

4.21. WILDLIFE AND FISHERIES RESOURCES

Impacts from decisions concerning Paleontological Resources and Visual Resource Management would have a negligible effect on wildlife in the Vernal Planning Area (VPA) and therefore will not be discussed further in this analysis. Paleontological resource decisions would not result in substantial amounts of surface disturbance nor protections from surface disturbance whereas Visual Resource Management decisions would generally be reflected in energy and minerals decisions discussed below. All other proposed management decisions have the potential to impact wildlife in the VPA. A detailed description of these impacts is given below. It should be noted that the effects of livestock grazing decisions on wildlife and fisheries resources would be generally limited to the disease transmission impacts of domestic sheep to bighorn sheep. Forage allotments that currently allow domestic sheep would continue to be phased to cattle allotments if they are associated with bighorn sheep reintroduction areas.

4.21.1. IMPACTS OF RESOURCE MANAGEMENT DECISIONS COMMON TO THE PROPOSED RMP AND ALL ALTERNATIVES

BLM would, wherever possible, provide habitat for a diversity of wildlife and fish species within the planning area, maintain and protect existing crucial habitats for big game and upland game species, restore degraded habitats, and manage for large un-fragmented blocks of continuous wildlife habitat that would provide the life cycle requirements of a variety of wildlife species. BLM recognizes the need to identify species and habitats most in need of conservation so that these areas can receive prioritization in preserving valuable wildlife habitats. BLM also recognizes the important role of UDWR in managing wildlife populations, hunting, and fishing associated with lands managed by BLM. Specific BLM actions to achieve these goals are listed in Chapter 2. These actions note that habitat preservation and cooperative wildlife management would be important in maintaining the wildlife populations associated with lands managed by BLM in the VPA.

4.21.2. IMPACTS OF RESOURCE MANAGEMENT DECISIONS ON WILDLIFE AND FISHERIES FOR THE PROPOSED RMP AND ALL ALTERNATIVES

4.21.2.1. IMPACTS OF CULTURAL RESOURCES DECISIONS ON WILDLIFE AND FISHERIES RESOURCES

Under the Proposed RMP and Alternatives A, B, C, and E, closing or limiting OHV use to designated trails in the Uinta 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 near cultural sites and traditional sacred properties. Alternative D (No Action) would maintain these areas as open to OHV use, and areas near cultural sites and traditional sacred properties would not provide protection to wildlife from OHV use, when compared to the Proposed RMP and the action alternatives.

4.21.2.2. IMPACTS OF FIRE MANAGEMENT ON WILDLIFE AND FISHERIES RESOURCES

The Proposed RMP and Alternatives A, B, C, and E allow for prescribed fire on approximately 156,425 acres 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 likely have similar short-term direct adverse effects from habitat removal. However, fire management decisions would generally have a long-term beneficial impact to wildlife and fish populations by helping to restore the natural fire regime, which would improve habitat health and increase habitat diversity. Restoring the natural fire regime would also reduce the chance of catastrophic fire, and the subsequent loss of major ecosystem components, in comparison to Alternative D (No Action). Alternative D (No Action) provides 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). This alternative provides for fewer acres of disturbance and therefore would likely have fewer short-term direct adverse impacts to wildlife and fish populations, but would likely result in a higher long-term risk of catastrophic wildfire than the action alternatives. This, in turn, would result in greater long-term risk to wildlife and fish populations than the action alternatives.

4.21.2.3. IMPACTS OF FORAGE ALLOCATION ON WILDLIFE AND FISHERIES RESOURCES

The overarching goal of forage allocation decisions is to maintain or improve the total forage resource using techniques that are compatible with the use and development of other resources and that would maintain, meet, or make substantial progress towards meeting Utah BLM Rangeland Health Standards. The impacts of forage allocation decisions by alternative are discussed below for all localities and under the heading of each forage locality. AUMs for wildlife are obtained by a combination of previously adjudicated AUMs and AUMs obtained either from the previous purchase of private grazing lands or through the allocation of AUMs currently owned and controlled by non-governmental organizations.

4.21.2.3.1. ALL LOCALITIES

4.21.2.3.1.1. Proposed RMP

The Proposed RMP would restrict forage utilization on uplands to a maximum of 50% utilization. Alternative D (No Action), on the other hand, would not specify forage utilization on uplands. The Proposed RMP would allocate 104,865 animal unit months (AUMs) for wildlife, which would include all wildlife species and populations. This is about 9% more (8,258 more AUMs) than Alternative D (No Action), which would allocate 96,607 AUMs to wildlife. In the short-term Alternative D (No Action) would have greater beneficial impacts to wildlife than the Proposed RMP by allowing for more forage utilization (not limited to 50%). However, in the long-term Alternative D (No Action) would have greater adverse impacts to wildlife than the Proposed RMP because the lack of a forage utilization limit would result in greater adverse impacts to the forage vegetation resource on which wildlife species depend.

4.21.2.3.1.2. Alternative A

Alternative A would restrict forage utilization on uplands to a maximum of 50% utilization. Alternative D (No Action), on the other hand, would not specify forage utilization on uplands. Alternative A would allocate 104,871 AUMs for wildlife, which would include all wildlife species and populations. This is about 9% more (8,264 more AUMs) than t Alternative D (No Action), which would allocate 96,607 AUMs to wildlife. In the short-term Alternative D (No Action) would have greater beneficial impacts to wildlife than Alternative A by allowing for more forage utilization (not limited to 50%). However, in the long-term Alternative D (No Action) would have greater adverse impacts to wildlife than Alternative A because the lack of a forage utilization limit would result in greater adverse impacts to the forage vegetation resource on which wildlife species depend.

