livelihood or sense of well-being depends on primitive recreation or the values associated with wilderness characteristics, Alternative E would provide the greatest amount of benefit. Expenditures by recreational visitors and businesses that value or depend on wilderness characteristics or primitive recreation would be greatest under Alternative E.

4.13 SOIL AND WATER RESOURCES

Please refer to Section 4.13 of the DRMP/DEIS with the following changes.

4.13.2.1 Effects of Fire Management Decisions on Water and Soils

NOTE TO READER: Section 4.13.2.1.1 has been replaced with the following to include a discussion of the effects of Alternative E.

4.13.2.1.1 Alternatives A, B, C, and E

Under Alternatives A, B, C, and E, prescribed burns on 156,425 acres of the VPA would result in three times more surface disturbance than under Alternative D – No Action. In the short term, 13% (20,335 acres) of the burned area would occur on water-erodible soils, 79% (123,575 acres) would occur on wind-erodible soils, 9% (14,078 acres) would occur on sodic soils, 20% (31,285 acres) would occur on saline soils, and 7% (10,949 acres) would occur on gypsic soils. Proper location of prescribed burns under all alternatives would limit adverse effects due to fire management.

4.13.2.2 Effects of Forage Management Decisions on Water and Soils

NOTE TO READER: Section 4.13.2.2.3 has been replaced with the following to include a discussion of the effects of Alternative E.

4.13.2.2.3 Alternatives C and E

Utilization under Alternatives C and E would be 50%, which provides more beneficial impacts to soils and water by limiting utilization than that under Alternative D – No Action, which does not specify forage utilization. Approximately 187,450 AUMs (permitted use, including historic non-use; wildlife forage; and forage for wild horses) would be allocated under these alternatives, which is 58,678 fewer acres than under Alternative D – No Action. These alternatives would cause the fewest adverse impacts from forage utilization.

4.13.2.3 Effects of Lands and Realty Decisions on Water and Soils

NOTE TO READER: Section 4.13.2.3.3 has been replaced with the following to include a discussion of the effects of Alternative E.

4.13.2.3.3 Alternatives C and E

Alternatives C and E would pursue access to the White River and Indian Trust Lands in Bitter Creek and near the confluence of South and Sweet Water Canyons. Additionally, an easement

would be pursued for the old Uintah Railroad bed from the Utah/Colorado state line to Watson in Evacuation Creek. Alternatives C and E would have increased, adverse impacts to soil and water resources, due to increased surface disturbance from additional public access as compared to Alternative D – No Action, where no increased access would be pursued and mineral entry would be precluded in withdrawal areas.

4.13.2.4 Effects of Minerals Decisions on Water and Soils

NOTE TO READER: A new column has been added to both Table 4.13.2 and Table 4.13.3 to include information under Alternative E.

TABLE 4.13.2. ACRES OF VPA ERODIBLE SOILS OPEN TO OIL AND GAS DEVELOPMENT, BY RFD AREA

Erodible Soil	Altamont-Bluebell	East Tavaputs Plateau	Manila-Clay Basin	Monument Butte-Red Wash	Tabiona-Ashley Valley	West Tavaputs Plateau
Alternative E						
KFACT < 0.32, Slope = 0-10%	6,217	13,103	1,937	101,408	14,347	11,053
KFACT < 0.32, Slope = 11-20%	0	0	725	0	1,242	0
KFACT < 0.32, Slope = 21-40%	0	5,300	0	7,999	22,457	0
KFACT ≥ 0.32, Slope = 0-10%	**1,730**	**6,141**	**4,010**	**50,159**	**15,778**	**1,610**
KFACT ≥ 0.32, Slope = 11-20%	**0**	**854**	**0**	**3,618**	**4,793**	**0**
KFACT ≥ 0.32, Slope = 21-40%	0	0	3,868	24,954	26,743	0
Total	***7,947***	***25,398***	***10,540***	***188,138***	***85,360***	***12,663***

TABLE 4.13.3. ALTERNATIVES COMPARISON FOR MINERALS DECISIONS	
	Alternative E
Oil, Gas and CBM	
Standard Lease Terms	818,891 acres
Controlled Surface Use	680,570 acres
No Surface Occupancy	47,629 acres
No Leasing	367,037 acres
Total impacts from surface disturbance*	27,837 acres
Total long-term impacts from surface disturbance	20,584 acres
Combined Hydrocarbon/Special Tar Sands	
Standard Lease Terms	43,295 acres
Controlled Surface Use	191,563 acres
No Surface Occupancy	3,696 acres
No Leasing	59,966 acres
Other Minerals	
Phosphate	52,063 acres
Gilsonite	163 miles
Mineral Disposal – Open	344,682 acres
Total Projected Wells (on BLM lands only)	**3,285 wells****

Note:

*Although this was labeled as "total short term impacts" in the DEIS, it is actually the total surface disturbance from wells and associated roads and pipelines on all lands in the Vernal PA.

**The number of wells includes only those on BLM lands in order to match the analyses presented in the DEIS. Although this allows a comparison of soil impacts from mineral decisions relative to other alternatives, it cannot be used to compare to the impacts on other resources that refer to the number of wells on all lands.

4.13.2.4.5 Alternative E

NOTE TO READER: A new Section 4.13.2.4.5 has been added to disclose the effects of Alternative E.

Alternative E would have the least adverse impacts to water quality and soil productivity compared to the other action alternatives and slightly greater impacts than Alternative D – No Action. Under Alternative E, approximately 1,499,461 acres would be administratively available for oil, gas, and CBM leasing subject to standard lease terms or controlled surface use, a number that is approximately 36,569 fewer acres than under Alternative D – No Action. However, due to leasing of the Hill Creek Extension and reasonable foreseeable development of administratively available lands, the total disturbance from oil and gas development would adversely affect 27,837 acres of soils, which is 958 more acres than under Alternative D – No Action. This alternative also designates the largest number of acres classified as NSO or as closed to leasing.

Total wells on BLM lands under this alternative would be approximately 3,285, which is approximately 203 fewer wells than under Alternative D – No Action. However, the total of 6,117 wells predicted under Alternative E would be greater than the 5,856 predicted under

Alternative D – No Action; therefore, direct, long-term impacts to soil and water would be more adverse under Alternative E than under Alternative D – No Action. With respect to oil shale leasing and mineral material disposal, Alternative E would adversely impact fewer acres than any other alternative (Table 4.13.3).

4.13.2.5 Effects of Rangeland Improvement Decisions on Water and Soils

NOTE TO READER: Section 4.13.2.5.3 has been replaced with the following to include a discussion of the effects of Alternative E.

4.13.2.5.3 Alternatives C and E

Alternatives C and E would provide 45,860 acres of vegetation treatments and 129 miles of fencing would be developed. Compared to Alternative D – No Action, these alternatives would have 5,470 more acres and 64 more miles of fencing, thereby providing more long-term beneficial impacts to soil and water resources. Water developments would have similar impacts to Alternative D – No Action.

4.13.2.6 Effects of Recreation Decisions on Water and Soils

NOTE TO READER: A new Section 4.13.2.6.5 has been added to disclose the effects of Alternative E.

4.13.2.6.5 Alternatives E

Under Alternative E, Fantasy Canyon (69 acres) would be designated as an SRMA, and the White River SRMA would increase in size from 24,183 acres to 47,130 acres (which would include management of public use and limiting surface disturbance by designating the western portion VRM Class I and the eastern portion VRM Class II). Management of the Blue Mountain, Fantasy Canyon, Book Cliffs, Red Mountain-Dry Fork, and Nine Mile Canyon areas as SRMAs would limit OHV use to trails and therefore provide greater direct long-term beneficial impacts to soils and water than those under Alternative D – No Action, although increased public visitation would have greater indirect, long-term adverse impacts to water quality and soil productivity. Management of 52,720 acres in the Browns Park area as an SRMA, with special management attention given to enhancement of riparian and fisheries resources and limiting OHV use, would protect 34,246 more acres than would Alternative D – No Action. Closing the southern portion of the Browns Park area to OHV use and managing it as VRM Class I would result in less surface disturbance by development; this, in turn, would have indirect, long-term benefits to water quality and soil productivity.

Backcountry byways, motorized-use trails, and cabins would not be developed under Alternative E. Development or improvement of up to 400 miles of trails for non-motorized use would result in increased public visitation and would have indirect, long-term, adverse impacts to water quality and soil productivity. Proper placement of non-motorized use trails would reduce the adverse impacts to soils and water resources. Not allowing OHV use off of designated motorized-use trails for big game retrieval would limit adverse impacts to soils and water resources, compared to Alternative D – No Action, which does not restrict OHV travel.

Therefore, these alternatives would generally have less adverse impacts and greater beneficial impacts than under other alternatives, including Alternative D – No Action.

4.13.2.7 Effects of Riparian Management Decisions on Water and Soils

NOTE TO READER: Section 4.13.2.7.1 has been replaced with the following to include a discussion of the effects of Alternative E.

4.13.2.7.1 Alternatives A, C, and E

Alternatives A, C, and E would implement the same management of riparian resources. These alternatives propose stubble heights of 4 inches (30% utilization) where conditions are to be maintained, and 6 inches (less than 20% utilization) if conditions need to be improved. Compared with Alternative D – No Action, Alternatives A, C, and E would foster improved riparian conditions and more beneficial impacts on water quality and soil productivity. Key herbaceous riparian species would provide more trapping and retention of sediment during high water events than Alternative D – No Action provides. Key riparian woody vegetation would be managed more under Alternatives A, C, and E, providing both direct and indirect, long-term benefits to water quality and soil productivity via reduced soil erosion and sedimentation in streams. By contrast, no management of woody species is specified under Alternative D – No Action.

4.13.2.8 Effects of Soils and Water Resources Decisions on Water and Soils

NOTE TO READER: A new Section 4.13.2.8.5 has been added to disclose the effects of Alternative E.

4.13.2.8.5 Alternative E

Alternative E would use oil and gas industry slope disturbance guidelines (Gold Book) to limit surface disturbances from oil and gas activities, which would provide indirect, long-term, beneficial impacts to soil and water quality by reducing soil erosion on steep hillsides, thus reducing the potential for increased stream sedimentation. Under Alternative E surface disturbances on slopes between 21% and 40% would require erosion control, GIS modeling, and surveying, and surface disturbances (and thus reducing the risk of increased stream sedimentation) would be prohibited on slopes greater than 40%. Alternative E would have impacts to soils and water quality comparable to those under Alternative C and greater indirect beneficial impacts than the other alternatives by reducing surface disturbances that cause soil erosion and subsequent stream sedimentation.

4.13.2.9 Effects of Special Designation Decisions on Water and Soils

NOTE TO READER: Section 4.13.2.9.3 has been replaced with the following to include a discussion of the effects of Alternative E.

4.13.2.9.3 Alternatives C and E

With respect to special designation decisions, Alternatives C and E would offer the greatest protection to soil and water resources through proposed ACEC designations. In addition to existing ACECs, Alternatives C and E propose ACEC designation of Bitter Creek (147,425 acres), Coyote Basin (which would include Kennedy Wash, Snake John, Shiner, and Myton Bench [124,161 acres]), Middle Green River (6,768 acres), White River corridor (47,130 acres), Four Mile Wash (50,280 acres), and Main Canyon (100,915 acres), as well as the expansion of the lower Green River (10,170 acres) and Nine Mile Canyon (81,168 acres) as ACECs. The management prescriptions for these proposed ACECs would result in less surface disturbance and would have indirect, long-term benefits to water quality and soil productivity in the form of reduced soil erosion and sedimentation in streams. By contrast, Alternative D – No Action does not designate any of these ACECs except the Lower Green River and Nine Mile Canyon.

Alternatives C and E recommend designation of new river segments as Wild and Scenic Rivers on the White River (44 miles), Nine Mile Creek (2 segments for a total of 19 miles), middle Green River (36 miles), Evacuation Creek (21 miles), Bitter Creek (22 miles), and Argyle Creek (22 miles). This action may increase visitation but would prevent surface disturbance in the immediate vicinity and, overall, would have more direct and indirect, long-term benefits to water quality and soil productivity, as compared to Alternative D – No Action.

4.13.2.10 Effects of Special Status Species Decisions on Water and Soils

NOTE TO READER: Section 4.13.2.10 has been replaced with the following to include a discussion of the effects of Alternative E.

Raptor habitat protection prescriptions (see Section 2.4.13.4 and Table 2.3) are similar for Alternatives A, C, and E. Compared to Alternatives B and D – No Action, these habitat protection measures when heightened would result in the most beneficial, indirect impacts to water and soils; however, Alternatives C and E offer slightly more protection than does Alternative A. Alternative B would offer some habitat protection from surface disturbance (and thus soil protection), but the level of protection would be less than under Alternatives A, C, and E. Alternative D – No Action offers the least indirect protection of water and soil resources because raptor buffers for surface disturbance are unspecified in the Book Cliffs area.

Improvement and maintenance of stream habitat in creeks including Bitter, Upper Willow, Beaver, Sears, Crouse, Tolivers, Davenport, Jackson, and Sweet Water Creeks would have direct, long-term benefits to water quality and soil productivity by stabilizing stream banks and reducing erosion and subsequent stream sedimentation and salinity increases.

4.13.2.11 Effects of Travel Decisions on Water and Soils

NOTE TO READER: A new Section 4.13.2.11.5 has been added to disclose the effects of Alternative E.

4.13.2.11.5 Alternative E

Under Alternative E, new roads and trails would be rehabilitated upon conclusion of their intended purpose, and roads and trails causing resource damage would be closed if maintenance, upgrade, or realignment would not protect resources. With respect to OHV travel, Alternative E would allow cross-country travel on 5,434 acres, travel limited to designated routes on 1,326,024 acres, and no travel on 392,818 acres. Further, it would designate 4,654 miles of routes. Compared to Alternative D – No Action, Alternative E would allow unlimited travel on 782,425 fewer acres, allow limited travel on 438,749 more acres, allow no travel on 342,430 more acres, and would designate 4,654 more miles of routes for OHV travel. This alternative would provide the most beneficial impacts to soil and water resources, compared to all other alternatives, by limiting surface disturbance and therefore erosion and sedimentation caused by motorized travel.

4.13.2.12 Effects of Visual Resource Management Decisions on Water and Soils

NOTE TO READER: A new Section 4.13.2.12.4 has been added to disclose the effects of Alternative E.

4.13.2.12.4 Alternative E

Alternative E proposes management of approximately 595,098 acres as VRM Class I. This would generally result in less development and surface disturbance than under Alternative D – No Action and would result in the second-most indirect, long-term benefits to water quality and soil productivity (following Alternative C) in the form of reduced soil erosion and sedimentation in streams.

4.13.2.13 Effects of Wildlife and Fisheries Management Decisions on Water and Soils

NOTE TO READER: Section 4.13.2.13.1 has been replaced with the following to include a discussion of the effects of Alternative E.

4.13.2.13.1 Alternatives A, B, C, and E

Alternatives A, B, C, and E propose restriction of surface-disturbing activities. Qualitatively, these alternatives would likely result in less development and surface disturbance and would have indirect, long-term benefits to water quality and soil productivity by reducing soil erosion and sedimentation in streams.

4.13.2.14 Effects of Woodlands and Forest Management Decisions on Water and Soils

NOTE TO READER: A new Section 4.13.2.14.5 has been added to disclose the effects of Alternative E.

4.13.2.14.5 Alternative E

Alternative E would manage up to 275,068 acres for treatment or harvest to reduce fuel loadings and to provide salvage of forest products. Salvage operations would be conducted to harvest forest and woodland products that are dead and/or dying due to fire, disease, insect-kill, or other disturbance with the management intent of promoting healthy forest and woodlands. These management actions would have short-term, indirect, adverse impacts on soil and water quality by increasing soil erosion and increasing stream sedimentation from surface disturbances during harvests or treatments. The long-term impacts would be beneficial to soils and water by potentially reducing the fire severity in treated areas, and thus, reducing the risks of soil erosion and subsequent degradation of stream water quality in treated watersheds. Salvage of woodland and forest species under Alternative E would not be allowed in non-WSA lands with wilderness characteristics, which would result in fewer indirect, long-term adverse impacts to soil and water resources through reduced surface disturbance thus limiting soil erosion and sedimentation in streams. When compatible with the goals and objectives for management of non-WSA lands with wilderness characteristics, vegetation and fuel treatments using prescribed fire would be allowed. In the short term prescribed fire would have adverse impacts on soil and water resources by increasing erosion and sedimentation. However, prescribed fire would have long-term benefits on soil and water resources by decreasing the severity of future wildfires.

4.13.2.15 Effects of Non-WSA Lands with Wilderness Characteristics on Water and Soils

NOTE TO READER: A new Section 4.13.2.15 has been added to disclose the effects of non-WSA lands with wilderness characteristics decisions on water and soils.

4.13.2.15.1 Alternatives A, B, C, and D – No Action

Under these alternatives, no direct actions would be implemented on non-WSA lands with wilderness characteristics to protect those characteristics. As a result, there would be no impact on water or soils from decisions related to non-WSA lands with wilderness characteristics.

4.13.2.15.2 Alternative E

Under Alternative E, 277,596 acres of non-WSA lands with wilderness characteristics would be managed with special protections to maintain their wilderness characteristics. These areas would be managed as VRM Class I, closed to OHV use, closed to mineral disposal, closed to oil and gas leasing, closed to solid mineral leasing, recommended for mineral withdrawal, excluded from new ROWs, closed to road construction, closed to wood cutting and seed collecting, and retained for federal ownership. This management prescription would result in less surface disturbance than under any other alternative and would therefore have the greatest beneficial impacts to water and soils. Compared to Alternatives A through D – No Action, Alternative E

would have greater indirect, long-term benefits to water quality and soil productivity because of reduced soil erosion and sedimentation and salinity in streams.

4.13.2.16 Summary

NOTE TO READER: Section 4.13.2.15 has been renumbered as Section 4.13.2.16 and a new Section 4.13.2.16.5 added to disclose the effects of Alternative E.

4.13.2.16.5 Alternative E

Alternative E would generally result in less surface disturbance than would Alternatives A, B, C, and D – No Action. It would therefore result in the greatest benefits to soil and watershed health and water quality. Compared to current conditions, there would be an overall benefit to soil productivity, watershed health, and water quality from Alternative E.

4.14 SPECIAL DESIGNATIONS

Please refer to Section 4.14 of the DRMP/DEIS with the following changes.

4.14.1 ACECs

NOTE TO READER: Section 4.14.1.3 has been modified as indicated below to include a discussion of the effects of Alternative E, and a new column has been added to Table 4.14.1 to include information on Alternative E.

TABLE 4.14.1. AREAS AND ACRES OF ACECS THAT WOULD BE DESIGNATED UNDER ALTERNATIVE E

Area	Alternative E (acres)
Bitter Creek	68,834
Bitter Creek – P.R. Spring	78,591
Coyote Basin	0
Coyote Basin – Coyote Basin	26,590
Coyote Basin – Kennedy Wash	10,670
Coyote Basin – Myton Bench	36,670
Coyote Basin – Shiner	21,957
Coyote Basin – Snake John	28,274
Four Mile Wash	50,280
Middle Green River	6,768
Lower Green River	10,170
White River Corridor	47,130
Nine Mile Canyon	81,168
Main Canyon	100,915

TABLE 4.14.1. AREAS AND ACRES OF ACECS THAT WOULD BE DESIGNATED UNDER ALTERNATIVE E

Area	Alternative E (acres)
Browns Park	52,721
Red Mountain – Dry Fork	24,285
Lears Canyon	1,375
Red Creek Watershed	24,475
Pariette Wetlands	10,437
Total	**681,310**

4.14.1.3.1 Bitter Creek and Bitter Creek-P.R. Spring ACECs

NOTE TO READER: Section 4.14.1.3.1 has been replaced with the following to include a discussion of the effects of Alternative E.

Under Alternatives A and C, 68,834 acres would be designated as the Bitter Creek ACEC. The Bitter Creek/P.R. Spring ACEC would be 78,591 acres under Alternative C only. The ACECs are adjoining, and together under Alternative C, they would be managed as a contiguous polygon of 147,425 acres. For either alternative the management would be the same. The area would be managed to protect old-growth pinyon pines, cultural resources, historical features, and watersheds. Special management actions would include the following: establishing a research/monitoring program, enhancing habitat through forest manipulation and tree spraying, and restricting wood cutting around old-growth pinyon. These management actions would preserve pinyon pine habitat, with indirect positive benefits to wildlife that use that type of habitat (See Wildlife Section). These management actions would also likely result in decreased fire risk and improved water quality in streams in the Bitter Creek Watershed. Because Alternative C designated both ACECs, there would be more than double the acreage as under Alternative A, and this would likely result in roughly twice the benefits to existing habitat and watershed health in the area.

Alternatives B and D – No Action would not designate Bitter Creek or Bitter Creek-P.R. Springs as ACECs and would therefore have no benefits to pinyon pine habitat or watershed health in this area.

Alternatives A and C would place similar restrictions on OHV use and mineral development in the area. Alternative C would require somewhat more area to be closed to leasing or managed as NSO. Based on the acres designated under each alternative and these increased restrictions, Alternative C would result in greater restrictions to mineral development in the ACEC, followed by Alternatives A, B and D – No Action, respectively.

Under Alternative E, the Bitter Creek ACEC would be 68,834 acres and the Bitter Creek-PR Spring ACEC would be 78,591 acres. The effects of other program decision on these ACECs would be that same as those described under Alternative C except that under Alternative E, parts

of these ACECs would be managed to protect non-WSA lands with wilderness characteristics, including Bitter Creek (33,488 acres), Rat Hole Ridge (11,367 acres), Cripple Cowboy (13,603 acres), and Sweet Water Canyon (6,994 acres). To protect those values, the non-WSA lands with wilderness characteristics would be managed to limit surface disturbance, including exclusion from rights-of-way; management to VRM Class I objectives; and closure to OHV use, oil and gas leasing, fire wood cutting, mineral material sales, and road construction (see Table 2.3). These measures would limit the vegetation manipulation needed to enhance the relevant and important watershed values of the ACEC. On the other hand, limitations on surface disturbance would protect the relevant and important old growth pinyon, cultural resources, and historic values of the ACEC.

4.14.1.3.2 Coyote Basin ACEC and the Coyote Basin Complex ACEC[1]

NOTE TO READER: Section 4.14.1.3.2 has been replaced with the following to include a discussion of the effects of Alternative E.

Under Alternatives A and B, the Coyote Basin ACEC would include 87,743 acres and 47,659 acres, respectively. The Coyote Basin ACEC proposed under Alternative A includes most of the area proposed under Alternative B with additional acreage that extends northward beyond Highway 40. Under Alternatives C and E, the Coyote Basin Complex ACEC would include the sub-complexes of Coyote Basin, Snake John, Shiner, Kennedy Wash, and Myton Bench for a total of 124,161 acres. These areas are proposed as ACECs because they contain populations of white-tailed prairie dogs and/or habitat.

Plague has resulted in adverse impacts to white-tailed prairie dog in Utah. Designation of the Coyote Basin ACEC or Coyote Basin Complex ACEC would not prevent the continued adverse impacts from the plague. However, it would provide positive benefits in the form of preservation of essential habitat for remaining prairie dog populations in the planning area. Alternatives C and E would provide the greatest amount of habitat and, therefore, the greatest potential benefit to prairie dog. Alternative A would provide the next greatest benefit, followed by Alternative B. Alternative D – No Action does not designate either ACEC, thereby offering no additional benefits for protection of the white-tailed prairie dog or black-footed ferret.

Each of the areas under Alternatives A, B, C, and E would be designated as a Research Natural Area, which would provide additional opportunities for research to identify the potential vectors for transmission of plague. This, in turn, could provide some long-term benefit in the treatment of this disease. However, designation of these ACECs does not guarantee the continued population viability of the white-tailed prairie dog in view of the potential mortality from continued spreads of the plague.

1. There are two different polygons under the title Coyote Basin ACEC. One is proposed in Alternative A and comprises 84,743 acres. The second is proposed in Alternative B and comprises 47,659 acres. In addition, there is a Coyote Basin sub-complex called Coyote Basin under Alternatives C and E, and it comprises 26,590 acres. They are all somewhat inclusive of one another in regards to geographic location. Refer to Figures 22-24.

Designation of the Coyote Basin ACEC or the Coyote Basin Complex also impacts other resources found within the ACECs. These ACECs would provide essential habitat for the potential reintroduction of black-footed ferret. The white-tailed prairie dog provides forage for the black-footed ferret and is considered necessary for its successful recovery in the project area. Accordingly, Alternatives C and E would provide the greatest potential positive benefit to the black-footed ferret, followed by Alternatives A and B, respectively. Under Alternatives A, B, C, and E, habitat in the ACEC would also be managed to protect critical habitat for other wildlife species that use the Coyote Basin ACEC. These species include the pronghorn, as well as sensitive species such as bobolink, ferruginous hawk, peregrine falcon, sage grouse, long-billed curlew, grasshopper sparrow, short-eared owl, big free-tailed bat, black-footed ferret, ringtail cat, and dwarf shrew. Accordingly, Alternatives C and E would have the greatest potential benefits to these species, followed by Alternatives A and B respectively.

No non-WSA lands with wilderness characteristics are located in the proposed ACEC, under any alternative.

Under Alternatives C and E, the area would be subject to standard lease terms and would be managed with timing and controlled surface use or NSO for oil and gas leasing. Alternatives A and B would be subject to standard lease terms and timing and controlled surface use. OHV use would be limited to designated routes or closed under all alternatives. These stipulations, combined with the size of the proposed Coyote Basin ACEC or Coyote Basin Complex ACEC, would cause the greatest restriction to oil and gas development and OHV use under Alternatives C and E, followed by Alternatives A and B. These surface management stipulations would also apply to the development of other solid mineral resources in the ACEC.

4.14.1.3.3 Four Mile Wash ACEC

NOTE TO READER: Section 4.14.1.3.3 has been replaced with the following to include a discussion of the effects of Alternative E.

Alternative C would designate 50,280 acres in the Four Mile Wash area as an ACEC/ Outstanding Natural Area to protect high-value scenery, riparian ecosystems, and special status fish species. Management actions include closing the area to oil and gas leasing. Visual resources would be managed as Class II, III, and IV. OHV use would be limited to designated routes. Alternatives A, B, and D – No Action would not designate Four Mile Wash as an ACEC. The management actions described under Alternative C would reduce potential short-term surface disturbance in the area, as well as prevent the installation of any additional long-term development structures. These actions would reduce visual impacts and improve the recreational experience in the area. Indirectly, they may result in reduced sedimentation impact and higher water quality, which, in turn, would have a positive impact on critical habitat for the four endangered fish located within this potential ACEC: Colorado pikeminnow (*Ptychocheilus lucius*), bonytail (*Gila elegans*), humpbacked chub (*Gila cypha*), and the razorback sucker (*Xyrauchen texanus*). Additionally, this decreased potential for development would result in benefits to terrestrial wildlife habitat in the area.

As does Alternative C, Alternative E would designate a 50,280-acre ACEC/ONA. However, under this alternative, the ACEC would be managed to preserve the wilderness characteristics on

43,013 acres of the Desolation Canyon non-WSA lands with wilderness characteristics that lie within the ACEC. Protection of wilderness characteristics would limit surface disturbance in the ACEC by closing the non-WSA lands with wilderness characteristics to OHV use and oil and gas leasing and by managing for little or no change to the landscape under VRM Class I objectives. Alternative E would limit surface disturbances, offering more protection to the relevant and important scenery, riparian ecosystem, and fisheries than offered by Alternative C. These limits on surface disturbance and motorized vehicle use would emphasize and benefit primitive and non-motorized recreation activities and experiences by preserving a natural setting and prohibiting motorized recreation that intrudes upon primitive activities.

Accordingly, Alternatives C and E would provide the greatest benefits to wildlife, visual resources, and recreation in the area. Alternatives A, B, and D – No Action would have the greatest adverse impacts to these resources but would also impose the fewest restrictions to oil and gas development.

4.14.1.3.4 Middle Green River ACEC

NOTE TO READER: Section 4.14.1.3.4 has been replaced with the following to include a discussion of the effects of Alternative E.

Under Alternatives C and E, 6,768 acres of the Middle Green River (line of sight from the centerline of the river up to one-half mile along both sides) between Dinosaur National Monument and the boundary of the Ouray National Wildlife Refuge would be designated as an ACEC to protect riparian ecosystems. Special management attention would include permitting only those surface-disturbing activities that are found to be complementary to the goals and objectives of the ACEC. The area would be open to oil and gas leasing subject to standard lease terms or managed with timing and controlled surface use. Visual resources would be managed as VRM Class II, III, or IV. OHV use would be limited to designated routes. Alternatives A, B, and D — No Action would not designate this area as an ACEC. Currently, this section of the river is used for recreation (hunting and fishing) as well as some OHV use. ACEC designations would result in protection of riparian resources. Impacts to riparian resources from Alternatives C and E would be positive in the form of reduced potential disturbance to riparian resources with associated improvements in riparian wildlife habitat and water quality. This section of the Green River does provide habitat for the Colorado pikeminnow and razorback sucker. Accordingly, designation of this section as an ACEC would have positive impact on these species. However, the management actions associated with this ACEC would not extensively change the use of the area; therefore, these benefits are unlikely to be substantial in relation to the other existing threats to these species (e.g., exotic fish introductions and existing dams on the Green River). This section of the Green River is used for recreational boaters. Limiting development along this corridor to activities complementary to maintaining the riparian area would improve the recreational experience for these users.

4.14.1.3.5 Lower Green River Expansion ACEC

NOTE TO READER: Section 4.14.1.3.5 has been replaced with the following to include a discussion of the effects of Alternative E.

Alternatives A and C would designate 10,170 acres of the Lower Green River between the Ouray National Wildlife Refuge and the Carbon County line as an ACEC. This is an expansion of the existing Lower Green River ACEC as described in Alternative D – No Action. The 1,700-acre increase adds the eastern portion of the river (line of sight from the center line of the river up to one-half mile). The impacts of ACEC management on other resource values and uses under Alternative C would be similar to those under Alternative D – No Action, affecting a larger area.

Alternative D – No Action would designate 8,470 acres with protection extending only west from the centerline of the river. Oil and gas leases would be issued with an NSO stipulation. Visual resources would be managed as Class II. OHV would be limited to designated routes. These restrictions would limit surface disturbance and protect both riparian and upland habitat along the corridor. This would have positive impacts on resident and migrating birds and other wildlife. It would also help protect critical habitat for such sensitive species as the American white pelican, bald eagle, long-billed curlew, black tern, mountain plover, Caspian tern, common yellow throat, ferruginous hawk, osprey, peregrine falcon, grasshopper sparrow, Lewis' woodpecker, short-eared owl, black-footed ferret, Townsend's big-eared bat, Utah milk snake, Colorado pikeminnow, razorback sucker, roundtail chub, and the Uinta Basin hookless cactus. The river corridor is a prime location for prehistoric and historical cultural sites as well. Therefore, this alternative would result in reduced potential impacts to these resources and enhance recreational opportunities.

Alternative D – No Action would have benefits similar to those described above for Alternative C but to a lesser degree because fewer acres would be designated for protection and because this alternative would have fewer restrictions on oil and gas development within the ACEC.

Alternative E would have the same impacts of ACEC designation and management as Alternative C, except that under Alternative E a portion of the ACEC would be managed to preserve the wilderness characteristics on 5,329 acres of the Desolation Canyon non-WSA lands with wilderness characteristics that lie within the ACEC. Protection of wilderness characteristics would limit surface disturbance in a portion of the ACEC by closing the area to OHV use and to oil and gas leasing and by managing the landscape under VRM Class I objectives. This alternative would limit surface disturbances, offering protection to the relevant and important scenery and riparian ecosystem.

4.14.1.3.6 White River ACEC

NOTE TO READER: Section 4.14.1.3.6 has been replaced with the following to include a discussion of the effects of Alternative E.

Under Alternative A, 17,810 acres along the White River corridor would be designated as an ACEC to protect unique geologic formations with spectacular vistas and high-value riparian ecosystems. The western portion would be managed as VRM I and closed to oil and gas leasing

or NSO, and would be closed to OHV use. The eastern portion would be managed as VRM II, and OHV use would be limited to designated routes. Leasing would be NSO within line of sight from the centerline, up to one-half mile either side of the river. Areas beyond the one-half-mile buffer would be open to oil and gas leasing subject to standard lease terms or managed with timing and controlled surface use. These management actions would serve to protect such resources as Goblin City, as well as to reduce potential impacts to other fragile geological formations. They would also reduce potential disturbance to riparian habitat and surrounding upland habitat. This would preserve riparian vegetation, maintain wildlife habitat in the riparian areas and surrounding uplands, and improve the recreational experience for boaters using the White River.

Under Alternatives C and E, these benefits would be increased due to the ACEC designation of 47,130 acres along the White River corridor to protect unique geologic formations with spectacular vistas and high-value river riparian ecosystems. The area would be managed as VRM Class I, II, III, or IV and would be closed or limited to designated routes for OHV use to meet the management objectives of the larger ACEC. NSO would be within line of sight from the centerline, up to one-half mile either side of the river. Areas beyond the one-half-mile buffer would be open to oil and gas leasing subject to standard lease terms, managed with timing and controlled surface use, or closed to oil and gas leasing. This increased acreage would result in an associated increase in the potential benefits to geological formations, riparian and upland habitat, and the recreational experience. A portion of the ACEC (21,167 acres) would include the White River non-WSA lands with wilderness characteristics and would be managed to preserve those characteristics under this alternative. Protection of wilderness characteristics would limit surface disturbance by closing the area to OHV use and oil and gas leasing and by managing the landscape for little or no change according to VRM Class I objectives. Protection of wilderness characteristics in part of the proposed ACEC would offer further protection to the relevant and important geology, scenery, and riparian values.

The White River provides critical habitat for the endangered Colorado pikeminnow, as well as habitat for other threatened, endangered, and sensitive species, including the razorback sucker, flannel mouth sucker, roundtail chub, yellow-billed cuckoo, peregrine falcon, and bald eagle. Alternatives A, C, and E would result in positive impacts to these species through the preservation of riparian habitat and the associated improvements to water quality. These alternatives, in particular, are very restrictive to OHV use with the western portion of the ACEC completely closed to OHVs. This would also have additional benefits for the species.

Neither Alternative B nor D – No Action would designate the White River corridor as an ACEC. Accordingly, they would result in greater adverse impacts to the previously described resources along the corridor. However, they would also have fewer restrictions to oil and gas development and OHV use.

4.14.1.3.7 Nine Mile Canyon Expansion ACEC

NOTE TO READER: Section 4.14.1.3.7 has been replaced with the following to include a discussion of the effects of Alternative E.

Alternatives A and C would designate 48,000 acres and 81,168 acres, respectively, in Nine Mile Canyon as an ACEC. These areas are both expansions of the current 44,181-acre Nine Mile Canyon ACEC. Each alternative would require the development and implementation of a comprehensive integrated activity plan. The area would be open subject to standard lease terms or managed as NSO for oil and gas leasing. Visual resources would be managed as Class II, III, or IV to meet different management objectives in different parts of the larger ACEC. OHV use would be limited to designated routes. Alternatives B and D – No Action would carry forward the current Nine Mile Canyon ACEC. All of these alternatives would provide protection to existing cultural resources in Nine Mile Canyon, including nationally significant Fremont, Ute, and Archaic rock art and structures. Additionally, this ACEC would protect wildlife habitat, vegetation (including special status species), and visual resources. Because of its high visitation, these changes would also have a benefit on recreational opportunities in the ACEC.

Alternative E would have the same impacts as those described for Alternative C except that 20,963 acres of the Desolation Canyon non-WSA lands with wilderness characteristics located in the ACEC would be manage to preserve the area's wilderness values. In the non-WSA lands with wilderness characteristics, the area would be closed to oil and gas leasing, OHV use, and ROWs. The landscape would be managed for little to no change according to VRM Class I objectives. This prescription for the non-WSA lands with wilderness characteristics is more restrictive than the prescription for the remainder of the ACEC and would allow little surface disturbance or intrusion by motorized vehicles. These limitations would protect cultural resources in place, preserve the natural landscapes (scenery), protect sensitive plants, and limit disturbance to wildlife utilizing the area, all relevant and important ACEC values.

Based on the acres that would be designated and the management prescriptions, Alternatives E and C would have the greatest benefit to relevant and important ACEC values, followed by Alternatives A, B and D – No Action, respectively.

4.14.1.3.8 Main Canyon ACEC

NOTE TO READER: Section 4.14.1.3.8 has been replaced with the following to include a discussion of the effects of Alternative E.

Alternative C would designate 100,915 acres in Main Canyon as an ACEC to protect relevant and important cultural and historic resources and natural systems. Special management attention would include permitting surface-disturbing activities found to be complementary or compatible with the goals and objectives of the ACEC. The area would be closed or managed with timing and controlled surface use for oil and gas leasing. Visual resources would be managed as VRM Class I or II. OHV use would be closed or limited to designated routes. These management actions would protect numerous cultural sites, including sites associated with the historical Northern Ute migration route along Main Canyon. Management of the visual resources according to VRM Class I or II would preserve the visual aesthetics of the area and enhance the

recreational experience. However, closures to oil and gas development and OHVs would restrict the use of these resources in the area.

Alternative E would also designate a 100,915-acre ACEC with impacts similar to those described for Alternative C. However, under this alternative, the ACEC includes portions of the Wolf Point non-WSA lands with wilderness characteristics (11,802 acres within the ACEC), which would be managed to preserve its wilderness characteristics. To protect the wilderness characteristics of the non-WSA lands with wilderness characteristics, Wolf Point would be closed to OHV use, oil and gas leasing, and new ROWs. To preserve the natural character of the area, the landscape would be managed according to VRM Class I objectives. This prescription would limit or prohibit surface disturbance, protecting the relevant and important cultural, historic, and natural system values of the ACEC.

Alternatives A, B, and D – No Action would not designate the Main Canyon ACEC and, consequently, would have potential negative impacts to cultural and visual resources and potential benefits to oil and gas development and OHV recreation.

4.14.1.3.9 Browns Park ACEC

NOTE TO READER: Section 4.14.1.3.9 has been replaced with the following to include a discussion of the effects of Alternative E.

Alternatives A and C would designate 52,721 acres in Browns Park as an ACEC. Under these alternatives, the BLM would develop a comprehensive integrated activity plan that would address protection of high-value scenery, wildlife habitat, and cultural and historic resources. The area would be closed to oil and gas leasing or leased with NSO or timing and controlled surface use stipulations. Visual resources would be managed as according to VRM Class I or II objectives. OHV use would be closed or limited to designated routes. This would preserve existing wildlife habitat and cultural resources. It would also afford protection to visual resources and would consequently improve the recreational experience in the area. Closing the area to OHV use or restricting OHV use to existing routes would decrease disturbance but would also decrease the motorized recreational opportunities in the area.

Under Alternative B, 18,474 acres would be designated as an ACEC. The area would be open to oil and gas leasing subject to standard lease terms, timing and controlled surface use, or NSO; or it might be closed to leasing. Visual resources would be managed according to VRM Class I, II, III, or IV objectives to meet differing landscape objectives in the ACEC. OHV use would be closed or limited to designated routes.

Because the ACEC would be larger and would have greater restrictions on minerals development and landscape modification under Alternatives A and C, there would be greater benefit to wildlife habitat, cultural resources, and recreation, in comparison with the benefits under Alternative B.

Under Alternative D – No Action, 52,721 acres of Browns Park would continue to be managed as an ACEC. However, the area would have less restriction on oil and gas development,

including portions that would be open to leasing, subject to standard lease terms. VRM requirements would not be as stringent as under other alternatives and would be managed as VRM Class III or IV. OHV use would be open, closed, or limited to designated routes. Accordingly, this alternative would provide less protection to wildlife habitat, cultural resources, and visual resources than would Alternatives A and C, but more than would Alternative B, due to the increased acreage.

Alternative E would also designate a 52,721-acre ACEC, to protect the relevant and important scenic, wildlife habitat, cultural resource, and historic resource values. The impacts of ACEC designation and management would be similar to those described under Alternative C. However, portions of Lower Flaming Gorge (11,274 acres), Dead Horse Pass (1,665 acres), Cold Spring Mountain (8,649 acres), and Mountain Home (2,089 acres) non-WSA lands with wilderness characteristics are located in the ACEC, and under Alternative E, they would be managed to protect their wilderness characteristics. To protect their wilderness characteristics, these non-WSA lands with wilderness characteristics would be closed to OHV use, oil and gas leasing, mineral material sales, ROWs, wood cutting, and road construction. The landscape would be managed according to VRM Class I objectives to preserve its character. This prescription would limit activities that disturb the landform and vegetation, protecting scenery, wildlife habitat, and cultural and historic resources.

4.14.2 Wild and Scenic Rivers

4.14.2.1 Impacts Common to All Alternatives

NOTE TO READER: A new column has been added to Table 4.14.2 to disclose the effects of Alternative E.

TABLE 4.14.2. RIVER SEGMENTS THAT WOULD BE DETERMINED SUITABLE AND TOTAL RIVER MILES BY ALTERNATIVE

River / River Segment	Alternative E (river miles)
White River 'Scenic' between the state line and its confluence with Asphalt Wash (Segment 1)	24
White River 'Wild' between Asphalt Wash to where the river leaves Section 18, T10S R23E SLBM (Segment 2)	10
White River 'Scenic' from where the river leaves Section 18 T10S R23E SLBM, and the Indian Trust Land boundary (Segment 3)	10
Nine Mile Creek 'Scenic' within Duchesne County between the Green River and the Duchesne County Line (Segment A)	13
Nine Mile Creek 'Recreational' within Duchesne County, between the Carbon county line and its confluence with Gate Canyon (Segment B)	6
Upper Green River	22
Lower Green River	30
Middle Green River	36
Evacuation Creek	21

TABLE 4.14.2. RIVER SEGMENTS THAT WOULD BE DETERMINED SUITABLE AND TOTAL RIVER MILES BY ALTERNATIVE	
River / River Segment	**Alternative E (river miles)**
Bitter Creek	22
Argyle Creek	22
Total River Miles	**216**
Total BLM Shoreline Miles	**112**
Note: Mileage is approximate.	

4.14.2.2 Alternative Impacts

NOTE TO READER: A new Section 4.14.2.2.5 has been added to disclose the effects of Alternative E.

4.14.2.2.5 Alternative E

4.14.2.2.5.1 Wild and Scenic Rivers

As in Alternative C, 216 river miles (112 miles of BLM shoreline) involving all 11 eligible river segments would be determined suitable for designation into the Wild and Scenic River System (Table 4.14.2 above). The effects of these suitability determinations would be similar to those described under Alternative C (see Section 4.14.2.2.3 of the DRMP/DEIS). However, under this alternative, non-WSA lands with wilderness characteristics in the river corridors would be managed to protect those characteristics, and, where suitable wild and scenic river segments include portions of non-WSA lands with wilderness characteristics, additional protections would result from the protective management prescriptions. Portions of the White River non-WSA lands with wilderness characteristics are located in the suitable White River Wild and Scenic River corridor. Portions of Desolation Canyon non-WSA lands with wilderness characteristics are in the Nine Mile Creek suitable river corridor. Parts of the Bitter Creek, Rat Hole Ridge, Cripple Cowboy, and Hell's Hole Canyon non-WSA lands with wilderness characteristics are located in the Bitter Creek river corridor. Parts of Lower Flaming Gorge non-WSA lands with wilderness characteristics are in the Upper Green River wild and scenic river corridor, and portions of Desolation Canyon non-WSA lands with wilderness characteristics are located in the Lower Green River corridor.

To protect their wilderness characteristics, the non-WSA lands with wilderness characteristics would be closed to OHV use, oil and gas leasing, mineral material sales, ROWs, wood cutting, and road construction. VRM Class I objectives would protect the characteristics from change in each of the non-WSA lands with wilderness characteristics. For those portions of the non-WSA lands with wilderness characteristics located in suitable Wild and Scenic River corridors, this prescription would prevent surface disturbances that would have adverse impacts on the outstanding natural, scenic, recreational, fish and wildlife, and cultural values; tentative classification; and free-flowing nature of these rivers.

4.14.3 Wilderness Study Areas (WSAs)

NOTE TO READER: The original title of Section 4.14.3, Wilderness, has been changed to "4.14.3 Wilderness Study Areas (WSAs)."

NOTE TO READER: Table 4.14.3 in the original DRMP/DEIS has not been reproduced in this document. However, every reference to Alternatives A, B, C, and D now includes Alternative E.

NOTE TO READER: Table 4.14.4 and Table 4.14.5 have been deleted. See Section 4.21 of this document for a discussion of impacts to Non-WSA Lands with Wilderness Characteristics.

4.15 SPECIAL STATUS SPECIES

Please refer to Section 4.15 of the DRMP/DEIS with the following changes.

4.15.2 Alternative Impacts

4.15.2.1 Impacts of Fire Management Decisions on Special Status Species

NOTE TO READER: Section 4.15.2.1.1 has been replaced with the following to include a discussion of the effects of Alternative E.

4.15.2.1.1 Alternatives A, B, C, and E

Fire Management decisions under Alternatives A, B, C, and E would have direct beneficial and adverse effects on special status species as described under Impacts Common to All Alternatives, although the impacts would generally be positive for species status over the long term. The greatest beneficial impact of prescribed fire on 156,425 acres per decade would be to restore habitat for the Mexican spotted owl and, over the long term, to reduce the potential for catastrophic wildland fires in other sensitive species habitats. Adverse impacts would include mortality and short-term loss of habitat. These four action alternatives would provide for prescribed burning on 104,525 more acres per decade than would Alternative D – No Action. As a result, the action alternatives would provide substantially more long-term beneficial impacts to special status wildlife species than would Alternative D – No Action due to a greater acreage of prescribed fire under all action alternatives.

4.15.2.2 Impacts of Forage Allocation and Livestock Grazing Decisions on Special Status Species

NOTE TO READER: A new Section 4.15.2.2.5 has been added to disclose the effects of Alternative E.

4.15.2.2.5 Alternative E

Under Alternative E, up to 50% of upland forage would be utilized by livestock, wild horses, and big-game species. The total number of AUMs (including livestock, wild horses and big game)

would be 187,450, a total of 58,678 (approximately 24%) less than under Alternative D – No Action. The riparian zone would be managed as described for Alternative A: stubble height would be initially identified as 4 inches, with 30% utilization of key herbaceous riparian species unless bank stabilization goals were not met. In that case, minimum stubble height would be increased to six inches with a maximum of 20% utilization of key herbaceous riparian species.

Although grazing is a threat to all listed and most sensitive species, the 24% reduction in AUMs would provide a substantial benefit to all species and would particularly reduce the risk of grazing impacts to the Book Cliffs soil endemics as compared to Alternative D – No Action.

4.15.2.3 Impacts of Mineral Development Decisions on Special Status Species

NOTE TO READER: A new column has been added in Table 4.15.2 to include information under Alternative E.

TABLE 4.15.2. DIFFERENCES IN ACREAGES AVAILABLE FOR MINERAL AND ENERGY DEVELOPMENT UNDER EACH ACTION ALTERNATIVE AS COMPARED TO ALTERNATIVE D – NO ACTION

Activity	Alternative E
Oil, Gas, and Coal Bed Methane	-36,569 (-2%)
Open minerals	-43,018 (-11%)

NOTE TO READER: A new Section 4.15.2.3.5 has been added to disclose the effects of Alternative E.

4.15.2.3.5 Alternative E

4.15.2.3.5.1 Special Status Plant Species

Under Alternative E, there would be a 2% decrease in the area open for oil and gas leasing and an 11% decrease in the area open for mineral development when compared to Alternative D – No Action. The number of acres open to oil and gas leasing on BLM-administered lands within the VPA would be 1,499,461, and acres open to mineral materials would be 344,682. Under Alternative E, 418,869 acres of desert shrub, 371,960 acres of sagebrush, and 327,451 acres of pinyon-juniper would be subject to surface disturbance from oil, gas, and coal bed methane development. Alternative E proposes 0.4% less disturbance to desert shrub, 11% less to sagebrush, and 17% less to pinyon-juniper than does Alternative D – No Action. Impacts of mineral and energy development under Alternative E are generally similar to those described for Alternative D – No Action; however, there are slight decreases in acreage available for mineral and energy development. The overall effect of Alternative E would be to slightly reduce the risk to endemics.

4.15.2.3.5.2 Special Status Animal Species

Alternative E would decrease the proportion of greater sage grouse winter and brooding habitat that is open to oil and gas development by approximately 22% when compared to Alternative D – No Action. This alternative would also increase the proportion of greater sage grouse winter and brooding habitat subject to special stipulations by approximately 19% when compared to Alternative D – No Action. This would have a beneficial impact when compared to Alternative D – No Action.

Alternative E would increase the proportion of white-tailed prairie dog habitat open to oil and gas development by approximately 38% when compared to Alternative D – No Action. This alternative would also decrease the proportion of white-tailed prairie dog habitat subject to special stipulations by approximately 52% when compared to Alternative D – No Action. This would result in impacts similar to the other action alternatives.

Alternative E would decrease the proportion of Mexican spotted owl canyon and forest habitat open to oil and gas development by approximately 36% and 31%, respectively, when compared to Alternative D – No Action. This alternative would also increase the proportion of Mexican spotted owl canyon and forest habitat subject to special stipulations by approximately 11% when compared to Alternative D – No Action (see Tables 17 and 18 in Appendix I - Wildlife). The combination of a 36% decrease in oil and gas development within the Mexican spotted owl canyon habitat and a 106% increase in protective measures within canyons providing substantial suitable habitat potentially necessary for the species' recovery would provide a substantial beneficial impact when compared to Alternative D – No Action.

4.15.2.3.5.3 Bonytail, Colorado Pikeminnow, Humpback Chub, Razorback Sucker, and Colorado River Cutthroat Trout

The minerals development proposed under Alternative E would have long-term and short-term, direct and indirect, adverse impacts on bonytail, Colorado pikeminnow, humpback chub, razorback sucker, and Colorado River cutthroat trout. The Soils and Water Quality Section (Section 4.13.2.4) concludes that although stipulations would mitigate the negative impacts of minerals development on water quality, the mineral development outlined for each alternative would result in indirect, long-term, adverse impacts to water quality through soil erosion, sedimentation, and the potential for petroleum discharges into surface water and would therefore adversely impact these fisheries. It is also currently unknown how minerals development would increase surface disturbances in selenium- and boron-rich soils, which could indirectly increase these contaminants in waters supporting these fisheries.

The greatest impact to the Colorado River fishes would be that most of the new energy and mineral development would occur in the southern part of the VPA, in the proximity of the Green and White Rivers or their tributaries. Oil and gas development would change clean water discharge patterns into the rivers. Any new depletion from the Green River, particularly in a critical habitat reach would constitute a substantial impact. Compared to Alternative D – No Action, Alternative E would have 184 more acres of riparian vegetation subject to minerals leasing standard stipulations (877 acres) and considerably fewer acres subject to timing and controlled surface use (66 acres) and NSO (1,356 acres) for 66% and 62% less, respectively.

However, Alternative E would close 1,749 acres of riparian vegetation to minerals leasing, whereas Alternative D – No Action would close 0 acres. Overall, there would be 2,168 fewer leasable acres of riparian vegetation (a 49% reduction) under Alternative E, and correspondingly fewer adverse impacts to special status species when compared to Alternative D – No Action.

4.15.2.4 Impacts of Rangeland Improvement Decisions on Special Status Species

NOTE TO READER: A new column has been added in Table 4.15.3 to include information under Alternative E.

TABLE 4.15.3 RANGELAND IMPROVEMENTS BY ALTERNATIVE

Alternative	E
Vegetation Treatment (acres)	45,860
Fencing (miles)	129.0
Guzzlers/reservoirs	811
Wells/springs	87
Water pipeline (miles)	29.5

NOTE TO READER: A new Section 4.15.2.4.5 has been added to disclose the effects of Alternative E.

4.15.2.4.5 Alternative E

The exact locations of the rangeland treatments are presently unknown. Therefore, the discussion below focuses only on how rangeland improvement decisions would affect special status plants as compared to Alternative D – No Action. General impacts associated with Alternative E would be the same as described in the Impacts Common to All Alternatives (Section 4.15.1 of the DEIS). Such impacts would be either beneficial or adverse, depending on whether the improvements made for livestock grazing resulted in moving livestock out of special status species habitat or concentrating them in new habitats. Alternative E proposes more vegetation treatments and rangeland improvements than does Alternatives A and D – No Action but fewer than does Alternative B (see Table 4.15.3 of the DRMP/DEIS). The increase in surface disturbance caused by vegetation treatments, when compared to Alternatives A and D – No Action, would produce more adverse impacts on special status plant habitat.

4.15.2.5 Impacts of Recreation and Travel Decisions on Special Status Species

NOTE TO READER: Section 4.15.2.5.1 has been replaced with the following to include a discussion of the effects of Alternative E.

4.15.2.5.1 Alternatives A, B, C, and E

The designation of White River, Blue Mountain, Fantasy Canyon, Browns Park, and Nine Mile Canyon as SRMAs would have both beneficial and adverse impacts on special status species. Beneficial impacts would include long-term protection of portions of the SRMAs from some

surface-disturbing activities such as minerals development, which would preserve special status species habitats in these areas. Adverse impacts include surface disturbance associated with visitor use, such as trampling, noise, and increased traffic in these areas. Because increased visitor use is projected under these alternatives, some adverse impacts on special status species found within the SRMAs would occur with additional recreational activities. In addition, large portions of these SRMAs and areas associated with motorized routes and trails would be open for oil and gas development. Seep Ridge, Book Cliff Divide, and Atchee Ridge Roads would not be designated as a Back Country Byways, which would likely reduce impacts associated with increased travel along designated byways. Both long-term beneficial and adverse impacts on special status species in these areas would be much the same among the four action alternatives and similar to those described in Impacts Common to All Alternatives.

The main difference between the four action alternatives and Alternative D – No Action is in the amount of land available for Open and Limited OHV use. Total acreages available for OHV open use under Alternatives A, B, C, and E are similar, ranging from 6,202 acres under Alternative A to 5,434 acres under Alternatives B, C, and E. In comparison, Alternative D – No Action would allow 787,859 acres to be open to unrestricted OHV use. Under Alternatives A, B, C, and E, the number of acres designated as the more restrictive "Limited" category of OHV use is roughly similar, ranging from 1,659,901 acres for Alternative B to 1,326,024 acres for Alternative E. In comparison, Alternative D – No Action would designate 887,275 acres as Limited OHV use. Generally adverse OHV effects, such as trampling of either occupied or potential habitat and special status species habitat, noise, habitat fragmentation, and increased wind erosion in sensitive habitats would still occur, but the risks of these impacts on special status species would be substantially reduced under Alternatives A, B, C, and E, when compared to Alternative D – No Action.

Although recreational hunting is carefully managed by the UDWR, impacts to species such as the greater sage-grouse and the white-tailed prairie dog could be exacerbated by this activity.

4.15.2.6 Impacts of Special Status Species Decisions on Special Status Species

NOTE TO READER: A new Section 4.15.2.6.5 has been added to disclose the effects of Alternative E.

4.15.2.6.5 Alternative E

Alternative E would implement Connelly's *Guidelines to Manage Greater Sage Grouse Populations and Their Habitats*, which recommends no surface-disturbing activities within 2 miles of active leks from March 1 to June 15 and no surface-disturbing activities within 0.25 mile of active leks. Permanent facilities or structures would be avoided within 2 miles of active leks. Any exceptions would be considered and granted via site-specific NEPA analysis. As in Alternative A, Alternative E would require the installation of multicylinder pumps, hospital-type sound-reducing mufflers, and placement of exhaust systems on oil and gas machinery (e.g., drill rigs and compressors) to reduce noise within 0.5 mile of known active leks. Alternative E would provide substantially greater benefits to the greater sage grouse than would Alternative D – No Action.

Alternative E would provide, maintain, and/or enhance habitat for the reintroduction of Colorado River cutthroat trout to Bitter Creek, Upper Willow Creek, Beaver Creek, Sears Creek, Crouse Creek, Tolivers Creek, Davenport Creek, Jackson Creek, Sweet Water Creek, and their tributaries. In comparison, Alternative D – No Action would provide and maintain suitable habitat for the reintroduction of Colorado River cutthroat trout to the same creeks mentioned above with the exception of Sweet Water, Argyle, Bitter, and Upper Willow Creeks. There would be no essential difference between this alternative and Alternative D – No Action, except in the number and location of creeks available for the reintroduction of Colorado River Cutthroat Trout.

4.15.2.7 Impacts of Soils and Watersheds Decisions on Special Status Species

NOTE TO READER: Section 4.15.2.7.1 has been replaced with the following to include a discussion of the effects of Alternative E.

4.15.2.7.1 Alternatives A, B, C, D – No Action, and E

Alternatives that incorporate decisions to protect water quality and reduce soil erosion would benefit special status plants and animals. Alternative A would provide beneficial protection for soils and watersheds by limiting surface disturbance on slopes greater than 40% and requiring an approved erosion control strategy and design for activities on slopes of 21–40%.

Alternative B would have beneficial impacts on special status species by limiting surface-disturbing activities on slopes greater than 20% by requiring an approved erosion-control strategy and design.

Alternatives C and E would provide beneficial protection by preventing disturbance to slopes above 40% and by requiring an approved erosion-control strategy and design for activities on slopes of 21–40%.

Alternative D – No Action restricts surface disturbance for mineral activities only on slopes greater than 40%.

Protection of water quality, reduction of sedimentation in streams, and limits on surface disturbance would be beneficial to special status species; therefore all of the action alternatives would provide more protection that Alternative D – No Action. Alternatives C and E would provide the most protection for water quality and surface disturbance and therefore provide the greatest amount of indirect protection for special status species.

4.15.2.9 Impacts of Woodlands and Forest Management Decisions on Special Status Species

NOTE TO READER: Section 4.15.2.9.1 has been replaced with the following to include a discussion of the effects of Alternative E.

4.15.2.9.1 Alternatives A, B, C, and E

Alternatives A, B, C, and E would allow public utilization of forest and woodland products as one tool for conducting vegetative treatments to achieve desired future conditions in forest and woodland habitats. Alternatives A and C would treat/harvest up to 552,663 acres of forest and woodland habitat. Alternative B would treat/harvest 554,108 acres of forest and woodland habitat.

Alternatives A, C, and E would manage forests and woodlands to maintain and restore ecosystems to a condition in which biodiversity is preserved and occurrences of fire, insects, disease, and other disturbances do not exceed levels normally expected in healthy forests and woodlands. These alternatives would maintain relict stands of vegetation for biological and genetic diversity. Forests and woodlands would be managed under the principles of multiple use and sustained yield without permanent impairment of the productivity of the land and the quality of the environment; this would allow use of forest and woodland products, biomass, and certain vegetation products in areas specified for this use to meet RMP goals (see Section 2.4.19.1). These alternatives would implement the National Healthy Forest Initiative and the National Fire Plan by conducting treatments to reduce fuel loadings, fire severity, and restoring historical disturbance regimes.

Alternatives A and B would initiate a proactive program of woodland management that would be implemented for the salvage of forest and woodland products that are dead and/or dying due to fire, disease, insect-kill, or other disturbance with the goal of promoting healthy forest and woodlands. Alternatives C and E would allow for the salvage of forest and woodland products within proposed ACECs (242,760 acres and 178,582 acres, respectively) only when there is a threat to these or other resources in the ACEC. Alternatives C and E would also allow for salvage of forest and woodland for other resources on up to 343,110 acres and 242,511 acres, respectively, outside of proposed ACECs. However, Alternative E would prohibit forest and woodland salvage on non-WSA lands with wilderness characteristics (277,596 acres), both within and outside of ACECs.

Alternative B would allow harvesting of forest and woodland stands that have reached culmination of mean annual increment (growth begins to decrease). Stands would thereafter be grown and thinned to approximately 80–90% of "normal (maximum) basal area" until the culmination of mean annual increment, at which time the stand(s) would be cut again.

Forest and woodland harvesting and treatments would be reduced by 13,232 acres (5%) under Alternative E (275,068 acres) when compared to Alternative D – No Action (288,300 acres). In addition, approximately 330,573 acres within WSAs and non-WSA lands with wilderness characteristics would not have vegetation removal. This reduction in harvesting and treatment levels and management of additional protected acres would reduce mortality from crushing and

trampling, habitat loss (including cover), and displacement of special status species that occupy forest habitats under Alternative E, as compared to Alternative D – No Action.

4.15.2.10 Impacts of Non-WSA Lands with Wilderness Characteristics Decisions on Special Status Species

NOTE TO READER: A new Section 4.15.2.10 has been added to disclose the effects of non-WSA lands with wilderness characteristics decisions on special status species.

Protecting wilderness characteristics in non-WSA lands with wilderness characteristics would provide direct and indirect beneficial impacts to special status species by precluding surface disturbance. Reducing surface disturbance limits erosion and decreases habitat fragmentation, noise, and traffic that can have adverse impacts on special status species. Alternative E, with 277,596 acres proposed for protection, is the only alternative under which management would specifically protect wilderness characteristics.

4.16 VEGETATION

Please refer to Section 4.16 of the DRMP/DEIS with the following changes.

4.16.2.1 Impacts of Fire Management Decisions on Vegetation Resources

NOTE TO READER: Section 4.16.2.1.1 has been replaced with the following to include a discussion of the effects of Alternative E.

4.16.2.1.1 Alternatives A, B, C, and E

All prescribed fire activities are preceded by a burn plan. Alternatives A, B, C, and E would allow for 156,425 acres of prescribed fire per decade in the VPA. Target vegetation communities include pinyon-juniper, oak, aspen, and conifer. Treatment in these areas through prescribed fire and other means of vegetation manipulation are likely in order to reduce the intensity and size of fires in the treated areas. Prescription fires would destroy plant material initially, resulting in an adverse, short-term impact on vegetation. There would be an increased risk of noxious weed and invasive species establishment on fire-exposed and disturbed ground surfaces. However, as vegetation recovers and plant communities begin to return to a natural fire regime, long-term, beneficial effects on the vegetation resource would occur, except where invasive annuals such as cheatgrass have invaded and become established. Plant communities could return to a more native mix of species. In some situations, seeding may be required in conjunction with prescribed fire to help prevent the establishment of non-native, invasive, and noxious species. The reduction in hazardous fuels from the use of prescribed fire would also benefit vegetation in the long term by reducing the risks of wildland fire. These beneficial impacts would be greater than those that would occur under Alternative D – No Action because the action alternatives would propose more acreage for prescribed fire treatments than would Alternative D – No Action.

4.16.2.2 Impacts of Forage Decisions on Vegetation Resources

NOTE TO READER: Section 4.16.2.2.1 has been replaced with the following to include a discussion of the effects of Alternative E.

4.16.2.2.1 Alternative A, B, C, and E

Under Alternatives A, B, C, and E, season of use changes, proper forage utilization limits, and improved livestock management strategies would all lead to improved vegetation conditions, which would have beneficial impacts on vegetation within the VPA. Other areas already meeting standards would be maintained to ensure no other issues would be present and no other improvements would be needed.

Each alternative would allow for reductions in AUMs in the event that rangeland conditions are not being sustained or improved. This adaptive management strategy would generally benefit vegetation in the long-term by allowing it to recover from grazing pressure. Alternatives A, B, C, and E would reduce utilization only after all other viable management options were considered, such as season of use.

Alternatives A, B, C, and E would limit the percentage of forage utilization on uplands. No specific utilization targets have been set for Alternative D – No Action. Under Alternatives A, C, and E, utilization levels of 50% would be targeted to provide for plant health and adequate root growth. This level of utilization would be beneficial to vegetation because plant health would be maintained and adequate root growth would be allowed to occur. Utilization under these alternatives would be less than under Alternative B, which has a utilization target of 60% (Table 4.16.1). Proper utilization targets for livestock grazing are used to sustain healthy vegetation.

NOTE TO READER: A new row has been added to Table 4.16.1 to include information under Alternative E.

TABLE 4.16.1. FORAGE UTILIZATION AND AUM ALLOCATIONS BY ALTERNATIVE

		AUM Allocations		
Alternative	**Forage Utilization Limit (%)**	**Livestock**	**Wildlife**	**Wild Horses**
E	50	77,294	106,196	3,960

4.16.2.3 Impacts of Lands and Realty Decisions on Vegetation Resources

NOTE TO READER: Section 4.16.2.3.1 has been replaced with the following to include a discussion of the effects of Alternative E.

4.16.2.3.1 Alternative A, B, C, and E

Decisions regarding land acquisitions to improve access would potentially increase impacts to vegetation in some areas through increased visitation and trampling. Acquisitions also have the potential to reduce impacts if increased access allows for vegetation treatments and reduction of wildland fire. Alternatives A, C, and E could result in impacts to vegetation along the White River near the mouth of Cowboy Canyon if access was acquired, resulting in more adverse impacts than would occur under Alternative D – No Action. Adverse impacts from damage to vegetation and from the establishment of noxious weed invasions could occur through the subsequent increase in traffic through this area. This activity would not occur under Alternative B or under Alternative D – No Action.

Increased public use of land or access acquired in Bitter Creek and near the confluence of South and Sweet Water Canyons would occur under Alternatives A, B, C, and E, with potentially adverse impacts to vegetation in these areas. Increased availability of access to these areas would lead to increased visitation, and the associated surface disturbance and damage to vegetation. These activities are not specified under Alternative D – No Action, so the potential for adverse impacts from these management actions would be less than those under the action alternatives.

Under Alternative E, approximately 277,596 acres of non-WSA lands with wilderness characteristics would be managed as ROW exclusion areas. The management decisions for these areas, in order to protect their wilderness characteristics, would have long-term, beneficial impacts on vegetation resources because surface disturbance impacts would be restricted. Compared to Alternative D – No Action, this alternative would have more beneficial impacts on vegetation resources because more protection would be afforded vegetation, reducing the potential for invasive species establishment and maintaining vegetation communities.

4.16.2.4 Impacts of Livestock and Grazing Decisions on Vegetation Resources

NOTE TO READER: Section 4.16.2.4.3 has been replaced with the following to include a discussion of the effects of Alternative E.

4.16.2.4.3 Alternatives C and E

Under Alternatives C and E, forage use would be limited to the fall and winter, except in Areas 2 and 3, reducing the potentially adverse impacts that grazing could cause during crucial growth periods. This alternative would result in fewer adverse impacts to vegetation when compared to Alternative D – No Action because of the limitations in place to protect vegetation.

4.16.2.5 Impacts of Minerals Decisions on Vegetation Resources

NOTE TO READER: A new Section 4.16.2.5.5 and a new Table 4.16.5E have been added to this section to disclose the effects of Alternative E.

4.16.2.5.5 Alternative E

TABLE 4.16.5E. ALTERNATIVE E – ACREAGE OF EACH VEGETATION COVER TYPE BY MINERALS LEASING CATEGORY

Vegetation Type	Standard Stipulations	Timing and Controlled Surface Use	No Surface Occupancy	No Leasing
Aspen	124	0	0	14
Badland/rock outcrop	36,930	11,256	2,138	14,339
Conifer	31,088	22,458	408	50,614
Desert Shrub	333,716	85,154	14,816	23,542
Mountain Shrub	17,907	29,724	743	24,897
Pinyon-Juniper	141,392	186,059	10,945	142,919
Riparian	877	66	1,356	1,749
Sagebrush	225,022	146,938	15,523	100,492
Sand Bars	26	0	40	22
TOTAL[1]	**787,082**	**481,655**	**45,969**	**358,588**

[1]The differences in total BLM vegetation acreages for each leasing category and total BLM acreages for oil and gas leasing are accounted for by those areas lacking vegetation (e.g., rocky areas, urban/developed areas).

As shown in Table 4.16.5E, Alternative E would designate approximately 1,268,737 acres as Standard Stipulations or Timing and Controlled Surface Use, representing a 14% decrease as compared to Alternative D – No Action. Oil and gas development would impact 17,467 acres, 4,703 of which would be reclaimed within one year of completion of operations (as per stipulations in Minerals Potential Report). This represents a 4% increase in wells under Alternative E and, therefore, potential disturbances related to oil and gas production compared to Alternative D – No Action.

Approximately 404,557 acres of BLM lands available for leasing with a No Surface Occupancy stipulation and closed to leasing would not be affected by oil and gas development, representing a 215% increase in total acres that would not be impacted by oil and gas development compared to Alternative D – No Action. Thus, the potential for impacts to vegetation would be less under Alternative E when compared to Alternative D – No Action.

Under this alternative, 52,063 acres would be open for prospecting, leasing, and development of phosphate with standard and special stipulations within the phosphate occurrence areas. This represents a 38% decrease compared to Alternative D – No Action, resulting in a lower potential for adverse impacts to vegetation under Alternative E. Gilsonite prospecting, leasing, and development would potentially occur on 163 miles of Gilsonite veins and on all BLM lands

classified as open that contain additional veins. This equates to a 3% decrease in area available for Gilsonite activities within the VPA as compared to Alternative D. Thus, fewer adverse impacts to vegetation would be expected. Although the potential exists for hard rock mining, little mining is expected to occur during the life of the plan.

Mineral material disposal could occur on 344,682 acres, a decrease of 11% in potentially adverse impacts to vegetation when compared to Alternative D – No Action.

4.16.2.6 Impacts of Minerals Decisions by RFD Area

NOTE TO READER: A new column has been added to Table 4.16.6 to include information under Alternative E.

TABLE 4.16.6. SHORT- AND LONG-TERM MINERALS IMPACTS UNDER EACH ALTERNATIVE BY RFD AREA WITHIN BLM-ADMINISTERED LAND (ACRES)

RFD Area	Alternative E	
	Short	Long
East Tavaputs Plateau	474	1,245
West Tavaputs Plateau	253	657
Monument Butte-Red Wash	3,797	10,437
Altamont-Bluebell	121	262
Tabiona-Ashley Valley	38	112
Manila-Clay Basin	20	51
Subtotal	***4,703***	***12,765***
TOTAL	**17,469**	

Source: Vernal Draft EIS Calculations 10 August 2004.

NOTE TO READER: Section 4.16.2.6.1 has been replaced with the following to include a discussion of the effects of Alternative E.

4.16.2.6.1 Alternatives A, B, C, and E

Total short-term and long-term impacts from oil and gas surface disturbances to vegetation would be greater under all of the action alternatives when compared to Alternative D – No Action. Short-term impacts include the loss of vegetation associated with surface disturbance for well pads, access roads, and minerals infrastructure. These activities would increase the potential for invasion of undesirable plant species, including noxious weeds, and would cause a potentially irretrievable loss of vegetation productivity during the period of disturbance and re-growth. Long-term adverse impacts would include slow re-growth of vegetation, and the potential long-term, adverse introduction and establishment of undesirable plant species, particularly cheatgrass.

4.16.2.7 Impacts of Rangeland Improvements Decisions on Vegetation Resources

NOTE TO READER: A new row has been added to Table 4.16.7 to include information under Alternative E.

TABLE 4.16.7. COMPARISON OF RANGELAND IMPROVEMENTS BY ALTERNATIVE

Alternative	Treatment acres (+/- impacted compared to the No Action Alternative)	Fencing miles (acres disturbed)	Guzzlers/reservoirs (acres disturbed)	Pipeline miles
E	45,860 (+5,470)	129.0 (65)	811	29.5

NOTE TO READER: Section 4.16.2.7.3 has been replaced with the following to include a discussion of the effects of Alternative E.

4.16.2.7.3 Alternatives C and E

Management decisions for vegetation treatments, fencing, and guzzlers/reservoirs would be the same for Alternatives C and E and would result in greater short-term disturbance to vegetation as compared to Alternative D – No Action, whereas short-term disturbance associated with new pipelines would be slightly less.

4.16.2.8 Impacts of Recreation Decisions on Vegetation Resources

NOTE TO READER: A new Section 4.16.2.8.5 has been added to disclose the effects of Alternative E.

4.16.2.8.5 Alternative E

Alternative E would manage a portion of the White River as an SRMA (47,130 acres) with the western portion closed to surface-disturbing activities and OHV use. Management in the eastern portion would limit OHV use to designated routes and only allow surface-disturbing activities in designated areas. This would reduce the potential for adverse impacts to vegetation compared to Alternative D – No Action.

Alternative E would also designate 42,758 acres on Blue Mountain as an SRMA. Increased recreation visitation would result in the potential for long-term adverse impacts in the form of vegetation trampling and weed invasion.

Alternative E would manage 69 acres in Fantasy Canyon as an SRMA to promote hiking and tours. No impacts from recreation visitation on vegetation are anticipated, as little to no vegetation occurs in the SRMA.

Alternative E would also designate 273,486 acres in the Book Cliffs and 52,720 acres in Browns Park as SRMAs. The impacts would be similar to those under Alternative A, except in Wolf

Point and Bitter Creek drainages and at the head of Sweet Water Canyon, where oil and gas would be managed as No Leasing, providing greater protection to vegetation. Alternative E would result in more beneficial impacts and fewer adverse impacts to vegetation compared to Alternative D – No Action.

The Red Mountain-Dry Fork SRMA would maintain 24,285 acres under Alternative E. The emphasis on developing OHV and non-OHV trails in this SRMA would increase visitation in the larger-sized SRMA, resulting in more disturbance to vegetation in the form of trampling.

The size of the Nine Mile Canyon SRMA would nearly double under Alternative E (the same as Alternatives A and C). The beneficial impacts to vegetation from protection measures and the accompanying limitations on surface disturbance would be greater than those under Alternative D – No Action.

Alternative E would develop up to 400 miles of trails, disturbing/removing approximately 150 acres of vegetation. Short-term impacts would consist of vegetation loss, and noxious weeds would probably invade disturbed areas. This activity would adversely disturb approximately 130 more acres than would be disturbed under Alternative D – No Action.

Alternative E would eliminate OHV use off of designated routes for big game retrieval. This activity is unspecified in Alternative D – No Action. Therefore, Alternative E would result in fewer OHV-related adverse impacts to vegetation.

Alternative E would not allow new cabin construction in the Book Cliffs. Alternative D – No Action does not address the construction of new cabins. Therefore, no new vegetation disturbances would occur, and the impacts to vegetation would be the same as under Alternative D – No Action.

Under Alternative E, protecting non-WSA lands with wilderness characteristics within the proposed SRMAs would require managing some areas (approximately 157,231 acres) under VRM Class I objectives; closing these areas to cross-country OHV use; and managing for primitive, non-mechanized recreational opportunities in order to protect their wilderness values. This would have long-term, beneficial impact on vegetation by reducing the likelihood of recreation-related surface disturbances in the non-WSA lands with wilderness characteristics. Compared to Alternative D – No Action, this alternative would have more beneficial impacts on vegetation because more protection would be afforded the resource.

4.16.2.9 Impacts of Soils and Watershed Decisions on Vegetation Resources

NOTE TO READER: Section 4.16.2.9.1 has been replaced with the following to include a discussion of the effects of Alternative E.

4.16.2.9.1 Alternatives A, B, C, D – No Action, and E

Alternatives C and E would not allow any surface-disturbing activities on slopes greater than 40%, resulting in greater restriction than that offered by Alternatives A and B, which require erosion control strategies and design for slopes greater than 20%. Decisions to reduce soil

erosion would benefit vegetation by ensuring that adequate soil substrate exists for continued plant growth. Disturbance to vegetation under all alternatives would be less than that under Alternative D – No Action, which only precludes mineral development on slopes greater than 40%.

4.16.2.10 Impacts of Special Designations on Vegetation Resources

NOTE TO READER: Section 4.16.2.10.1 has been replaced with the following to include a discussion of the effects of Alternative E.

4.16.2.10.1 Alternatives A B, C, D - No Action, and E

Bitter Creek – Alternative A would designate 71,000 acres and Alternatives C and E would designate 147,425 acres as an ACEC, in part to protect old growth pinyon pine. This would have a greater beneficial impact on vegetation, as compared to Alternative D – No Action, which would not designate the area as an ACEC. Alternative B also would not designate the area as an ACEC.

Coyote Basin-Snake John Kennedy Wash – Alternative A would designate 87,743 acres and Alternatives C and E would designate 124,161 acres as an ACEC, primarily to protect wildlife. Direct beneficial effects to vegetation would occur through noxious weed control. Also, vegetation would indirectly benefit from the special management attention designed to protect wildlife habitat. The action alternatives would beneficially affect vegetation as compared to Alternative D – No Action, which would not designate the area as an ACEC.

Four Mile Wash – Alternatives C and E would designate 50,280 acres as an ACEC, which would benefit the vegetation in the area as compared to no ACEC designation under Alternative D – No Action. Under Alternatives C and E, OHV use would be limited to designated routes, reducing vegetation disturbance.

Lower Green River – Designating the Lower Green River corridor as an ACEC under Alternatives A, C, and E (10,170 acres) would have more beneficial impacts on riparian vegetation because of reduced surface disturbance, compared to Alternative D – No Action, which would maintain the designated 8,470 acres along the river as an ACEC. Alternative B would not designate the Lower Green River as an ACEC, therefore having no beneficial impacts to vegetation. Alternatives C and E would designate the Middle Green River as an ACEC (6,768 acres) resulting in more beneficial impacts on vegetation than would result under Alternative D – No Action.

White River Corridor – Alternative A would designate 17,810 acres and Alternatives C and E would designate 47,130 acres along the White River as an ACEC, which would reduce surface-disturbing activities and have more beneficial impacts to vegetation as compared to Alternative D – No Action. Alternatives B and D – No Action would not designate the area an ACEC, so there would be no beneficial protection-related impacts in this area.

Nine Mile Canyon – Alternative A would designate 48,000 acres and Alternatives C and E 81,169 acres as an ACEC, which would have greater protection-related beneficial impacts on

vegetation when compared to Alternative D – No Action (44,181 acres designated). Surface-disturbing activities would be reduced and special status plant species would be protected to a greater degree under Alternatives A, C, and E. Alternative B (44,181 acres) would have the same level of beneficial protection-related impacts as would Alternative D – No Action.

Main Canyon – Alternatives C and E would designate 100,915 acres in this area as an ACEC, with beneficial impacts on vegetation by reducing surface-disturbing activities, when compared to Alternative D – No Action. Alternatives A and B would have the same impacts as Alternative D – No Action, which would provide no ACEC protection to vegetation in this area.

In addition, Alternative E would manage the non-WSA lands with wilderness characteristics for the protection of their wilderness characteristics. Under this alternative, approximately 197,170 acres within the proposed ACECs would be managed under VRM Class I objectives and would be closed to mineral leasing and mineral materials disposal; excluded from ROW consideration; closed to commercial and private woodcutting; and closed to OHV travel. These management decisions would have long-term, beneficial impacts on vegetation by either reducing or prohibiting surface disturbances within the non-WSA lands with wilderness characteristics, indirectly reducing the likelihood for noxious or invasive species establishment, reducing potential soil disturbances that could affect plant communities, and maintaining the vegetation productivity within the protected areas. This alternative would have more beneficial impacts on vegetation resources than would Alternative D – No Action because it would manage the resource in a more protective fashion.

4.16.2.11 Impacts of Wild and Scenic Rivers Decisions on Vegetation Resources

NOTE TO READER: Section 4.16.2.11.3 has been replaced with the following to include a discussion of the effects of Alternative E.

4.16.2.11.3 Alternatives C and E

Long-term beneficial impacts to riparian vegetation would be greatest under Alternatives C and E when compared to Alternative D – No Action. These alternatives would identify segments along the White River, Nine Mile Creek, Middle Green River, Evacuation Creek, Bitter Creek, Upper Green River, Lower Green River, and Argyle Creek as suitable for designation into the Wild and Scenic River System. The protective management of wild and scenic river designation would have greater beneficial impacts on riparian vegetation than would be provided by any of the other alternatives.

4.16.2.12 Impacts of Travel Decisions on Vegetation Resources

NOTE TO READER: Section 4.16.2.12.1 has been replaced with the following to include a discussion of the effects of Alternative E.

4.16.2.12.1 Alternatives A B, C, and E

Alternatives A, C, and E would rehabilitate roads and trails and return habitat to its original condition when the routes no longer serve their permitted purpose, allowing for vegetation

growth and reducing the potential for indirect adverse effects associated with access. Long-term benefits to vegetation would include increases in diverse vegetation communities and a reduction in disturbed areas suitable for noxious weed invasion. Alternatives A, C, and E would have more beneficial impacts as compared to Alternative D – No Action, because road and trail maintenance (except for OHV trails) and removal are unspecified under Alternative D – No Action.

Alternative B would not rehabilitate roads. Potential impacts associated with open roads under Alternative B would be the same as under Alternative D – No Action, which does not specify for road rehabilitation.

Alternatives A, B, C, and E would repair, maintain, or upgrade existing trails and roads that are in poor condition. This would benefit vegetation by reducing the chance of noxious weed invasions, as compared to Alternative D – No Action, which does not specify road and trail improvements.

Alternatives A, B, C, and E would include less area open to OHV travel as compared to Alternative D – No Action. Thus, the impacts to vegetation overall would be less (Alternative A - 6,202 acres open; B, C, and E - 5,434 acres open; compared to 787,859 acres open under Alternative D). Impacts associated with OHV travel include damage to and loss of vegetation and the spread of noxious weeds.

The number of acres that would be closed to OHV travel varies under each action alternative, but would be more than what would occur under Alternative D – No Action, which would maintain as closed 50,388 acres. Thus, adverse impacts to vegetation would be less under the action alternatives than under Alternative D – No Action. Alternatives C and E would close the greatest number of acres to OHV use (366,559 acres and 392,818 acres, respectively); Alternative A would close 75,845 acres; and Alternative B would close 60,187 acres.

In addition, under Alternative E, approximately 228 miles of travel routes would be closed to motorized use in order to protect wilderness characteristics within non-WSA lands with wilderness characteristics. The impacts of these travel route closures on vegetation would be negligible, as there would be no reduction of or additional surface disturbances to vegetation resources along these previously disturbed routes.

4.16.2.13 Impacts of Visual Resources Decisions on Vegetation Resources

NOTE TO READER: A new Section 4.16.2.13.3 has been added to disclose the effects of Alternative E.

4.16.2.13.3 Alternative E

Areas managed as VRM Class I would provide long-term beneficial impacts to vegetation by limiting surface and vegetation disturbances. Approximately 277,596 additional acres of non-WSA lands with wilderness characteristics would be managed under VRM Class I objectives to preserve their natural condition. Thus, this alternative would manage the largest area under VRM Class I objectives for protection of scenic quality and unmodified landscapes, which would also

afford the greatest protection to vegetation resources. Areas managed by VRM Class II objectives would generally retain their landscape characteristics but allow for some developments and modification that would result in surface and vegetation disturbance. Areas managed by VRM Class III and IV objectives allow for greater degrees of landscape change. These changes would result in greater amounts of surface, and thus, vegetation disturbance.

4.16.2.14 Impacts of Wild Horse Decisions on Vegetation Resources

NOTE TO READER: Section 4.16.2.14.1 has been replaced with the following to include a discussion of the effects of Alternative E.

4.16.2.14.1 Alternatives A, B, C, D – No Action, and E

Decisions for wild horse management would involve re-establishing herds and altering amounts of forage allocated for horses, resulting in direct, adverse impacts to vegetation from trampling, fencing, and grazing. Grazing pressure would vary by alternative. Alternative B would not manage for wild horses, and Alternatives A, C, D – No Action, and E propose herd re-establishment. Changes in the amount of vegetation use would be less under Alternative B than under any of the other alternatives, because specific management and development for horses would not occur.

4.16. 2.15 Impacts of Wildlife Decisions on Vegetation Resources

NOTE TO READER: Section 4.16.2.15.1 has been replaced with the following to include a discussion of the effects of Alternative E.

4.16.2.15.1 Alternatives A, B, C, D – No Action, and E

Seasonal restrictions and limitations on surface-disturbing activities for the protection of wildlife would indirectly benefit vegetation. Alternatives A, B, C, and E would provide slightly more protection than would Alternative D – No Action, because Alternative D – No Action would only restrict minerals activities. Alternatives A, B, C, and E would stipulate limits on the amount of surface disturbance (10% of crucial deer habitat for A and B; up to 560 acres per township for Alternatives C and E), further reducing the direct adverse impacts to vegetation when compared to Alternative D – No Action, under which new surface disturbances remain unspecified.

Sagebrush habitat reclamation or enhancement within crucial deer winter range under Alternatives C and E would benefit this vegetation type, when compared to Alternative D – No Action (under which sagebrush habitat reclamation remains unspecified). Vegetation treatments in sagebrush communities would beneficially impact the development of the desired seral stages. Under Alternatives A and B disturbed sagebrush habitat areas would be reclaimed but at a lower ratio and producing fewer beneficial impacts to the vegetation than under Alternatives C and E and at a higher ratio and producing more beneficial effects than under Alternative D – No Action.

4.16.2.16 Impacts of Woodland Decisions on Vegetation Resources

NOTE TO READER: A new Section 4.16.2.16.5 has been added to disclose the effects of Alternative E.

4.16.2.16.5 Alternative E

Forest and woodlands would be managed to maintain and restore biodiversity and to reduce the occurrences of insect infestations, fire, and disease to levels normally expected in healthy forest and woodlands. Relict stands would be maintained for biological and genetic diversity. These management actions would have long-term direct and indirect protection-related beneficial impacts on vegetation resources by reducing the risks of wildland fire and by reducing the damage caused by insects and disease. Other beneficial impacts are described under Section 4.16.1 of the DEIS.

Woodland harvesting, associated disturbances caused by the construction of access roads and trails, and subsequent soil erosion would have direct and indirect, long-term, adverse impacts on vegetation by increasing soil erosion rates and increasing the potential for noxious weed establishment. Applying best management practices to reclaim obsolete access roads and trails created for woodland harvesting and to reduce soil erosion caused by woodland harvesting would reduce adverse impacts to vegetation resources and to vegetation productivity in the short term.

Under Alternative E, approximately 131,809 acres would be managed to prohibit woodland harvesting and salvage in order to protect non-WSA lands with wilderness characteristics. Under this alternative, non-WSA lands with wilderness characteristics would be managed as closed to private and commercial harvesting and seed collection; closed to cross-country OHV access; closed to road construction; and managed under VRM Class I objectives. The impacts of these decisions on woodland vegetation would be beneficial in the long term from preservation and maintenance of woodland vegetation communities, reduced direct and indirect impacts to soils, and a reduced potential for noxious or invasive species establishment from surface disturbances. However, there would be long-term, adverse impacts to vegetation from prohibitions on mechanical treatments to reduce fuel loading, which would maintain the risks of wildland fire and the subsequent exposure of burned areas to noxious and invasive species establishment. Compared to Alternative D – No Action, this alternative would have more beneficial impacts on vegetation because of the protective decisions to preserve wilderness values that also protect vegetation.

NOTE TO READER: A new Section 4.16.2.17 has been added to disclose the effects of non-WSA lands with wilderness characteristics decisions on vegetation resources.

4.16.2.17 Impacts of Non-WSA Lands with Wilderness Characteristics Decisions on Vegetation Resources

4.16.2.17.1 Alternatives A, B, C, and D – No Action

Alternatives A, B, C, and D – No Action would not prescribe actions to directly protect non-WSA lands with wilderness characteristics. Thus, there would be no effects on vegetation.

4.16.2.17.2 Alternative E

Alternative E would provide the most benefit to vegetation resources by restricting surface disturbance within approximately 277,596 acres of non-WSA lands with wilderness characteristics. The impacts on vegetation resources would be similar to those discussed under Alternative E, Woodlands, above (Section 4.16.2.16).

NOTE TO READER: The original Section 4.16.2.17, Summary, has been renumbered here as Section 4.16.2.18 and has been replaced with the following to include a discussion of Alternative E.

4.16.2.18 Summary

In general, surface disturbance impacts from management decisions related to fire, woodlands, forage, lands and realty, and minerals are directly related to vegetation impacts; therefore, the alternatives with greater surface disturbances would have the highest impacts to vegetation resources. The greatest surface disturbance from oil, gas, and coal bed methane leasing would be under Alternative B, followed by Alternatives A, D – No Action, C, and E, respectively.

Off-highway vehicle use would be generally unrestricted under Alternative D – No Action, therefore direct adverse impacts would be greatest under this alternative, followed by Alternatives B, A, C, and E, respectively.

4.17 VISUAL RESOURCES

Please refer to Section 4.17 of the DRMP/DEIS with the following changes.

4.17.2.1 Impacts of Cultural Decisions on Visual Resources

NOTE TO READER: A new Section 4.17.2.1.5 has been added to disclose the effects of Alternative E.

4.17.2.1.5 Alternative E

To protect areas of high cultural resource site density and traditional sacred properties, the Uinta Foothills, Devils Hole, Upper Willow Creek, and Four Mile Wash areas would be closed to oil

and gas leasing and OHV use under Alternative E. These management actions would have the greatest direct, short-term and long-term protection and preservation-related impacts on visual resources because of restrictions on surface disturbances. Compared to Alternative D, this alternative would be more resource protective.

Alternatives A, C, and E would provide the greatest level of landscape (visual resource) protection, because they also provide the highest levels of cultural resource protection. Alternative B would provide some visual resource protection, but less than would Alternatives A and C. Alternative D would provide the lowest level of cultural resource (and visual resource) protection.

4.17.2.2 Impacts of Fire Management Decisions on Visual Resources

NOTE TO READER: Section 4.17.2.2.1 has been replaced with the following text to include a discussion of the effects of Alternative E.

4.17.2.2.1 Alternatives A, B, C, and E

These alternatives would allow for prescriptive fire treatments on approximately 156,425 acres per decade. The impacts of fire management decisions on scenic quality would vary, depending upon the location, size, and timing of the burned areas and the type of fire management treatment conducted (as described in Section 4.17.1 of the DRMP/DEIS). Short-term impacts of fire management decisions on visual resources would be largely adverse, affecting the color, line, form, and texture of the vegetation by creating strong visual contrasts between burned and unburned areas. However, the use of prescribed fire as part of a fire management program would, in the long term, decrease the frequency, intensity, and size of unmanaged wildland fires and reduce smoke generation, both of which would benefit visual resources by limiting landscape-obscuring haze and preserving the desired vegetation component of the scenic landscape (see Section 4.17.1 Impacts Common to All Alternatives for a detailed impact analysis of all fire management decisions). Further, use of prescribed fire under these alternatives would introduce long-term vigor and variety to the vegetation element of the landscape, creating a vegetation mosaic that would enhance scenic quality. Alternative E, when compared to Alternative D, would have greater beneficial impacts on visual resources because prescribed fire would be applied to more area under Alternative E than under Alternative D.

4.17.2.3 Impacts of Lands and Realty Decisions on Visual Resources

NOTE TO READER: A new Section 4.17.2.3.3 has been added to disclose the effects of Alternative E.

4.17.2.3.3 Alternative E

Alternative E proposes mineral withdrawals in order to preclude mining in the Green River Scenic Corridor in Browns Park, the White River, Lears Canyon, the Book Cliffs Natural Area, and the Lower Green River ACEC. The proposed withdrawals, totaling 36,267 acres, would prohibit hardrock mining in these areas and the surface disturbance associated with mining. The result would be no lands and realty–related changes to the landscape and to scenic quality in

these areas. Under Alternative E, non-WSA lands with wilderness characteristics would be managed as ROW-exclusion areas, closed to new road construction, and recommended for withdrawal from mineral entry. These actions would prevent surface disturbance and changes to the landscape, thus protecting the existing scenic quality.

When compared to Alternative D, Alternative E would provide more protection to visual resources because more area would be proposed for locatable mineral withdrawal and non-WSA lands with wilderness characteristics would be managed to restrict surface disturbances.

With recommendations for locatable mineral withdrawal and exclusion of ROWs, Alternative E (along the Alternatives A, B, and C) would provide the greatest level of landscape protection (visual resources) from mining, construction of utility lines, and other lands and realty–related actions.. Alternative D would provide a high level of protection to visual resources but to lesser degree than the other alternatives.

4.17.2.4 Impacts of Grazing Decisions on Visual Resources

NOTE TO READER: A new Section 4.17.2.4.4 has been added to disclose the effects of Alternative E.

4.17.2.4.4 Alternative E

Under Alternative E, lands acquired in Nine Mile Canyon would not be grazed in order to protect this area's riparian and watershed values. This would directly protect the vegetation component of the scenic landscape and visual resources within the riparian zone. Livestock grazing on the uplands outside the riparian zone would follow standards and guidelines for rangeland health. This would result in proper levels of livestock grazing and, probably, construction of some grazing facilities (e.g., fences and water features). The impacts to the vegetative component of the landscape would not be noticeable, but construction of facilities would introduce human-made features to the landscape. Compared to Alternative D, this alternative would provide more protection to the scenery of the riparian landscape from grazing.

Alternative E (along with Alternatives A and C) would protect the scenic quality of riparian areas from grazing. Alternative B would provide more protection than is given under current management, but less than that given by Alternatives A, C, and E. Alternative D – No Action would provide no protection.

4.17.2.5 Effects of Minerals/Energy Decisions on Visual Resources

NOTE TO READER: Section 4.17.2.5 has been replaced with the following text in order to include a discussion of the effects of Alternative E, and a new column has been added to Table 4.17.1 to include information on Alternative E.

TABLE 4.17.1. MINERAL LEASING ACREAGES

	Alternative E
Oil and Gas – Standard Stipulations, Timing and Controlled Surface Use	1,499,461
Mineral Materials – Open	344,682
Phosphate – Open	52,063
Gilsonite (miles)	163

Under Alternative E, 277,596 acres of non-WSA lands with wilderness characteristics would be closed to mineral leasing in order to protect their wilderness values and would be managed under VRM I objectives. This closure would prevent surface disturbance caused by mineral development and would protect the scenic quality within these areas. A summary of mineral leasing acreages is given in Table 4.17.1 above.

Alternative E proposes mineral withdrawals in order to preclude mining in the Green River Scenic Corridor in Browns Park, the White River, Lears Canyon, the Book Cliffs Natural Area, and the Lower Green River ACEC. The proposed withdrawals total about 36,267 acres, and their withdrawal would prohibit hardrock mining in these areas and the surface disturbance associated with mining. Thus, there would mining-related changes to the landscape and to scenic quality in these areas. Also under this alternative, non-WSA lands with wilderness characteristics (277,596 acres) would be recommended for withdrawal from mineral entry. These actions would prevent surface disturbance and changes to the landscape, thus protecting the existing scenic quality.

The greatest acreage of potential minerals-related surface disturbance (and subsequent potential degradation of visual quality) would occur under Alternative B, followed by Alternative A, C, and E. Alternative D – No Action proposes the least acreage of potential mineral surface disturbance.

4.17.2.6 Effects of Recreation Decisions on Visual Resources

NOTE TO READER: A new Section 4.17.2.6.5 has been added to disclose the effects of Alternative E.

4.17.2.6.5 Alternative E

Alternative E would manage 47,130 acres along the White River as an SRMA. Asphalt Wash would be managed under VRM Class I and II objectives; OHV use would be limited to designated routes; and the White River corridor would be protected from surface-disturbing activities for up to one mile on either side of the river corridor. These actions would provide direct, beneficial, short- and long-term protection of landscapes and scenic quality.

Alternative E would also manage as SRMAs the following areas: 273,486 acres in the Book Cliffs; 52,720 acres in Browns Park; 24,285 acres in Red Mountain–Dry Fork; 1,020 in Pelican Lake; 69 acres in Fantasy Canyon; 42,758 acres in Blue Mountain; and 81,168 acres in Nine Mile Canyon. Management of these SRMAs would provide direct, short- and long-term protection of visual quality because: 1) integrated activity plans would be prepared for the SRMAs that provide for scenic viewing; 2) scenic vistas would be protected; 3) surface-disturbing activities would be limited to those that would meet recreation (SRMA) objectives, including scenic quality; and 4) some portions of the proposed SRMAs would be closed to oil and gas leasing, reducing surface disturbance and impacts to visual quality.

Some parts of the White River, Blue Mountain, Book Cliffs, Browns Park, and Nine Mile Canyon SRMAs include non-WSA lands with wilderness characteristics. The impacts of Alternative E would be essentially the same as those for Alternative A (see the DRMP/DEIS, Section 4.17.2.6.1 for a discussion of impacts under Alternative A), except that Alternative E would also manage 157,231 acres of non-WSA lands with wilderness characteristics in the SRMAs as closed to oil and gas leasing. The non-WSA lands with wilderness characteristics would also be closed to solid mineral leasing and recommended for withdrawal from entry under the mining laws (157,231 acres within the SRMAs). These closures and withdrawals would prevent surface disturbances to the landscape from mineral and energy exploration and development, thereby preventing adverse impacts to visual quality in these areas. Other elements of the management prescription for non-WSA lands with wilderness characteristics are also aimed at protecting their wilderness characteristics (management under VRM I objectives and closure to OHV use). These actions would restrict surface disturbances on 157,231 acres of the SRMAs, thereby protecting scenic quality and scenic values.

Under Alternative E and Alternative C, the direct long-term adverse impacts of light pollution adjacent to Dinosaur National Monument would be mitigated, which would also benefit night-time visual quality in the VPA.

In summary, Alternatives C and E would provide the greatest level of scenic quality protection within the SRMAs, followed by Alternative A. Alternatives B and D – No Action would provide the least scenic quality protection. Compared to Alternative D – No Action, Alternatives C and E would provide the most visual quality protection from light pollution, followed by Alternatives A and B. Alternative D – No Action would not protect the National Monument from light pollution.

4.17.2.7 Impacts of Travel/Roads/Trails Decisions on Visual Resources

NOTE TO READER: A new Section 4.17.2.7.5 has been added to disclose the effects of Alternative E.

4.17.2.7.5 Alternative E

Under Alternative E, up to 400 miles of trails would be developed or improved for mechanized (non-motorized) use. The 800 miles of motorized trails proposed under the other alternatives would not be developed or improved under Alternative E. This would have direct, long-term, benefits to visual resources by reducing surface disturbances.

Developing additional trails would impact visual resources and scenic quality by introducing linear contrasts in the landform and vegetation elements of the landscape. Trail design would be mitigated, however, to meet VRM class objectives, and the long term impacts of surface disturbance on the scenery would be minor.

Under this alternative, off-road travel (motorized) would not be permitted in non-WSA lands with wilderness characteristics. Thus, OHV travel to dispersed campsites would not be permitted, preventing added disturbance to vegetation and soil, and the resultant impact on the scenic quality of the landscape.

Roads and trails authorized for construction would be rehabilitated after serving their intended purpose. In the short-term, road construction would result in linear contrasts in the landform and vegetation of the landscape, adversely impacting visual quality. In the long-term (sometimes beyond the life of the Plan), rehabilitation of roads would have no impact on scenic quality.

Alternative E would not allow OHV use off of designated routes or trails for big game retrieval. This action would directly benefit visual quality by reducing landform and vegetation disturbance caused by the creation of new OHV routes or an extension of existing OHV routes.

Under this alternative, there would be 5,434 acres open to cross-country OHV travel (the same as under Alternatives B and C) except in non-WSA lands with wilderness characteristics. Cross-country travel in open areas would result in soil disturbance and vegetation damage, adversely affecting the scenic landscape. The extent of cross-country OHV travel effects would vary with the type of landform and vegetation. By limiting the areas open to cross-country travel, the adverse impacts to soil and vegetation would be reduced, preserving the scenic quality of the landscape.

Areas in which OHV travel is limited to designated routes would increase to 1,326,024 acres, an increase of 438,749 acres from current management under Alternative D – No Action. Limiting travel to designated routes would directly benefit visual resources by increasing the level of management of OHV travel and by reducing the extent of OHV-caused alteration of the existing landform and vegetation in the landscape. Reducing surface disturbance would preserve scenic quality.

Areas closed to OHV travel would be increased from 50,388 acres (under Alternative D – No Action) to 392,818 acres, which would directly benefit visual resources by preventing OHV surface disturbances to soil, water, and vegetation.

The number of miles of routes designated for motorized travel would increase from zero miles under Alternative D – No Action (though not formally designated, OHV use is occurring on many of these routes) to 4,654 miles under Alternative E. Limiting motorized use to designated routes would confine soil and vegetation disturbance to those routes and not permit expansion to other undisturbed parts of the landscape. This would have a beneficial effect on visual resources.

In summary, travel decisions under Alternatives A, C, and E would have the greatest benefit to visual resources, followed by those under Alternative B. Alternative D – No Action would have

greater OHV impacts on visual resources than would the other alternatives because more acres are designated as open to OHV travel with potentially adverse cross-country-related impacts to visual resources.

4.17.2.8 Impacts of Riparian/Soils/Watershed Decisions on Visual Resources

NOTE TO READER: Section 4.17.2.8 has been replaced with the following to include a discussion of the effects of Alternative E.

Surface-disturbing activities on steep slopes would tend to have direct and indirect, short-term and long-term, adverse impacts on scenic quality because of their high visibility. The larger the disturbance, the more visible it becomes from foreground and middle-ground viewpoints, and thus, the greater the impact on visual quality. Direct impacts would result from visual contrasts between surface disturbance and the surrounding landscape; indirect impacts would result from contrasts caused by erosion-related surface disturbance.

Under Alternatives A, B, C, and E, surface disturbance impacts on 21–40% slopes would be mitigated through an erosion-control strategy developed in accordance with VRM objectives. Under Alternative A, disturbances on slopes greater than 40% would not be allowed except when they are the least disturbing of all possible actions. Under Alternative B, disturbance of slopes greater than 40% would require an approved plan. Alternative C and E would not allow any surface disturbance on slopes greater than 40%, and Alternative D would not allow mineral-related activities on these slopes.

Alternatives A, B, and C would provide a high degree of protection of scenic quality by mitigating erosion through erosion-control strategies, GIS modeling, and project design. Alternative C and E would provide the most protection of scenic quality by prohibiting steep slope disturbances greater than 40% in addition to erosion control and GIS modeling. Alternative D would provide the least protection of scenic quality by protecting slopes in excess of 40% from minerals disturbances only.

4.17.2.9 Impacts of Special Designation Area Decisions on Visual Resources

NOTE TO READER: The second paragraph of Section 4.17.2.9 has been replaced with the following to include a discussion of the effects of Alternative E, and a new column has been added to Table 4.17.2 to include information on Alternative E.

Alternatives C and E would provide the most long-term visual resource protection by designating the most acres as ACECs and by recommending the longest stretches of waterways for protection under the Wild and Scenic Rivers system. Alternative A would offer the second-best level of protection to visual resources. Alternative B would provide some visual resource protection but less than Alternatives A, C, and E. Alternative D – No Action would provide the lowest level of protection to visual resources, because it designates the fewest ACEC acres and recommends protecting the fewest waterways under the Wild and Scenic River system. A summary of Alternative E impacts from special designation decisions are shown below in Table 4.17.2.

TABLE 4.17.2. IMPACTS OF SPECIAL DESIGNATION AREAS ON VISUAL RESOURCES [1]	
Special Designation Areas	**Alternative E**
ACECs	
Proposed Bitter Creek ACEC	Those portions of ACEC closed and NSO for oil and gas leasing, managed via VRM Class I and II objectives, closed to wood cutting, and closed or limited to OHV travel would maintain the visual appeal and scenic quality of those portions of the ACEC. Areas of the ACEC open to leasing with timing limitations and controlled surface use, managed by VRM Class III objectives, and scheduled for forest manipulation would result in surface disturbance that alters the landscape character and scenic quality.
Proposed Bitter Creek-P.R. Springs	Same impacts as described for the Proposed Bitter Creek ACEC, Alternative E.
Proposed Coyote Basin-Snake John-Kennedy Wash ACEC	Those portions of ACEC NSO for oil and gas leasing, managed via VRM Class II objectives, and closed or limited to OHV travel would minimized surface disturbances and maintain the scenic quality of those areas. Areas of the ACEC open to leasing with standard stipulations or timing limitations and controlled surface use, managed by VRM Class III and IV objectives, would result in surface disturbance that alters the landscape character and scenic quality.
Proposed Four Mile Wash ACEC	Those portions of ACEC closed to oil and gas leasing, managed via VRM Class II objectives, and limited to OHV use would maintain the scenic quality of those areas by limiting surface disturbances. Areas managed via VRM Class III and IV objectives would offer less protection of the visual quality of the ACEC.
Proposed Middle Green River ACEC	Portions of ACEC managed via VRM Class II objectives and limited to OHV use would maintain the scenic quality of those areas by limiting surface disturbance. Those portions open to leasing subject to standard terms, timing limitations, and controlled surface use and managed by VRM Class III and IV objectives would allow alteration of the landform and vegetation that decreases scenic quality.
Proposed Lower Green River ACEC	NSO for oil and gas leasing, management via VRM Class II objectives, and limiting OHV use to designated routes would minimize surface disturbance and maintain the scenic quality of the ACEC.
Proposed White River Corridor ACEC	Those portions of ACEC managed as NSO for oil and gas leasing, managed via VRM Class II objectives, and closed or limited to OHV travel would maintain the scenic quality of those areas by limiting surface disturbances.
Browns Park ACEC	Those portions of ACEC closed and NSO for oil and gas leasing, managed via VRM Class I and II objectives, and closed or limited to OHV travel would maintain scenic quality by limiting or prohibiting surface disturbance that alters the landscape. Those portions of the ACEC open to leasing with timing limitations or controlled surface use would allow for some landscape change that would have a minimal effect on scenery but that would still meet VRM objectives.
Proposed Nine Mile Canyon and Lears Canyon ACECs	Those portions of the ACEC designated as NSO for oil and gas leasing, managed by VRM Class II objectives, and limited to OHV use would maintain scenic quality by limiting surface disturbance associated with these activities. Those portions of the ACEC open to leasing subject to standard terms and managed via VRM Class III and IV objectives would allow surface disturbance that would alter the landform, vegetation, and visual quality of the canyon.

TABLE 4.17.2. IMPACTS OF SPECIAL DESIGNATION AREAS ON VISUAL RESOURCES [1]	
Special Designation Areas	**Alternative E**
Red Mountain-Dry Fork ACEC	Those portions of the ACEC closed and designated NSO for oil and gas leasing, managed by VRM Class II objectives, and limited to OHV use would maintain scenic quality by limiting surface disturbance associated with these activities. Those portions of the ACEC open to leasing subject to timing limitations and controlled surface use and managed via VRM Class III and IV objectives would allow surface disturbance that would alter the landform, vegetation, and visual quality of the area.
Main Canyon ACEC	Those portions of the ACEC closed to oil and gas leasing, managed by VRM Class I and II objectives, and closed or limited to OHV use would maintain scenic quality by limiting surface disturbance associated with these activities. Those portions of the ACEC open to leasing subject to timing limitations and controlled surface use would allow surface disturbance that would alter the landform and vegetation and that would have a minimal effect on the visual quality of the canyon, while still meeting VRM objectives.
Wild and Scenic	
White River segments	Recommending 44 miles of the White River suitable for inclusion in the Wild and Scenic River System would limit surface disturbance, providing long-term protection of visual quality.
Middle Green River segment	Recommending 36 miles of the Middle Green River suitable for inclusion in the Wild and Scenic River System would limit surface disturbance, providing long-term protection of visual quality.
Nine Mile Creek segments	Recommending two segments of Nine Mile Creek, totaling 19 miles, as suitable for inclusion in the Wild and Scenic River System would limit surface disturbance, providing long-term protection to visual quality.
Evacuation Creek, Argyle Creek, and Bitter Creek segments	Recommending Evacuation Creek, Argyle Creek, and Bitter Creek as suitable for inclusion in the Wild and Scenic River System would limit surface disturbance, providing long-term protection to visual quality.
[1] As noted in section 4.17.2.9, VRM acreages used in this analysis of impacts on visual resources include all lands within the VPA, not only BLM administered lands. This is because the VRM analysis includes foreground, middleground, and background views that could encompass federal, state, and private property.	

4.17.2.10 Impacts of Vegetation Decisions on Visual Resources

NOTE TO READER: A new Section 4.17.2.10.3 has been added to disclose the effects of Alternative E.

4.17.2.10.3 Alternative E

Under Alternative E, vegetation treatments with prescribed fire on 156,425 acres per decade would be permitted. The effects of prescribed burning on visual quality would be adverse in the short term. Removing vegetation with fire and then seeding would alter the form, line, color, and texture of the existing landscape. Short-term, indirect impacts to these landscape elements would also result from the construction of fences to exclude livestock from the treated areas.

Long-term beneficial impacts to visual resources from prescribed fire would be produced by: 1) the reduction in the potential for vegetation and stand-destroying wildland fires; 2) the re-creation of historic fire regimes; 3) increased biodiversity with a reduction in diseased, stressed, and infested trees; and 4) the creation of a visual mosaic of vegetation (added variety in the vegetative element of the landscape) that would tend to improve scenic quality.

In summary, Alternatives A, B, C, and E would have the greatest short-term adverse impacts and long-term beneficial impacts to visual resources from more VPA acreage that would be affected by proposed vegetation treatments. Alternative D would have the fewest impacts on visual resources because a smaller area would be affected by vegetation management that would include prescribed burning.

4.17.2.11 Effects of Visual Decisions on Visual Resources

NOTE TO READER: Section 4.17.2.11 has been replaced with the following to include a discussion of the effects of Alternative E and a new column has been added to Table 4.17.3 to include information on Alternative E.

TABLE 4.17.3. VRM CLASS ACREAGES BY ALTERNATIVE

	Alternative E
VRM I and II	595,098
VRM III and IV	1,126,563

Under Alternative E, approximately 277,596 acres of non-WSA lands with wilderness characteristics would be managed under VRM Class I objectives in order to preserve their wilderness characteristics (see Table 4.17.3). Based on these visual management objectives, Alternative C would provide the highest degree of protection to scenic quality under VRM I and II, followed by Alternative E, then Alternative A. Alternative B followed by Alternative D – No Action would provide the least protection to scenic quality under combined VRM I and II acreages.

4.17.2.12 Effects of Woodland and Forest Decisions on Visual Resources

NOTE TO READER: A new Section 4.17.2.12.5 has been added to disclose the effects of Alternative E.

4.17.2.12.5 Alternative E

Under Alternative E, impacts to visual resources from forest and woodland treatment would be similar to impacts under Alternative A, except that forest and woodland salvage would only be allowed when the woodland or forest resource was threatened. Woodland salvage and harvesting would be prohibited on 242,760 acres of proposed ACECs and on 277,596 acres of non-WSA lands with wilderness characteristics, resulting in the reduction in the long-term benefits to woodlands since this form of fuel reduction and the accompanying reduction in wildland fire risks would not be conducted. Some of areas proposed for ACECs are also in non-WSA lands

with wilderness characteristics. Thus, the acres closed to forest and woodland treatments above would not be additive (242,760 + 277,596 = 520,356).

Similar to those under Alternative A, management actions under Alternative E would maintain and restore woodlands and forest ecosystems to a condition in which biodiversity would be preserved, insects and disease would be controlled to normal levels, relict stands would be maintained, fuel loading would be reduced, historic fire regimes would begin to be restored, salvage would be permitted, and woodland treatments would be accomplished through fire. Up to 275,068 acres would be treated through woodland harvesting or fire treatments.

The short-term, direct impacts of these actions on visual quality would be both adverse and beneficial. Impacts to form, line, color, and texture of vegetation would be created by woodland treatments, harvest, and salvage. Surface disturbances from OHV use would be visible. However, long-term benefits to visual quality would result from the creation of vegetation variety created by forest and woodland treatments (e.g., islands or areas of shrubs and grasses would be introduced to continuous stands of pinyon and juniper woodlands).

In the long term, the woodland forest management actions would benefit visual resources by: 1) reducing the potential risk of wildland fires that would adversely affect visual quality and 2) improving visual quality through the creation of scenic variety found in the mosaic of vegetation types produced by vegetation treatments.

In the short term, indirect adverse impacts to visual quality would be produced by construction of fences used to exclude livestock from treated areas.

In summary, woodland management under Alternatives C and E would have the greatest benefit to visual resources from management actions to improve woodland stands (indirectly improving visual quality), followed by Alternative A. Alternative B would have adverse impacts on visual quality by allowing public harvesting for maximum output of woodland and forest products. Alternative D – No Action would provide the least protection of visual quality because woodland management actions under it are unspecified.

NOTE TO READER: A new Section 4.17.2.13 has been added to disclose the effects of non-WSA lands with wilderness characteristics decisions on visual resources.

4.17.2.13 Effects of Non-WSA Lands with Wilderness Characteristics Decisions on Visual Resources

4.17.2.13.1 Alternatives A, B, C, and D

Under these alternatives, no actions would be prescribed to specifically protect the wilderness characteristics of the non-WSA lands with wilderness characteristics, and thus there would be no direct impacts to visual resources.

4.17.2.13.2 Alternative E

Under Alternative E, 277,596 acres in 25 areas would be managed to protect their wilderness characteristics (see Section 3.22 Non-WSA Lands with Wilderness Characteristics). To achieve this objective, these lands would be managed under VRM Class I objectives to preserve the characteristic landscape. These areas would be closed to surface-disturbing activities, subject to valid existing rights. These actions would prevent changes to the characteristic landscape (vegetation, landform, and water) and protect the scenic quality of these lands.

4.17.2.14 Summary of Impacts from Alternative

NOTE TO READER: Section 4.17.2.13 Summary has been renumbered as 4.17.2.14 and a subsection 4.17.2.14.5 added to disclose the effects of Alternative E.

4.17.2.14.5 Alternative E

Alternative E provides a level of protection for scenic quality comparable to Alternative C by:

- Establishing protection for areas of concentrated cultural resources
- Eliminating grazing in a segment of Nine Mile Canyon
- Authorizing the fewest number of acres to be leased for mineral and energy development
- Recommending non-WSA lands with wilderness characteristics and other special areas for withdrawal from mineral entry
- Proposing the largest acreages for protection as ACECs and Wild and Scenic Rivers
- Managing a large acreage for VRM Class I and II objectives (the most protective VRM objectives)
- Managing non-WSA lands with wilderness characteristics to protect their natural landscape character

4.18 WILD HORSES

Please refer to Section 4.18 of the DRMP/DEIS with the following changes.

NOTE TO READER: A new row has been added to Table 4.18.1 to include information on Alternative E.

TABLE 4.18.1. MAINTAINING WILD HORSE HERDS, BY ALTERNATIVE

	Bonanza Herd Management Area (HMA)	Winter Ridge Herd Area (HA)	Hill Creek HMA
Alternative E	Yes	Yes	Yes

4.18.2.1 Impacts of Cultural Decisions, Recreation Decisions, Special Designations, Travel Decisions on Wild Horses

NOTE TO READER: Section 4.18.2.1.1 has been replaced with the following to include a discussion of the effects of Alternative E.

4.18.2.1.1 Alternatives A, C, and E

Management decisions for recreation and travel and for the protection of cultural resources and special management areas in the VPA as described under Alternatives A, C, and E would have indirect, long-term, beneficial effects on wild horses due to the restriction on resource uses. These alternatives would limit OHV travel in Upper Willow Creek (Winter Ridge HA and Hill Creek HMA) to designated routes to protect cultural resources in these areas. Additionally, Alternatives C and E would close these areas to oil and gas leasing for the protection of cultural resource and special areas, resulting in indirectly preserving habitat for wild horses in portions of the Winter Ridge HA and the Hill Creek HMA. Compared to Alternative D – No Action, Alternatives A, C, and E would provide higher degrees of protection to wild horses by restricting some activities around designated cultural sites.

Additionally, in order to provide protection for cultural resources and special management areas, Alternatives C and E would close Wolf Point to oil and gas leasing, thereby beneficially reducing the impacts of oil and gas development on the neighboring HMAs.

4.18.2.2 Impacts of Fire Decisions on Wild Horses

NOTE TO READER: Section 4.18.2.2.1 has been replaced with the following to include a discussion of the effects of Alternative E.

4.18.2.2.1 Alternatives A, C, and E

Fire management for Alternatives A, C, and E would allow for prescribed fire on approximately 156,425 acres per decade. Short-term, adverse impacts on wild horses, including potential mortality, reduced forage, and restricted use of these areas by wild horses, would occur in areas subject to prescribed burns. However, these prescribed fires would be planned in areas where long-term benefits, including improved forage, would be realized as a result of the vegetation treatment. Compared to Alternative D – No Action, these alternatives would be more beneficial to wild horses in the long term because more area would be managed for prescribed fire vegetation treatments, which would have more long-term, indirect improvements on wild horse forage conditions.

4.18.2.3 Impacts of Forage Allocation Decisions on Wild Horses

NOTE TO READER: Section 4.18.2.3.3 has been replaced with the following to include a discussion of the effects of Alternative E.

4.18.2.3.3. Alternatives C and E

Forage allocation proposals under Alternatives C and E would have direct, long-term impacts on wild horses in the VPA. There would be a substantial long-term direct benefit (e.g., improved forage conditions) on wild horses from the proposal to change the season of use by livestock grazing to improve rangeland health, which would increase long-term forage. Alternatives C and E would limit the foraging of uplands to 50% of existing forage unless otherwise specified by a management plan. Forage allocations to wild horses in the proposed Winter Ridge HA would be 1,200 AUMs, and forage allocations to wild horses in the Hill Creek HMA would be 1,740 AUMs. Forage allocations to wild horses in the Bonanza HMA would be 1,020 AUMs. Total wild horse forage allocations would be 3,960 AUMs under this alternative and would have greater beneficial impacts on wild horse herds when compared to Alternative D – No Action, which would allocate 3,360 AUMs for wild horses.

Alternative A includes a management stipulation that would go into effect if monitoring indicates that a reduction in forage use is necessary in the proposed Winter Ridge HA and Hill Creek HMA because of demonstrated conflicts between wildlife, livestock, and wild horses. Under Alternatives C and E, reductions in forage would be made only to livestock. Similar to Alternative A, under Alternatives C and E, additional forage identified in the Winter Ridge HA and Hill Creek HMA would be divided proportionately between big game and wild horses. If wild horses or big game did not need additional forage, the forage would be assigned to livestock. These forage decisions would have long-term beneficial impacts on wild horses by giving precedence to wild horse herds.

Under Alternatives C and E, big game and wild horse numbers would be allowed to increase only to the point where livestock permitted use would not be reduced.

Alternatives C and E also include decisions stipulating that if forage conflicts between livestock and wild horses are identified in the Bonanza HMA, use by livestock and wild horses would be reduced, but the wild horse herd would not be reduced below 40 animals. If forage conflicts were identified between wildlife and wild horses in the Bonanza HMA, use by wildlife and wild horses would be reduced proportionally. If additional forage were available in the Bonanza HMA, wild horse use would be increased in accordance with available forage. These management decisions would adjust the size of wild horse herds to reduce use conflicts and to meet the available forage resources, which would be beneficial for wild horses because herd health would be maintained. Compared to Alternative D – No Action, Alternatives C and E would be more beneficial for VPA wild horse herds because more horses would be managed under these alternatives than would be managed under Alternative D – No Action.

4.18.2.4 Impacts of Minerals Development Decisions on Wild Horses

NOTE TO READER: Section 4.18.2.4.3 has been replaced with the following to include a discussion of the effects of Alternative E.

4.18.2.4.3 Alternatives C and E

Under Alternatives C and E, minerals development would have long-term, direct and indirect, adverse impacts to wild horses. Direct impacts from minerals-related surface disturbances to remove vegetation would reduce the AUMs available to wild horses. Indirect impacts would include the general effects of widespread activities that would create noise and associated disturbance to horses.

Under Alternatives C and E (when compared to Alternative D – No Action), additional acres in the HMAs and HA would go into categories that either restrict minerals development or result in less impact on wild horse habitat. Of all of the alternatives, Alternative E would have the fewest acres available for oil and gas development with approximately 277,596 acres within non-WSA areas with wilderness characteristics closed to leasing. This shift in oil and gas development designations would have direct and indirect, long-term, beneficial impacts to all three of the wild horse herds in the VPA because there would be less surface disturbance and minerals-related intrusive impact (noise, human presence, etc) on wild horses. In comparison, Alternative D – No Action would maintain current minerals development designation on lands in the HMAs and HA.

4.18.2.5 Impacts of Rangeland Improvement Decisions on Wild Horses

NOTE TO READER: Section 4.18.2.5.3 has been replaced with the following to include a discussion of the effects of Alternative E, and a new column has been added to Table 4.18.2 to include information on Alternative E.

TABLE 4.18.2. RANGELAND IMPROVEMENTS PROPOSED UNDER EACH ALTERNATIVE

	Alternative E
Vegetation Treatment (acres)	45,860
Fencing (miles)	129.0
Guzzlers/reservoirs	811
Wells/springs	87
Water pipeline (miles)	29.5

4.18.2.5.3 Alternatives C and E

Under Alternatives C and E, vegetation treatments for rangeland improvements would occur on 45,860 acres (5,470 more acres than Alternative D – No Action provides), maintaining and providing additional forage for livestock. Under these alternatives more rangeland improvements, including fences, guzzlers/reservoirs, and wells/springs would be constructed than would be constructed under Alternative D – No Action. These facilities would provide water for livestock and would support proper livestock distribution and utilization of the forage.

Maintenance and improvement of forage condition and construction of added waters for livestock under Alternatives C and E would provide water for forage for wild horses. Alternative C and E would have more beneficial long-term impacts on wild horses than would Alternative D – No Action.

4.18.2.6 Impacts of Wild Horse Decisions on Wild Horses

NOTE TO READER: Section 4.18.2.6.3 has been replaced with the following to include a discussion of the effects of Alternative E.

4.18.2.6.3 Alternatives C and E

Decisions under Alternatives C and E would re-establish a herd of wild horses in the Bonanza HMA. These alternatives would beneficially establish an AML of 85 wild horses with a minimum herd of 40 individuals. A separate management plan would be prepared to specify the needs of the wild horse herd in the Bonanza HMA. A gathering plan would be prepared and approximately 45 horses would be removed every four years. These horses would be made available for adoption under the BLM's Adopt-A-Horse Program. All of these decisions would have long-term, beneficial impacts on wild horses within the Bonanza HMA by managing this wild horse herd for long-term sustainability.

These alternatives would designate the Winter Ridge HA as an HMA and would establish an AML of 100 horses, not to be reduced below 50 individuals. Adjustments in the AML would be in accordance with criteria as described under forage management decisions. A gathering plan would be prepared and approximately 50 horses would be removed every four years. These horses would be made available for adoption under BLM's Adopt-A-Horse Program. The impacts on the wild horse herd within the proposed Winter Ridge HMA would be the same as discussed above for the Bonanza HMA.

These alternatives would manage Hill Creek as a HMA. The AML for the Hill Creek herd would be set at 145 horses, with a minimum herd of 70 individuals. A management agreement would be reached with the Ute Indian Tribe for the existing herd. A gathering plan would be prepared and approximately 75 horses would be removed every four years. These horses would be made available for adoption under BLM's Adopt-A-Horse Program. This alternative would extend the boundaries of the Hill Creek HMA to include the north end of Wild Horse Bench (approximately 30,347 acres) and Big Pack Mountain (approximately 22,865 acres). Under these alternatives, equine diseases would continue to be a problem and would have long-term adverse impacts on both the Northern Ute Tribe horses as well as wild horses because of the potential for contact between herds. The impacts on the wild horse herd within the Hill Creek HMA would be the same as discussed above for the Bonanza HMA.

4.18.2.7 Impacts of Non-WSA Lands with Wilderness Characteristics Decisions on Wild Horses

NOTE TO READER: A new Section 4.18.2.7 has been added to disclose the effects of non-WSA lands with wilderness characteristics decisions on wild horses.

4.18.2.7.1 Alternatives A, B, C, and D – No Action

Under these alternatives, no actions are specifically prescribed to protect non-WSA lands with wilderness characteristics. Thus, there would be no impacts of non-WSA lands with wilderness characteristics decisions on wild horses.

4.18.2.7.2 Alternative E

Decisions to protect non-WSA lands with wilderness characteristics areas within the VPA are described under Alternative E. Approximately 16,396 acres of non-WSA lands with wilderness characteristics lie within the Hill Creek HMA, and approximately 7,449 acres lie within the Bonanza HMA. The impacts of these decisions on wild horses would be beneficial in the long term because the non-WSA lands with wilderness characteristics areas that are within the above HMAs would be closed to minerals leasing and OHV travel, the areas would be managed under VRM Class I objectives and managed to preserve their wilderness values. These decisions would have long-term, beneficial impacts on the VPA wild horse herds by restricting surface disturbances within the HMAs, by reducing the impacts to vegetation productivity, and by reducing the impacts from other human-caused disturbances (e.g., noise and OHV vehicle travel) on the herds. Compared to Alternative D – No Action, this alternative would have more beneficial impacts because it would provide more protection to wild horses.

4.18.2.8 Summary

NOTE TO READER: The original Section 4.18.2.7, Summary, has been renumbered here as Section 4.18.2.8. The original Subsection 4.18.2.7.3 has been renumbered here as Subsection 4.18.2.8.3 and replaced with the following to discuss of the effects of Alternative E.

4.18.2.8.3 Alternatives C and E

These alternatives would provide the highest degree of wild horse protection by re-establishing the Bonanza HMA, designating the Winter Ridge HA as an HMA, extending herd management boundaries, designating travel corridors, and providing the most range improvements.

4.19 WILDLIFE AND FISHERIES RESOURCES

Please refer to Section 4.19 of the DRMP/DEIS with the following changes.

4.19.2 Effects of Resource Management Decisions on Wildlife and Fisheries by Alternative

NOTE TO READER: Section 4.19.2.1 has been replaced with the following to include a discussion of the effects of Alternative E.

4.19.2.1 Effects of Cultural Resources Decisions on Wildlife and Fisheries Resources

Under Alternatives A, B, C, and E, closing or limiting OHV use to designated trails in the Uintah Foothills, Little Devil/Big Hole, Upper Willow Creek, and Four Mile Wash areas would reduce surface-disturbing activities and thus would have beneficial protection-related impacts to wildlife and wildlife habitat in the vicinity of cultural sites and traditional sacred properties. Alternative D – No Action would manage these areas as open to OHV use, and areas in the vicinity of cultural sites and traditional sacred properties would not provide protection to wildlife and habitat from OHV use, as compared to the action alternatives (Alternative A, B, C, and E).

NOTE TO READER: Section 4.19.2.2 has been replaced with the following to include a discussion of the effects of Alternative E.

4.19.2.2 Effects of Fire Management Decisions on Wildlife and Fisheries Resources

Alternatives A, B, C, and E would allow up to 156,425 acres of prescribed fire treatments to be accomplished per decade. The effects of prescribed fire on wildlife and fish populations would be direct and adverse in the short term by removing habitat, reducing short-term habitat quality, and causing individual mortality. Additionally, the use of fire lines and fire suppression activities for wildfire under the Fire Management Plan would also likely remove habitat, reduce short-term habitat quality, and cause individual mortality through treatment-related surface disturbances. However, fire management decisions would generally have a long-term beneficial impact to wildlife and fish populations by beginning to restore the natural fire regime, which would improve habitat health and increase habitat diversity. Restoring the natural fire regime would also reduce the risks of wildland fire and the subsequent loss of major ecosystem components. Alternative D – No Action would manage for a total of 50,900 acres per decade of prescribed fire (27,950 and 22,950 acres for the Book Cliffs and Diamond Mountain RMPs, respectively). Alternative E would provide for fewer acres of disturbance from prescribed fire and, therefore, would likely have fewer short-term direct adverse impacts to wildlife and fish populations; it would, however, likely result in a greater long-term risk of wildfire than would occur under the action alternatives. This, in turn, would result in greater long-term risk to wildlife and fish populations than would occur under the action alternatives.

4.19.2.3 Effects of Forage Allocation Decisions on Wildlife and Fisheries Resources

NOTE TO READER: Section 4.19.2.3.3 has been replaced with the following to include a discussion of the effects of Alternative E.

4.19.2.3.3 Alternatives C and E

Alternatives C and E would restrict forage utilization on uplands to a maximum of 50% utilization (the same as Alternative A). Currently there is no specification for forage utilization on uplands under Alternative D – No Action. Alternatives C and E would allocate 106,196 AUMs for wildlife. This would be an increase of 9,589 AUMs allocated to wildlife in comparison to Alternative D – No Action.

If forage allocation reductions are necessary to make significant progress toward sustaining rangeland health in the Bonanza, Book Cliffs, Diamond Mountain, and Blue Mountain localities or in the Bonanza and Hill Creek HMAs and Winter Ridge HA, then livestock use would be reduced accordingly. Forage allocations for pronghorn antelope and deer would not be reduced. These strategies would provide additional forage to wildlife, which would benefit wildlife. Reductions in forage allocation for livestock in the Bonanza locality, the Hill Creek HMA, and the Winter Ridge HA were not specified under Alternative D – No Action.

Wildlife use would be increased in accordance with the available forage, requiring that additional forage was available and rangeland health was being sustained or that substantial progress was being made towards sustaining rangeland health in the Bonanza, Blue Mountain, and Diamond Mountain localities; in the Bonanza and Hill Creek HMAs; and in the Winter Ridge HA. Livestock use would not be increased above permitted use. Suspended AUMs would be restored in the Book Cliffs locality, and any additional forage would be allocated to wildlife. These strategies would provide additional beneficial forage to wildlife under these conditions when compared to Alternative D – No Action.

4.19.2.4 Effects of Land and Realty Management Decisions on Wildlife and Fisheries Resources

NOTE TO READER: Section 4.19.2.4.1 has been replaced with the following to include a discussion of the effects of Alternative E.

4.19.2.4.1 Alternatives A, B, C, and E

Land withdrawals would benefit vegetation in both the short term and long term by reducing the potential for surface disturbance by mineral exploration, development, and extraction activities. Alternatives A, B, C, and E would pursue locatable mineral withdrawal in the Green River Scenic Corridor in Browns Park (8,208 acres), relict vegetation areas in Lears Canyon (1,377 acres), and the Lower Green River ACEC (17,063 acres). Alternative D would pursue mineral withdrawals in the above areas but with different acreages designated for withdrawal: Browns Park (19,400 acres), Lears Canyon (3,600 acres), and Lower Green River (7,900 acres). In addition, under Alternative E, non-WSA lands with wilderness characteristics would be managed as ROW exclusion areas.

These withdrawals and protective measures would likely have a long-term benefit to wildlife and fisheries associated with these areas by protecting them and their habitats from disturbance associated with minerals development. Impacts to wildlife and fisheries and their habitat would depend on the area involved in lands and realty activity. Acquisition or withdrawal of lands with special status species habitat would generally contribute positively to wildlife and fisheries habitat protection. Under Alternative E, the exclusion of non-WSA lands with wilderness characteristics from future ROW development would reduce long-term impacts to wildlife and fisheries habitats in these areas.

4.19.2.5 Effects of Mineral Resource Decisions on Wildlife and Fisheries Resources

NOTE TO READER: New columns have been added to Tables 4.19.1 through 4.19.7 to include information on Alternative E.

4.19.2.5.2 Habitat Fragmentation

TABLE 4.19.1. FUNCTIONAL HABITAT LOSS CREATED BY PROPOSED ROADS AND PIPELINES ON BLM LANDS IN THE MANILA-CLAY BASIN RFD AREA

	Alternative E
Road and Pipeline Densities (mi/mi^2)	1.41
Percent outside a Functional Habitat Loss-660' zone	87%
Percent outside a Functional Habitat Loss-1,320' zone	76%
Percent outside a Functional Habitat Loss-2,640' zone	60%

TABLE 4.19.2. FUNCTIONAL HABITAT LOSS CREATED BY PROPOSED ROADS AND PIPELINES ON BLM LANDS IN THE TABIONA-ASHLEY VALLEY RFD AREA

	Alternative E
Road and Pipeline Densities (mi/mi^2)	1.06
Percent outside a Functional Habitat Loss-660' zone	90%
Percent outside a Functional Habitat Loss-1,320' zone	81%
Percent outside a Functional Habitat Loss-2,640' zone	67%

TABLE 4.19.3. FUNCTIONAL HABITAT LOSS CREATED BY PROPOSED ROADS AND PIPELINES ON BLM LANDS IN THE ALTAMONT-BLUEBELL RFD AREA

	Alternative E
Road and Pipeline Densities (mi/mi^2)	1.33
Percent outside a Functional Habitat Loss-660' zone	85%
Percent outside a Functional Habitat Loss-1,320' zone	72%
Percent outside a Functional Habitat Loss-2,640' zone	51%

TABLE 4.19.4. FUNCTIONAL HABITAT LOSS CREATED BY PROPOSED ROADS AND PIPELINES ON BLM LANDS IN THE MONUMENT BUTTE-RED WASH RFD AREA	
	Alternative E
Road and Pipeline Densities (mi/mi^2)	2.40
Percent outside a Functional Habitat Loss-660' zone	79%
Percent outside a Functional Habitat Loss-1,320' zone	62%
Percent outside a Functional Habitat Loss-2,640' zone	40%

TABLE 4.19.5. FUNCTIONAL HABITAT LOSS CREATED BY PROPOSED ROADS AND PIPELINES ON BLM LANDS IN THE WEST TAVAPUTS PLATEAU RFD AREA	
	Alternative E
Road and Pipeline Densities (mi/mi^2)	0.76
Percent outside a Functional Habitat Loss-660' zone	91%
Percent outside a Functional Habitat Loss-1,320' zone	84%
Percent outside a Functional Habitat Loss-2,640' zone	70%

TABLE 4.19.6. FUNCTIONAL HABITAT LOSS CREATED BY PROPOSED ROADS AND PIPELINES ON BLM LANDS IN THE EAST TAVAPUTS PLATEAU RFD AREA	
	Alternative E
Road and Pipeline Densities (mi/mi^2)	0.74
Percent outside a Functional Habitat Loss-660' zone	92%
Percent outside a Functional Habitat Loss-1,320' zone	84%
Percent outside a Functional Habitat Loss-2,640' zone	71%

TABLE 4.19.7. HABITAT FRAGMENTS CREATED BY ROADS AND PIPELINES IN THE VPA AND ROAD-EFFECTS ZONES ASSOCIATED WITH THESE FRAGMENTS							
All Fragments				**Fragments 250 Acres or Greater**			
Number	**Average Size (acres)**	**% of Total Area**	**% Open to Minerals Development**	**Number**	**Average Size (acres)**	**% of Total Area**	**% Open to Minerals Development**
Fragments created by roads or pipelines							
4,485	383	99.6	Alt E: 76.4	736	2,194	93.6	Alt E: 65.5
Fragments outside the 660-foot road effects zone							
2,849	492	81.2	Alt E: 60.8	696	1,891	76.3	Alt E: 51.9
Fragments outside the 1,320-foot road effects zone							
2,394	477	66.1	Alt E: 48.3	593	1,803	62.0	Alt E: 40.9

TABLE 4.19.7. HABITAT FRAGMENTS CREATED BY ROADS AND PIPELINES IN THE VPA AND ROAD-EFFECTS ZONES ASSOCIATED WITH THESE FRAGMENTS							
All Fragments				Fragments 250 Acres or Greater			
Number	Average Size (acres)	% of Total Area	% Open to Minerals Development	Number	Average Size (acres)	% of Total Area	% Open to Minerals Development
Fragments outside the 2,640-foot road effects zone							
1,510	505	44.2	Alt E: 30.6	413	1,728	41.4	Alt E: 25.6

NOTE TO READER: The paragraph immediately following Table 4.19.7 on page 4-314 of the DRMP/DEIS has been replaced with the paragraph below.

As shown in the tables, Alternative B would have the greatest level of impact on large habitat fragments, followed by Alternatives A, D, C, and E, respectively. In comparison Alternative D – No Action, Alternative B would have a 4.6% to 6.9% higher acreage of large habitat fragments open to development; Alternative A would have a 3% to 4% higher acreage; Alternative C would have 4.4% to 4.9% lower acreage; and Alternative E would have a 12.1% to 46.7% lower acreage open to mineral development. Thus, when compared to Alternative D – No Action, Alternative E would have substantially less adverse impact on wildlife from habitat fragmentation.

4.19.2.5.2.1 Big Game Species

NOTE TO READER: The last paragraph on page 4-315 of the DRMP/DEIS has been replaced with the paragraph below.

Alternatives A and B would increase the proportion of big game habitat open to surface-occupying oil and gas development by approximately 7% and 8.5%, respectively, when compared to Alternative D – No Action. These alternatives would increase the proportion of big game habitats in areas subject to controlled surface use by approximately 20% and 24.6%, respectively, when compared to Alternative D – No Action, with the exception of decreases of acreages subject to controlled surface use in overall mule deer (-5%), moose (-5%), and black bear (-18%) habitat under Alternative B, and pronghorn habitat under both Alternatives A (-27%) and B (-28%). Alternative C would decrease the proportion of most big game habitats open to surface-occupying oil and gas development by approximately 7% when compared to Alternative D – No Action. Under Alternative E, the proportion of big game habitats open to standard stipulations for oil and gas development would decrease by an average of 19% compared to Alternative D – No Action. Exceptions include a 10% increase in the proportion of pronghorn habitats under standard stipulations. Alternative E would increase the proportion of big game habitats subject to timing and controlled surface use by an average of 7% when compared to Alternative D – No Action (see Tables 1 to 9 in Appendix I of the DRMP/DEIS).

4.19.2.5.2.2 Upland Bird Species

NOTE TO READER: The second paragraph of Section 4.19.2.5.2.2 on page 4-316 of the DRMP/DEIS has been replaced with the paragraph below.

Alternatives A and B would increase the proportion of upland bird habitat open to surface-occupying oil and gas development by approximately 10% and 14%, respectively, when compared to Alternative D – No Action. These alternatives would also decrease the proportion of upland bird habitat subject to controlled surface use by approximately 8% and 14%, respectively, when compared to Alternative D – No Action. Alternative C would also increase the proportion of upland bird habitat open to surface occupying oil and gas development by approximately 2% when compared to Alternative D – No Action and would decrease the proportion of upland bird habitat subject to controlled surface use by approximately 8% when compared to Alternative D – No Action (see Tables 10-15 in Appendix I). Under Alternative E, the proportion of upland bird habitat open to standard stipulations for oil and gas development would decrease by an average of 5% compared to Alternative D – No Action. Exceptions include a 24% increase in the proportion of ring-neck pheasant habitats under standard stipulations. Alternative E would also decrease the proportion of upland bird habitats subject to timing and controlled surface use by an average of 7% when compared to Alternative D – No Action (see Tables 10–15 in Appendix I)

4.19.2.5.2.5 Fisheries and Riparian/Aquatic Species

NOTE TO READER: The third paragraph of Section 4.19.2.5.2.5 on page 4-317 of the DRMP/DEIS has been replaced with the paragraph below.

Although the restrictions on mineral development in wetlands, riparian zones, and floodplains protect aquatic resource from direct impacts, they would not protect them from indirect impacts. The Water Quality section of this DRMP/DEIS indicates that although stipulations would mitigate the negative impacts of minerals development on water quality, the mineral development outlined for each alternative would result in increased risk of indirect, long-term, adverse impacts to water quality through soil erosion, sedimentation, and the potential for petroleum discharges to surface water. These impacts would have a correspondingly increased risk of adverse impacts to fisheries associated with these areas. In general, the level of risk of impacts would be commensurate with the level of mineral development under each alternative. Accordingly, Alternative B would have the greatest potential for impacts to aquatic habitat, followed by Alternatives A, D – No Impact, C, and E, respectively.

4.19.2.6 Effects of Rangeland Improvements Decisions on Wildlife and Fisheries Resources

NOTE TO READER: A new column has been added to Table 4.19.8 to include information on Alternative E.

TABLE 4.19.8. RANGELAND IMPROVEMENTS PROPOSED UNDER THE ALTERNATIVES

	Alternative E
Vegetation Treatment (acres)	45,860
Fencing (miles)	129
Guzzlers/reservoirs	811
Wells/springs	87
Water pipeline (miles)	29.5

NOTE TO READER: The last paragraph of Section 4.19.2.6 on page 4-318 of the DRMP/DEIS has been replaced with the paragraph below.

Alternatives C and E would propose more vegetation treatments and more miles of fencing, as well as additional guzzlers/reservoirs and wells/springs, than would Alternative D – No Action. Alternatives C and E would have greater long-term, beneficial impacts on wildlife than would Alternative D – No Action by improving existing wildlife habitat and providing water during periods of drought. However, Alternatives C and E would propose fewer miles of water pipelines, so the beneficial impacts of this management decision would be less under these alternatives compared to Alternative D – No Action.

4.19.2.7 Effects of Recreation and Travel Decisions on Wildlife and Fisheries Resources

NOTE TO READER: The first paragraph of Section 4.19.2.7 on page 4-318 of the DRMP/DEIS has been replaced with the paragraph below.

Alternatives A and B would designate Seep Ridge, Book Cliff Divide, and Atchee Ridge Roads as BLM Back Country Byways. Alternatives C and E would not designate these roads as BLM Back Country Byways. Alternatives A, B, C, D – No Action, and E would designate Browns Park (Alternatives A, C, D, and E: 52,721 acres; Alternative B: 18,474 acres), Red Mountain/Dry Fork (Alternatives A, B, C, and E: 24,285 acres), and Nine Mile Canyon (Alternatives A and C: 81,168 acres; Alternative B: 44,181 acres) as SRMAs. Alternatives A, C, and E would also designate the White River (24,183 acres, 47,130 acres, and 47,130 acres respectively), Blue Mountain (42,758 acres), and Book Cliffs (273,486 acres) areas as SRMAs and would improve and/or develop up to 400 miles of hiking, horseback riding, and mechanized trails. Alternatives C and E would also designate Fantasy Canyon (69 acres) as an SRMA. Alternative B would not designate these areas as SRMAs nor improve and/or develop any additional trails.

SRMA designations under Alternatives C and E would have both long-term beneficial and adverse impacts on wildlife and fish populations in these areas. Beneficial impacts would include

long-term protection of wildlife and fish habitats in these areas from some surface-disturbing activities. However, any increase in visitor use would have some adverse impacts on wildlife and fish populations that occur within designated SRMAs. Potential impacts to wildlife in SRMAs would likely be limited to short-term disturbance caused by hikers and other recreationists.

4.19.2.8 Effects of Riparian Decisions on Wildlife and Fisheries Resources

NOTE TO READER: Section 4.19.2.8.1 has been replaced with the following to include a discussion of the effects of Alternative E.

4.19.2.8.1 Alternatives A, B, C, and E

Under Alternatives A, B, C, and E, key streamside herbaceous riparian vegetation, where stream bank stability is dependant upon it, would have a minimum stubble height capable of trapping and assuring retention of sediment during high flows at the end of the growing season. Management actions would be based on residual stubble height or utilization of current year's growth at the end of the growing season. To maintain riparian conditions, stubble height on key riparian plant species would be set at 4 inches with 30% utilization. If riparian conditions need improvement, stubble height on key riparian plant species would be set at 6 inches with less than 20% utilization. Key riparian woody vegetation would not be browsed at a level that precludes adequate recruitment to maintain or recover the woody component. Woody vegetation would be managed for the sprouting and young categories rather than the mature and dead categories. Woody vegetation utilization would be set at 30%.

Management decisions under Alternatives A, B, C, and E would help maintain or improve riparian areas in the VPA to a higher degree than would those under Alternative D. Improvements in the riparian area have the potential to directly benefit fish and wildlife species associated with these riparian areas by providing improved habitat and resources.

4.19.2.9 Effects of Special Designations Decisions on Wildlife and Fisheries Resources

NOTE TO READER: Section 4.19.2.9.1 has been replaced with the following to include a discussion of the effects of Alternative E, and a new column has been added to Table 4.19.9 to include information on Alternative E. A summary of total ACECs for Alternatives A, B, C, and D can be found on page 4-320 of the DRMP/DEIS.

4.19.2.9.1 Alternatives A, B, C, D – No Action, and E

Special management areas—ACECs/Research Natural Areas (RNAs)—would generally have long-term beneficial impacts on the wildlife and fisheries known to occur within their boundaries. Only activities that would maintain or enhance habitat used by wildlife and fisheries would be permitted in these areas, although some special management areas would remain open to minerals development. In areas where minerals or any other type of development may impact wildlife and fisheries, restrictive lease stipulations would be required to eliminate or minimize these impacts. The designation of these areas, or lack thereof, would have similar impacts between alternatives. Alternatives C and E propose the most ACECs/RNAs. Alternatives B and D – No Action propose the fewest ACECs/RNAs. Alternative A generally designates fewer acres

in the existing and proposed ACECs/RNAs than does Alternative C but more than do Alternatives B and D – No Action. A summary of the total ACECs by alternative is given in Table 4.19.9.

TABLE 4.19.9. ACEC DESIGNATIONS BY ALTERNATIVE*

ACECs	Acres
	Alt E
Bitter Creek	68,834
Bitter Creek/P.R. Spring	78,591
Coyote Basin	0
Coyote Basin - Coyote Basin	26,590
Coyote Basin - Kennedy Wash	10,670
Coyote Basin - Myton Bench	36,670
Coyote Basin - Shiner	21,957
Coyote Basin - Snake John	28,274
Four Mile Wash	50,280
Lears Canyon	1,375
Middle Green River	6,768
Lower Green River	10,170
White River	47,130
Browns Park	52,721
Red Mountain - Dry Fork	24,285
Nine Mile Canyon	81,168
Pariette	10,437
Red Creek	24,475
Main Canyon	100,915
Total Acreage	**681,310**

* Acres of ACECs for Alternatives A–D can be found in Table 4.19.9 on page 4-320 of the DRMP/DEIS.

4.19.2.10 Effects of Special Status Species Decisions on Wildlife and Fisheries Resources

NOTE TO READER: Section 4.19.2.10 has been replaced with the following to include a discussion of the effects of Alternative E.

Alternatives that incorporate decisions to protect special status plant and animal species would likely benefit general wildlife and fish populations. Alternatives A and B would provide more protection than would Alternative D – No Action but less protection than would Alternatives C and E for special status species.

4.19.2.11 Effects of Soils and Watersheds Decisions on Wildlife and Fisheries Resources

NOTE TO READER: Section 4.19.2.11 has been replaced with the following to include a discussion of the effects of Alternative E.

Under Alternatives A, B, C, and E, the "Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development" (Gold Book, USDI and USDA 2006) would be used as a guide. Surface-disturbing activities would avoid steep hillsides in the construction of roads, pipelines, and flowlines. In addition, under Alternatives C and E, an approved plan would be required prior to construction and maintenance on slopes 21–40% if surface-disturbing activities cannot be avoided, and no surface disturbance would be allowed on slopes greater than 40%. These additional limitations on surface disturbances from oil and gas activities would provide greater indirect, long-term, beneficial impacts to wildlife and fisheries by reducing soil erosion on steep hillsides under Alternatives C and E than would occur under Alternative D – No Action.

NOTE TO READER: Section 4.19.2.11.3 has been replaced with the following to include a discussion of the effects of Alternative E.

4.19.2.11.3 Alternatives C and E

Alternatives C and E would have greater indirect beneficial impacts on wildlife and fisheries than would the other alternatives by applying the same management actions on 21–40% slopes as those applied under Alternative A and by prohibiting surface disturbances on slopes greater than 40%. These actions would provide greater indirect, long-term, beneficial impacts to wildlife and fisheries than would Alternative D – No Action by reducing soil erosion on steep hillsides.

4.19.2.12 Effects of Wildlife and Fisheries Management Decisions on Wildlife and Fisheries Resources

NOTE TO READER: Section 4.19.2.12.3 has been replaced with the following to include a discussion of the effects of Alternative E.

4.19.2.12.3 Alternatives C and E

This alternative would not allow surface-disturbing activities within McCook and Monument Ridge mule deer migration corridors from April 15 to May 31 and from September 1 to October 15. This would result in an extension of the dates in the Monument Ridge area but a reduction of dates in the McCook area when compared with Alternative D – No Action. Activities would not be allowed that would result in adverse impacts to mule deer and elk within crucial winter range from November 15 to April 30. This restriction would not apply if it is determined through analysis and coordination with UDWR that impacts could be mitigated. Factors to be considered would include snow depth, temperature, snow crusting, location of disturbance, forage quantity and quality, animal condition, and expected duration of disturbance. Compared to Alternative D – No Action, these restrictions extend the time period when surface-disturbing activities would be excluded from crucial winter range by approximately 6 weeks. Further, it would provide UDWR an opportunity to be involved in analyzing impacts, which would not occur under Alternatives B or No Action. Total new surface disturbance within crucial mule deer winter

range would be limited to 560 acres per township, or 2.4% of a township, and would be prorated based on the percentage of the crucial mule deer winter range within the township on BLM-managed lands. All disturbances within sagebrush habitat on crucial mule deer winter range would be reclaimed or enhanced at a ratio of 3 to 1. New surface disturbance or restoration in crucial mule deer winter range is not specified in Alternative D – No Action. These proposed management decisions would have more overall benefit to mule deer and elk populations when compared to Alternative D – No Action because fewer surface disturbances would be allowed within crucial habitat.

Under Alternatives C and E, management actions for bighorn sheep would be similar to those under Alternative A, except that habitat and forage would be provided for the emigration and/or reintroduction of Rocky Mountain bighorn sheep. The areas of emigration and reintroduction would be the same as described under Alternative A: the Upper Book Cliffs, including the Willow Creek drainage upstream from Wood Canyon and the Bitter Creek drainage upstream from the Sweetwater confluence; the White River corridor; the Browns Park/Green River corridor including Red Creek Canyon, Sears Creek Canyon, Crouse Canyon, Tolivers Creek, Beaver Creek/Willow Creek area, Goslin Mountain and Teepee Mountain, Big Brush Creek, Little Brush Creek, and Ashley Gorge; and ridge tops on Diamond Mountain, Richard's Mountain, the Island Park/Dry Fork area, and Nine-Mile Canyon. This would expand the reintroduction effort for bighorn sheep in the VPA and would have more beneficial impacts on bighorn sheep populations, when compared with Alternative D – No Action because more management decisions would be applied under these alternatives to provide habitat, forage, and reclamation of surface disturbances within crucial habitat.

Habitat and forage would be provided for the emigration and/or re-introduction of bison in the Book Cliffs, which would have long-term, beneficial impacts on this species within the VPA. The impacts on moose would be the same as discussed under Alternative A.

4.19.2.13 Effects of Wild Horse Decisions on Wildlife and Fisheries Resources

NOTE TO READER: A new row has been added to Table 4.19.10 to include information on Alternative E.

TABLE 4.19.10. MAINTAINING WILD HORSE HERDS BY ALTERNATIVE

	Bonanza HA	Winter Ridge HA	Hill Creek HA
Alternative E	Yes	Yes	Yes

4.19.2.14 Effects of Woodlands and Forest Management Decisions on Wildlife and Fisheries Resources

NOTE TO READER: Section 4.19.2.14.1 has been replaced with the following to include a discussion of the effects of Alternative E.

4.19.2.14.1 Alternatives A, B, C, and E

Alternatives A, B, C, and E would allow public utilization of forest and woodland products as one tool for conducting vegetative treatments to achieve desired future conditions in these forest and woodland habitats. These alternatives would treat/harvest up to 554,108 acres of forest and woodland habitat.

Alternatives A, C, and E would manage forests and woodlands to maintain and restore ecosystems to a condition in which biodiversity is preserved and occurrences of fire, insects, disease, and other disturbances do not exceed levels normally expected in healthy forests and woodlands. These alternatives would maintain relict stands of vegetation for biological and genetic diversity. Forests and woodlands would be managed under the principles of multiple use and sustained yield without permanent impairment of the productivity of the land and the quality of the environment and would allow use of forest, woodland, biomass, and certain vegetation products in areas specified for this use to meet RMP goals (see Section 2.4.18.1 of the DRMP/DEIS). Both of these alternatives would implement the National Healthy Forest Initiative and the National Fire Plan by conducting treatments to reduce fuel loadings, fire severity, and restoring historical disturbance regimes.

Alternatives A and B would initiate a proactive program of woodland management implemented for the salvage of forest and woodland products that are dead and/or dying due to fire, disease, insect-kill, or other disturbance with the management intent of promoting healthy forest and woodlands. Alternatives C and E would allow for the salvage of forest and woodland products within proposed ACECs (242,760 acres) only when there is a threat to forest and woodlands or other resources in the ACEC. Alternatives C and E would also allow for salvage of forest and woodland for other resources on up to 343,110 acres outside of proposed ACECs. However, under Alternative E, salvaging of woodland and forest species would not be allowed in non-WSA lands with wilderness characteristics (277,596 acres), which would result in fewer indirect, long-term, adverse impacts to wildlife and fisheries resources through reduced surface disturbance and increase the potential for adverse impacts to wildlife from fuel loading and wildfires. Alternative B would allow harvesting forest and woodland stands that have reached culmination of mean annual increment (growth begins to decrease). Stands would thereafter be grown and thinned to approximately 80–90% of "normal (maximum) basal area" until the culmination of mean annual increment at which time the stand(s) would be cut again.

In summary, Alternatives A, B, C, and E would have some short-term impacts on wildlife habitat associated with cavity-nesters and other wildlife associated with woodland habitat, including snags. However, woodland harvest would also provide edge habitat that would benefit several big game species, including deer, elk, and black bear. It would also likely improve long-term habitat by eliminating fuel loading, thereby reducing the risk of habitat loss from wildland fire.

NOTE TO READER: A new Section 4.19.2.15 has been added to disclose the effects of non-WSA lands with wilderness characteristics decisions on wildlife and fisheries resources.

4.19.2.15 Effects of Non-WSA Lands with Wilderness Characteristics Decisions on Wildlife and Fisheries Resources

4.19.2.15.1 Alternatives A, B, C, and D – No Action

Under these alternatives, non-WSA lands with wilderness characteristics would not be subject to protective management to maintain those characteristics. Depending on management decisions for other resources, there would be varying levels of development and surface disturbance within these areas, which would have indirect, long-term, adverse impacts to wildlife and fisheries.

4.19.2.15.2 Alternative E

Under Alternative E, 277,596 acres of non-WSA lands with wilderness characteristics would be managed with special protections to maintain their wilderness characteristics. These areas would be managed as VRM Class I; closed to OHV use; closed to mineral leasing, disposal, and entry; excluded from new ROWs; closed to road construction; closed to wood cutting and seed collecting; and retained in federal ownership. Management under this alternative would result in less surface disturbance than would management under any other alternative and would have greater beneficial impacts to wildlife and fisheries. However, management to maintain wilderness values would forego opportunities for vegetation treatments that would enhance or restore habitats or restore ecological balance. This could have a positive benefit for wildlife species that rely on late-seral plant communities but could negatively affect species that rely on early- to mid-seral plant communities. Compared to Alternatives A, B, C, and D – No Action, Alternative E would have indirect, long-term benefits to wildlife and fisheries in the form of reduced soil erosion, sedimentation, and salinity in streams; reduced human disturbance of wildlife; and reduced surface disturbance and fragmentation of wildlife habitat.

4.19.3 Summary

NOTE TO READER: A Section 4.19.3 has been replaced with the following to include a discussion of the effects of Alternative E.

In general, the greatest impacts to wildlife habitat would be fragmentation of essential wildlife and fisheries habitat due to continued minerals development. In this respect, Alternative B would have the greatest impact, followed by Alternatives A, D – No Action, C, and E, respectively. However, it should be noted that the difference in fragmentation impacts between these alternatives is proportionally less than 10% between the alternatives with the least impacts (Alternative E) and the most impacts (Alternative B). The impacts of other resource management decisions on wildlife would be similarly ranked with Alternative B having the greatest adverse impact followed by Alternatives A, D – No Action, C, and E, respectively.

4.20 WOODLANDS AND TIMBER RESOURCES

Please refer to Section 4.20 of the DRMP/DEIS with the following changes.

4.20.2.1 Impacts of Fire Management Decisions on Woodland Resources

NOTE TO READER: Section 4.20.2.1.1 has been replaced with the following to include a discussion of the effects of Alternative E.

4.20.2.1.1. Alternatives A, B, C, and E

Fire management prescriptions under Alternatives A, B, C, and E would have direct beneficial and adverse effects on woodland resources. The beneficial effects of prescribed fire on 156,425 acres of woodlands per decade would include fuel load reductions, the regeneration of some desirable species such as aspen and ponderosa pine, the creation of wildlife snags from burned trees, and the reduction of woodland disease and insect infestations. Compared to Alternative D – No Action, Alternatives A, B, C, and E would provide approximately three times more beneficial impacts to woodland resources from prescribed fire. Short-term, adverse, indirect effects on woodland resources from fire treatments would include potentially increased soil erosion and soil loss from steep slopes. Off-highway vehicle use in these areas would have short-term and long-term adverse impacts on woodland resources by intensifying adverse, fire-related soil erosion impacts.

4.20.2.2 Impacts of Lands and Realty Decisions on Woodland Resources

NOTE TO READER: A new Section 4.20.2.2.3 has been added to disclose the effects of Alternative E.

4.20.2.2.3 Alternative E

The impacts of lands and realty decisions on woodland resources would be similar to the discussion under Alternatives A, B, and C, except that approximately 277,596 acres of non-WSA lands with wilderness characteristics would be managed as ROW exclusion areas and recommended for withdrawal from mineral entry. Under Alternative A, B, and C, locatable mineral withdrawals would be recommended along the upper Green River (8,208 acres), lower Green River (17,063 acres), White River (9,218 acres) and the Book Cliffs Natural Area (401 acres). These actions would have long-term, beneficial impacts on woodland resources by prohibiting ROW and mining-related surface disturbances and by maintaining woodland productivity within these areas. This alternative would have more beneficial impacts on woodland resources than Alternative D – No Action because more protection would be applied to woodland resources.

4.20.2.3 Impacts of Minerals/Energy Decisions on Woodland Resources

NOTE TO READER: A new Section 4.20.2.3.5 has been added to disclose the effects of Alternative E.

4.20.2.3.5 Alternative E

Under Alternative E, approximately 390,419 acres in woodland areas would be administratively available for oil, gas, and CBM leasing subject to Standard Lease Terms or Timing and Controlled Surface Use. This is approximately 126,499 fewer acres (516,918 total acres under Alternative D – No Action) of woodland areas available for oil, gas, and CBM leasing than under Alternative D – No Action. Alternative E also designates 715 times more acreage (24,351 total acres) in woodland areas as closed to leasing than does Alternative D – No Action (34 total acres). Woodland areas classified as NSO would be about six times greater under Alternative D – No Action (30,804 more acres; 37,152 total acres) than under Alternative E (6,348 total acres). The greater acreage classified as NSO under Alternative D – No Action does not out weigh the substantially greater acreage classified as closed to leasing under Alternative E. Also, as stated above, substantially fewer acres would be available subject to Standard Lease Terms or Timing and Controlled Surface Use under Alternative E than under Alternative D – No Action. Adverse impacts to woodland resources would be caused primarily by the loss of resource production and availability of woodland products during the life of minerals projects. Also, surface disturbance due to minerals production would adversely impact woodland resources via increased soil erosion and loss of some trees. Direct, long-term beneficial impacts to woodlands management would include support facilities and access roads created by developing minerals areas. These facilities would provide increased access to woodlands resources.

4.20.2.4 Impacts of Recreation Decisions on Woodland Resources

NOTE TO READER: Section 4.20.2.4.3 has been replaced with the following to disclose the effects of Alternative E.

4.20.2.4.3 Alternatives C and E

Alternatives C and E would manage 47,130 acres along the White River as an SRMA along with 69 acres in Fantasy Canyon. As under Alternative A, Blue Mountain (42,758 acres), Book Cliffs (273,486), Browns Park (52,720 acres), and Nine-Mile Canyon (81,168 acres) would be designated and managed as SRMAs. These designations would have direct, long-term, beneficial impacts on woodlands resources by restricting OHV use to designated trails and managing recreational woodcutting. Further, under Alternatives C and E, Wolf Point and Bitter Creek drainages and the head of Sweetwater Canyon would be closed to mineral leasing. These alternatives would provide more protection for woodland resources than would Alternative D – No Action.

4.20.2.5 Impacts of Soils/Watershed/Riparian Decisions on Woodland Resources

NOTE TO READER: Section 4.20.2.5.1 has been replaced with the following to disclose the effects of Alternative E.

4.20.2.5.1 Alternatives A, B, C, and E

Under Alternatives A, B, C, and E, managing the browse in riparian areas for woody species would have direct, long-term, beneficial effects on aging cottonwood stands. Proper grazing use of woody vegetation and the recruitment and recovery of woody species would have a long-term beneficial impact on restoring healthy cottonwood stands along riparian corridors.

Alternative D – No Action would allow for surface disturbance on slopes in excess of 40% for minerals only. For other activities, no occupancy or other surface disturbance would be allowed. Alternatives A, B, C, and E would provide more protection of woodland resources than would Alternative D – No Action via a range of erosion control measures. Under Alternatives C and E, no surface disturbance would be allowed on slopes greater than 40% and erosion control measures would be required on slopes between 21% and 40%. Under Alternative A, erosion control measures would be required on slopes between 21% and 40%, and no surface disturbance would be allowed on slopes greater than 40% unless it was determined that it would cause undue or unnecessary degradation to pursue other placement alternatives. Under Alternative B, erosion-control measures would be required on slopes greater than 20%. These alternatives would provide more protection of woodland resources than would Alternative D – No Action by reducing the impacts associated with woodland treatments on steep slopes, particularly prescribed fire treatments.

4.20.2.6 Impacts of Special Designations Decisions on Woodland Resources

NOTE TO READER: Section 4.20.2.6.3 has been replaced with the following to disclose the effects of Alternative E.

4.20.2.6.3 Alternatives C and E

Alternatives C and E would beneficially effect woodland resources by designating Bitter Creek (68,834 acres), the Middle Green River (6,768 acres), the White River corridor (47,130 acres), Main Canyon (100,915 acres), and Four Mile Wash (50,280 acres) as ACECs. Also, 124,161 acres would be designated as an ACEC in the Coyote Basin-Shiner-Kennedy Wash areas. Alternative D – No Action would not designate these areas as ACECs.

Alternatives C and E would designate 81,168 acres in Nine-Mile Canyon as an ACEC to protect cultural values. This is 36,987 acres more than currently designated under Alternative D – No Action. Also, the Lower Green River ACEC would be expanded to include both sides of the river with 10,170 acres, protecting high-value scenic resources and riparian ecosystems, managing this area as VRM Class II, and not allowing surface-disturbing activities. In total, approximately 681,310 acres (515,366 acres more than Alternative D – No Action) would be designated or maintained as ACECs under these alternatives (a 410% increase over Alternative D – No Action).

ACEC designation would have long-term beneficial effects on woodland resources by preventing surface-disturbing activities in woodland areas.

In addition to the Upper and Lower Green River, Alternatives C and E would recommend segments of the White River (approximately 44 miles), Green River (approximately 22 miles), Nine-Mile Creek (approximately 19 miles), the Middle Green River (36 miles), and Evacuation Creek, Bitter Creek, and Argyle Creek as suitable for designation as Wild and Scenic. The designation of these segments would have long-term beneficial impacts on woodland resources by providing more resource protection for woodland riparian resources and biodiversity, as compared to Alternative D – No Action.

Under Alternative E, approximately 197,170 acres of non-WSA lands with wilderness characteristics lie within proposed ACECs. These areas would be managed to prohibit woodland harvesting or salvage, which would have long-term, adverse impacts on harvesting opportunities and long-term, beneficial impacts on resource preservation and productivity.

4.20.2.7 Impacts of Travel/Roads/Trails Decisions on Woodland Resources

NOTE TO READER: A new Section 4.20.2.7.5 has been added to disclose the effects of Alternative E.

4.20.2.7.5 Alternative E

Indirect, long-term adverse impacts on woodland resources associated with OHV travel would be reduced under Alternative E compared to Alternative D – No Action. Under Alternative E, 5,434 acres would be open to OHV travel, and 392,818 acres would be closed to OHV travel. This is 782,425 fewer acres open to OHV travel and 342,430 more acres closed to OHV travel than under Alternative D – No Action. There would be 1,326,024 acres that would be limited to OHV travel under Alternative E, 49% (438,749 acres) more than under Alternative D – No Action. The substantial increase in areas limited to OHV travel under Alternative E compared to Alternative D would be offset by the substantial decrease in areas open to OHV travel between these two alternatives. OHV-related prescriptions in Alternative E (closures and areas limited to OHV travel as described above and prohibition on the use of OHVs for big game retrieval off designated routes) would result in less potential for soil erosion caused by OHV use than those in Alternative D – No Action and would therefore be more protective of woodland resources. On the other hand, the ability to access woodland resources for resource management and/or harvesting of woodland products would also be reduced, which would have long-term, adverse, access-related impacts on woodland resource management.

4.20.2.8 Impacts of Vegetation Decisions on Woodland Resources

NOTE TO READER: Section 4.20.2.8.1 has been replaced with the following to disclose the effects of Alternative E.

4.20.2.8.1 Alternatives A, B, C, and E

Allowing prescribed fire on 156,425 acres per decade under Alternatives A, B, C, and E would have impacts similar to those described under Fire Management and Impacts Common to All Alternatives. In the short term, woodland resources would be adversely impacted by prescribed fire and mechanical and chemical treatments since these activities would cause surface disturbance potentially inhibiting the productivity of woodland resources through erosion and the removal of some trees and other vegetation. However, in the long term these fire management activities would facilitate the restoration of natural fire regimes. Alternatives A, B, C, and E would provide approximately three times more beneficial impacts to woodland resources through fire treatments and vegetation manipulation, as compared to Alternative D – No Action.

4.20.2.9 Impacts of Visual Decisions on Woodland Resources

NOTE TO READER: A new Section 4.20.2.9.5 has been added to disclose the effects of Alternative E, and a new column has been added to Table 4.20.1 to include information on Alternative E.

TABLE 4.20.1. VRM CLASS ACREAGES BY ALTERNATIVE

	Alternative E
VRM I and II	595,098
VRM III and IV	1,126,563

4.20.2.9.5 Alternative E

Under Alternative E, direct, long-term, beneficial impacts would result from limiting surface disturbance in woodland areas in accordance with VRM Class I and II guidelines. However, limitations on surface disturbance for woodland disease and infestation treatments and excessive fuel loading in VRM Class I and II areas also have direct, long-term, adverse impacts because treatments that would otherwise aid in returning woodland areas to historical fire regimes and reduce wildfire risk may be limited. VRM Class III and Class IV designations would impose fewer restrictions on lands with woodland resources, which would be beneficial in reducing fuel loads and subsequently reducing the risks of wildland fire but would also result in surface-disturbing activities which may adversely impact woodland resources through increased erosion and loss of trees.

Alternative E would designate more acres as VRM Class I and II (595,098 acres) than would Alternative D – No Action for a 207% increase over Alternative D – No Action. Alternative E would therefore have greater beneficial, protection-related, direct and indirect, effects on woodland resources than would Alternative D – No Action. On the other hand, because of the

larger acreage designated as VRM Class I and II, Alternative E may have more adverse impacts on woodland resources than would Alternative D – No Action.

4.20.2.10 Impacts of Woodlands Decisions on Woodland Resources

NOTE TO READER: A new Section 4.20.2.10.5 has been added to disclose the effects of Alternative E

4.20.2.10.5 Alternative E

Alternative E would manage approximately 131,809 acres (within non-WSA lands with wilderness characteristics) with private and commercial harvesting and salvage prohibitions that would have long-term, adverse impacts on woodland harvesting and gathering opportunities. In the long term, these prohibitions would have beneficial impacts on woodland resources since prohibitions on harvesting prevent damage to the resource. This alternative would provide more benefits to woodland resources than would Alternative D – No Action while at the same time resulting in more adverse impacts associated with woodland harvesting and gathering.

NOTE: A new Section 4.20.2.11 has been added to disclose the effects of non-WSA lands with wilderness characteristics decisions on woodlands.

4.20.2.11 Impacts of Non-WSA Lands with Wilderness Characteristics Decisions on Woodlands

Non-WSA lands with wilderness characteristics would be managed under Alternative E with a management prescription that includes prohibitions on woodland harvesting and salvage, closure to OHV access, designation as VRM I, closure to minerals leasing, recommendations for mineral withdrawal, and exclusion from ROW location. These decisions would have beneficial and adverse impacts on woodland resources. Closing non-WSA lands with wilderness characteristics to woodland harvesting and OHV access would preserve the resource by reducing direct and indirect impacts from surface disturbances within these areas (e.g., soil compaction and erosion, increased fire risks from motorized OHVs, increased potential of invasive species invasion, and replacement of woodland resources). Long-term, adverse impacts would result from reduced opportunities for woodland harvesting and restrictions on vegetation removal and treatments that could otherwise reduce understory fire risks and improve woodland ecological conditions.

4.20.2.12 Summary

NOTE TO READER: The original Section 4.20.2.11, Summary, has been renumbered here as Section 4.20.2.12, and a new subsection 4.20.2.12.5 has been added to disclose the effects of Alternative E.

4.20.2.12.5 Alternative E

This alternative would provide the greatest level of woodlands resource protection, as compared to Alternative D – No Action and the other alternatives by:

- Establishing the greatest number of acres for special designation resource protection (ACECs and river segments suitable for designation as Wild and Scenic)
- Providing protection from surface disturbances on steep slopes
- Providing the greatest protection from surface disturbance caused by motorized/OHV use
- Designating the most acres as VRM Class I (the most protective VRM Class)

NOTE TO READER: A new Section 4.21 Non-WSA Lands with Wilderness Characteristics to has been added to disclose the effects of proposed decisions under each alternative on non-WSA lands with wilderness characteristics.

4.21 NON-WSA LANDS WITH WILDERNESS CHARACTERISTICS

Non-WSA lands with wilderness characteristics are areas generally of 5,000 acres or more in a natural or undisturbed condition. These areas provide outstanding opportunities for solitude or primitive forms of recreation (non-motorized and non-mechanized activities in undeveloped settings). All of the alternatives would impact the values of non-WSA lands with wilderness characteristics to some degree. Generally, actions that create surface disturbance adversely affect the natural character of these areas and the setting for experiences of solitude and primitive recreational activities. Motorized uses in these areas detract from opportunities for both solitude and primitive forms of recreation.

4.21.1 Impacts Common to All Alternatives

4.21.1.1 Fire Management

Prescribed fire would be used under all alternatives to restore native vegetation communities; to maintain and enhance forage for livestock, wildlife, and wild horses; and to reduce fuel loading to prevent catastrophic wildfires.

Prescribed fire treatments would restore vegetation communities and a more natural or desired composition of forbs, grasses, shrubs, and trees, enhancing a more natural landscape. In the short term, a burned landscape may reduce visitor attraction to non-WSA lands with wilderness characteristics and opportunities for primitive recreation. In the long-term, however, a more natural landscape would benefit the natural characteristics of the non-WSA lands with wilderness characteristics and enhance the setting and opportunities for primitive forms of recreation, including hiking, backpacking, hunting, wildlife viewing, and nature study. Enhancing forage for wildlife and wild horses would support and enhance opportunities for primitive recreation, including hunting and wildlife viewing. Reducing fuel loading and the risk of catastrophic wildfire would protect the settings that support primitive recreation opportunities.

In the short term, fire operations (e.g., aircraft over-flights and fire line construction) would adversely impact both the natural landscape and characteristics of non-WSA lands with wilderness characteristics. The noise and presence of the people, equipment, and operations would also adversely impact opportunities for solitude and primitive forms of recreation. In the long-term, however, surface disturbance associated with the fire treatment would be restored, with little to no net effect on naturalness. The effects of fire operations on opportunities for

solitude and primitive recreation would cease, restoring those opportunities. When fencing and seeding are used to aid in restoration of the vegetation community, livestock exclosure fences would have a short-term, temporary impact on the natural characteristics of the non-WSA lands with wilderness characteristics. Introducing a fence would add a human-made structure to the landscape, diminishing the natural characteristics in the short term, and until it is removed.

4.21.1.2 Lands and Realty

Under all alternatives, lands would be recommended for withdrawal from entry under the mining laws for the protection of natural and cultural resource values. Closure of lands to mining (e.g., gold, silver, and uranium) would prevent surface disturbances to the landscape that would degrade the natural characteristics of the non-WSA lands with wilderness characteristics. Mineral withdrawals would also prevent the presence and noise of mining operations (people, vehicles, and equipment) that would diminish opportunities for solitude and conflict with primitive forms of recreation (e.g., hiking, backpacking, hunting, river floating, wildlife viewing, and nature study).

Under all alternatives, most of the public lands in the VPA would be retained in public ownership and managed under the principles of multiple use and sustained yield for the benefit of the American people. Retention of public lands would facilitate the BLM's ability to manage the various resource values and uses, including wilderness characteristics.

Under all alternatives, the identification of utility corridors for future placement of power lines and pipelines, and the identification of avoidance and exclusion areas for corridors would both degrade and protect the wilderness characteristics of non-WSA lands with wilderness characteristics. If corridors were located through non-WSA lands with wilderness characteristics, the placement of utility lines would introduce human-made structures to the landscape and degrade the natural condition of the lands. The presence of these facilities would change the setting required to support primitive forms of recreation from an undeveloped landscape to a more developed and industrial landscape. The presence and operation of utility lines would also reduce opportunities for solitude. On the other hand, if non-WSA lands with wilderness characteristics were identified as areas for exclusion from, or avoidance of, utility corridors, the natural characteristics and opportunities for solitude and primitive recreation would be protected.

4.21.1.3 Livestock and Grazing Management

Under all alternatives, livestock (cattle and sheep) would continue to graze on public lands in non-WSA lands with wilderness characteristics. Levels of livestock use (AUMs) on public lands are set to ensure vegetation communities will meet standards for rangeland health, including proper functioning condition of riparian zones, and the BLM monitors the rangeland to ensure those standards and conditions are met. When a healthy vegetation condition is maintained, there would be no adverse impacts to the natural characteristics of the non-WSA lands with wilderness characteristics. Healthy vegetation communities would maintain and enhance wildlife habitat and populations, ensuring continued opportunities for primitive forms of recreation, including hunting, wildlife viewing, and nature study. Under all alternatives, the health of vegetation communities would be protected, and, therefore, there would be no impacts to the naturalness of the non-WSA lands with wilderness characteristics.

Often, it is necessary to constructed fences and waters to support livestock grazing. In order to ensure proper distribution of livestock over an allotment and proper levels of forage utilization, fences and waters are constructed to manage and distribute livestock. The introduction of human-made structures on the landscape would degrade the natural characteristics of the non-WSA lands with wilderness characteristics, to some degree. However, improved livestock distribution and forage utilization would protect and enhance the condition of the vegetation community and thus the natural characteristics of the non-WSA lands with wilderness characteristics. If a minimal number of fences or waters could be constructed in non-WSA lands with wilderness characteristics and still meet the objectives of the non-WSA lands with wilderness characteristics, they may be permitted. Livestock management facilities are proposed under all alternatives.

4.21.1.3 Minerals

Under all alternatives, development of existing oil and gas leases would result in the loss of wilderness characteristics on between 14% and 100% of 13 to 15 different non-WSA lands with wilderness characteristics, totaling between 124,215 acres and 183,095 acres. Construction of roads, well pads, compressors, pipelines, and power lines would disturb vegetation and soil and the natural characteristics of the non-WSA lands with wilderness characteristics. The presence of people, vehicles, and equipment, and the physical disturbance to the landscape would diminish opportunities for solitude and conflict with primitive forms of recreation.

However, under all alternatives, lands would be proposed for withdrawal from entry under the mining laws in some of the non-WSA lands with wilderness characteristics. Closure to mining would prevent surface disturbances that would degrade the natural characteristics of the non-WSA lands with wilderness characteristics and would exclude the presence and noise of people, vehicles, equipment, and structures that would diminish opportunities for solitude and conflict with opportunities for primitive recreation.

4.21.1.5 Recreation

Under all alternatives, portions of the VPA would be managed for primitive recreational opportunities and the settings needed to support those activities and desired experiences. Under every alternative, management for primitive recreation would maintain and enhance the opportunities for primitive and unconfined recreation and the experience of solitude in some of the non-WSA lands with wilderness characteristics.

Under all alternatives, portions of the VPA would be managed for motorized recreation, including OHV use, back country driving, sightseeing, vehicle-supported camping, picnicking, and hunting. Under all alternatives, motorized uses would degrade opportunities for solitude and primitive recreation in some of the non-WSA lands with wilderness characteristics. Under Alternatives A, B, C, and D – No Action, motorized travel would be permitted on some of the vehicle routes in non-WSA lands with wilderness characteristics. The noise and presence of vehicles would degrade opportunities for solitude and conflict with primitive forms of recreation. Under Alternative E, motorized use of routes would only be permitted on the boundaries of non-WSA lands with wilderness characteristics. However, use of those boundary routes would degrade opportunities for solitude near the edges of non-WSA lands with wilderness

characteristics. As visitors move away from the boundary of the non-WSA lands with wilderness characteristics, further into the heart of the area(s), the impacts of the noise and presence of vehicles on solitude and primitive recreation would lessen and eventually disappear.

4.21.1.6 Riparian and Wetland Resources

Under all alternatives, riparian systems would be managed to achieve proper functioning condition. Protection and improvement of riparian vegetation communities in non-WSA lands with wilderness characteristics would enhance the natural characteristics of portions of some of the non-WSA lands with wilderness characteristics. Protection and improvement of riparian areas would also enhance habitat for aquatic and terrestrial wildlife and would enhance opportunities for primitive recreation.

Sometimes it is necessary to construct facilities to manage and improve riparian areas. Construction of exclosure fences, for example, would introduce human-made structures to the landscape and degrade the natural characteristics of the riparian portion of the non-WSA lands with wilderness characteristics, to some degree. Many of these structures would be temporary and would be removed upon achieving proper functioning condition. Rehabilitation would restore the natural characteristics of the riparian portion of non-WSA lands with wilderness characteristics.

4.21.1.7 Special Designations

Special management areas are proposed under all of the alternatives. These areas include ACECs, suitable Wild and Scenic Rivers, and WSAs. Generally, ACECs and Wild and Scenic Rivers are established to protect wildlife, vegetation, cultural resources, scenic quality, or recreational opportunities, and management of them would limit surface disturbances and offer protection to the natural characteristics of some of the non-WSA lands with wilderness characteristics. Protection of natural landscapes would protect and enhance opportunities for both solitude and primitive types of recreation.

Under all alternatives, WSAs would be managed to protect their wilderness characteristics. Where WSAs are contiguous to non-WSA lands with wilderness characteristics, protection of the WSA would extend or expand opportunities for solitude and primitive forms of recreation found in the non-WSA lands with wilderness characteristics to a larger area, enhancing the opportunity.

4.21.1.8 Visual Resources

Under all alternatives, visual resource management objectives would protect natural landscapes, and thus wilderness characteristics, but would also provide opportunities for landscape changes that would degrade the natural characteristics of non-WSA lands with wilderness characteristics. Management under VRM Class I (preservation of the characteristics landscape) and Class II (retention of the characteristics landscape) objectives would prevent and minimize disturbance to the landform and vegetation and would prevent the placement of structures that are apparent on the landscape, thus protecting the natural characteristics of some of the non-WSA lands with wilderness characteristics. However, management objectives under VRM Class III (partial retention of the characteristic landscape) and Class IV (management for landscape change)

provide for more landscape change. With those objectives, surface disturbance to landform and vegetation and placement of structures that are apparent on the landscape would be permitted. This would degrade the natural characteristics of some of the non-WSA lands with wilderness characteristics and alter the setting needed to support opportunities for solitude and primitive types of recreation.

4.21.1.9 Wildlife and Fisheries

Under all alternatives, the BLM would implement a variety of actions to maintain, enhance, and protect habitats for a diversity of fish and wildlife species. Degraded habitats would be restored. Habitat would be managed for large blocks that provide for the life cycle requirements of fish and wildlife species. These actions would lead to healthy and diverse wildlife populations throughout the VPA. The presence of a variety of wildlife would provide for primitive recreation activities in the non-WSA lands with wilderness characteristics.

There are no actions common to all the alternatives for air quality, cultural resources, hazardous materials, paleontology, soil and water resources, socio-economics, or wild horses that would impact non-WSA lands with wilderness characteristics. These resources are analyzed in the Alternatives Impacts Section (4.21.2).

4.21.2 Alternative Impacts

4.21.2.1 Impacts of Cultural Resources Decisions on Non-WSA Lands with Wilderness Characteristics

4.21.2.1.1 Alternative A

Under this alternative, areas of high cultural resource site density would be protected from surface disturbance caused by OHV use by limiting motorized travel to designated routes in the Little Hole/Devils Hole and Upper Willow Creek areas. This action would have direct, short- and long-term benefits to the natural character of the Lower Flaming Gorge and Wolf Point non-WSA lands with wilderness characteristics by limiting surface disturbance cause by OHV use on the designated routes and by not expanding OHV use to other areas of the non-WSA lands with wilderness characteristics. Limiting OHV use to designated routes and offering portions of the Four Mile Wash area for oil and gas leasing subject to NSO would also protect areas of high cultural resource site density by limiting surface disturbance to designated routes. This action would also have direct, short- and long-term benefits to the natural character of the Four Mile Wash portion of the Desolation Canyon non-WSA lands with wilderness characteristics. However, while limiting OHV use to designated routes would prevent surface disturbance that would impact the naturalness of these three non-WSA lands with wilderness characteristics, the noise and presence of OHVs on these routes would have an adverse impact on opportunities for solitude and primitive recreation when OHVs travel on these routes.

4.21.2.1.2 Alternative B

Under this alternative, the benefits of limiting surface disturbance by OHV use to protect cultural resources, and thus wilderness characteristics, would be the same as described for Alternative A.

However, the benefits of offering oil and gas leases with an NSO stipulation in the Four Mile Wash area of Desolation Canyon non-WSA lands with wilderness characteristics would not be realized. Under this alternative, leases would be issued with standard stipulations resulting in surface disturbance and impacts to the natural values of the non-WSA lands with wilderness characteristics. The presence and noise of oil and gas exploration and development would also adversely impact opportunities for solitude and primitive recreation, as in Alternative A.

4.21.2.1.3 Alternative C

Under this alternative, areas of high cultural resource site density would be protected from surface disturbance caused by OHV use and oil and gas development by closing the Little Hole/Devils Hole, Upper Willow Creek, and Four Mile Wash areas to OHV use and oil and gas leasing. These actions would have direct, short- and long-term benefits to the natural character of the Lower Flaming Gorge, Wolf Point, and Desolation Canyon non-WSA lands with wilderness characteristics by preventing surface disturbance cause by OHV driving cross-country (as permitted in Alternative D – No Action) and oil and gas exploration and development. Further, closing these areas to OHV use and oil and gas development would provide short- and long-term benefits to opportunities for solitude and primitive recreation in these areas by excluding the presence and noise of OHVs and oil and gas development from these three non-WSA lands with wilderness characteristics.

4.21.2.1.4 Alternative D – No Action

Alternative D – No Action would not limit OHV use near high-density cultural sites, and these sites would be open to oil and gas leasing. This alternative would have long-term, adverse impacts on the wilderness characteristics of Lower Flaming Gorge, Wolf Point, and Desolation Canyon non-WSA lands with wilderness characteristics by permitting surface-disturbing activities that would alter the landscape and natural character of these areas. Further, the noise and presence of OHVs and oil and gas development would have an adverse impact on the opportunities for solitude and primitive recreation these areas offer.

4.21.2.1.5 Alternative E

Alternative E would have the same impacts on areas of high cultural resource site density and wilderness characteristics in the Lower Flaming Gorge, Wolf Point, and Desolation Canyon non-WSA lands with wilderness characteristics as described in Alternative C.

4.21.2.1.6 Summary

In summary, Alternatives C and E would provide the highest level of protection to areas of high cultural resource site density and wilderness characteristics in the Lower Flaming Gorge, Wolf Point, and Desolation Canyon non-WSA lands with wilderness characteristics. Alternatives A and B would provide some protection but less than that provided by Alternatives C and E. Alternative D – No Action would provide the least protection to cultural resources and wilderness characteristics.

4.21.2.2 Impacts of Fire Management Decisions on Non-WSA Lands with Wilderness Characteristics.

4.21.2.2.1 Alternatives A, B, C, and E

These alternatives would provide for prescribed fire treatments on approximately 156,425 acres per decade. Where fire treatments occurred in non-WSA lands with wilderness characteristics, the effects on wilderness values would be both short- and long-term. Further, the degree of impact would vary by vegetation community and landform. For example, the effects of fire burning in a pinyon-juniper community in mountainous terrain would remain more visible to the visitor than fire burning on a sage brush flat.

Prescribed fire treatments would restore native vegetation communities and a more natural composition of forbs, grasses, shrubs, and trees, enhancing a more natural landscape. In the short-term, a burned landscape may reduce opportunities for primitive recreation. In the long-term, however, a more natural landscape would benefit the natural character of the non-WSA lands with wilderness characteristics and enhance the setting and opportunities for primitive forms of recreation.

In the short term, fire operations (e.g., aircraft over-flights and fire line construction) would adversely impact both the natural landscape and character of the non-WSA lands with wilderness characteristics. The noise and presence of the people, equipment, and operations would also adversely impact opportunities for solitude and primitive forms of recreation. In the long term, however, surface disturbance associated with the fire treatment would be restored, with little to no net effect on naturalness. And, the effects of fire operations on opportunities for solitude and primitive recreation would cease, restoring those opportunities. When fencing and seeding are used to aid in restoration of the vegetation community, the livestock exclosure fence would have a short-term, temporary impact on the natural characteristics of the non-WSA lands with wilderness characteristics. Introducing a fence would add a human-made structure to the landscape, diminishing the natural characteristics in the short-term until it is removed.

4.21.2.2.2 Alternative D – No Action

Alternative D – No Action would prescribe fire on up to 27,950 acres in the Book Cliffs area and 22,950 acres in the Diamond Mountain area. The effects, whether adverse or beneficial, would be the same as those described under Alternative A, but on a smaller scale than under Alternatives A, B, C, and E.

4.21.2.2.3 Summary

In summary, fire management would have long-term, beneficial impacts on vegetation, and thus on the natural quality of the non-WSA lands with wilderness characteristics. Alternatives A, B, C, and E would have equivalent impacts on this resource. Alternative D – No Action would have the least beneficial impacts on the natural quality because fewer acres would be treated with prescribed fire.

4.21.2.3 Impacts of Lands and Realty Management Decisions on Non-WSA Lands with Wilderness Characteristics

4.21.2.3.1 Alternative A

Alternative A proposes withdrawals to preclude locatable mineral entry into the Green River Scenic Corridor in Browns Park, the White River, Lears Canyon, the Book Cliffs Natural Area, and the Lower Green River. The proposed withdrawals, totaling 36,267 acres, would prohibit entry for hard rock mining, protecting the existing character of the landscape. Withdrawing lands from mineral entry in these areas would protect the natural character of 1,779 acres of the Lower Flaming Gorge, 6,368 acres of the White River, 3 acres of the Cripple Cowboy, and 8,572 acres of the Desolation Canyon non-WSA lands with wilderness characteristics. Further, prohibition of mining would preserve the opportunities for both solitude and primitive forms of recreation in each of these non-WSA lands with wilderness characteristics. When compared to Alternative D – No Action, Alternative A would provide slightly more protection.

Under Alternative A, BLM would pursue public access to the White River at the mouth of Cowboy Canyon, Bonanza Bridge, and the Wagon Hound Road. Further, acquisition of Indian Trust Lands would be sought in Bitter Creek and near the confluence of South and Sweetwater Canyons. These actions would enhance public access to the White River, Bitter Creek, Rat Hole, Cripple Cowboy, Hells Hole Canyon, and Sweet Water non-WSA lands with wilderness characteristics, protecting opportunities to participate in primitive and unconfined forms of recreation in these areas.

4.21.2.3.2 Alternative B

Alternative B also proposes withdrawals to preclude locatable mineral entry into the Green River Scenic Corridor in Browns Park, the White River, Lears Canyon, the Book Cliffs Natural Area, and the Lower Green River. The effects on the wilderness characteristics of Lower Flaming Gorge, White River, Cripple Cowboy, and Desolation Canyon non-WSA lands with wilderness characteristics would be the same as described in Alternative A.

Public access to the White River would not be pursued and acquisition of Indian Trust Lands would only be sought for BLM administrative purposes under this alternative. The effect would be no enhancement of public access to participate in primitive recreation in a natural setting.

4.21.2.3.3 Alternative C

The effects of pursuing access to public lands and proposing mineral withdrawals would be the same as described under Alternative A.

4.21.2.3.4 Alternative D

Under this alternative, BLM would recommend mineral withdrawals in the Green River Scenic Corridor in Browns Park, relict vegetation areas, the Lower Green River, and developed and potential recreation sites, totaling about 35,900 acres. Mineral withdrawals under this alternative would protect the natural landscape and character of the Lower Flaming Gorge (1,779 acres) and

Desolation Canyon (8,572 acres) non-WSA lands with wilderness characteristics. Without mining operations, there would be no presence and noise of people, equipment, and mining operations, and thus these would not impact opportunities for solitude and primitive recreation in these areas.

4.21.2.3.5 Alternative E

The effects of pursuing access to public lands and proposing mineral withdrawals would be the same as described under Alternative A. Under this alternative, non-WSA lands with wilderness characteristics would be managed as ROW exclusion areas. Exclusion from future ROW development for pipelines and power lines would protect the wilderness characteristics of these areas, including the natural character of the landscape of all the non-WSA lands with wilderness characteristics. Further, under Alternative E, all non-WSA lands with wilderness characteristics would be recommended for withdrawal from mineral entry. Withdrawal from mining entry would have the same impacts as described in Alternative A, except on a larger area (277,596 acres). Protection of the natural landscape would also preserve the setting needed to support primitive forms of recreation and experiences of solitude.

4.21.2.3.6 Summary

In summary, Alternatives A, C, and E would provide the greatest protection to the wilderness characteristics of the non-WSA lands with wilderness characteristics by proposing to withdraw the non-WSA lands with wilderness characteristics from locatable mineral entry and by excluding the areas as locations for future utility ROWs. Alternatives B and D – No Action would also provide protection to wilderness characteristics but to lesser degree than Alternatives A, C, and E.

4.21.2.4 Impacts of Livestock and Grazing Management on Non-WSA Lands with Wilderness Characteristics

4.21.2.4.1 Alternatives A, C, and E

Under these alternatives, lands acquired in the Nine Mile area would not be grazed by livestock to enhance riparian and watershed values. The resulting improvement of riparian and watershed condition would enhance the wilderness characteristics of Desolation Canyon non-WSA lands with wilderness characteristics. Without livestock grazing, the vegetation and soil condition of the watershed would improve, also improving the natural character of the non-WSA lands with wilderness characteristics. Further, improved natural condition would sustain the setting needed to support wilderness-related recreation opportunities (primitive and unconfined recreation) and the experience of solitude wilderness visitors seek.

4.21.2.4.2 Alternative B

Under Alternative B livestock grazing would be permitted on lands acquired in the Nine Mile area, if use does not detract from riparian values and recreation objectives. At proper levels of use, grazing would not adversely impact the riparian conditions of Nine Mile Canyon. While there would be some visual evidence of livestock use in the canyon (presence of livestock, feces,

trampling of soil, and consumption of vegetation), rangeland health and riparian condition would be maintained, and the natural condition of the Desolation Canyon non-WSA lands with wilderness characteristics would be maintained to the average visitor. For some visitors, the presence of livestock would be an adverse impact on the desired experience (connection with the natural world and experiences of solitude). However, this effect would be seasonal. Livestock would not graze in the canyon year long. At other times of the years, livestock would be gone, trampled soils would recover, and vegetation would re-grow, reducing the effect to the visitor.

4.21.2.4.3 Alternative D – No Action

Under Alternative D – No Action, grazing management actions are unspecified on lands acquired in the Nine Mile area. Since grazing is guided by livestock objectives set in the *Standards for Rangeland Health and Guidelines for Grazing Management* and the riparian are managed by objectives of Proper Functioning Condition, this alternative would have impacts on non-WSA lands with wilderness characteristics like Alternative B. Proper levels of livestock use are guided by grazing and riparian objectives. These objectives would not permit degradation of the lands. However, since livestock would still be present during periods of the year, the effects on wilderness characteristics would be the same as described for Alternative B.

4.21.2.4.4 Summary

In summary, under Alternatives A, C, and E there would be no impact of livestock grazing on non-WSA lands with wilderness characteristics from acquisition of lands in Nine Mile Canyon, because grazing would not be permitted on the acquired lands. Alternatives B and D – No Action, however, would allow for livestock grazing, with seasonal impacts on opportunities for solitude and primitive recreation due to the presence of livestock in the Desolation Canyon non-WSA lands with wilderness characteristics.

4.21.2.5 Effects of Minerals and Energy Resources on Non-WSA Lands with Wilderness Characteristics

Given the resource development potential, past levels of production, presence of leases, and ongoing exploration and development, the following assumptions for oil and gas exploration and development were used in the analysis of impacts to non-WSA lands with wilderness characteristics.

- The number of wells projected in each development area would not be evenly distributed throughout the development area. Greater densities of wells would cluster in areas of exploration interest and resource discovery and production.
- Lessees would exercise rights on existing leases (valid existing rights) in areas of high and moderate potential.
- 75% of the wells drilled would produce oil or gas.
- 75% of the producing wells would be producing at any given time.
- The average life of a well would be 25 years.
- There would be 0.20 miles of new road construction per well and 0.73 acres of surface disturbance per well.

- There would be 2.4 acres of surface disturbed per well; 0.9 acres would be reclaimed within 1 year.
- The number of miles of pipelines would equal the numbers of miles of new roads.
- Average well spacing would be 80 acres.
- 10% of the wells would have electrification. The length of power lines would approximately equal the miles of road. There would be approximately 0.25 miles of surface disturbance per mile of power line.

The potential for oil and gas development in the VPA was derived from the Mineral Potential Report for the Vernal Planning Area (BLM 2004). Definitions of high ("H"), medium ("M"), and undetermined ("ND") oil and gas development potential can be found in that publication. For analysis purposes, high and medium potential are considered as reasonably foreseeable for development, while undetermined potential is considered to indicate that development is unlikely to occur. Areas are considered to have undetermined oil and gas potential because of a lack of useful data. Within the VPA, these areas typically lack data due to a dearth of current or historical exploration, and they are therefore considered unlikely to be developed within the life of this plan.

A number of variables would influence the degree of impact to non-WSA lands with wilderness characteristics, including where surface-disturbing activities occur, land form or topography, vegetation type, sequence of development, and reclamation time. Soil types and climate would affect the time it takes to reclaim disturbances. Successful reclamation would take about 5–10 years.

Construction and operation of oil and gas wells and associated support facilities, including roads, surface and buried pipelines, power lines, and compressor stations would create soil and vegetation disturbance and the presence of permanent structures that would degrade the natural characteristics of non-WSA lands with wilderness characteristics. In addition to site-specific surface disturbance, the cumulative number of wells and density of spacing would change the natural landscape to an industrial landscape.

The noise of construction and operation of producing wells, including the presence of work crews, vehicles, and equipment, would degrade opportunities for solitude and conflict with primitive recreational opportunities in proximity to industrial development. As recreational visitors move away from the sources of development, the sights and sounds of development would diminish. However, it can be expected that sights and sounds from development would reduce opportunities for solitude and primitive and unconfined recreation up to 1/2 mile beyond the direct loss of natural character. Given the number and spacing of industrial facilities, it would be difficult to escape the adverse effects on solitude and primitive recreation throughout the areas with wilderness characteristics.

It can be expected that as a result of oil and gas development and production, entire non-WSA lands with wilderness characteristics would lose their natural qualities and opportunities for solitude and primitive recreation. Table 4.21.1 summarizes the impacts from the alternatives to each of the non-WSA lands with wilderness characteristics found in the VPA.

Since the precise location of solid mineral development (tar sands, oil shale, Gilsonite, phosphate, mineral materials, and locatable minerals) is unknown, for analysis purposes the following assumptions for solid mineral exploration and development were used in the analysis of impacts to non-WSA lands with wilderness characteristics.

- The assessment of potential effects is based on the overall acreage open to development.
- The greater the surface disturbance, the greater the potential to impact the wilderness characteristics of non-WSA lands with wilderness characteristics.

4.21.2.5.1 Alternative A

4.21.2.5.1.1 Oil, Gas, and Coal-bed Methane (CBM)

All or parts (between 70% and 100%) of 14 non-WSA lands with wilderness characteristics, totaling up to 171,608 acres, would lose their natural character and opportunities for solitude and primitive recreation due to exploration for and development of oil and gas resources in the VPA.

- Bitter Creek
- Bull Canyon
- Cold Spring Mountain
- Cripple Cowboy
- Desolation Canyon
- Hell's Hole Canyon
- Hideout Canyon
- Lower Bitter Creek
- Mexico Point
- Mountain Home
- Rat Hole
- Sweet Water Canyon
- White River
- Wolf Point

These areas are located in oil and gas development areas with moderate to high potential for further development. Given the resource potential, level of past production, existing leases, and ongoing exploration and development, it is anticipated these 14 non-WSA lands with wilderness characteristics would lose all or most of their wilderness characteristics. The impacts to naturalness and opportunities for solitude and primitive recreation would be the same as described above.

4.21.2.5.1.2 Other Mineral Resources

Under Alternative A, tar sands would be open to leasing with standard or timing and controlled surface use stipulations on 21,543 acres in the Bitter Creek, Desolation Canyon, Hideout Canyon, Lower Bitter Creek, Mexico Point, and Wolf Point non-WSA lands with wilderness characteristics. In the Desolation Canyon and Wolf Point non-WSA lands with wilderness characteristics, 2,412 acres would be open to leasing with an NSO stipulation. Oil shale would be open to leasing on 11,862 acres in Desolation Canyon and White River non-WSA lands with wilderness characteristics and closed to leasing on 6,513 acres in these same two areas.

Phosphate would be available for leasing on 11,515 acres in Bourdette Draw, Daniels Canyon, Moonshine Draw, and Mountain Home non-WSA lands with wilderness characteristics, and closed to leasing on 204 acres in Moonshine Draw and Mountain Home non-WSA lands with wilderness characteristics. In all, 10 miles of Gilsonite would be open to leasing on about 48

acres (determined based on an average width of 40 feet for Gilsonite) in Desolation Canyon, and White River non-WSA lands with wilderness characteristics.

Mineral materials (e.g., sand, gravel, and building stone) would be open to leasing on 53,084 acres in 18 separate non-WSA lands with wilderness characteristics: Beach Draw, Bitter Creek, Bourdette Draw, Bull Canyon, Cold Spring Mountain, Daniels Canyon, Dead Horse Pass, Desolation Canyon, Diamond Breaks, Diamond Mountain, Lower Flaming Gorge, Moonshine Draw, Mountain Home, Stuntz Draw, White River, Wild Mountain, and Wolf Point. Mineral materials would be closed to leasing on 13,872 acres in Bourdette Draw, Bull Canyon, Cold Spring Mountain, Desolation Canyon, Diamond Breaks, Diamond Mountain, Lower Bitter Creek, Lower Flaming Gorge, Mountain Home, and White River.

Under Alternative A, 16,892 acres in portions of five non-WSA lands with wilderness characteristics would be proposed for withdrawal from entry under the mining laws: Cold Spring Mountain, Cripple Cowboy, Desolation Canyon, Lower Flaming Gorge, and White River. This would leave 260,704 acres open to entry under the mining laws in all or portions of each of the non-WSA lands with wilderness characteristics.

The impacts from projected development of tar sands, oil shale, Gilsonite, phosphate, mineral materials, coal, and locatable minerals are difficult to quantify because specific locations for these operations have not been determined and development is dependent on market demand and technology. However, generally, it can be said that these types of operations typically result in small to medium-sized surface disturbances that would degrade the natural characteristics of localized parts of the non-WSA lands with wilderness characteristics, if they were to occur in any of the areas listed above. Further, the presence and noise of people and equipment would degrade opportunities for solitude and conflict with opportunities for primitive forms of recreation. Road construction to new mine sites would reduce the roadless nature of the non-WSA lands with wilderness characteristic. It should be noted that the nature of tar sands and oil shale development could result in substantially more surface disturbance than is anticipated for the other solid minerals, with impacts as described above to larger areas of the non-WSA lands with wilderness characteristics.

However, it should also be noted that the potential for development of tar sands is considered to be low. Development potential for oil shale, Gilsonite, phosphate, and mineral materials is moderate to high, and exploration and development is likely. Development potential for coal is low, given the low-grade quality of the resource, while potential for locatables is moderate. Very little development is expected.

This assessment is based on acres open to development, as compared to Alternative D – No Action. The more acres open to mineral leasing, the more potential for surface disturbance and degradation of the wilderness characteristics of non-WSA lands with wilderness characteristics. Compared to Alternative D – No Action, the same number of acres would be open to tar sands leasing in Alternative A, except that 2,347 more acres would be open subject to NSO. The same number of acres would be open to oil shale leasing under Alternative A as under Alternative D – No Action. Under Alternative A, 984 more acres would be open to phosphate leasing than under Alternative D – No Action, and 1 more mile of Gilsonite would be available for leasing under

Alternative A than under Alternative D – No Action. However, 6,381 fewer acres would be open to disposal of mineral materials. Under Alternative A, 4,490 fewer acres would be available for mineral entry than under Alternative D – No Action.

4.21.2.5.2 Alternative B

4.21.2.5.2.1 Oil, Gas, and Coal-bed Methane (CBM)

The impacts of oil and gas development on the natural character and opportunities for solitude and primitive recreation of non-WSA lands with wilderness characteristics would be the same as described for Alternative A, for the same areas, except more acres would lose their wilderness characteristics—up to 183,095 acres.

4.21.2.5.2.2 Other Mineral Resources

Under Alternative B, tar sands would be open to leasing with standard or timing and controlled surface use stipulations on 23,892 acres in the Bitter Creek, Desolation Canyon, Hideout Canyon, Lower Bitter Creek, Mexico Point, and Wolf Point non-WSA lands with wilderness characteristics. In the Wolf Point non-WSA lands with wilderness characteristics, 65 acres would be open to leasing with and NSO stipulation. Oil shale would be open to leasing on 14,844 acres in the Desolation Canyon and White River non-WSA lands with wilderness characteristics and closed to leasing on 3,531 acres in the White River non-WSA lands with wilderness characteristics.

Phosphate would be available for leasing on 11,515 acres in Bourdette Draw, Daniels Canyon, Moonshine Draw, and Mountain Home non-WSA lands with wilderness characteristics, and closed to leasing on 204 acres in Moonshine Draw and Mountain Home non-WSA lands with wilderness characteristics. A total of 10 miles of Gilsonite would be open to leasing on about 48 acres (acres determined based on an average width of 40 feet of Gilsonite) in the Desolation Canyon and White River non-WSA lands with wilderness characteristics.

Mineral materials (e.g., sand and gravel and building stone) are open to leasing on 63,926 acres in 18 separate non-WSA lands with wilderness characteristics: Beach Draw, Bitter Creek, Bourdette Draw, Bull Canyon, Cold Spring Mountain, Daniels Canyon, Dead Horse Pass, Desolation Canyon, Diamond Breaks, Diamond Mountain, Lower Bitter Creek, Lower Flaming Gorge, Moonshine Draw, Mountain Home, Stuntz Draw, White River, Wild Mountain, and Wolf Point. Mineral materials are closed to leasing on 13,872 acres in Bourdette Draw, Bull Canyon, Cold Spring Mountain, Desolation Canyon, Diamond Breaks, Diamond Mountain, Lower Flaming Gorge, Mountain Home, and White River.

Under Alternative B, 16,892 acres in portions of five non-WSA lands with wilderness characteristics would be proposed for withdrawal from entry under the mining laws: Cold Spring Mountain, Cripple Cowboy, Desolation Canyon, Lower Flaming Gorge, and White River. This would leave 260,704 acres open to entry under the mining laws in all or portions of each of the non-WSA lands with wilderness characteristics.

The impacts from projected development of tar sands, oil shale, Gilsonite, phosphate, mineral materials, coal, and locatable minerals are difficult to quantify because specific locations for these operations have not been determined and development is dependent on market demand and technology. However, generally, it can be said that these types of operations typically result in small to medium-sized surface disturbances that would degrade the natural characteristics of localized parts of the non-WSA lands with wilderness characteristics, if they were to occur in any of the areas listed above. Further, the presence and noise of people and equipment would degrade opportunities for solitude and conflict with opportunities for primitive forms of recreation. Road construction to new mine sites would reduce the roadless nature of the non-WSA lands with wilderness characteristic. It should be noted that the nature of tar sands and oil shale development could result in substantially more surface disturbance than is anticipated for the other solid minerals, with impacts as described above to larger areas of the non-WSA lands with wilderness characteristics.

However, it should also be noted that the potential for development of tar sands is considered to be low. Development potential for oil shale, Gilsonite, phosphate, and mineral materials is moderate to high, and exploration and development is likely. Development potential for coal is low, given the low-grade quality of the resource, while potential for locatables is moderate. Very little development is expected.

This assessment is based on acres open to development, as compared to Alternative D – No Action. The more acres open to mineral leasing, the more potential for surface disturbance and degradation of the wilderness characteristics of non-WSA lands with wilderness characteristics. Compared to Alternative D – No Action, the same number of acres would be open to tar sands leasing in Alternative B. About 2,982 more acres would be open to oil shale leasing than under Alternative D – No Action. Under Alternative B, 984 more acres would be open to phosphate leasing than under Alternative D – No Action, and 1 more mile of Gilsonite would available for leasing than under Alternative D – No Action. However, 4,461 more acres would be open to disposal of mineral materials. Under Alternative B, 4,490 fewer acres would be available for mineral entry than under Alternative D – No Action.

4.21.2.5.3 Alternative C

4.21.2.5.3.1 Oil, Gas, and Coal-bed Methane (CBM)

Under Alternative C the impacts of oil and gas development on the natural character and opportunities for solitude and primitive recreation of non-WSA lands with wilderness characteristics would be the same as those described for Alternative A, for the same areas, except that fewer acres would be affected. All or parts (between 51% and 100%) of the 14 non-WSA lands with wilderness characteristics listed in Alternative A, totaling up to 141,480 acres, would lose their naturalness and opportunities for solitude and primitive recreation due to oil and gas development and production.

4.21.2.5.3.2 Other Mineral Resources

Under Alternative C, tar sands would be open to leasing with standard or timing and controlled surface use stipulations on 4,244 acres in the Bitter Creek, Desolation Canyon, Hideout Canyon,

Lower Bitter Creek, Mexico Point, and Wolf Point non-WSA lands with wilderness characteristics. In the Bitter Creek, Desolation Canyon, and Wolf Point non-WSA lands with wilderness characteristics, 19,079 acres would be closed to leasing. Oil shale would be open to leasing on 6,355 acres in Desolation Canyon and White River non-WSA lands with wilderness characteristics and closed to leasing on 12,019 acres.

Phosphate would be available for leasing on 11,509 acres in the Bourdette Draw, Daniels Canyon, Moonshine Draw, and Mountain Home non-WSA lands with wilderness characteristics, and closed to leasing on 210 acres in Moonshine Draw and Mountain Home non-WSA lands with wilderness characteristics. A total of 9 miles of Gilsonite would be open to leasing on about 44 acres (acres determined based on an average width of 40 feet for Gilsonite) in the White River non-WSA lands with wilderness characteristics.

Mineral materials (e.g., sand and gravel and building stone) would be open to leasing on 34,106 acres in 15 separate non-WSA lands with wilderness characteristics: Bitter Creek, Bourdette Draw, Bull Canyon, Cold Spring Mountain, Daniels Canyon, Dead Horse Pass, Desolation Canyon, Diamond Breaks, Diamond Mountain, Lower Bitter Creek, Lower Flaming Gorge, Moonshine Draw, Mountain Home, White River, and Wild Mountain. Mineral materials would be closed to leasing on 32,850 acres in Beach Draw, Bitter Creek, Bourdette Draw, Bull Canyon, Cold Spring Mountain, Daniels Canyon, Desolation Canyon, Diamond Breaks, Diamond Mountain, Lower Flaming Gorge, Moonshine Draw, Mountain Home, Stuntz Draw, White River, and Wolf Point.

Under Alternative C, 16,892 acres in portions of five non-WSA lands with wilderness characteristics would be proposed for withdrawal from entry under the mining laws: Cold Spring Mountain, Cripple Cowboy, Desolation Canyon, Lower Flaming Gorge, and White River. This would leave 260,704 acres open to entry under the mining laws in all or portions of each of the non-WSA lands with wilderness characteristics.

The impacts from projected development of tar sands, oil shale, Gilsonite, phosphate, mineral materials, coal, and locatable minerals are difficult to quantify because specific locations for these operations have not been determined and development is dependent on market demand and technology. However, generally it can be said that these types of operations typically result in small to medium-sized surface disturbances that would degrade the natural characteristics of localized parts of the non-WSA lands with wilderness characteristics, if they were to occur in any of the areas listed above. Further, the presence and noise of people and equipment would degrade opportunities for solitude and conflict with opportunities for primitive forms of recreation. Road construction to new mine sites would reduce the roadless nature of the non-WSA lands with wilderness characteristic. It should be noted, that the nature of tar sands and oil shale development could result in substantially more surface disturbance than is anticipated for the other solid minerals, with impacts as described above to larger areas of the non-WSA lands with wilderness characteristics.

However, it should also be noted that the potential for development of tar sands is considered to be low. Development potential for oil shale, Gilsonite, phosphate, and mineral materials is moderate to high, and exploration and development is likely. Development potential for coal is

low, given the low-grade quality of the resource, while potential for locatables is moderate. Very little development is expected.

This assessment is based on acres open to development, as compared to Alternative D – No Action. The more acres open to mineral leasing, the more potential for surface disturbance and degradation of the wilderness characteristics of non-WSA lands with wilderness characteristics. Compared to Alternative D – No Action, 19,648 fewer acres would be open to tar sands leasing in Alternative C, and 65 fewer acres would be open subject to NSO. About 5,507 fewer acres would be open to oil shale leasing as compared to Alternative D – No Action. Under Alternative C, 978 more acres would be open to phosphate leasing than under Alternative D – No Action, and the same number of miles of Gilsonite (9) would available for leasing as Alternative D – No Action. However, 25,359 fewer acres would be open to disposal of mineral materials. Under Alternative C, 4,490 fewer acres would be available for mineral entry than under Alternative D – No Action.

4.21.2.5.4 Alternative D

4.21.2.5.4.1 Oil, Gas, and Coal-bed Methane (CBM)

The impacts of oil and gas development on the natural character and opportunities for solitude and primitive recreation of non-WSA lands with wilderness characteristics would be the same as described for Alternative C, for the same areas, except that slightly more acres would be affected: up to 157,965 acres.

4.21.2.5.4.2 Other Mineral Resources

Under Alternative D – No Action, tar sands would be open to leasing with standard or timing and controlled surface use stipulations on 23,892 acres in the Bitter Creek, Desolation Canyon, Hideout Canyon, Lower Bitter Creek, Mexico Point, and Wolf Point non-WSA lands with wilderness characteristics. In the Wolf Point non-WSA lands with wilderness characteristics, 65 acres would be open to leasing with an NSO stipulation. Oil shale would be open to leasing on 11,862 acres in the Desolation Canyon and White River non-WSA lands with wilderness characteristics and closed to leasing on 6,513 acres in these same two areas.

Phosphate would be available for leasing on 10,531 acres in the Bourdette Draw, Daniels Canyon, Moonshine Draw, and Mountain Home non-WSA lands with wilderness characteristics, and closed to leasing on 1,188 acres in Moonshine Draw and Mountain Home non-WSA lands with wilderness characteristics. A total of 9 miles of Gilsonite would be open to leasing on about 44 acres (acres determined based on an average width of 40 feet for Gilsonite) in the Desolation Canyon, Lower Bitter Creek, and White River non-WSA lands with wilderness characteristics.

Mineral materials (e.g., sand and gravel and building stone) are open to leasing on 59,465 acres in 18 separate non-WSA lands with wilderness characteristics: Beach Draw, Bitter Creek, Bourdette Draw, Bull Canyon, Cold Spring Mountain, Daniels Canyon, Dead Horse Pass, Desolation Canyon, Diamond Breaks, Diamond Mountain, Lower Bitter Creek, Lower Flaming Gorge, Moonshine Draw, Mountain Home, Stuntz Draw, White River, Wild Mountain, and Wolf Point. Mineral materials are closed to leasing on 7,490 acres in Bourdette Draw, Bull Canyon,

Cold Spring Mountain, Desolation Canyon, Diamond Breaks, Diamond Mountain, Lower Flaming Gorge, Mountain Home, and White River.

Under Alternative D, 12,402 acres in portions of four non-WSA lands with wilderness characteristics would be proposed for withdrawal from entry under the mining laws – Cold Spring Mountain, Desolation Canyon, Lower Flaming Gorge, and Mountain Home. This would leave 265,194 acres open to entry under the mining laws in all or portions of each of the non-WSA lands with wilderness characteristics.

The impacts from projected development of tar sands, oil shale, Gilsonite, phosphate, mineral materials, coal, and locatable minerals are difficult to quantify because specific locations for these operations have not been determined and development is dependent on market demand and technology. However, generally it can be said that these types of operations typically result in small to medium-sized surface disturbances that would degrade the natural characteristics of localized parts of the non-WSA lands with wilderness characteristics, if they were to occur in any of the areas listed above. Further, the presence and noise of people and equipment would degrade opportunities for solitude and conflict with opportunities for primitive forms of recreation. Road construction to new mine sites would reduce the roadless nature of the non-WSA lands with wilderness characteristic. It should be noted, that the nature of tar sands and oil shale development could result in substantially more surface disturbance than is anticipated for the other solid minerals, with impacts as described above to larger areas of the non-WSA lands with wilderness characteristics.

However, it should also be noted that the potential for development of tar sands is considered to be low. Development potential for oil shale, Gilsonite, phosphate, and mineral materials is moderate to high, and exploration and development is likely. Development potential for coal is low, given the low-grade quality of the resource, while potential for locatables is moderate. Very little development is expected.

This assessment is based on acres open to development. The more acres open to mineral leasing, the more potential for surface disturbance and degradation of the wilderness characteristics of non-WSA lands with wilderness characteristics. Alternative D – No Action would make the most acres available for tar sands leasing in the non-WSA lands with wilderness characteristics: 23,892 acres. This would be the same as for Alternative B. Alternative D – No Action would make 11,862 acres available for oil shale leasing, the same as under Alternative A but 2,982 acres fewer than under Alternative B. Alternative D would open 10,531 acres to phosphate leasing, 984 fewer acres than under Alternatives A and B and 978 fewer acres than under Alternative C. Alternative D – No Action would make 9 miles of Gilsonite available for leasing, the same as under Alternative C, but 1 mile less than under Alternatives A and B. Under Alternative D – No Action, 59,465 acres would be open for mineral material disposal, more than Alternatives A and C, but 4,461 fewer acres than Alternative B. Under Alternative D – No Action, 12,402 acres would be recommended for withdrawal from entry under the mining laws, 4,490 fewer than under Alternatives A, B, and C.

4.21.2.5.5 Alternative E

4.21.2.5.5.1 Oil, Gas, and Coal-bed Methane (CBM)

Due to the presence of existing leases, parts (between 14% and 89%) of 13 non-WSA lands with wilderness characteristics totaling up to 124,215 acres would lose their natural character and opportunities for solitude and primitive recreation due to exploration, development, and production of oil and gas resources in the VPA:

- Bitter Creek
- Bull Canyon
- Cripple Cowboy
- Desolation Canyon
- Hell's Hole Canyon
- Hideout Canyon
- Lower Bitter Creek
- Mexico Point
- Mountain Home
- Rat Hole
- Sweet Water Canyon
- White River
- Wolf Point

These areas are located in oil and gas development areas with moderate to high potential for further development. Given the resource potential, level of past production, existing leases (exercise of valid existing rights), and ongoing exploration and development, it is anticipated these 13 non-WSA lands with wilderness characteristics would lose part of their natural character and opportunities for solitude and primitive recreation. The impacts to naturalness and opportunities for solitude and primitive recreation would be the same as those described for Alternative A above.

4.21.2.5.5.2 Other Mineral Resources

Under Alternative E, tar sands would be closed to leasing where they occur in the Bitter Creek, Desolation Canyon, Hideout Canyon, Lower Bitter Creek, Mexico Point, and Wolf Point non-WSA lands with wilderness characteristics. Oil shale would be closed to leasing on 18,375 acres in Desolation Canyon and White River non-WSA lands with wilderness characteristics. While phosphate occurs on 11,719 acres in the Bourdette Draw, Daniels Canyon, Moonshine Draw, and Mountain Home non-WSA lands with wilderness characteristics, it would be closed to leasing under this alternative. All 10 miles of Gilsonite found in Desolation Canyon, Lower Bitter Creek, and White River would be closed to leasing under Alternative E. Further, 66,956 acres of mineral materials found in Beach Draw, Bitter Creek, Bourdette Draw, Bull Canyon, Cold Spring Mountain, Daniels Canyon, Dead Horse Pass, Desolation Canyon, Diamond Breaks, Diamond Mountain, Lower Bitter Creek, Lower Flaming Gorge, Moonshine Draw, Mountain Home, Stuntz Draw, White River, Wild Mountain, and Wolf Point would be closed to mineral material disposal. Under Alternative E, 277,596 acres in all 25 non-WSA lands with wilderness characteristics would be proposed for withdrawal from entry under the mining laws.

The impacts from projected development of tar sands, oil shale, Gilsonite, phosphate, mineral materials, coal, and locatable minerals are difficult to quantify because specific locations for these operations have not been determined and development is dependent on market demand and technology. However, generally it can be said that these types of operations typically result in

small to medium-sized surface disturbances that would degrade the natural characteristics of localized parts of the non-WSA lands with wilderness characteristics, if they were to occur in any of the areas listed above. Further, the presence and noise of people and equipment would degrade opportunities for solitude and conflict with opportunities for primitive forms of recreation. Road construction to new mine sites would reduce the roadless nature of the non-WSA lands with wilderness characteristic. It should be noted, that the nature of tar sands and oil shale development could result in substantially more surface disturbance than is anticipated for the other solid minerals, with impacts as described above to larger areas of the non-WSA lands with wilderness characteristics.

However, it should also be noted that the potential for development of tar sands is considered to be low. Development potential for oil shale, Gilsonite, phosphate, and mineral materials is moderate to high, and exploration and development is likely. Development potential for coal is low, given the low-grade quality of the resource, while potential for locatables is moderate. Very little development is expected.

This assessment is based on acres open to development, as compared to Alternative D – No Action. The more acres open to mineral leasing, the more potential for surface disturbance and degradation of the wilderness characteristics of non-WSA lands with wilderness characteristics. Since the emphasis of Alternative E is to protect the wilderness characteristics of non-WSA lands with wilderness characteristics, these lands would not be available for leasing for any of the solid mineral leasables. Compared to Alternative D – No Action, 23,982 fewer acres would be open to tar sands leasing, 11,862 fewer acres would be open to oil shale leasing, 10,531 fewer acres open to phosphate leasing, 9 fewer miles would be open to Gilsonite leasing, and 59,465 fewer acres would be open to mineral material disposal. All 277,596 acres of non-WSA lands would be recommended for withdrawal from mineral entry—265,194 more acres unavailable for hardrock mining. As a result, there would be no impacts on the wilderness characteristics of the non-WSA lands with wilderness characteristics, subject to valid existing rights.

4.21.2.5.6. Summary

Under all alternatives, portions (between 14% and 100%) of 13 to 14 of the non-WSA lands with wilderness characteristics would lose their wilderness characteristics due to the development of oil and gas resources (exercise of valid existing rights on existing leases). Construction of roads and well pads and ancillary facilities would degrade the natural landscape. The presence of people and equipment and the operation of the exploration and production facilities would diminish or eliminate opportunities for solitude and primitive recreation. Oil and gas development would degrade the wilderness characteristics of between 124,215 acres and 185,095 acres, depending on the alternative, of the total 277,596 acres of non-WSA lands with wilderness characteristics in the VPA.

Under Alternatives A, B, C, and D – No Action, the anticipated development of some tar sands, oil shale, phosphate, Gilsonite, and mineral materials leases would have the same types of impacts on the wilderness characteristics on up to 18 non-WSA lands where these resource values are located. Coal is located in the planning area, but its low-grade quality leaves this resource unlikely for development, with no associated impacts on wilderness characteristics. Under Alternative A, B, C, and D – No Action, most of the non-WSA lands with wilderness

characteristics would be open to entry under the mining laws. A few projects are anticipated that would have generally small to moderate, localized impacts on the wilderness characteristics of the non-WSA lands with wilderness characteristics. Under Alternative E, however, all 277,596 acres of the non-WSA lands with wilderness characteristics would be recommended for mineral withdrawal, protecting the wilderness characteristics of these lands.

TABLE 4.21.1 ALTERNATIVE IMPACTS TO NON-WSA LANDS WITH WILDERNESS CHARACTERISTICS

Name of Area	Oil & as Development Potential			Proposed Lease Stipulations (Acres)				Currently under Lease (Acres)	Wilderness Characteristic Lost (Acres)		
	H	M	U	Standard Stipulations	Timing and Controlled Surface Use	NSO	Closed to Leasing		Direct loss of natural characteristics during life of the Plan (acres)	Reduction (directly or indirectly) in quality of the opportunities for solitude and primitive and unconfined recreation due to sights and sounds of development (acres)	Total area affected during life of the plan (acres and %)
Beach Draw (898 acres)											
Alternative A			X	40	858			0	0	0	0 (0%)
Alternative B			X	717	181			0	0	0	0 (0%)
Alternative C			X	3	16	879		0	0	0	0 (0%)
Alternative D			X	898				0	0	0	0 (0%)
Alternative E			X				898	0	0	0	0 (0%)
Bitter Creek (33,488 acres)											
Alternative A	X			2,419	30,980	89		23,569 (70%)	33,399	33,399	33,399 (99%)
Alternative B	X			13,609	19,790	89		23,569 (70%)	33,399	33,399	33,399 (99%)
Alternative C	X			32	1,073		32,383	23,569 (70%)	23,569	23,569	23,569 (70%)
Alternative D	X			25,509	7,239	740		23,569 (70%)	32,748	32,748	32,748 (98%)
Alternative E	X						33,488	23,569 (70%)	23,569	23,569	23,569 (70%)

TABLE 4.21.1 ALTERNATIVE IMPACTS TO NON-WSA LANDS WITH WILDERNESS CHARACTERISTICS

Name of Area	Oil & as Development Potential			Proposed Lease Stipulations (Acres)				Currently under Lease (Acres)	Wilderness Characteristic Lost (Acres)		
	H	M	U	Standard Stipulations	Timing and Controlled Surface Use	NSO	Closed to Leasing		Direct loss of natural characteristics during life of the Plan (acres)	Reduction (directly or indirectly) in quality of the opportunities for solitude and primitive and unconfined recreation due to sights and sounds of development (acres)	Total area affected during life of the plan (acres and %)
Bourdette Draw (13,335 acres)											
Alternative A			X	3,224	10,036	75		5,744 (43%)	0	0	0 (0%)
Alternative B			X	6,828	6,432	75		5,744 (43%)	0	0	0 (0%)
Alternative C			X		13,258	77		5,744 (43%)	0	0	0 (0%)
Alternative D			X	13,094	22	239		5,744 (43%)	0	0	0 (0%)
Alternative E			X				13,335	5,744 (43%)	0	0	0 (0%)
Bull Canyon (2,483 acres)											
Alternative A		X		12	2,468		3	2,221 (89%)	2,480	2,480	2,480 (100%)
Alternative B		X		13	2,466		4	2,221 (89%)	2,479	2,479	2,479 (100%)
Alternative C		X			2,479		4	2,221 (89%)	2,479	2,479	2,479 (100%)
Alternative D		X		2,479			4	2,221 (89%)	2,479	2,479	2,479 (100%)
Alternative E		X					2,483	2,221 (89%)	2,221	2,221	2,221 (89%)

TABLE 4.21.1 ALTERNATIVE IMPACTS TO NON-WSA LANDS WITH WILDERNESS CHARACTERISTICS

Name of Area	Oil & as Development Potential			Proposed Lease Stipulations (Acres)				Currently under Lease (Acres)	Wilderness Characteristic Lost (Acres)		
	H	M	U	Standard Stipulations	Timing and Controlled Surface Use	NSO	Closed to Leasing		Direct loss of natural characteristics during life of the Plan (acres)	Reduction (directly or indirectly) in quality of the opportunities for solitude and primitive and unconfined recreation due to sights and sounds of development (acres)	Total area affected during life of the plan (acres and %)
Cold Spring Mountain (8,674 acres)											
Alternative A		X	X	115	8,400	171	78	0 (0%)	8,515	8,515	8,515 (97%)
Alternative B		X	X	2,994	5,521	171	78	0 (0%)	8,515	8,515	8,515 (97%
Alternative C		X	X		8,515	171	78	0 (0%)	8,515	8,515	8,515 (97%)
Alternative D		X	X		5,189	3,500	75	0 (0%)	5,171	5,171	5,171 (59%)
Alternative E		X	X				8,764	0 (0%)	0	0	0 (0%)
Cripple Cowboy (13,603 acres)											
Alternative A	X	X			13,599		4	11,519 (85%)	13,599	13,599	13,599 (100%)
Alternative B	X	X		6,943	6,657		3	11,519 (85%)	13,600	13,600	13,600 (100%)
Alternative C	X	X		9	57		13,537	11,519 (85%)	11,519	11,519	11,519 (85%)
Alternative D	X	X		3,640	9,525	435	3	11,519 (85%)	13,165	13,165	13,165 (97%)
Alternative E	X	X					13,603	11,519 (85%)	11,519	11,519	11,519 (85%)

TABLE 4.21.1 ALTERNATIVE IMPACTS TO NON-WSA LANDS WITH WILDERNESS CHARACTERISTICS

Name of Area	Oil & as Development Potential			Proposed Lease Stipulations (Acres)				Currently under Lease (Acres)	Wilderness Characteristic Lost (Acres)		
	H	M	U	Standard Stipulations	Timing and Controlled Surface Use	NSO	Closed to Leasing		Direct loss of natural characteristics during life of the Plan (acres)	Reduction (directly or indirectly) in quality of the opportunities for solitude and primitive and unconfined recreation due to sights and sounds of development (acres)	Total area affected during life of the plan (acres and %)
Daniels Canyon (3,045 acres)											
Alternative A			X		3,045			322 (11%)	0	0	0 (0%)
Alternative B			X	1,923	1,122			322 (11%)	0	0	0 (0%)
Alternative C			X		3,004	41		322 (11%)	0	0	0 (0%)
Alternative D			X	2,980	16	49		322 (11%)	0	0	0 (0%)
Alternative E			X				3,045	322 (11%)	0	0	0 (0%)
Dead Horse Pass (6,994 acres)											
Alternative A			X	3,594	3,400			0 (0%)	0	0	0 (0%)
Alternative B			X	5,727	1,267			0 (0%)	0	0	0 (0%)
Alternative C			X	3,594	3,400			0 (0%)	0	0	0 (0%)
Alternative D			X	3,261	2,086	1,647		0 (0%)	0	0	0 (0%)
Alternative E			X				6,994	0 (0%)	0	0	0 (0%)

TABLE 4.21.1 ALTERNATIVE IMPACTS TO NON-WSA LANDS WITH WILDERNESS CHARACTERISTICS

Name of Area	Oil & as Development Potential			Proposed Lease Stipulations (Acres)				Currently under Lease (Acres)	Wilderness Characteristic Lost (Acres)		
	H	M	U	Standard Stipulations	Timing and Controlled Surface Use	NSO	Closed to Leasing		Direct loss of natural characteristics during life of the Plan (acres)	Reduction (directly or indirectly) in quality of the opportunities for solitude and primitive and unconfined recreation due to sights and sounds of development (acres)	Total area affected during life of the plan (acres and %)
Desolation Canyon (63,118 acres)											
Alternative A	X	X		38,007	7,330	17,781		41,949 (66%)	45,337	45,337	45,337 (72%)
Alternative B	X	X		50,474	12,507	137		41,949 (66%)	62,981	62,981	62,981 (100%)
Alternative C	X	X		17,076	3,953		42,089	41,949 (66%)	41,949	41,949	41,949 (66%)
Alternative D	X	X		19,652	25,669	17,763		41,949 (66%)	45,321	45,321	45,321 (72%)
Alternative E	X	X					63,118	41,949 (66%)	41,949	41,949	41,949 (66%)
Diamond Breaks (4,539 acres)											
Alternative A			X	3,241	1,241		57	0 (0%)	0	0	0 (0%)
Alternative B			X	4,225	257		57	0 (0%)	0	0	0 (0%)
Alternative C			X		4,482		57	0 (0%)	0	0	0 (0%)
Alternative D			X	3,036	1,425	21	57	0 (0%)	0	0	0 (0%)
Alternative E			X				4,539	0 (0%)	0	0	0 (0%)

TABLE 4.21.1 ALTERNATIVE IMPACTS TO NON-WSA LANDS WITH WILDERNESS CHARACTERISTICS

Name of Area	Oil & as Development Potential			Proposed Lease Stipulations (Acres)				Currently under Lease (Acres)	Wilderness Characteristic Lost (Acres)		
	H	M	U	Standard Stipulations	Timing and Controlled Surface Use	NSO	Closed to Leasing		Direct loss of natural characteristics during life of the Plan (acres)	Reduction (directly or indirectly) in quality of the opportunities for solitude and primitive and unconfined recreation due to sights and sounds of development (acres)	Total area affected during life of the plan (acres and %)
Diamond Mountain (27,238 acres)											
Alternative A			X	3,291	23,477	470		5,475 (20%)	0	0	0 (0%)
Alternative B			X	4,760	22,008	470		5,475 (20%)	0	0	0 (0%)
Alternative C			X	3,393	20,431	3,414		5,475 (20%)	0	0	0 (0%)
Alternative D			X	2,260	19,274	5,704		5,475 (20%)	0	0	0 (0%)
Alternative E			X				27,238	5,475 (20%)	0	0	0 (0%)
Hell's Hole Canyon (2,709 acres)											
Alternative A	X	X			2,709			2,260 (83%)	2,709	2,709	2,709 (100%)
Alternative B	X	X		2,419	290			2,260 (83%)	2,709	2,709	2,709 (100%)
Alternative C	X	X		570	16		2,123	2,260 (83%)	2,260	2,260	2,260 (83%)
Alternative D	X	X		7	2,438	264		2,260 (83%)	2,445	2,445	2,445 (90%)
Alternative E	X	X					2,709	2,260 (83%)	2,260	2,260	2,260 (83%)

TABLE 4.21.1 ALTERNATIVE IMPACTS TO NON-WSA LANDS WITH WILDERNESS CHARACTERISTICS

Name of Area	Oil & as Development Potential			Proposed Lease Stipulations (Acres)				Currently under Lease (Acres)	Wilderness Characteristic Lost (Acres)		
	H	M	U	Standard Stipulations	Timing and Controlled Surface Use	NSO	Closed to Leasing		Direct loss of natural characteristics during life of the Plan (acres)	Reduction (directly or indirectly) in quality of the opportunities for solitude and primitive and unconfined recreation due to sights and sounds of development (acres)	Total area affected during life of the plan (acres and %)
Hideout Canyon (1,113 acres)											
Alternative A	X	X			1,113			154 (14%)	1,113	1,113	1,113 (100%)
Alternative B	X	X		8	1,105			154 (14%)	1,113	1,113	1,113 (100%)
Alternative C	X	X		1,113				154 (14%)	1,113	1,113	1,113 (100%)
Alternative D	X	X		42	1,071			154 (14%)	1,113	1,113	1,113 (100%)
Alternative E	X	X					1,113	154 (14%)	154	154	154 (14%)
Lower Bitter Creek (11,417 acres)											
Alternative A	X			4,761	6,656			8,039 (70%)	11,417	11,417	11,417 (100%)
Alternative B	X			4,761	6,656			8,039 (70%)	11,417	11,417	11,417 (100%)
Alternative C	X			4,761	6,656			8,039 (70%)	11,417	11,417	11,417 (100%)
Alternative D	X			10,398		1,019		8,039 (70%)	10,398	10,398	10,398 (91%)
Alternative E	X						11,417	8,039 (70%)	8,039	8,039	8,039 (70%)

TABLE 4.21.1 ALTERNATIVE IMPACTS TO NON-WSA LANDS WITH WILDERNESS CHARACTERISTICS

Name of Area	Oil & as Development Potential			Proposed Lease Stipulations (Acres)				Currently under Lease (Acres)	Wilderness Characteristic Lost (Acres)		
	H	M	U	Standard Stipulations	Timing and Controlled Surface Use	NSO	Closed to Leasing		Direct loss of natural characteristics during life of the Plan (acres)	Reduction (directly or indirectly) in quality of the opportunities for solitude and primitive and unconfined recreation due to sights and sounds of development (acres)	Total area affected during life of the plan (acres and %)
Lower Flaming Gorge (17,810 acres)											
Alternative A			X	89	6,432	2	11,287	0 (0%)	0	0	0 (0%)
Alternative B			X	12,840	3,184	1,786		0 (0%)	0	0	0 (0%)
Alternative C			X	18	6,495		11,297	0 (0%)	0	0	0 (0%)
Alternative D			X	3,455	4,999	9,356		0 (0%)	0	0	0 (0%)
Alternative E			X				17,810	0 (0%)	0	0	0 (0%)
Mexico Point (1,277 acres)											
Alternative A	X	X			1,277			635 (50%)	1,277	1,277	1,277 (100%)
Alternative B	X	X		10	1,267			635 (50%)	1,277	1,277	1,277 (100%)
Alternative C	X	X		1,277				635 (50%)	1,277	1,277	1,277 (100%)
Alternative D	X	X		1	1,276			635 (50%)	1,277	1,277	1,277 (100%)
Alternative E	X	X					1,277	635 (50%)	635	635	635 (50%)

TABLE 4.21.1 ALTERNATIVE IMPACTS TO NON-WSA LANDS WITH WILDERNESS CHARACTERISTICS

Name of Area	Oil & as Development Potential			Proposed Lease Stipulations (Acres)				Currently under Lease (Acres)	Wilderness Characteristic Lost (Acres)		
	H	M	U	Standard Stipulations	Timing and Controlled Surface Use	NSO	Closed to Leasing		Direct loss of natural characteristics during life of the Plan (acres)	Reduction (directly or indirectly) in quality of the opportunities for solitude and primitive and unconfined recreation due to sights and sounds of development (acres)	Total area affected during life of the plan (acres and %)
Moonshine Draw (4,513 acres)											
Alternative A			X	12	4,377	120	4	0 (0%)	0	0	0 (0%)
Alternative B			X	2,197	2,192	120	4	0 (0%)	0	0	0 (0%)
Alternative C			X		3,043	1,466	4	0 (0%)	0	0	0 (0%)
Alternative D			X	4,509			4	0 (0%)	0	0	0 (0%)
Alternative E			X				4,513	0 (0%)	0	0	0 (0%)
Mountain Home (7,083 acres)											
Alternative A	X	X		208	6,674	201		4,524 (64%)	6,882	6,882	6,882 (97%)
Alternative B	X	X		1,822	5,060	201		4,524 (64%)	6,882	6,882	6,882 (97%)
Alternative C	X	X			6,875	208		4,524 (64%)	6,875	6,875	6,875 (97%)
Alternative D	X	X		254	3,185	3,644		4,524 (64%)	4,524	4,524	4,524 (64%)
Alternative E	X	X					7,083	4,524 (64%)	4,524	4,524	4,524 (64%)

TABLE 4.21.1 ALTERNATIVE IMPACTS TO NON-WSA LANDS WITH WILDERNESS CHARACTERISTICS

Name of Area	Oil & as Development Potential			Proposed Lease Stipulations (Acres)				Currently under Lease (Acres)	Wilderness Characteristic Lost (Acres)		
	H	M	U	Standard Stipulations	Timing and Controlled Surface Use	NSO	Closed to Leasing		Direct loss of natural characteristics during life of the Plan (acres)	Reduction (directly or indirectly) in quality of the opportunities for solitude and primitive and unconfined recreation due to sights and sounds of development (acres)	Total area affected during life of the plan (acres and %)
Rat Hole (11,367 acres)											
Alternative A	X	X			11,367			8,288 (73%)	11,367	11,367	11,367 (100%)
Alternative B	X	X		11,367				8,288 (73%)	11,367	11,367	11,367 (100%)
Alternative C	X	X			164		11,203	8,288 (73%)	8,288	8,288	8,288 (73%)
Alternative D	X	X		3,864	7,023	480		8,288 (73%)	10,887	10,887	10,887 (96%)
Alternative E	X	X					11,367	8,288 (73%)	8,288	8,288	8,288 (73%)
Stuntz Draw (1,992 acres)											
Alternative A			X		1,992			0 (0%)	0	0	0 (0%)
Alternative B			X	636	1,356			0 (0%)	0	0	0 (0%)
Alternative C			X		983	1,009		0 (0%)	0	0	0 (0%)
Alternative D			X	1,992				0 (0%)	0	0	0 (0%)
Alternative E			X				1,992	0 (0%)	0	0	0 (0%)

TABLE 4.21.1 ALTERNATIVE IMPACTS TO NON-WSA LANDS WITH WILDERNESS CHARACTERISTICS

Name of Area	Oil & as Development Potential			Proposed Lease Stipulations (Acres)				Currently under Lease (Acres)	Wilderness Characteristic Lost (Acres)		
	H	M	U	Standard Stipulations	Timing and Controlled Surface Use	NSO	Closed to Leasing		Direct loss of natural characteristics during life of the Plan (acres)	Reduction (directly or indirectly) in quality of the opportunities for solitude and primitive and unconfined recreation due to sights and sounds of development (acres)	Total area affected during life of the plan (acres and %)
Sweet Water Canyon (6,994 acres)											
Alternative A	X	X			6,994			5,143 (74%)	6,994	6,994	6,994 (100%)
Alternative B	X	X		723	6,271			5,143 (74%)	6,994	6,994	6,994 (100%)
Alternative C	X	X		34			6,960	5,143 (74%)	5,143	5,143	5,143 (74%)
Alternative D	X	X		6,387		583		5,143 (74%)	6,387	6,387	6,387 (91%)
Alternative E	X	X					6,994	5,143 (74%)	5,143	5,143	5,143 (74%)
Vivas Cake Hill (277 acres)											
Alternative A			X	9	268			0 (0%)	0	0	0 (0%)
Alternative B			X		277			0 (0%)	0	0	0 (0%)
Alternative C			X		27	250		0 (0%)	0	0	0 (0%)
Alternative D			X	277				0 (0%)	0	0	0 (0%)
Alternative E			X				277	0 (0%)	0	0	0 (0%)

TABLE 4.21.1 ALTERNATIVE IMPACTS TO NON-WSA LANDS WITH WILDERNESS CHARACTERISTICS

Name of Area	Oil & as Development Potential			Proposed Lease Stipulations (Acres)				Currently under Lease (Acres)	Wilderness Characteristic Lost (Acres)		
	H	M	U	Standard Stipulations	Timing and Controlled Surface Use	NSO	Closed to Leasing		Direct loss of natural characteristics during life of the Plan (acres)	Reduction (directly or indirectly) in quality of the opportunities for solitude and primitive and unconfined recreation due to sights and sounds of development (acres)	Total area affected during life of the plan (acres and %)
White River (21,210 acres)											
Alternative A	X			8,812	5,971	6,367		9,626 (45%)	14,783	14,783	14,783 (70%)
Alternative B	X			8,812	5,971	6,367		9,626 (45%)	14,783	14,783	14,783 (70%)
Alternative C	X			7,644	3,140	3,538	6,888	9,626 (45%)	10,784	10,784	10,784 (51%)
Alternative D	X			10,911		10,299		9,626 (45%)	10,911	10,911	10,911 (51%)
Alternative E	X						21,210	9,626 (45%)	9,626	9,626	9,626 (45%)
Wild Mountain (527 acres)											
Alternative A			X	427	100			0 (0%)	0	0	0 (0%)
Alternative B			X	439	88			0 (0%)	0	0	0 (0%)
Alternative C			X	428	52			0 (0%)	0	0	0 (0%)
Alternative D			X	348	179			0 (0%)	0	0	0 (0%)
Alternative E			X				527	0 (0%)	0	0	0 (0%)

TABLE 4.21.1 ALTERNATIVE IMPACTS TO NON-WSA LANDS WITH WILDERNESS CHARACTERISTICS

Name of Area	Oil & as Development Potential			Proposed Lease Stipulations (Acres)				Currently under Lease (Acres)	Wilderness Characteristic Lost (Acres)		
	H	M	U	Standard Stipulations	Timing and Controlled Surface Use	NSO	Closed to Leasing		Direct loss of natural characteristics during life of the Plan (acres)	Reduction (directly or indirectly) in quality of the opportunities for solitude and primitive and unconfined recreation due to sights and sounds of development (acres)	Total area affected during life of the plan (acres and %)
Wild Mountain (527 acres)											
Alternative A			X	427	100			0 (0%)	0	0	0 (0%)
Alternative B			X	439	88			0 (0%)	0	0	0 (0%)
Alternative C			X	428	52			0 (0%)	0	0	0 (0%)
Alternative D			X	348	179			0 (0%)	0	0	0 (0%)
Alternative E			X				527	0 (0%)	0	0	0 (0%)

4.21.2.6 Effects of Recreation Decisions on Non-WSA Lands with Wilderness Characteristics

4.21.2.6.1 Alternative A

Alternative A would manage 24,183 acres along the White River as an SRMA for river-related recreation opportunities, including float boating, camping, wildlife viewing, hunting, fishing, hiking, and historic interpretation. The SRMA includes portions of the White River non-WSA lands with wilderness characteristics. In the canyon, the SRMA prescription would generally retain the natural character of the landscape, allowing minor development consistent with VRM Class II objectives, except where the ROW corridor crosses the river canyon. Generally, retaining a natural setting would support opportunities for solitude and primitive forms of recreation. Location of a utility line in the proposed corridor would also change the landscape to a more developed character, and would not be conducive to opportunities for solitude or primitive recreation activities.

Under this alternative, Blue Mountain (42,758 acres) would be managed as a SRMA with recreation focus on hang-gliding, wildlife viewing, hunting, sight seeing, photography, horseback riding, camping, hiking, rock climbing, historic interpretation, and OHV use of designated routes. The SRMA includes Bourdette Draw non-WSA lands with wilderness characteristics. The management prescription for that portion of the SRMA that includes the non-WSA lands with wilderness characteristics would limit OHV use to designated routes, manage landscapes as VRM Classes I, II, and IV, and allow for oil and gas leasing with timing and controlled surface use stipulations. Management to VRM Class I (preservation of the characteristic landscape) and II (retain the landscape) would limit surface disturbance that would impact the natural character of the non-WSA lands with wilderness characteristics. Areas along the Miners Draw Road would be managed VRM Class IV and would permit development that would alter the landscape and natural character of the non-WSA lands with wilderness characteristics. Oil and gas leasing with timing and controlled surface use would allow exploration and development that would alter the landscape. However, while parts of the non-WSA lands with wilderness characteristics are leased, oil and gas occurrence potential is undetermined, so development is not anticipated. Limiting OHV use to designated routes (about 4 miles) would prevent further surface disturbance of the landscape, and thus its natural character, but the noise and presence of motorized vehicles would degrade opportunities for solitude and conflict with primitive recreation activities found in the non-WSA lands with wilderness characteristics.

Alternative A would manage 273,486 acres in the Book Cliffs as a SRMA with emphasis on a frontier mystique of adventure and discovery; opportunities for unconfined recreation with limited facilities. Activities would include wildlife viewing, hunting, hiking, backpacking, OHV driving, camping, viewing cultural sites, picnicking, mountain biking, photography, and horseback riding. This SRMA includes all or portions of Bitter Creek, Rat Hole Ridge, Cripple Cowboy, Hells Hole Canyon, Sweet Water Canyon, and Wolf Point non-WSA lands with wilderness characteristics. The management prescription for that portion of the SRMA that includes the non-WSA lands with wilderness characteristics would limit OHV use to approximately 34 miles of designated routes, manage landscapes as VRM Classes II and III, and

allow for oil and gas leasing with timing and controlled surface use stipulations (also a small area of standard stipulations in Bitter Creek non-WSA lands with wilderness characteristics). Management to VRM Class II would limit surface disturbance that would generally protect the natural character of the non-WSA lands with wilderness characteristics. Management to VRM Class III would allow for surface disturbance and development that would alter the landscape and natural character of the non-WSA lands with wilderness characteristics. Wolf Point, Sweetwater Canyon, Cripple Cowboy, Hells Hole Canyon, and Rat Hole Ridge would be managed by VRM Class II objectives. Bitter Creek would be managed under both Class II and III objectives. Oil and gas leasing with timing and controlled surface use stipulations would allow exploration and development that would alter the landscape. Since the SRMA is located in an area with moderate and high potential for oil and gas occurrence, development is likely. Limiting OHV use to designated routes would prevent further surface disturbance of the landscape and thus degradation of the natural character, but the noise and presence of motorized vehicles would degrade opportunities for solitude and conflict with primitive recreation activities found in the non-WSA lands with wilderness characteristics.

Alternative A would manage 52,720 acres in Browns Park as an SRMA with recreation focus on outstanding scenic vistas and enhancement of resources and associated activities including riparian, fish, special status species, water quality, water-based recreation, hunting, hiking, biking, horseback riding, OHV driving, camping, and cultural interpretation, as well as the construction of facilities needed to support these activities. The SRMA includes all or portions of the Mountain Home, Cold Springs Mountain, Lower Flaming Gorge, and Dead Horse Pass non-WSA lands with wilderness characteristics. The management prescription for that portion of the SRMA that includes Lower Flaming Gorge non-WSA lands with wilderness characteristics would close the area to leasing, while the other non-WSA lands with wilderness characteristics would allow leasing with timing and controlled surface use stipulations in the SRMA. The prescription for OHV travel in the non-WSA lands with wilderness characteristics within the SRMA would limit travel to designated routes, except Lower Flaming Gorge, which would be closed to OHV use. And, the non-WSA lands with wilderness characteristics in the SRMA would be managed by VRM Class II objectives. The area south of the Green River between Little Hole and Fire Flat, extending around the Taylor Flat subdivision to Rye Grass Draw, would be managed for primitive recreation opportunities, closed to OHV use, and closed to surface disturbing activities. This prescription would protect the wilderness characteristics (naturalness, and opportunities for solitude and primitive recreation) in the Lower Flaming Gorge non-WSA lands with wilderness characteristics. In the northern portion of the SRMA (that includes parts of Mountain Home and Cold Spring Mountain non-WSA lands with wilderness characteristics), mineral occurrence potential is moderate, and leasing with stipulations would result in surface disturbance that would alter the natural character of the non-WSA lands with wilderness characteristics. Limiting motorized travel to about 3 miles of designated routes in the Mountain Home and Cold Spring Mountain non-WSA lands with wilderness characteristics would prevent expansion of surface disturbance that would degrade the natural landscape. However, the noise and presence of vehicles would temporarily impact opportunities for solitude and conflict with primitive forms of recreation. There are no routes designated for OHV travel in the Dead Horse Pass non-WSA lands with wilderness characteristics.

Alternative A would manage 81,168 acres in Nine Mile Canyon as a SRMA to protect high-value cultural resources and scenic vistas. The SRMA includes a portion (20,989 acres) of the Desolation Canyon non-WSA lands with wilderness characteristics. OHV travel in the non-WSA lands with wilderness characteristics portion of the SRMA would be limited to designated routes and the area would be managed with VRM Class II objectives in the canyon bottom and Class III objectives on the table lands above the canyon. Mineral resources would be leased with a no surface occupancy stipulation for the canyon bottom and standard stipulation on the table lands. Portions of the non-WSA lands with wilderness characteristics are already leased, and potential for mineral occurrence is moderate to high. So, development is anticipated. No surface occupancy on future leases in the canyon bottom would prevent further landscape modifications that would degrade the natural character of the Desolation Canyon non-WSA lands with wilderness characteristics. But, exploration and development on existing leases and new leases with standard stipulations would result in surface disturbance that alters the natural character of the table lands above the canyon. Limiting motorized travel to designated routes (19 miles) would prevent surface disturbance from expansion of OHV use that would adversely impact the natural character of the non-WSA lands with wilderness characteristics. The noise and presence of vehicles on these routes, however, would degrade opportunities for solitude and conflict with primitive, non-motorized recreation uses of the area. While management of the area for VRM Class II objectives would minimize surface disturbance and impacts to the natural character of the non-WSA lands with wilderness characteristics, it would not prevent that disturbance.

4.21.2.6.2 Alternative B

Under Alternative B, the White River would be managed for recreation use with minimal management oversight. OHV use would be closed along the river and limited to routes elsewhere. As a result, the river itself would provide opportunities for non-motorized recreation like floating, fishing, camping, hunting, and wildlife viewing. Motor vehicles, however, would have point access to the river on existing routes, providing for OHV driving and vehicle-supported camping, fishing, and picnicking, but this would also create some conflict with non-motorized river users. Motorized recreation uses and unlimited visitor group sizes would detract from opportunities for solitude and conflict with primitive and unconfined recreation uses.

Under this alternative, Blue Mountain would not be managed as a SRMA, but the area would be managed as part of the field office Extensive Recreation Management Area (ERMA). Dispersed motorized and non-motorized recreation uses would continue with minimal facility construction. Non-motorized, undeveloped forms of recreation would enhance opportunities for solitude and primitive and unconfined recreation and would not create surface disturbances that would degrade the natural character of the Bourdette Draw non-WSA lands with wilderness characteristics. However, where motorized recreation uses occurred in the non-WSA lands with wilderness characteristics, and if even minimal facilities were constructed to support recreation activities, the resulting surface disturbance of expanding OHV use and construction of facilities would degrade the natural character of the non-WSA lands with wilderness characteristics. Further, the noise and presence of vehicles and facilities would impact opportunities for solitude and conflict with primitive and unconfined forms of recreation.

Under this alternative, like Blue Mountain, the Book Cliffs region would not be managed as a SRMA, but the area would be managed as part of the field office ERMA. Dispersed motorized

and non-motorized recreation uses would continue with minimal facility construction. Non-motorized, undeveloped forms of recreation would enhance opportunities for solitude and primitive and unconfined recreation and would not create surface disturbances that would degrade the natural character of the Bitter Creek, Rat Hole Ridge, Hells Hole Canyon, Sweetwater, Cripple Cowboy, and Wolf Point non-WSA lands with wilderness characteristics. However, where motorized recreation uses occurred in the non-WSA lands with wilderness characteristics, and if even minimal facilities were constructed to support recreation activities, the resulting surface disturbance of expanding OHV use and construction of facilities would degrade the natural character of the non-WSA lands with wilderness characteristics. Further, the noise and presence of vehicles and facilities would impact opportunities for solitude and conflict with primitive and unconfined forms of recreation.

Under Alternative B, Browns Park would be managed as an 18,474-acre SRMA with recreation focus on outstanding scenery, riparian, fisheries, special status species, water quality, water-based recreation, hunting, hiking, biking, horseback riding, OHV driving, camping, and cultural interpretation, and construction of facilities would be needed to support these activities. The SRMA includes portions of the Mountain Home (507 acres), Cold Springs Mountain (3,226 acres), and Lower Flaming Gorge (4,320 acres) non-WSA lands with wilderness characteristics. The impacts to non-WSA lands with wilderness characteristics would be the same as those described for Alternative A, for those non-WSA lands with wilderness characteristics located in the smaller SRMA.

Under this alternative, Nine Mile Canyon would be managed as a 44,181-acre SRMA to protect areas of high cultural resource site density and scenic vistas. The SRMA would include a smaller part of the Desolation Canyon non-WSA with wilderness characteristics, with impacts to the non-WSA lands with wilderness characteristics as described under Alternative A.

4.21.2.6.3 Alternative C

Alternative C would manage 47,130 acres along the White River as an SRMA, with impacts that same as described for Alternative A.

Under this alternative, Blue Mountain would be managed as a 42,758-acre SRMA, with impacts that are the same as those described under Alternative A.

Similar to Alternative A, Alternative C would manage 273,486 acres within the Book Cliffs as a SRMA. The impacts would be the same as those described for Alternative A, except the Wolf Creek and Bitter Creek drainages and the head of Sweetwater Canyon would be closed to oil and gas leasing. Closure to leasing would prevent surface disturbance from exploration and development, protecting the natural character of the Wolf Point, Cripple Cowboy, Bitter Creek, Rat Hole Ridge, and Sweetwater non-WSA lands with wilderness characteristics. However, portions of these non-WSA lands with wilderness characteristics are already leased, and given the moderate to high potential for mineral occurrence, impacts to their roadless character, naturalness, and opportunities for solitude and primitive recreation would be the same as those described under Alternative A.

Under Alternative C, Browns Park would be managed as a 52,720-acre SRMA, with impacts to non-WSA lands with wilderness characteristics being the same as those described for Alternative A.

Under this alternative, Nine Mile Canyon would be managed as an 81,168-acre SRMA, with impacts to non-WSA lands with wilderness characteristics being the same as those described for Alternative A.

4.21.2.6.4 Alternative D – No Action

Designation of Browns Park and Nine Mile Canyon SRMAs under Alternative D – No Action would be the same as that proposed under Alternative B, with impacts being the same as those described for Alternative B.

4.21.2.6.5 Alternative E

Designation of SRMAs under Alternative E would be the same as that proposed under Alternative C, with impacts being the same as those described for Alternative C. Under this alternative, however, non-WSA lands with wilderness characteristics located in any of the SRMAs would be managed for primitive and non-motorized/non-mechanized forms of recreation, and the required settings supporting those types of activities (undeveloped and unmodified landscapes) and experiences. As a result, the roadless and natural character of the non-WSA lands with wilderness characteristics would be preserved, as would the opportunities for solitude and primitive recreation it provides.

4.21.2.6.6 Summary

In summary, management of SRMAs under Alternative E would provide the greatest level of protection to the wilderness characteristics of the non-WSA lands with wilderness characteristics, followed by Alternatives C and A. Management of the non-WSA lands with wilderness characteristics portions of the SRMAs for natural landscapes, non-motorized uses, and opportunities for solitude and primitive recreation would protect the wilderness characteristics of these areas. Alternatives B and D – No Action would provide less protection of wilderness characteristics.

4.21.2.7 Impacts of Travel, Roads, and Trails Decisions on Non-WSA Lands with Wilderness Characteristics

4.21.2.7.1 Alternative A

Alternative A proposes to improve and develop up to 400 miles of trails for non-motorized uses. Mechanized use (mountain bikes) would also be permitted. Developing additional trails for hiking and horseback riding would provide added opportunities for primitive forms of recreation, if the trails were located in any of the non-WSA lands with wilderness characteristics (that decision would be made at the activity-level stage of planning following completion of the RMP). Development of trails for mountain bikes would be in conflict with the primitive forms of recreation typically found, and managed for, in lands with wilderness characteristics. If there

were substantial levels of use on the trails (by foot, horse, and/or bike) in the non-WSA lands with wilderness characteristics, the visitor's ability to find and experience solitude would be reduced. Construction of new trails would create surface disturbance that would detract from the natural character of the landscape and non-WSA lands with wilderness characteristics, depending on the type of landform and vegetation cover. The change to the natural landscape, however, is expected to be minimal.

Under this alternative, new permitted roads would be rehabilitated after serving their intended purposes. In the short-term, new roads constructed in non-WSA lands with wilderness characteristics would reduce the roadless character of the non-WSA lands with wilderness characteristics. Depending on the location of the road, it may even reduce the size of the non-WSA lands with wilderness characteristics, as lands with wilderness characteristics are roadless. Motor vehicle use of these newly constructed roads would also impact a visitor's ability to find solitude and conflict with primitive, non-motorized forms of recreation. Depending on the purpose of the road, the impacts would be long-term, as well. For example, a newly constructed road to a producing oil or gas well would remain in place for an average of 25 years (Mineral Report, June 2004). However, upon successful reclamation, the natural characteristics of the non-WSA lands with wilderness characteristics could return. The nature of the landform and vegetation would affect the success of the reclamation efforts (partial or total). Cuts and fills for road construction on steep slopes and removal of old growth forest vegetation would be more difficult to restore and would take longer to return to a natural condition than a road constructed through a grassland or sage brush flat.

This alternative would also allow for the improvement or development of 800 miles of motorized trails. Trail improvement or construction would create surface disturbance that would have direct, adverse impacts on the landscape and natural quality of the non-WSA lands with wilderness characteristics, if any of the trails were developed in the non-WSA lands with wilderness characteristics (that decision would be made at the activity-level stage of planning following completion of the RMP). Development of motorized trails would conflict with the primitive forms of recreation typically found, and managed for, in lands with wilderness characteristics. And, the presence and noise of dirt bikes or ATVs would reduce opportunities for solitude visitors seek in areas with wilderness characteristics. Construction of new trails would create surface disturbance that would detract from the natural character of the landscape and non-WSA lands with wilderness characteristics, depending on the type of landform and vegetation cover. Indirect, long-term, adverse impacts would be produced by soil erosion, trail widening, and unmanaged extension of the trail system by OHVs.

Alternative A would not allow motorized use off roads or trails to retrieve big game taken while hunting. Where this activity might occur in non-WSA lands with wilderness characteristics, this management action would reduce surface disturbance cause by OHV use that directly reduces the natural characteristics of non-WSA lands with wilderness characteristics. Further, this action would reduce the presence and noise of vehicles and the impacts to opportunities for solitude and primitive and unconfined recreation uses.

Under Alternative A, 6,202 acres would be designated as "open" to cross-country OHV travel. None of these open areas are located in non-WSA lands with wilderness characteristics, so there would be no impacts of motor vehicles on wilderness characteristics.

Under this alternative, 1,643,475 acres would be designated "limited" to OHV travel. The limitation would require vehicles to travel on designated routes (4,860 miles). Except for portions of the Lower Flaming Gorge and White River non-WSA lands with wilderness characteristics, OHV use in all other non-WSA lands with wilderness characteristics would be limited to designated routes. This limitation would confine disturbance to soils and vegetation caused by motor vehicle use to the existing routes and result in no additional degradation of the natural characteristics of the non-WSA lands with wilderness characteristics. The presence and noise of vehicles using these routes, however, would reduce the opportunity of visitors to find solitude in the non-WSA lands with wilderness characteristics, especially in proximity to the routes. And, motorized uses would conflict with primitive and unconfined recreation opportunities sought in the non-WSA lands with wilderness characteristics.

Under this alternative, 75,845 acres would be closed to OHV use, including portions of the Lower Flaming Gorge and White River non-WSA lands with wilderness characteristics. This closure would prevent surface disturbance caused by motorized travel and the resultant impacts to the natural characteristics of the non-WSA lands with wilderness characteristics. Further, closure to OHV use would protect opportunities for solitude or conflict with primitive forms of recreation in these areas. The wilderness characteristics of these two non-WSA lands with wilderness characteristics would be unaffected by OHV travel.

4.21.2.7.2 Alternative B

Under Alternative B, hiking, horseback riding, and mechanized (non-motorized) trails would not be improved or developed. Thus, there would be no benefit to primitive and unconfined forms of recreation (hiking and horseback riding) sought by visitors to areas with wilderness characteristics. But, there would also be no conflict between mountain bike users of trails and hikers and horseback riders.

Under this alternative, new permitted roads would not be rehabilitated after serving their intended purposes. They would be left as parts of the transportation system on public lands. If these roads were constructed in non-WSA lands with wilderness characteristics, they would reduce the roadless character of the affected non-WSA lands with wilderness characteristics and reduce the size of the area with wilderness characteristics because lands with wilderness characteristics are roadless. Continued motor vehicle use of these newly constructed roads would also reduce a visitor's ability to find solitude and conflict with primitive, non-motorized forms of recreation.

This alternative, like Alternative A, would also allow the improvement or development of 800 miles of motorized trails. If these trails were developed in non-WSA lands with wilderness characteristics, the impacts would be the same as described under Alternative A.

Alternative B would allow motorized use off roads or trails to retrieve big game taken while hunting. If this activity occurred in non-WSA lands with wilderness characteristics, cross-

country travel by motor vehicles would create surface disturbance that directly reduces the natural characteristic of non-WSA lands with wilderness characteristics. Further, the presence and noise of vehicles traveling cross-country in non-WSA lands with wilderness characteristics would reduce the visitor's opportunities for solitude and conflict with primitive and unconfined recreation uses. However, given the limited amount of anticipated cross-country travel and the limitation to certain times of the year (fall hunting seasons), this impact is not expected to be substantial.

Under Alternative B, 5,434 acres in the VPA would be designated as "open" to cross country OHV travel. None of these open areas are located in non-WSA lands with wilderness characteristics, so there would be no impacts of motor vehicles on wilderness characteristics.

Under this alternative, 1,659,901 acres would be designated "limited" to OHV travel. The limitation would require vehicles to travel on designated routes (4,861 miles). Except for portions of the White River non-WSA lands with wilderness characteristics, OHV use in all other non-WSA lands with wilderness characteristics would be limited to designated routes, with impacts the same as those described under Alternative A for areas designated limited to OHV travel.

Under this alternative, 60,187 acres would be closed to OHV use, including portions of the White River non-WSA lands with wilderness characteristics, with impacts the same as those described under Alternative A, for areas closed to OHV travel.

4.21.2.7.3 Alternative C

Alternative C proposes to improve and develop up to 400 miles of trail for non-motorized uses, including hiking, horseback riding, and mountain biking. The impacts of this action on the wilderness characteristics of non-WSA lands with wilderness characteristics would be the same as those described for Alternative A.

Under this alternative, new permitted roads would be rehabilitated after serving their intended purposes. The impacts to the wilderness characteristics of non-WSA lands with wilderness characteristics would be the same as described under Alternative A.

Under this alternative, motorized trails would not be developed, and consequently this decision would result in no impacts to the natural characteristics of the non-WSA lands with wilderness characteristics, nor opportunities for solitude or primitive recreational opportunities, as described under Alternative A.

Alternative C would not allow motorized use off road or trail to retrieve big game taken while hunting. The impacts to the wilderness characteristics of non-WSA lands with wilderness characteristics would be the same as those described under Alternative A.

Under Alternative C, 5,434 acres in the VPA would be designated as "open" to cross-country OHV travel. None of these open areas are located in non-WSA lands with wilderness characteristics, so there would be no impacts of motor vehicles on wilderness characteristics.

Under this alternative, 1,353,529 acres would be designated "limited" to OHV travel. The limitation would require vehicles to travel on designated routes (4,707 miles), including the Mountain Home, Dead Horse Pass, Beach Draw, Stuntz Draw, Mexico Point Hideout Canyon, and Hells Hole Canyon non-WSA lands with wilderness characteristics. The impacts of limiting motorized travel to designated routes on the wilderness characteristics of these areas would be the same as those described for Alternative A.

Under Alternative C, 366,559 acres would be closed to OHV use, including the Lower Flaming Gorge, Cold Spring Mountain, Diamond Breaks, Diamond Mountain, Wild Mountain, Bourdette Draw, Daniels Canyon, Bull Canyon, White River, Lower Bitter Creek, Bitter Creek, Rat Hole Ridge, Cripple Cowboy, Sweetwater Canyon Wolf Point, and Desolation Canyon non-WSA lands with wilderness characteristics. The effect of OHV closure on the wilderness characteristics of these non-WSA lands with wilderness characteristics would be the same as those described for Alternative A but would include more lands with wilderness characteristics.

Under this alternative, motorized trails would not be developed. With no lands allocated to motorized trail riding, there would be no impacts to the natural characteristics of the non-WSA lands with wilderness characteristics, nor opportunities for solitude or primitive recreational opportunities, as described under Alternative A.

4.21.2.7.4 Alternative D – No Action

Alternative D – No Action proposes 55 miles of hiking and horseback riding trails and 2 miles of mountain bike trails. If these trails are located in any non-WSA lands with wilderness characteristics, the impacts to wilderness characteristics would be the same as those described in Alternative A. Further, this alternative proposes managing the Red Mountain Trail as a motorized trail. Since there are no non-WSA lands with wilderness characteristics in the Red Mountain area, there would be no impacts to wilderness characteristics. The alternative makes no decisions regarding off-road or off-trail use of OHVs to retrieve game taken while hunting or reclamation of newly constructed roads.

This alternative would maintain a total of 787,859 acres as open to OHV travel, including all, or portions of the Desolation Canyon, Wolf Point, Cripple Cowboy, Bitter Creek, Rat Hole Ridge, Lower Bitter Creek, White River, Diamond Breaks, Lower Flaming Gorge, Dead Horse Pass, and Wild Mountain non-WSA lands with wilderness characteristics. Cross-country motorized travel in these non-WSA lands with wilderness characteristics would result in surface disturbance to soils and vegetation that would alter the landscape and diminish the natural characteristics of these non-WSA lands with wilderness characteristics. Further, the presence and noise of motorized vehicles would degrade a visitor's opportunity for solitude and conflict with opportunities for primitive and unconfined recreation activities.

Under this alternative, 887,275 acres would be limited to OHV use, including all or parts of the Desolation Canyon, Wolf Point, Sweet Water Canyon, Cripple Cowboy, Rat Hole Ridge, Bitter Creek, Hells Hole Canyon, White River, Bourdette Draw, Bull Canyon, Daniels Canyon, Moonshine Draw, Stuntz Draw, Vivas Cake Hill, Diamond Mountain, Cold Springs Mountain, and Mountain Home non-WSA lands with wilderness characteristics. Limiting OHV use to existing routes would confine soil and vegetation disturbance caused by motor vehicles to

existing routes and would result in no additional change to the natural characteristics of the non-WSA lands with wilderness characteristics. The presence and noise of vehicles using these routes, however, would reduce the opportunity of visitors to find solitude in the non-WSA lands with wilderness characteristics, especially in proximity to the routes. And, motorized uses would conflict with primitive and unconfined recreation opportunities sought in the non-WSA lands with wilderness characteristics.

Alternative D – No Action would close 50,388 acres to OHV use, including parts of the Desolation Canyon, Bitter Creek, White River, Diamond Mountain, Lower Flaming Gorge, Dead Horse Pass, and Mountain Home non-WSA lands with wilderness characteristics. This closure would prevent surface disturbance caused by motorized travel and would protect the natural characteristics of the non-WSA lands with wilderness characteristics. Further, closure to OHV use would eliminate the presence and noise of OHV travel and preserve opportunities for solitude and primitive forms of recreation in these areas. The wilderness characteristics of the non-WSA lands with wilderness characteristics would be unaffected by OHV travel.

4.21.2.7.5 Alternative E

Alternative E proposes to improve and develop up to 400 miles of trails for non-motorized uses, including hiking and horseback riding. The impacts of this action on the wilderness characteristics of non-WSA lands with wilderness characteristics would be the same as those described for Alternative A, except that mountain biking would not be permitted, and thus, the conflicts with primitive forms of recreation would not occur.

Under this alternative, new permitted roads would be rehabilitated after serving their intended purposes. The impacts to the wilderness characteristics of non-WSA lands with wilderness characteristics would be the same as those described under Alternative A.

Alternative E would not propose motorized trails, so this decision would result in no impacts to the natural characteristics of the non-WSA lands with wilderness characteristics nor opportunities for solitude or primitive recreational opportunities, as described under Alternative A.

This alternative would not allow motorized use off-road or off-trail to retrieve big game taken while hunting. The impacts to the wilderness characteristics of non-WSA lands with wilderness characteristics would be the same as those described under Alternative A.

Under Alternative E, 5,434 acres in the VPA would be designated as "open" to cross-country OHV travel. None of these open areas are located in non-WSA lands with wilderness characteristics, so there would be no impacts of motor vehicles on wilderness characteristics.

Under this alternative, 1,326,024 acres would be designated "limited" to OHV travel. The limitation would require vehicles to travel on designated routes (4,654 miles). None of the areas limited to motorized travel include non-WSA lands with wilderness characteristics, so there would be no impacts of limited motor vehicle use on wilderness characteristics.

Under Alternative E, 392,818 acres would be closed to OHV use, including all of the non-WSA lands with wilderness characteristics. The effect of OHV closure on the wilderness characteristics of these non-WSA lands with wilderness characteristics would be the same as those described for Alternative A, but it would affect more acres, including all of the non-WSA lands with wilderness characteristics.

4.21.2.7.6 Summary

In summary, Alternative A, C, and E travel decisions would have the greatest beneficial impacts on the wilderness characteristics of non-WSA lands with wilderness characteristics. Alternative D – No Action would have greater OHV impacts on wilderness characteristics than the other alternatives because more acres would be designated open to cross-country OHV travel.

4.21.2.8 Impacts of Riparian/Soils/Watershed Decisions on Non-WSA Lands with Wilderness Characteristics

4.21.2.8.1 Alternative A

Surface-disturbing activities on slopes between 21% and 40% would not be approved without an approved erosion-control strategy. While the strategy would prevent unnecessary and undue degradation of the environment, it would not prevent soil and vegetation disturbance that would degrade the natural characteristics of the non-WSA lands with wilderness characteristics. Further, the presence and noise of people and equipment connected with the proposed project would diminish opportunities for solitude and primitive and unconfined types of recreation typically sought in areas with wilderness characteristics.

The prohibition of surface disturbance on slopes greater than 40% would prevent surface disturbance that would degrade the natural condition of non-WSA lands with wilderness characteristics. The prohibition on disturbance would also protect opportunities for both solitude and primitive forms of recreation.

4.21.2.8.2 Alternative B

Surface-disturbing activities on slopes greater than 20% would not be approved without an approved erosion control strategy, resulting in impacts the same as those described for Alternative A on slopes between 21% and 40%.

4.21.2.8.3 Alternative C

Like Alternative A, surface disturbance on slopes between 21% and 40% would not be permitted without an approved erosion-control strategy. Further, surface disturbance would not be allowed on slopes over 40%. The effects of these actions on non-WSA lands with wilderness characteristics would be the same as those described for Alternative A.

4.21.2.8.4 Alternative D – No Action

Under this alternative, no surface disturbance or occupancy for mineral development would be allowed on slopes greater than 40%. The effects of this action on non-WSA lands with wilderness characteristics would be the same as those described for Alternative A.

4.21.2.8.5 Alternative E

As with Alternative C, no surface disturbance would be permitted on slopes between 21% and 40% without an approved erosion-control strategy. Further, surface disturbance would not be allowed on slopes over 40%. However, under this alternative, no surface disturbance would be permitted that would impact the natural character of the non-WSA lands with wilderness characteristics. The effects of these actions would preserve the wilderness characteristics of non-WSA lands with wilderness characteristics.

4.21.2.8.6 Summary

Alternative E would provide the most protection of the wilderness characteristics of non-WSA lands with wilderness characteristics because surface disturbance would not be permitted in these areas. Alternatives A and C would mitigate the effects of soil erosion on slopes greater than 20%, but the mitigation would not prevent surface disturbance that degrades the natural characteristics of non-WSA lands with wilderness characteristics.

4.21.2.9 Impacts of Special Designation Decisions on Non-WSA Lands with Wilderness Characteristics

For the purposes of this analysis, "Special Designations" include ACECs established under each alternative, rivers suitable for inclusion in the Wild and Scenic Rivers System under each alternative, and WSAs being managed to protect their wilderness characteristics under each alternative.

Tables 4.21.2 through 4.21.4 show which special management areas would be established/ recommended under each alternative, their acreage/length, and the non-WSA lands with wilderness characteristics that are wholly or partially located in the special management area.

TABLE 4.21.2 NON-WSA LANDS WITH WILDERNESS CHARACTERISTICS LOCATED IN SPECIAL MANAGEMENT AREAS

Areas of Critical Environmental Concern (ACECs)					
ACEC	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Bitter Creek – PR Spring					
Acres	68,834	0	147,425	0	147,425
Non-WSA Lands with Wilderness Characteristics Located in the Special Management Area	Bitter Creek, Rat Hole Ridge, and Cripple Cowboy		Bitter Creek, Rat Hole Ridge, Cripple Cowboy, and Sweet Water Canyon		Bitter Creek, Rat Hole Ridge, Cripple Cowboy, and Sweet Water Canyon
Four Mile Wash					
Acres	0	0	50,280	0	50,280
Non-WSA Lands with Wilderness Characteristics Located in the Special Management Area			Desolation Canyon		Desolation Canyon
Lower Green River					
Acres	10,170	0	10,170	8,407	10,170
Non-WSA Lands with Wilderness Characteristics Located in the Special Management Area	Desolation Canyon		Desolation Canyon	Desolation Canyon	Desolation Canyon
White River					
Acres	17,810	0	47,130	0	47,130
Non-WSA Lands with Wilderness Characteristics Located in the Special Management Area	White River		White River		White River
Browns Park					
Acres	52,721	18,474	52,721	52,721	52,721
Non-WSA Lands with Wilderness Characteristics Located in the Special Management Area	Lower Flaming Gorge, Mountain Home, Cold Spring Mountain, and Dead Horse Pass	Lower Flaming Gorge	Lower Flaming Gorge, Mountain Home, Cold Spring Mountain, and Dead Horse Pass	Lower Flaming Gorge, Mountain Home, Cold Spring Mountain, and Dead Horse Pass	Lower Flaming Gorge, Mountain Home, Cold Spring Mountain, and Dead Horse Pass

TABLE 4.21.2 NON-WSA LANDS WITH WILDERNESS CHARACTERISTICS LOCATED IN SPECIAL MANAGEMENT AREAS

Areas of Critical Environmental Concern (ACECs)					
ACEC	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Nine Mile Canyon					
Acres	48,000	44,181	81,168	44,181	81,168
Non-WSA Lands with Wilderness Characteristics Located in the Special Management Area	Desolation Canyon	Desolation Canyon	Desolation Canyon	Desolation Canyon	Desolation Canyon
Main Canyon					
Acres	0	0	100,915	0	100,915
Non-WSA Lands with Wilderness Characteristics Located in the Special Management Area			Wolf Point		Wolf Point

TABLE 4.21.3 NON-WSA LANDS WITH WILDERNESS CHARACTERISTICS LOCATED IN SPECIAL MANAGEMENT AREAS

Wild and Scenic Rivers					
River	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
White River					
Miles/Classification	14 / Scenic and Wild	0	44 / Scenic, Wild, and Scenic	0	44 / Scenic, Wild, and Scenic
Non-WSA Lands with Wilderness Characteristics Located in the Special Management Area	White River		White River		White River
Nine Mile Creek					
Miles/Classification	0	0	18 / Scenic and Recreational	0	18 / Scenic and Recreational
Non-WSA Lands with Wilderness Characteristics Located in the Special Management Area			Desolation Canyon		Desolation Canyon

TABLE 4.21.3 NON-WSA LANDS WITH WILDERNESS CHARACTERISTICS LOCATED IN SPECIAL MANAGEMENT AREAS

Wild and Scenic Rivers					
River	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Bitter Creek					
Miles/Classification	0	0	22 / Scenic	0	22 / Scenic
Non-WSA Lands with Wilderness Characteristics Located in the Special Management Area			Bitter Creek, Cripple Cowboy, Rat Hole Ridge, and Hells Hole Canyon		Bitter Creek, Cripple Cowboy, Rat Hole Ridge, and Hells Hole Canyon
Upper Green River					
Miles/Classification	22 / Scenic	22 / Scenic	22 / Scenic	22 / Scenic	22 / Scenic
Non-WSA Lands with Wilderness Characteristics Located in the Special Management Area	Lower Flaming Gorge	Lower Flaming Gorge	Lower Flaming Gorge	Lower Flaming Gorge	Lower Flaming Gorge
Lower Green River					
Miles/Classification	30 / Scenic	30 / Scenic	30 / Scenic	30 / Scenic	30 / Scenic
Non-WSA Lands with Wilderness Characteristics Located in the Special Management Area	Desolation Canyon	Desolation Canyon	Desolation Canyon	Desolation Canyon	Desolation Canyon

TABLE 4.21.4 NON-WSA LANDS WITH WILDERNESS CHARACTERISTICS LOCATED IN SPECIAL MANAGEMENT AREAS

Wilderness Study Areas (WSAs)		
WSA	**Acres**	**Contiguous Non-WSA Lands with Wilderness Characteristics**
Book Cliffs Mountain Browse ISA	400	Cripple Cowboy
Bull Canyon	520	Bull Canyon
Daniels Canyon	2,496	Daniels Canyon
Diamond Breaks	3,900	Diamond Breaks
West Cold Springs	3,200	Cold Spring Mountain
Winter Ridge	42,462	None

4.21.2.9.1 Alternative A

Under Alternative A, five ACECs that include non-WSA lands with wilderness characteristics would be established to protect a variety of relevant and important values. Those ACECs are Bitter Creek-PR Spring, Lower Green River, White River, Browns Park, and Nine Mile Canyon. The management prescriptions for these ACECs would protect wilderness characteristics in portions of non-WSA lands with wilderness characteristics.

In the 68,834-acre Bitter Creek-PR Spring ACEC, the 160-acre parcel around the old growth pinyon forest and Book Cliffs Mountain Browse Natural Areas (400 acres) would be closed to oil and gas leasing, wood cutting, and OHV use, and would be managed by VRM Class I objectives. This prescription would prevent surface disturbances and motorized uses and would protect the natural character of the non-WSA lands with wilderness characteristics and opportunities for solitude and primitive recreation. Most of the ACEC, however, would be available for leasing, forest treatments, firewood cutting, and OHV use on designated routes. These actions would result in surface disturbances that alter the landscape and natural characteristics of non-WSA lands with wilderness characteristics. The presence and noise of vehicles and equipment would diminish opportunities for solitude and would conflict with more primitive forms of recreation.

The 10,710 acre Lower Green River ACEC would be available for oil and gas leasing with an NSO stipulation, managed by VRM Class II objectives, and limited to OHV use on designated routes. This prescription would prevent large-scale landscape modifications from oil and gas development in an area of high potential and industry interest, but would allow some developments within VRM objectives, generally protecting the natural characteristics of this portion of the Desolation Canyon non-WSA lands with wilderness characteristics. The presence and noise of OHV use on designated routes would temporarily reduce opportunities for solitude and conflict with opportunities for primitive forms of recreation sought in areas with wilderness characteristics, when vehicles were traveling the routes.

Most of the 17,810 acres White River ACEC would be closed to oil and gas leasing or available only with an NSO stipulation. The uplands of the eastern half of the ACEC would be open to leasing with timing and controlled surface use stipulations. The western half of the ACEC would be closed to OHV use, while OHV use in the eastern half of the ACEC would be limited to designated routes. The interior river canyon in the western half of the ACEC would be managed by VRM Class I objectives, while the remainder of the ACEC would be managed VRM Class II. This prescription would generally prevent surface disturbances that reduce the natural character of the White River non-WSA lands with wilderness characteristics, except in the uplands of the eastern half of the ACEC. Here oil and gas leasing is permitted and would lead to surface disturbance due to the high potential for and industry interest in developing oil and gas resources. VRM Class II objectives in the eastern half of the ACEC would permit some surface disturbances that would degrade the natural characteristics of the non-WSA lands with wilderness characteristics. The presence and noise of OHV use on designated routes in the eastern half of the ACEC would reduce opportunities for solitude and would conflict with primitive forms of recreation when vehicles were traveling the designated routes.

In the 52,721 acre Browns Park ACEC, much of the Lower Flaming Gorge non-WSA lands with wilderness characteristics would be closed to leasing and OHV use. The Green River through Browns Park would be open to leasing but with an NSO stipulation. The area of NSO includes a very small part of the north end of the Dead Horse Pass non-WSA lands with wilderness characteristics and a very small part of the south end of the Mountain Home non-WSA lands with wilderness characteristics. Otherwise, most of the ACEC would be open to leasing with timing and controlled surface use; OHV use would be limited to designated routes; and visual resource objectives would be Class II. This prescription would prevent surface disturbance and would protect the natural characteristics of the Lower Flaming Gorge non-WSA lands with wilderness characteristics. It would also preclude the noise and presence of motorized vehicles and equipment that would reduce opportunities for solitude and conflict with the primitive forms of recreation sought by visitors to lands with wilderness characteristics. The NSO leasing stipulation along the Green River would prevent surface disturbance in very small parts of the Mountain Home and Dead Horse Pass non-WSA lands with wilderness characteristics. Otherwise, this ACEC prescription would allow for surface disturbances that would alter the landscape and natural character of the non-WSA lands with wilderness characteristics. However, the ACEC is located in an area of undetermined mineral potential, and mineral development is not expected to be substantial. Further, compliance with VRM Class II objectives would minimize surface disturbances and impacts to the natural characteristics of the non-WSA lands with wilderness characteristics. Motorized use of designated routes, however, would adversely impact opportunities for solitude and primitive recreation. The presence and noise of vehicles would detract from the experience of solitude and conflict with primitive recreational uses.

In the 48,000-acre Nine Mile Canyon ACEC, the canyon would be open to oil and gas leasing with an NSO stipulation, while the table lands above the canyon would be open with timing and controlled surface use stipulations. The ACEC prescription would limit OHV travel in the entire ACEC to designated routes, and visual resources management objectives would be Class II in the lower canyon and Class III in the upper canyon and on the tablelands. This prescription would generally prevent surface disturbance to the canyon bottom, protecting its natural character. Given the mineral potential, current industry interest, and production history, however, surface disturbances would be expected in much of the rest of the ACEC and would detract from the natural characteristics of this portion of the Desolation Canyon non-WSA lands with wilderness characteristics. The presence and noise of OHV travel and oil and gas development would diminish the opportunities for solitude on the non-WSA lands with wilderness characteristics and would conflict with primitive forms of recreation typically found in non-WSA lands with wilderness characteristics.

Under Alternative A, 22 miles of the White River would be recommended suitable for Wild and Scenic River designation with a classification of "wild" in the upper end of the river canyon and "scenic" in the lower end. Protection of river values (until Congress acts on BLM's recommendation) would prevent uses and surface disturbances that would detract from the natural characteristics of 11 miles of the recommended river canyon in the White River non-WSA lands with wilderness characteristics or that would impact opportunities for solitude and primitive recreation in the river canyon. Under this alternative, 22 miles of the Upper Green River would be recommended for designation as a Wild and Scenic River with a classification of "scenic." As in the case of the White River, protection of the river (until Congress acts) would

preserve the wilderness characteristics of the Lower Flaming Gorge non-WSA lands with wilderness characteristics. Further, 30 miles of the Lower Green River would be recommended for designation as a wild and scenic river with a classification of "scenic." Protection of river values (until Congress acts) would preserve the wilderness characteristics of a portion of the Desolation Canyon non-WSA lands with wilderness characteristics.

Managing the wilderness study areas (WSAs) under the BLM's Interim Management Policy to protect their wilderness values would expand opportunities for solitude and primitive forms of recreation found in the Cripple Cowboy, Bull Canyon, Daniels Canyon, Diamond Breaks, and Cold Spring Mountain non-WSA lands with wilderness characteristics to larger land areas, including both the WSAs and contiguous non-WSA lands with wilderness characteristics. This would enhance the opportunities for solitude and primitive recreation.

4.21.2.9.2 Alternative B

Under Alternative B, two ACECs that include non-WSA lands with wilderness characteristics would be established to protect a variety of relevant and important values. Those ACECs are Browns Park and Nine Mile Canyon. The management prescriptions for these ACECs would protect wilderness characteristics in portions of the non-WSA lands with wilderness characteristics.

In the 18,474-acre Browns Park ACEC, part of the Lower Flaming Gorge non-WSA lands with wilderness characteristics would be open to oil and gas leasing subject to an NSO stipulation. The Green River through Browns Park would be open to leasing, also with an NSO stipulation. In Browns Park, the area of NSO would include a very small part of the north end of the Dead Horse Pass non-WSA lands with wilderness characteristics and a very small part of the south end of the Mountain Home non-WSA lands with wilderness characteristics. Otherwise, most of the ACEC would be open to leasing with timing and controlled surface use, OHV use would be limited to designated routes, and visual resource objectives would be VRM Class I, II, III, and IV.

This prescription would generally prevent surface disturbance and protect the natural characteristics of the riverine parts of the Lower Flaming Gorge, Mountain Home, and Dead Horse Pass non-WSA lands with wilderness characteristics. However, the noise and presence of motorized vehicles and equipment would reduce opportunities for solitude and would conflict with the primitive forms of recreation sought by visitors to lands with wilderness characteristics. This ACEC prescription would allow for surface disturbances that would alter the landscape and natural character of the non-WSA lands with wilderness characteristics. However, the ACEC is located in an area of undetermined mineral potential, and mineral development is not expected to be substantial. Motorized use of designated routes would adversely impact opportunities for solitude and primitive recreation. The presence and noise of vehicles would detract from the experience of solitude and would conflict with primitive recreational uses, both opportunities sought by visitors to lands with wilderness characteristics.

In the 44,181-acre Nine Mile Canyon ACEC, the canyon would be open to oil and gas leasing with timing and controlled surface use stipulations, whereas the table lands above the canyon would be open with standard stipulations. The ACEC prescription would limit OHV travel in the

entire ACEC to designated routes, and visual resources management objectives would be VRM Class II in the canyon and VRM Class III and IV on the tablelands. This prescription would generally prevent surface disturbance to the canyon bottom, protecting its natural character. Given the mineral potential, current industry interest, and production history, however, surface disturbances would be expected in much of the rest of the ACEC, detracting from the natural characteristics of this portion of the Desolation Canyon non-WSA lands with wilderness characteristics. The presence and noise of OHV travel and oil and gas development would diminish the opportunities for solitude on the non-WSA lands with wilderness characteristics, and conflict with primitive forms of recreation typically found in lands with wilderness characteristics.

Under this alternative, 22 miles of the Upper Green River would be recommended for designation as a Wild and Scenic River with a classification of "scenic." Protection of river values (until Congress acts on BLM's recommendation) would prevent uses and surface disturbances that would detract from the natural characteristics of the Lower Flaming Gorge non-WSA lands with wilderness characteristics or impact opportunities for solitude and primitive recreation in the river canyon. Further, 30 miles of the Lower Green River would be recommended for designation as a wild and scenic river with a classification of "scenic." Protection of river values (until Congress acts) would preserve the wilderness characteristics of a portion of the Desolation Canyon non-WSA lands with wilderness characteristics.

Managing the wilderness study areas (WSAs) under BLM's Interim Management Policy to protect their wilderness values would expand opportunities for solitude and primitive forms of recreation found in the Cripple Cowboy, Bull Canyon, Daniels Canyon Diamond Breaks, and Cold Spring Mountain non-WSA lands with wilderness characteristics to larger land areas, including both the WSAs and contiguous non-WSA lands with wilderness characteristics. This would enhance the opportunities for solitude and primitive recreation.

4.21.2.9.3 Alternative C

Under Alternative C, six ACECs that include non-WSA lands with wilderness characteristics would be established to protect a variety of relevant and important values. Those ACECs are Bitter Creek-PR Spring, Four Mile Wash, Lower Green River, White River, Browns Park, and Nine Mile Canyon. The management prescriptions for these ACECs would protect wilderness characteristics in portions of the non-WSA lands with wilderness characteristics.

In the 147,425-acre Bitter Creek-PR Spring ACEC, the 160-acre parcel around the old growth pinyon forest and the Bitter Creek, Rat Hole Ridge, Hells Hole Canyon, Cripple Cowboy, and Sweet Water Canyon non-WSA lands with wilderness characteristics would be closed to oil and gas leasing, closed to OHV use (except Hells Hole Canyon non-WSA lands with wilderness characteristics), and managed by VRM Class I objectives. This prescription would prevent surface disturbances and motorized uses and would protect the natural characteristics of the non-WSA lands with wilderness characteristics and opportunities for solitude and primitive recreation. The rest of the ACEC would be available for leasing, forest treatments, firewood cutting, and OHV use on designated routes, but there are no lands with wilderness characteristics in the remainder of the ACEC, so the wilderness characteristics of non-WSA lands with wilderness characteristics would not be affected by these uses.

The 50,280-acre Four Mile Wash ACEC would be closed to oil and gas leasing. The visual resources of the ACEC would be managed for VRM Class II, Class III, and Class IV objectives. The ACEC would be closed to off-highway vehicles. This prescription would generally limit surface disturbance and would maintain the natural characteristics of this portion of the Desolation Canyon non-WSA lands with wilderness characteristics. Closure to OHVs would eliminate the presence and noise of vehicle use and would preserve opportunities for solitude. Further, closure to OHV use would prevent conflicts with opportunities for primitive and unconfined recreation sought by visitors to lands with wilderness characteristics.

Under this alternative, the 10,710-acre Lower Green River ACEC would be the same area as that described in Alternative A and would be managed by the same prescription. The effect on non-WSA lands with wilderness characteristics, therefore, would be the same as that described under Alternative A.

The river canyon of the 47,130-acre White River ACEC would be closed to oil and gas leasing or available with an NSO stipulation. The uplands would be open to leasing with timing and controlled surface use and standard stipulations. The western half of the ACEC would be closed to OHV use, whereas OHV use in the eastern half of the ACEC would be limited to designated routes. The river canyon in the western half of the ACEC would be managed by VRM Class I objectives, whereas the river canyon in the eastern half of the ACEC would be managed by VRM Class II objectives. The uplands would be managed under VRM Class III and VRM Class IV objectives. This prescription would generally prevent surface disturbances that reduce the natural characteristics along the river corridor of the White River non-WSA lands with wilderness characteristics, but not in the uplands of the ACEC. Here oil and gas leasing would be permitted and would lead to surface disturbance due to the high potential, industry interest, and production history. VRM Class II objectives in the eastern half of the ACEC would permit some surface disturbances that would degrade the natural character of the non-WSA lands with wilderness characteristics. The presence and noise of OHV use of designated routes in the eastern half of the ACEC would reduce opportunities for solitude and would conflict with primitive forms of recreation when vehicles were traveling the designated routes.

Under this alternative, the 52,721-acre Browns Park ACEC would be the same area as that described in Alternative A and would be managed by the same prescription. The effect on non-WSA lands with wilderness characteristics, therefore, would be the same as that described under Alternative A.

In the 81,168-acre Nine Mile Canyon ACEC, the lower canyon in the Desolation Canyon non-WSA lands with wilderness characteristics would be closed to oil and gas leasing, while the remainder of the canyon would be open to leasing subject to timing and controlled surface use stipulations. The table lands above the canyon would generally be open subject to standard stipulations. The non-WSA lands with wilderness characteristics would be closed to OHV use, and the remainder of the ACEC would be limited to designated routes. Visual resources in the canyon portion of the ACEC would be managed under VRM Class II, whereas the uplands would be managed under VRM Class III and IV objectives. This prescription would generally prevent surface disturbance to the Desolation Canyon non-WSA lands with wilderness

characteristics because the non-WSA lands with wilderness characteristics would be closed to oil and gas leasing and OHV use, protecting their natural characteristics.

Under Alternative C, 44 miles of the White River would be recommended suitable for Wild and Scenic River designation with segment classifications of "scenic," "wild," and "scenic" in the upper, middle, and lower portions of the river canyon, respectively. Further, under this alternative, 18 miles of Nine Mile Creek would be recommended suitable for designation as "scenic" and "recreational." Twenty-two miles of Bitter Creek would be recommended suitable for designation as a "scenic" river. Twenty-two miles of the Upper Green River would be recommended suitable for designation as a "scenic" river. Thirty miles of the Lower Green River would be recommended suitable for designation as a "scenic" river. Protection of river values (until Congress acts on BLM's recommendation) would prevent uses and surface disturbances that would detract from the natural characteristics of the White River, Desolation Canyon, Bitter Creek, Rat Hole Ridge, Cripple Cowboy, Sweet Water Canyon, Hells Hole Canyon, and Lower Flaming Gorge non-WSA lands with wilderness characteristics. The presence and noise of motor vehicle use of designated routes in the recommended "scenic" and "recreational" segments would reduce opportunities for solitude and would conflict with primitive recreation in these river segments. The impacts would be temporary, however, occurring only when vehicles were present.

Managing the WSAs under BLM's Interim Management Policy to protect their wilderness values would expand opportunities for solitude and primitive forms of recreation found in the Cripple Cowboy, Bull Canyon, Daniels Canyon, Diamond Breaks, and Cold Spring Mountain non-WSA lands with wilderness characteristics to larger land areas, including both the WSAs and contiguous non-WSA lands with wilderness characteristics. This would enhance the opportunities for solitude and primitive recreation.

4.21.2.9.4 Alternative D

Under Alternative D, three ACECs that include non-WSA lands with wilderness characteristics would be established to protect a variety of relevant and important values. Those ACECs are the Lower Green River, Browns Park, and Nine Mile Canyon. The management prescriptions for these ACECs would protect wilderness characteristics in portions of the non-WSA lands with wilderness characteristics.

The 8,407-acre Lower Green River ACEC would be available for oil and gas leasing with an NSO stipulation, managed by VRM Class II objectives, and limited to OHV use on designated routes. This prescription would prevent large-scale landscape modifications from oil and gas development in an area of high potential, industry interest, and production history, but it would allow some developments that meet VRM objectives, generally protecting the natural characteristics of this portion of the Desolation Canyon non-WSA lands with wilderness characteristics. The presence and noise of OHV use on designated routes would temporarily reduce opportunities for solitude and conflict with opportunities for primitive forms of recreation sought in areas with wilderness characteristics, when vehicles were traveling the routes.

In the 52,721-acre Browns Park ACEC, lands along the Green River would be generally open to oil and gas leasing subject to NSO stipulations, closed to OHV use, and managed under VRM

Class II objectives. Outside the river, the ACEC would be open to leasing subject to timing and controlled surface use stipulations; OHV use would be limited to designated routes; and visual resources would be managed for partial retention of the landscape and for landscape modification. This prescription would generally protect the natural characteristics of the Lower Flaming Gorge non-WSA with wilderness characteristics, a small portion of the Mountain Home non-WSA lands with wilderness characteristics, and a portion of the Cold Spring Mountain non-WSA lands with wilderness characteristics in proximity to the river. The portions of the Lower Flaming Gorge non-WSA lands with wilderness characteristics closed to OHV use would preserve opportunities for solitude because there would be no noise or presence of motorized vehicles. In those parts of the Mountain Home and Cold Spring Mountain non-WSA lands with wilderness characteristics where OHV use is limited to designated routes, the presence and noise of motor vehicles would reduce opportunities for solitude and primitive forms of recreation.

Under this alternative, the 44,181-acre Nine Mile Canyon ACEC would be the same area as that described in Alternative B and would be managed by the same prescription. The effect on non-WSA lands with wilderness characteristics, therefore, would be the same as that described under Alternative B.

Under this alternative, 22 miles of the Upper Green River would be recommended for designation as a Wild and Scenic River with a classification of "scenic." Thirty miles of the Lower Green River would be recommended as a "scenic" river. Protection of river values (until Congress acts on BLM's recommendation) would prevent uses and surface disturbances that would detract from the natural character of the Lower Flaming Gorge and Desolation Canyon non-WSA lands with wilderness characteristics. The presence and noise of motor vehicle use of designated routes in the recommended "scenic" segment would reduce opportunities for solitude and would conflict with primitive recreation in these river segments. The impacts would be temporary, however, lasting only when vehicles were present.

Managing the WSAs under BLM's Interim Management Policy to protect their wilderness values would expand opportunities for solitude and primitive forms of recreation found in the Cripple Cowboy, Bull Canyon, Daniels Canyon, Diamond Breaks, and Cold Spring Mountain non-WSA lands with wilderness characteristics to larger land areas, including both the WSAs and contiguous non-WSA lands with wilderness characteristics. This would enhance the opportunities for solitude and primitive recreation.

4.21.2.9.5 Alternative E

Under this alternative, the Bitter Creek-PR Spring, Four Mile Wash, Lower Green River, White River, Browns Park, Nine Mile Canyon, and Main Canyon ACECs would be the same area as that described in Alternative C and would be managed by the same prescription. The effect on non-WSA lands with wilderness characteristics, therefore, would be the same as that described under Alternative C.

Under this alternative, the segments of the White River, Nine Mile Creek, Bitter Creek, Upper Green River, and Lower Green River recommended suitable for Wild and Scenic River designation would be the same area as that described in Alternative C and would be managed by

the same prescription. The effect on non-WSA lands with wilderness characteristics, therefore, would be the same as that described under Alternative C.

Managing the WSAs under BLM's Interim Management Policy to protect their wilderness values would expand opportunities for solitude and primitive forms of recreation found in the Cripple Cowboy, Bull Canyon, Daniels Canyon, Diamond Breaks, and Cold Spring Mountain non-WSA lands with wilderness characteristics to larger land areas, including both the WSAs and contiguous non-WSA lands with wilderness characteristics. This would enhance the opportunities for solitude and primitive recreation.

4.21.2.9.6 Summary

Alternatives C and E would provide the most long-term protection of wilderness values of non-WSA lands with wilderness characteristics by designating the most acres as ACECs and by recommending the longest stretches of waterways for protection in the National Wild and Scenic Rivers System, followed by Alternative A. Alternative B would provide some protection of wilderness characteristics of non-WSA lands with wilderness characteristics but less than that provided by Alternative C or E. Alternative D – No Action would provide the lowest level of protection to wilderness characteristics, because it designates the smallest number of ACEC acres and recommends protecting the fewest waterways under the Wild and Scenic River System.

4.21.2.10 Impacts of Vegetation Decisions on Non-WSA Lands with Wilderness Characteristics

Vegetation treatments are proposed under each alternative in both the Fire Management and Rangeland Improvements Sections of Chapter 2 (see Table 2.3 Alternatives of the DRMP/DEIS). For the purposes of this analysis, it will be assumed that the acreages proposed for treatment in the Rangeland Improvement Section are in addition to the acreages proposed in the Fire Management Section.

4.21.2.10.1 Alternative A

Under Alternative A, 156,425 acres of vegetation would be treated by prescribed fire per decade. The purpose of these treatments would be to reduce fuel loads, restore fire to the ecosystem, restore native vegetation communities, and enhance livestock and wildlife forage conditions. In the long term, vegetation treatments with fire would restore native vegetation communities and a more natural composition of grasses, forbs, shrubs, and/or trees in those communities. If these treatments occurred in non-WSA lands with wilderness characteristics, this objective would enhance the natural characteristics of the non-WSA lands with wilderness characteristics. In the short term, however, operation of a prescribed burning operation would result in disturbance of the landform and vegetation through fire line construction and other activities (e.g., staging areas) needed to manage the fire. Further, the presence and noise of people, vehicles, equipment, and aircraft would eliminate opportunities for solitude and primitive and unconfined recreation in proximity to the fire. The impacts on opportunities for solitude and primitive recreation would be temporary, lasting for the duration of the prescribed burning operation and reclamation. When the fire and reclamation operations are complete, these opportunities would return. Soil and

vegetation disturbance from fire line construction and other activities (e.g. staging areas) would diminish the natural characteristics of the non-WSA lands with wilderness characteristics, but reclamation would restore the natural conditions in a relatively short period of time.

Also under this alternative, 34,460 acres of vegetation would be treated to enhance forage condition for livestock grazing. The methods of treatment for this purpose would vary but would most often include fire and/or mechanical treatments (heavy equipment and chainsaws). If these treatments were planned for non-WSA lands with wilderness characteristics, the effects of treatment with fire would be the same as described above. Mechanical treatments, however, would have long-term impacts on the natural characteristics of the non-WSA lands with wilderness characteristics and opportunities for solitude and primitive and unconfined recreation. While restoration of native vegetation communities would be beneficial to the natural characteristics of non-WSA lands with wilderness characteristics, the use of chainsaws, bull dozers, brush hogs, etc. to accomplish the objective would leave an obvious imprint of human activity on the land, an adverse effect on the natural characteristics of non-WSA lands with wilderness characteristics. Also in the short term, the presence and noise of people and equipment would eliminate opportunities for solitude and primitive forms of recreation in proximity to the treatment area. In the long term, a setting clearly manipulated by humans would diminish the opportunities for both solitude and primitive recreation.

4.21.2.10.2 Alternative B

The effects of vegetation treatments with prescribed fire would be the same as those described under Alternative A. The effects of vegetation treatments to enhance livestock forage would also be the same as those described under Alternative A, except under this alternative 50,900 acres would be treated (16,260 more acres than under Alternative A).

4.21.2.10.3 Alternative C

The effects of vegetation treatments with prescribed fire would be the same as those described under Alternative A. The effects of vegetation treatments to enhance livestock forage would also be the same as those described under Alternative A, except that under this alternative 45,860 acres would be treated (11,220 more acres than under Alternative A).

4.21.2.10.4 Alternative D – No Action

Under Alternative D – No Action, 50,900 acres of pinyon-juniper woodlands and sagebrush communities would be treated with prescribed fire with effects matching those described under Alternative A. The effects of vegetation treatments to enhance livestock forage would also be the same as those described under Alternative A, except that under this alternative 40,390 acres would be treated (5,750 more acres than under Alternative A).

4.21.2.10.5 Alternative E

The effects of vegetation treatments with prescribed fire would be the same as those described under Alternative A. The effects of vegetation treatments to enhance livestock forage would also be the same as those described under Alternative C.

4.21.2.10.6 Summary

All of the alternative would have essentially the same effects of vegetation treatments on non-WSA lands with wilderness characteristics. The only difference is the number of acres treated. Alternatives B, C, and E treat the same number of acres with prescribed fire and comparable numbers of acres to enhance livestock forage. Alternative A treats the fewest acres to enhance livestock forage, and Alternative D – No Action treats the fewest acres with prescribed fire.

4.21.2.11 Impacts of Visual Resource Management Decisions on Non-WSA Lands with Wilderness Characteristics

There are four objectives for visual resource management (VRM Classes I–IV) that provide for various levels of landscape protection and change. The objective of Class I is to preserve the characteristic landscape whereas the objective of Class IV provides for landscape modifications (see Chapter 3 of the DRMP/DEIS, Section 3.17, Visual Resources). Land use planning decisions to manage areas by VRM Class I objectives would preserve the characteristics of the landscape. In non-WSA lands with wilderness characteristics, this objective would preserve the natural characteristics of the area. VRM Class II objectives would retain the characteristics landscape, allowing for minor changes to the landform and vegetation. This objective would generally protect the natural condition of the land in non-WSA lands with wilderness characteristics. VRM Class III objectives provide for partial retention of the existing character of the landscape, allowing for moderate changes to land and vegetation. This objective is not compatible with preserving the wilderness characteristics of non-WSA lands with wilderness characteristics. VRM Class IV objectives provide for major modification of the landscape, and this is clearly incompatible with preservation of the natural characteristics of non-WSA lands with wilderness characteristics.

Table 4.21.5 shows the VRM Class I–IV objectives by non-WSA lands with wilderness characteristics, in acres, by alternative.

TABLE 4.21.5 VISUAL RESOURCE MANAGEMENT OBJECTIVES BY NON-WSA LANDS WITH WILDERNESS CHARACTERISTICS AREAS

Non-WSA Lands with Wilderness Characteristics	Alternative A (Acres)	Alternative B (Acres)	Alternative C (Acres)	Alternative D (Acres)	Alternative E (Acres)
Beach Draw					
Class I					898
Class II	898	208	898	208	
Class III					
Class IV		690		690	
Bitter Creek					
Class I			32,363		33,488
Class II	12,764		68		
Class III	20,724		1,057		
Class IV		33,488		33,488	
Bourdette Draw					
Class I	4,342				13,335
Class II	7,170		13,335		
Class III	1,798	4,365		4,365	
Class IV	25	8,970		8,970	
Bull Canyon					
Class I	1	4	1	4	2,483
Class II	2,482		2,482		
Class III					
Class IV		2,479		2,479	
Cold Spring Mountain					
Class I	75	75		75	8,764
Class II	8,574	367	8,764	367	
Class III	115	4,580		4,580	
Class IV		3,742		3,742	
Cripple Cowboy					
Class I	4	3	13,537	3	13,603
Class II	13,599	6,687	66	6,657	
Class III		1,720		1,720	
Class IV		5,193		5,223	
Daniels Canyon					
Class I					3,045
Class II	3,045		3,045		
Class III		3,045			
Class IV				3,045	

TABLE 4.21.5 VISUAL RESOURCE MANAGEMENT OBJECTIVES BY NON-WSA LANDS WITH WILDERNESS CHARACTERISTICS AREAS

Non-WSA Lands with Wilderness Characteristics	Alternative A (Acres)	Alternative B (Acres)	Alternative C (Acres)	Alternative D (Acres)	Alternative E (Acres)
Dead Horse Pass					
Class I					6,994
Class II	3,402	676	3,402	676	
Class III	2,965	2,111	2,965	2,111	
Class IV	627	4,207	627	4,207	
Desolation Canyon					
Class I					63,118
Class II	23,903	12,273	24,321	12,273	
Class III	14,510	20,475	14,101	20,475	
Class IV	24,705	30,370	24,696	30,370	
Diamond Breaks					
Class I	57	59		59	4,539
Class II	1,160		4,536		
Class III	3,322	2,652	3	2,652	
Class IV		1,828		1,828	
Diamond Mountain					
Class I			1,042		27,238
Class II	3,300	6,399	5,131	6,399	
Class III	23,938	1,051	21,039	1,051	
Class IV		19,778		19,778	
Hells Hole Canyon					
Class I			2,119		2,709
Class II	2,709	289	590	289	
Class III		2,420		2,420	
Class IV					
Hideout Canyon					
Class I					1,113
Class II	1,113	1,103	1,113	1,103	
Class III					
Class IV		10		10	
Lower Bitter Creek					
Class I					11,417
Class II					
Class III	26				
Class IV	11,391	11,417	11,417	11,417	

TABLE 4.21.5 VISUAL RESOURCE MANAGEMENT OBJECTIVES BY NON-WSA LANDS WITH WILDERNESS CHARACTERISTICS AREAS

Non-WSA Lands with Wilderness Characteristics	Alternative A (Acres)	Alternative B (Acres)	Alternative C (Acres)	Alternative D (Acres)	Alternative E (Acres)
Lower Flaming Gorge					
Class I					17,810
Class II	17,700	1,257	17,770	1,257	
Class III	33	1,875	33	1,875	
Class IV	77	14,678	77	14,678	
Mexico Point					
Class I					1,277
Class II	1,277	1,277	1,277	1,277	
Class III					
Class IV					
Moonshine Draw					
Class I		4		4	4,513
Class II	4,513	1,735	4,513	1,735	
Class III					
Class IV		2,774		2,774	
Mountain Home					
Class I					7,083
Class II	4,875	117	4,875	117	
Class III	2,208	1,354	2,208	1,354	
Class IV		5,612		5,612	
Rat Hole Ridge					
Class I			11,175		11,367
Class II	11,367		192		
Class III		3,240		3,240	
Class IV		8,127		8,127	
Stuntz Draw					
Class I					1,992
Class II	1,992	1,362	1,992	1,362	
Class III					
Class IV		630		630	
Sweet Water Canyon					
Class I			6,950		6,994
Class II	6,994	6,272	44	6,272	
Class III					
Class IV		722		722	

TABLE 4.21.5 VISUAL RESOURCE MANAGEMENT OBJECTIVES BY NON-WSA LANDS WITH WILDERNESS CHARACTERISTICS AREAS

Non-WSA Lands with Wilderness Characteristics	Alternative A (Acres)	Alternative B (Acres)	Alternative C (Acres)	Alternative D (Acres)	Alternative E (Acres)
Vivas Cake Hill					
Class I					277
Class II	277	277	277	277	
Class III					
Class IV					
White River					
Class I	4,980		9,027		21,210
Class II	7,360	12,339	4,528	12,219	
Class III	464	464	3,210	464	
Class IV	8,406	8,406	4,445	8,527	
Wild Mountain					
Class I			515		527
Class II	58	42	6	42	
Class III	469	16	6	16	
Class IV		469		469	
Wolf Point					
Class I	10	9	11,746	9	11,802
Class II			56		
Class III	11,792	242		242	
Class IV		11,551		11,551	

4.21.2.11.1 Alternative A

Under Alternative A, 150,001 acres would be managed by VRM Class I and II objectives in all or parts of 24 non-WSA lands with wilderness characteristics, protecting the natural character of those lands in the non-WSA lands with wilderness characteristics.

4.21.2.11.2 Alternative B

Under Alternative B, 52,777 acres would be managed by VRM Class I and II objectives in all or parts of 20 non-WSA lands with wilderness characteristics, protecting the natural character of those lands in the non-WSA lands with wilderness characteristics.

4.21.2.11.3 Alternative C

Under Alternative C, 191,657 acres would be managed by VRM Class I and II objectives in all or parts of 24 non-WSA lands with wilderness characteristics, protecting the natural character of those lands in the non-WSA lands with wilderness characteristics.

4.21.2.11.4 Alternative D – No Action

Under Alternative D – No Action, 52,626 acres would be managed by VRM Class I and II objectives in all or parts of 20 non-WSA lands with wilderness characteristics, protecting the natural character of those lands in the non-WSA lands with wilderness characteristics.

4.21.2.11.5 Alternative E

Under Alternative E, 277,696 acres would be managed by VRM Class I objectives in all of the 25 non-WSA lands with wilderness characteristics, protecting the natural character of those lands in the non-WSA lands with wilderness characteristics.

4.21.2.11.6 Summary

The visual resource management objectives proposed in Alternative E would provide protection of the natural characteristics of all the non-WSA lands with wilderness characteristics. VRM objectives in Alternative C would provide protection to the natural characteristics of the 191,657 acres in 24 non-WSA lands with wilderness characteristics, followed by Alternative A with 150,001 acre protected in 24 areas. Visual resource objectives in Alternatives B and D – No Action provide the least protection to the natural characteristics of the non-WSA lands with wilderness characteristics.

4.21.2.12 Impacts of Wild Horse Decisions on Non-WSA Lands with Wilderness Characteristics

There are three wild horse herd management/herd areas in the VPA: Bonanza, Winter Ridge, and Hill Creek. A portion of the White River non-WSA lands with wilderness characteristics is located in the Bonanza herd management area. The Wolf Point non-WSA lands with wilderness characteristics is located in the Winter Ridge herd area and a portion of the Desolation Canyon non-WSA lands with wilderness characteristics is located in the Hill Creek herd management area.

4.21.2.12.1 Alternative A

Under Alternative A, a horse herd would not be re-established in the Bonanza herd management area. Thus, there would be no impacts (beneficial or adverse) on the wilderness characteristics of the White River non-WSA lands with wilderness characteristics. In the Winter Ridge herd area, a horse herd of 50 to 100 animals would be re-established. An area with wilderness characteristics is natural and provides opportunities for either solitude or primitive recreation. Areas with wilderness characteristics may also possess supplemental values (interesting, special, or unique natural or cultural resource values) in addition to the requisite wilderness characteristics. Wild horses, for example, would be considered a supplemental value. The presence of this resource value would supplement the wilderness characteristics of the Wolf Point non-WSA lands with wilderness characteristics. In the Hill Creek herd management area, a 70- to 145-animal horse herd would be re-established. Again, the presence of this resource value would supplement the wilderness characteristics of the Desolation Canyon non-WSA lands with wilderness characteristics. In order to re-establish the herd, however, fences would have to be constructed to

mange the herds. Construction of fences in the non-WSA lands with wilderness characteristics (if that location was necessary) would add further development of humans to the landscape and diminish the natural characteristics of the land. During construction, the presence and noise of people and equipment building the fences would detract from opportunities for solitude and primitive recreation. When construction ended, the adverse impact on opportunities for solitude and primitive recreation would improve, but the long-term presence of human-made structures on the land would detract from the undeveloped setting needed to support these opportunities.

4.21.2.12.2 Alternative B

As with Alternative A, under this alternative no horse herd would be re-established in the Bonanza herd management area, and there would be no effect on the wilderness characteristics of the White River non-WSA lands with wilderness characteristics. Likewise, no horse herd would be re-established in the Winter Ridge herd area under this alternative. Thus, there would be no impact on the wilderness characteristics of the Wolf Point non-WSA lands with wilderness characteristics. In the Hill Creek herd management area, all horses would be removed and permits would be offered to the Northern Ute Tribe for up to 100 horses. As with Alternative A, it would be necessary to build fences to manage the herd, with detrimental effects on the natural characteristics and opportunities for solitude and primitive recreation in the Desolation Canyon non-WSA lands with wilderness characteristics, if the fences were located in the non-WSA lands with wilderness characteristics.

4.21.2.12.3 Alternative C

Under Alternative C, a 40- to 85-animal horse herd would be re-established in the Bonanza herd management area. The presence of this resource value would supplement the wilderness characteristics of the White River non-WSA lands with wilderness characteristics. With the herd, however, it would necessary to construct fences and water facilities to manage the horses. Construction of the facilities would further modify the landscape and detract from the natural characteristics of the landscape and would adversely impact opportunities for solitude and primitive recreation. If the facilities were located in the White River non-WSA lands with wilderness characteristics, they would diminish the natural characteristics of the non-WSA lands with wilderness characteristics. In the Winter Ridge herd area, a 50- to 100-animal horse herd would be re-established—the same as under Alternative A. The effects to wilderness characteristics of the Wolf Point non-WSA lands with wilderness characteristics would be the same as those described for Alternative A. In the Hill Creek herd management area, a 70- to 145-animal horse herd would be re-established with an impact the same as that described for this herd management area under that alternative.

4.21.2.12.4 Alternative D – No Action

The effects of Alternative D – No Action in the Bonanza herd management area would be the same as those described for Alternative C, except 3 miles of gap fences would be proposed for construction in the White River non-WSA lands with wilderness characteristics. The effects on the natural characteristics of the non-WSA lands with wilderness characteristics and opportunities for solitude and primitive recreation would be the same as those described for Alternative C. In the Winter Ridge herd area, no herd would be established, with effects on the

wilderness characteristics being the same as those described for Alternative B. The Hill Creek herd management area would support a herd of 195 horses under Alternative D – No Action. The presence of wild horses would supplement the wilderness characteristics of the Desolation Canyon non-WSA lands with wilderness characteristics. No facilities are proposed for management of the herd, so no impacts to the wilderness characteristics of the non-WSA lands with wilderness characteristics would be anticipated.

4.21.2.12.5 Alternative E

The impacts of wild horses and wild horse management on the wilderness characteristics of White River, Wolf Point, and Desolation Canyon non-WSA lands with wilderness characteristics would be the same as those described for Alternative C.

4.21.2.12.6 Summary

Under all alternatives except Alternative B, the BLM would manage for wild horses with the benefits that the presence of wild horses would have on wilderness characteristics and the adverse impacts fence and water construction would have on the natural landscape and opportunities for solitude and primitive recreation. Under Alternative B, the BLM would not manage for wild horses but would offer permits to the Northern Ute Tribe for up to 100 horses.

4.21.2.13 Impacts of Woodland and Forest Decisions on Non-WSA Lands with Wilderness Characteristics

4.21.2.13.1 Alternative A

Under Alternative A, actions would be implemented to maintain and restore forest and woodlands ecosystems to a condition in which biodiversity is preserved, insects and disease are controlled to normal levels, relict stands are maintained, fuel loads are reduced, historic fire regimes are beginning to be restored, salvage is permitted, forests and woodlands are managed for multiple-use, and sustained yield is allowed through fire and mechanical treatments. Up to 552,663 acres would be treated or harvested. Salvage of forest and woodland products that are dead or dying due to fire, disease, insect kill, or other disturbance would be permitted throughout the VPA.

Forest and woodland treatments with fire would restore native vegetation communities and a more natural composition of grasses, forbs, shrubs, and/or trees in those communities. If these treatments occurred in non-WSA lands with wilderness characteristics, this objective would enhance the natural characteristics of the non-WSA lands with wilderness characteristics. In the short term, however, prescribed burning would result in disturbance of the landform and vegetation through fire line construction needed to manage the fire. Further, the presence and noise of people, vehicles, equipment, and aircraft would eliminate opportunities for solitude and primitive and unconfined recreation in proximity to the fire. The impacts on opportunities for solitude and primitive recreation would be temporary, lasting for the duration of the prescribed burning operation and reclamation. When the fire and reclamation operations are complete, these opportunities would return. Soil and vegetation disturbance for fire line construction would

diminish the natural characteristics of the non-WSA lands with wilderness characteristics, but reclamation would restore the natural conditions in a relatively short period of time.

If mechanical treatments (heavy equipment and chainsaws) were conducted for non-WSA lands with wilderness characteristics, the surface disturbance would have long-term impacts on the natural characteristics of the non-WSA lands with wilderness characteristics and opportunities for solitude and primitive and unconfined recreation. While restoration of native vegetation communities would be beneficial to the natural characteristics of non-WSA lands with wilderness characteristics, the use of chainsaws, bull dozers, etc. to accomplish the forest and woodland objectives would leave an obvious imprint of human activity on the land, having an adverse effect on the natural characteristics of the non-WSA lands with wilderness characteristics. Also, in the short term, the presence and noise of people and equipment would eliminate opportunities for solitude and primitive forms of recreation in proximity to the treatment area. In the long term, a setting clearly manipulated by humans would also diminish the opportunities for both solitude and primitive recreation.

Salvage of forest and woodland products would be done by mechanical means with the same impacts to non-WSA lands with wilderness characteristics as described above.

4.21.2.13.2 Alternative B

Under Alternative B, public use of forest and woodland products would be permitted to achieve desired future conditions (e.g., vegetation treatments). Harvest of forest and woodland species would be permitted by the public with emphasis on achieving the greatest output of products. Up to 554,108 acres would be treated or harvested. While the emphasis of this alternative is on the production of forest and woodland products for public use, the effects of mechanical treatment of up to 554,108 acres on the wilderness characteristics of non-WSA lands with wilderness characteristics would be the same as those described under Alternative A. The effects of forest and woodland salvage on non-WSA lands with wilderness characteristics would be the same as those described in Alternative A.

4.21.2.13.3 Alternative C

Alternative C would have the same effects from forest and woodland treatments and harvest on wilderness characteristics of non-WSA lands with wilderness characteristics as those described in Alternative A. The effects of forest and woodland salvage by mechanical means would be the same as those described for Alternative A, except that salvage would only be allowed in ACECs when forest and woodland resources were threatened. Otherwise, 242,760 acres of ACECs would not be affected by salvage. Since there are several areas of non-WSA lands with wilderness characteristics located in proposed ACECs, the exclusion of salvage from ACECs would prevent surface disturbance that would diminish the wilderness characteristics of non-WSA lands with wilderness characteristics (see Table 4.21.3 Non-WSA Lands with Wilderness Characteristics Located in Special Management Areas).

4.21.2.13.4 Alternative D – No Action

Under Alternative D – No Action, up to 88,200 acres of forest and 200,100 acres of woodlands would be treated or be harvested. If any of those treatments (fire or mechanical) occurred in non-WSA lands with wilderness characteristics, the effects would be the same as those described under Alternative A.

4.21.2.13.5 Alternative E

Under Alternative E, forest and woodland treatment and harvests as well as salvage would not be permitted with mechanical means (e.g., chainsaws or bulldozers) in non-WSA lands with wilderness characteristics. Forest and woodland treatments, however, could be performed with prescribed fire if consistent with the objectives for management of the wilderness characteristics of the non-WSA lands with wilderness characteristics. As a result, there would be no surface disturbance from mechanical treatments, harvests, or salvage operations and no effects on the natural characteristics of the non-WSA lands with wilderness characteristics. With prescribed fire treatments, the presence and noise of people, vehicles, or equipment would temporarily reduce opportunities for solitude and primitive recreation during the fire operation. When the operation was complete and rehabilitated as needed, those opportunities would return. Forest and woodland treatments would restore native vegetation communities and composition that would benefit the natural characteristics of the non-WSA lands with wilderness characteristics.

4.21.2.13.6 Summary

Forest and woodland management under Alternative E would provide the greatest protection of wilderness characteristics in the non-WSA lands with wilderness characteristics. On the other hand, without treatments, in some cases there would be no benefit from the restoration of native plant communities or the composition of plants in those communities. The other alternatives would prescribe different areas of land for treatment, harvest, and salvage with similar beneficial effects to non-WSA lands with wilderness characteristics from restoration of native plant communities and similar adverse effects from surface disturbance.

4.21.2.14 Impacts of Non-WSA Lands with Wilderness Characteristics Decisions on Non-WSA Lands with Wilderness Characteristics

There are 25 areas outside of existing WSAs totaling 277,596 acres that were inventoried and found to have wilderness characteristics. See Table 3.22.1 in this Supplement for a list of areas by name and acreage with wilderness characteristics (Figure 20e).

4.21.2.14.1 Alternatives A, B, C, and D – No Action

Under these alternatives, there would be no specific actions prescribed to directly protect or enhance the wilderness characteristics of the non-WSA lands with wilderness characteristics that have those values. Thus, there would be no effect on the wilderness characteristics of the non-WSA lands with wilderness characteristics.

4.21.2.14.2 Alternative E

Under Alternative E, all non-WSA lands with wilderness characteristics would be manage by the following prescription:

- Visual resource management (VRM) Class I objectives followed
- Closed to OHV use
- Closed to oil and gas leasing
- Closed to solid mineral leasing
- Closed to disposal of mineral materials
- Proposed for withdrawal from mineral entry
- Public lands retained in federal ownership
- Excluded from location of utility ROWs
- Closed to permitted commercial and personal-use wood cutting and seed collecting
- Closed to new road construction
- Maintenance of existing facilities permitted
- When compatible with the goals and objectives for management of non-WSA lands with wilderness characteristics:
    - Vegetation and fuel treatments permitted using prescribed fire
    - Construction of wildlife waters, livestock facilities, and minimal recreation facilities permitted
    - Excavation of cultural resources sites permitted
    - Excavation of paleontological resources permitted
- No actions would be allowed that would degrade the wilderness characteristics of the non-WSA lands with wilderness characteristics.

This prescription would prevent road construction that would alter the size of the non-WSA lands with wilderness characteristics, prevent surface disturbances that would detract from the natural characteristics of the non-WSA lands with wilderness characteristics, prevent surface disturbances and uses that would be incompatible with primitive recreation activities, and protect the setting needed to support the experience of solitude. This management prescription would protect the wilderness characteristics of all of the non-WSA lands with wilderness characteristics with those values.

4.21.2.14.3 Summary

Alternatives A, B, C, and D – No Action prescribe no specific actions that would affect (adversely or beneficially) the wilderness characteristics of non-WSA lands with wilderness characteristics. Alternative E, however, prescribes a management scheme that would protect the wilderness characteristics of all of the non-WSA lands with wilderness characteristics with those values (277,596 acres).

4.21.2.15 Summary of Impacts from Alternatives

4.21.2.15.1 Alternative A

Alternative A provides for management of natural landscapes and opportunities for solitude and primitive forms of recreation by:

- establishing cultural resource protection areas;
- proposing large acreages for protection in special designations (ACECs and Wild and Scenic Rivers);
- limiting surface disturbance on steep slopes;
- establishing a large number of acres for protection of landscapes (scenery) through VRM Class I and II objectives; and
- using prescribed fire and mechanical treatments to restore vegetation communities and reduce wildfire hazard.

Under Alternative A, however, protection of wilderness characteristics would be less than under Alternatives C and E.

4.21.2.15.2 Alternative B

Alternative B provides less management of natural landscapes and opportunities for solitude and primitive forms of recreation by:

- using prescribed fire and mechanical treatment to restore vegetation communities and reduce wildfire hazard and
- managing more acres for landscape change through VRM Class III and IV objectives.

4.21.2.15.3 Alternative C

Alternative C places emphasis on management of natural landscapes and opportunities for solitude and primitive forms of recreation by:

- establishing cultural resource protection areas;
- leasing fewer acres for mineral and hydrocarbon development than do other alternatives;
- using prescribed fire and mechanical treatment to restore vegetation communities and reduce wildfire hazard;
- proposing larger acreages for special designations (ACECs and Wild and Scenic Rivers); and
- managing large acreages for landscape protection through VRM Class I and II objectives (the most protective VRM classes).

4.21.2.15.4 Alternative D – No Action

Alternative D – No Action provides the least emphasis on management of naturalness and opportunities for solitude and primitive recreation by:

- establishing no cultural resource protection areas;

- using prescribed fire and mechanical treatment to restore vegetation communities and reduce wildfire hazard;
- managing the fewest acres for special designations (ACECs and Wild and Scenic Rivers); and
- managing the most acres for VRM Class III and IV objectives (the least protective VRM classes), the same as Alternative B.

4.21.2.15.5 Alternative E

Alternative E focuses on protection to the natural values and opportunities for solitude and primitive recreation of the non-WSA lands with wilderness characteristics by:

- closing the non-WSA lands with wilderness characteristics to OHV use;
- closing the non-WSA lands with wilderness characteristics to oil and gas leasing, solid mineral leasing, and mineral material sales;
- proposing the non-WSA lands with wilderness characteristics for withdrawal from mineral entry;
- excluding the non-WSA lands with wilderness characteristics from ROW development;
- closing the non-WSA lands with wilderness characteristics to permitted commercial and personal-use wood cutting;
- managing the non-WSA lands with wilderness characteristics for landscape protection through VRM Class I objectives;
- closing the non-WSA lands with wilderness characteristics to road construction; and
- allowing vegetation and fuel treatments with prescribed fire, when compatible with the goals and objectives for management of the non-WSA lands with wilderness characteristics.

4.21.3 Mitigation Measures

There are a number of actions proposed under all alternatives that would limit surface disturbance, focus on primitive forms of recreation, and maintain or restore vegetation condition, all of which would maintain and enhance the wilderness characteristics of portions of non-WSA lands with wilderness characteristics. Under Alternatives A, B, C, and E, withdrawals from entry under the mining laws would prevent surface disturbance along parts of the Green and White Rivers and would protect the natural condition of the landscape in the Lower Flaming Gorge, White River, and Desolation Canyon non-WSA lands with wilderness characteristics. Under Alternative D – No Action, mineral withdrawals are also proposed for portions of the Green River through Browns Park and the lower Green River, again, protecting the natural condition of the river canyon parts of Lower Flaming Gorge and Desolation Canyon non-WSA lands with wilderness characteristics. Protecting the natural character of the river canyons would enhance the setting required to support opportunities for solitude and primitive forms of recreation.

Under all alternatives, actions to prohibit surface disturbance within floodplains and within 100 meters of riparian zones would protect the natural condition of riparian portions of non-WSA lands with wilderness characteristics. Protection of the natural condition of these areas would also enhance the setting needed to provide opportunities for both solitude and primitive forms of

recreation. Further, managing riparian zones to achieve proper functioning condition would maintain and restore vegetation condition and water quality that would enhance the natural condition of riparian portions of the non-WSA lands with wilderness characteristics and settings that support primitive forms of recreation like hiking and wildlife viewing.

Under all alternatives, prescribed burning to restore vegetation communities would maintain and enhance the natural condition of non-WSA lands with wilderness characteristics, enhance wildlife habitat for hunting and wildlife viewing, and enhance the visual appeal by introducing variety to the landscape. Under Alternative E, all non-WSA lands with wilderness characteristics would be managed to VRM Class I standards. Managing areas by VRM Class I objectives would maintain the natural condition of portions of the non-WSA lands with wilderness characteristics. Under the other alternatives, portions of the non-WSA lands would continue to be managed to that standard, preserving the natural condition of the lands. All surface-disturbing activities, regardless of alternative or management action, would be subject to the VRM objectives of the area within which the activity takes place. The visual resource contrast rating system would be used as a tool to analyze the potential site-specific impacts of surface disturbance as well as facility design and placement. Surface-disturbing activities and facilities would then be designed to mitigate their visual impacts and conform to the area's VRM objective. Mitigation would include camouflage coloring, facility design, and placement/location.

Under Alternatives A, C, and E, recreation management objectives for portions of the White River, Blue Mountain, Book Cliffs, Browns Park, and Nine Mile Canyon SRMAs would provide activities, settings, and experiences for primitive forms of recreation. These objectives would provide protection of the natural setting and opportunities for solitude and primitive forms of recreation in portions of the White River, Bourdette Draw, Lower Flaming Gorge, Desolation Canyon, and the Bitter Creek non-WSA lands with wilderness characteristics. These objectives would provide the same benefits to wilderness characteristics for the Desolation Canyon and Lower Flaming Gorge non-WSA lands with wilderness characteristics under Alternative D – No Action. Further, actions to construct up to 400 miles of non-motorized trails under Alternative A, C, and E and 55 miles of trails under Alternative D – No Action would provide further opportunities for primitive forms of recreation.

Management of ACEC and Wild and Scenic River values in Browns Park, Nine Mile Canyon, and the Lower Green River under all alternatives would maintain and enhance wilderness characteristics in portions of the Lower Flaming Gorge and Desolation Canyon non-WSA lands with wilderness characteristics. Management of the ACEC and Wild and Scenic River values in White River under Alternative A, C, and E would have the same effect on the wilderness characteristics of portions of the White River non-WSA lands with wilderness characteristics.

4.21.4 Unavoidable Adverse Impacts

Under Alternative A, B, C, and D – No Action, minerals exploration and development, power line and pipeline construction, road and trail construction, and vegetation treatment with mechanical methods would result in surface disturbances and placement of human-made structures on the landscape that would cause unavoidable adverse impacts on the natural characteristics of non-WSA lands with wilderness characteristics. Further, the noise and presence of people and equipment to implement these treatments and construct these facilities would

diminish opportunities for solitude and primitive recreation. The human presence on the landscape would also alter the setting needed to support these opportunities. These impacts to wilderness characteristics would not be mitigated through project location and design.

Under Alternative E, 277,596 acres of non-WSA lands with wilderness characteristics would be closed to OHV travel and surface disturbances that would degrade or diminish the wilderness characteristics of these lands. However, even under this alternative and these prescriptions to protect wilderness characteristics, 124,215 acres would lose their natural character and opportunities for solitude and primitive recreation due to exploration, development, and production of oil and gas resources in the VPA. Existing oil and gas leases and the exercise of valid existing rights under those leases would eliminate the wilderness characteristics in portions of 13 non-WSA lands with wilderness characteristics (see Section 4.21.2.5.5.1 above).

4.21.5 Short-term Use Versus Long-term Productivity

Under all alternatives, construction of oil and gas exploration access roads and well pads would produce a long-term loss of naturalness and opportunities for solitude and primitive recreation in portions of up to 14 non-WSA lands with wilderness characteristics. Similarly, under Alternatives A, B, C, and D – No Action, OHV driving, woodcutting, and seismic exploration would cause long-term losses of naturalness and opportunities for solitude and primitive recreation.

Under all alternatives, the use of prescribed fire for vegetation treatments would, in the long term, enhance vegetation condition and the natural character of non-WSA lands with wilderness characteristics. A more natural landscape would improve opportunities for both solitude and primitive forms of recreation. Further, construction of riparian exclosure fences needed for restoration of riparian areas would degrade the natural character of non-WSA lands with wilderness characteristics in the short term but would enhance the riparian vegetation community in the long term, providing for a more natural landscape and settings for primitive recreational activities. Upon restoration, the exclosure fences would be removed.

Protection of ACEC and Wild and Scenic River values in Browns Park, Nine Mile Canyon, and the Lower Green River under all alternatives would maintain and enhance wilderness characteristics in portions of the Lower Flaming Gorge and Desolation Canyon non-WSA lands with wilderness characteristics in the long term. Management of the ACEC and Wild and Scenic River values in White River under Alternatives A, C, and E would have the same long-term effect on the wilderness characteristics of portions of the White River non-WSA lands with wilderness characteristics.

4.21.6 Irreversible and Irretrievable Impacts

Under Alternatives A, B, C, and D, oil and gas wells and well fields that are currently producing; above-ground pipeline and power line corridors and communication sites; forest and woodland treatments by mechanical means (bull dozers and chainsaws); construction of livestock and wildlife waters and fences; construction of roads and trails; allocation of open areas and designated routes for motorized vehicle use; and allocation of areas for the harvesting of forest and woodland products (e.g., timber production and fire wood) would all result in irreversible

and irretrievable degradation of the natural characteristics of non-WSA lands with wilderness characteristics. Further, implementation of these structures, land treatments, and uses would change the natural, undeveloped setting to a more developed and industrial landscape that is not conducive to primitive recreation activities and experiences of solitude. Land and vegetation disturbance, the presence of human-made structures on the land, and the noise and presence of people, equipment, and vehicles would not support an experience of solitude and would conflict with primitive recreational activities.

Under Alternative E, however, 277,596 acres in 25 separate non-WSA lands with wilderness characteristics would be managed to protect natural landscapes and opportunities for solitude and primitive recreation activities. These areas would be closed to motorized uses and surface-disturbing activities that would degrade or diminish wilderness characteristics. Despite this long-term commitment to protecting undeveloped landscapes, opportunities for solitude, and primitive recreational activities, there would still be an irreversible and irretrievable loss of wilderness characteristics on 124,215 acres in portions of 13 of the non-WSA lands with wilderness characteristics (see Section 4.21.2.5.5.1 above). Although currently undeveloped, portions of these non-WSA lands with wilderness characteristics have been leased for oil and gas production. Because it is anticipated that the lease holders will exercise their rights under their leases and develop these areas for oil and gas production, the wilderness characteristics of portions of these 13 areas will be irreversibly and irretrievably lost.

4.22 CUMULATIVE IMPACTS

NOTE TO READER: The first paragraph of Section 4.22 CUMULATIVE IMPACTS has been replaced with the following to include a cumulative impacts analysis of managing to protect the wilderness characteristics of non-WSA lands with wilderness characteristics on other resource values and uses.

Cumulative impacts are the effects on the environment from all past, present, and reasonably foreseeable future actions outside of the scope or not associated with the proposed project. These impacts are discussed because the quality of the human environment is the result of many actions or factors working together to produce a cumulative effect. The effect of any single action cannot be determined by considering that action in isolation. The cumulative impacts discussion that follows considers the proposed alternatives in the context of the broader human environment, outside the scope and geographic area described by the Resource Management Plan (the VPA), with the purpose of determining whether the proposed project would produce major adverse impacts within the VPA.

Non-WSA Lands with Wilderness Characteristics

Specific actions are prescribed under Alternative E to protect the wilderness characteristics of all 277,596 acres of non-WSA lands with wilderness characteristics in 25 separate areas. These actions would generally place limits on other resource uses that are not compatible with protecting wilderness characteristics, and limit resource development that would alter the landscape. When considered cumulatively with other actions prescribed under Alternative E, managing lands to protect their wilderness characteristics would have both adverse impacts on some resource values and uses and beneficial impacts on others.

Under Alternatives A, B, C, and D, no actions are prescribed specifically to protect the wilderness characteristics of non-WSA lands with wilderness characteristics. Thus, there are no cumulative impacts of managing these areas to protect their wilderness characteristics on other resource values and uses. There are, however, actions prescribed under other resource programs that would indirectly protect some or all of the wilderness characteristics of some or portions of the non-WSA lands with wilderness characteristics. For example, oil and gas leasing with no surface occupancy under Alternative B would protect the naturalness of Green River corridor in Desolation Canyon and Lower Flaming Gorge non-WSA lands with wilderness characteristics, and closures to OHV use would enhance opportunities for solitude and primitive recreation in portions of the White River and Lower Flaming Gorge non-WSA land with wilderness characteristics under Alternative A. The cumulative impacts of those actions are described under the resource programs that prescribe those measures.

Under Alternative E, a set of management actions are prescribed to specifically protect the wilderness characteristics of 277,596 acres in 25 separate areas (see Chapter 2, Table 2.3, Non-WSA Lands with Wilderness Characteristics). These actions, when considered with other actions prescribed in this plan and by other land management agencies (Forest Service, Park Service, Fish and Wildlife Service, and other BLM offices), would have cumulative impacts on other resource values and uses of the VPA.

The prescription for protection of non-WSA lands with wilderness characteristics limits other resource uses that would be incompatible with opportunities for solitude and primitive recreation and limits surface disturbances that would degrade the natural characteristics of the non-WSA lands with wilderness characteristics. All 277,596 acres of the non-WSA lands with wilderness characteristics would be closed to OHV use, closed to oil and gas and other mineral leasing, excluded from rights-of-way development, closed to wood cutting, and closed to road construction. Non-WSA lands with wilderness characteristics would be recommended for withdrawal from mineral entry. This prescription would prevent surface disturbances that would alter landform and vegetation. These limitations on surface disturbance, when considered cumulatively with other actions prescribed in this plan, would provide protection to many resource values in the VPA, including soil, water, vegetation (upland and riparian), wildlife and their habitat, air quality, special status species, visual resources, cultural resources, and fossils.

Cultural resource decisions would close sensitive areas to OHV use. Fire management decisions would use prescribed fire to restore vegetation communities, rather than mechanical treatment methods. Lands and realty program decisions would recommend areas for mineral withdrawal. Oil and gas program decisions would close sensitive areas to leasing and offer other areas with no surface occupancy stipulations. ACEC management decisions and wild and scenic river recommendations would protect special values and river systems. And, special status species decisions would protect habitat for various species. These program decisions would limit disturbance of soil and vegetation. Decisions to manage lands to protect their wilderness characteristics would add cumulatively to these limits on soil and vegetation (surface) disturbance, protecting the resource values identified above. Further, these limits on surface disturbance would add cumulatively to recreation decisions to maintain some undeveloped settings needed to support opportunities for primitive forms of recreation (e.g., hiking, back packing, hunting, fishing, river floating, wildlife viewing, and nature study). These actions would

also add cumulatively to the economy of businesses dependent on undeveloped settings (i.e., outfitters and guides and wilderness therapy businesses), and produce revenues for local and state governments. When considered in a broader context, with similar decisions of other agencies for other public lands, national forests, national monuments and recreation areas, and fish and wildlife refuges, decisions to protect the wilderness characteristics of non-WSA lands with wilderness characteristics would add cumulatively to the protection of soil, water, vegetation (upland and riparian), wildlife and their habitat, air quality, special status species, visual resources, cultural resources, and fossils throughout the VPA and the region.

It should be noted, however, that 129,468 acres in 15 of the non-WSA lands with wilderness characteristics are already leased for oil and gas production (47% of all of the non-WSA lands with wilderness characteristics), though exploration and development may not have occurred to date. Given the known resource value, potential for development, and production history in the VPA, it is expected that between 14% and 89% of 13 of the non-WSA lands with wilderness characteristics under lease would be developed for oil and gas production. Through the exercise of valid existing rights (under the terms and conditions of the existing leases), about 124,215 acres of the non-WSA lands managed to protect their wilderness characteristics under Alternative E could be developed anyway. On these lands, disturbance to soil, vegetation, wildlife habitat, air quality, and visual resources, normally associated with oil and gas development, would still occur (see Section 4.21.2.5). If any of the existing leases in non-WSA lands with wilderness characteristics were not developed during the term of the lease, and the leases expired, under Alternative E, they would be closed to leasing and unavailable for future development and production.

Protection of the wilderness characteristics of non-WSA lands with wilderness characteristics, however, would also add cumulatively to limitations on other uses of the public lands and natural resources. Under Alternative E, all 277,596 acres of non-WSA lands with wilderness characteristics would be closed to OHV travel and other motorized forms of recreation. To protect wilderness characteristics, all 277,596 acres would be closed to timber production and wood cutting, and to mineral and energy production, subject to the valid existing rights discussed above. All of these areas would also be excluded from location of power lines, pipelines, and other rights-of-way. Livestock grazing would continue, but vegetation treatments to maintain and enhance forage for livestock would be limited to prescribed fire. Mechanical treatments using chainsaws or bull dozers would not be permitted in these areas.

When considered with other program decisions in the plan, the decision to manage non-WSA lands with wilderness characteristics to protect their wilderness characteristics would add cumulatively to limits on other land and resource uses. Many decisions of the plan limit other resource uses, giving emphasis to protection of certain resource values. Cultural resource and recreation decisions would close and limit OHV use to protect culturally sensitive areas and give emphasis to non-motorized forms of recreation. River corridors would be closed to energy and mineral development, or offered with no surface occupancy stipulations, to protect flood plains, wild and scenic river values, riparian values, and fish and wildlife. Wood cutting would be prohibited in a portion of an ACEC to protect old growth pinyon pine. Surface disturbance would be prohibited or limited on steep slopes to prevent soil erosion. Surface disturbance would be prohibited or limited in flood plains. Energy development would be prohibited or limited in

special status species habitat to ensure protection of the habitat and survival of the species. These decisions limit or prohibit energy and mineral production; timber production; wood cutting; road construction; and power line, pipeline, and other utility construction in some portions of the VPA. These prohibitions and limitations would result in some level of loss of income and revenue in both the local area and region. When considered in a broader context, with similar decisions of other agencies for other public lands, national forests, national monuments and recreation areas, and fish and wildlife refuges, decisions to protect the wilderness characteristics of non-WSA lands with wilderness characteristics would add cumulatively to prohibitions and limitations on these resource uses throughout the VPA and the region.

See Section 4.22.19 for a discussion of cumulative impacts of other program decisions on the wilderness characteristics of non-WSA lands with wilderness characteristics.

NOTE TO READER: Section 4.22.11.3, Wilderness, has been replaced with the following to remove the references to non-WSA lands with wilderness characteristics.

Cumulative impacts from the implementation of other resource decisions on WSAs would be minimal, with the exception of mineral and OHV decisions. Mineral resource development and OHV activity could result in major adverse impacts the wilderness characteristics of portions of the Winter Ridge WSA (See Table 4.14.3 of the DRMP/DEIS).

NOTE TO READER: A new Section 4.22.19, Non-WSA Lands with Wilderness Characteristics, has been added to disclose the cumulative effects of the alternatives on non-WSA lands with wilderness characteristics.

4.22.19 Cumulative Impacts on Non-WSA Lands with Wilderness Characteristics

As demand for resource uses continues to grow, and interest in public lands continually broadens, the cumulative impacts on non-WSA lands with wilderness characteristics would increase, both in terms of loss of undeveloped landscapes and opportunities for solitude and primitive recreation and in terms of protection of places with these values. There are a number of actions prescribed in the DRMP/DEIS that would add cumulatively to both the protection and alteration of lands with wilderness characteristic. Use of public lands, including oil and gas development and other mineral production, would continue to change the landscape and reduce the amount of wild lands. Growing use of motorized transportation and mountain bikes would reduce opportunities for solitude and primitive forms of recreation. Use of forest and woodland products would introduce the presence of human beings on the landscape, resulting in a reduction of undisturbed and unmodified landscapes—places with wilderness characteristics.

On the other hand, protection of landscapes in a more natural condition via management for protection of wilderness characteristics and visual resource (landscape) objectives would preserve unmodified landscapes and wilderness characteristics. Further restoration of more natural vegetation communities with prescribed fire (rather than with chain saws and bulldozers) would aid in the restoration of native vegetation communities, natural landscapes, habitat for wildlife, and the associated primitive recreation opportunities. Establishing recreation management objectives with a focus on primitive forms of recreation and limiting motorized recreation would also enhance opportunities for solitude and primitive recreation.

Under all alternatives, 129,468 acres in 15 non-WSA lands with wilderness characteristics (47% of all acres of all 25 non-WSA lands with wilderness characteristics) are currently leased for oil and gas production. Development of existing leases (the exercise of valid existing rights) and acquisition of future leases (under Alternatives A, B, C, and D) would result in the loss of between 124,215 – 183,095 acres (45% - 66%) of areas with wilderness characteristics in the VPA. When added to decades of oil and gas development in this region, this continued land use would add cumulatively, in varying degrees, to the change of the land to a more industrial landscape and the loss of natural landscapes and opportunities for solitude and primitive recreation. Under all alternatives, between 88,200 and 552,663 acres of forests and woodlands would be treated for timber and woodland product production, fuels reduction, and vegetation community enhancement. Mechanical treatment would add another measure of the evidence of humans on the landscape, further reducing wild lands, or lands with wilderness characteristics, in the planning area. Under the action alternatives (A, B, C, and E), motorized use would be limited to a designated route system, with small areas open to cross-country travel. This focus in OHV management would limit the expansion of motorized travel, adding cumulatively to protection of natural landscapes and existing opportunities for solitude and primitive forms of recreation. However, development of up to 800 miles of additional motorized trails under Alternatives A and B, and motorized use of new oil and gas roads under all alternatives, would expand opportunities for motorized recreation and away from primitive activities and experiences of solitude, adding cumulatively to the loss of wilderness characteristics. Under Alternatives A, C, D – No Action, and E, between 55 and 400 miles of non-motorized trails would be developed, adding cumulatively to miles of trails already present in the VPA and increasing opportunities for primitive and unconfined forms of recreation.

Under all alternatives, management to protect and enhance wildlife and special status species habitat, including riparian habitat, would enhance opportunities for primitive forms of recreation, including wildlife viewing and hunting. Management of primitive and semi-primitive non-motorized portions of the SRMAs for primitive recreation opportunities (e.g., hiking, backpacking, hunting, and wildlife viewing) and the settings needed to support these activities and experiences would cumulatively enhance wilderness characteristics, primitive recreation, experiences of solitude, and natural settings. Further, under Alternative E, management prescriptions that protect the wilderness characteristics of 277,596 acres of non-WSA lands with wilderness characteristics would add cumulatively to the protection of wild lands throughout the VPA and the State of Utah. Throughout Utah, the BLM, National Park Service, and Forest Service are managing over 5.5 million acres to protect their wilderness values (in designated wilderness, recommended wilderness, and WSAs). Management of the 277,596 acres of non-WSA lands with wilderness characteristics specifically to protect their wilderness characteristics would increase the number of acres in Utah managed to protect wilderness characteristics by about 5 percent. If BLM were to protect all non-WSA lands with wilderness characteristics currently being considered in ongoing planning efforts, it would increase the acreage under protective management by 50 percent. Overall, about 16 percent of the 52 million surface acres in Utah would then be managed in a way that provides some level of protective management for wilderness characteristics.

NOTE TO READER: A new reference has been added to the Proposed Plan References.

Bowker, J.M.; Harvard, J.E., III; Bergstrom, John C.; Cordell, H. Ken; English, Donald B.K.; Loomis, John B. "The Net Economic Value of Wilderness", *The Multiple Values of Wilderness*: 161 – 181. USFS, Southern Research Station, 2005.

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