4.21.2.3.1.3. Alternative B

Alternative B would restrict forage utilization on uplands to a maximum of 60% utilization. Currently there is no specification for forage utilization on uplands under Alternative D (No Action). Alternative B would allocate 104,871 AUMs for wildlife. This would be an increase of 8,264 AUMs (about 9%) allocated to wildlife in comparison with Alternative D (No Action). With respect to AUMs allocated for wildlife Alternative B would be more beneficial to wildlife than Alternative D (No Action) due to the greater number of AUMs. Under Alternative B the impacts of forage utilization limits on wildlife compared to Alternative D (No Action) would be the same as the impacts discussed under Alternative A except that Alternative B would limit forage utilization to 60%.

4.21.2.3.1.4. 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). The impacts of forage utilization decisions on wildlife under Alternatives C and E would be the same as under Alternative A because the decisions would be the same. With respect to AUMs allocated for wildlife Alternatives C and E would be more beneficial to wildlife than Alternative D (No Action) due to the greater number of AUMs.

4.21.2.3.1.5. Alternative D (No Action)

Currently there is no specification for forage utilization on uplands under Alternative D (No Action). The Alternative D (No Action) would allocate 96,607 AUMs for wildlife.

4.21.2.3.2. BONANZA LOCALITY**4.21.2.3.2.1. Proposed RMP and Alternative A**

Under the Proposed RMP and Alternative A, if forage allocation reductions are necessary to maintain, meet or make significant progress towards rangeland health in the Bonanza locality AUMs allocated to livestock and pronghorn would be reduced proportionally though pronghorn use would not be reduced below 502 AUMs. The Proposed RMP and Alternative A would be more beneficial to wildlife than Alternative D (No Action) because the Proposed RMP and Alternative A specify necessary actions when the aforementioned criteria are met.

If, however, additional forage is available forage increases would be divided proportionately between livestock and big game with the wildlife AUMs going to pronghorn and deer. In this case, the impacts of the Proposed RMP and Alternatives A and D (No Action) are approximately the same because both alternatives would provide additional forage for wildlife.

4.21.2.3.2.2. Alternative B

Under Alternative B, in the Bonanza locality if forage allocation reductions are necessary to maintain, meet or make significant progress towards rangeland health pronghorn use would be reduced, but not below 502 AUMs. Other appropriate reductions in big game use would also be made but prior to making reductions in livestock numbers. In this case, Alternative B would be more beneficial to wildlife than Alternative D (No Action) because Alternative B specifies necessary actions when the aforementioned criteria are met.

If additional forage is available up to 502 AUMs would be provided for pronghorn and sheep and/or cattle use would be increased in accordance with available forage. If livestock and pronghorn are not in need of additional forage remaining AUMs would be allocated to deer. In this case, Alternative D (No Action) would be more beneficial to wildlife than Alternative B because Alternative B would favor livestock over wildlife in allocating additional forage.

4.21.2.3.2.3. Alternatives C and E

Under Alternatives C and E, if forage allocation reductions are necessary to maintain, meet or make significant progress towards rangeland health in the Bonanza locality livestock AUM use would be reduced while pronghorn, deer, and other big game use would be maintained. Alternatives C and E would be more beneficial to wildlife than Alternative D (No Action) because Alternative D (No Action) does not specify management actions when the aforementioned criteria are met whereas Alternatives C and E do. Alternatives C and E would not reduce big game use at all. Instead all forage allocation reductions would be borne by livestock.

If additional forage is available wildlife use would be increased in accordance with available forage and livestock use would not be increased above permitted use. In this case, Alternatives C and E would be more beneficial to wildlife than Alternative D (No Action) because all additional available forage would be allocated for wildlife.

4.21.2.3.2.4. Alternative D (No Action)

If forage allocation reductions are necessary to make significant progress towards or sustain rangeland health, there is no specified management plan for the Bonanza locality under Alternative D (No Action).

If additional forage is available and rangeland health is being sustained, or significant progress is being made towards sustaining rangeland health in the Bonanza Area, additional forage allocations would: (1) Provide for optimum wildlife levels where conflicts with livestock do not exist. (2) Specific to deer, habitat would be managed to support significantly increased levels; and specific to pronghorn, habitat would be managed to support increased levels. (3) Target livestock AUM figures are not final stocking levels. (5) Rather, all livestock use adjustments would be implemented through documented mutual agreement or by decision. When livestock use adjustments would be implemented by decision, it would be based on operator consultation and monitoring of resource conditions. (6) Additionally, any necessary adjustments in stocking levels or other management practices, including changes or additions to existing management facilities, would be based on allotment evaluations.

4.21.2.3.3. BONANZA WILD HORSE HERD AREA LOCALITY

4.21.2.3.3.1. Proposed RMP

Wild horses in the Bonanza Wild Horse Herd were gathered and removed from the area in 2001. Under the Proposed RMP, the area would be declared unpopulated and managed as an HA with no specific management plan for wild horses. No AUMs are allocated for wild horses potentially leaving more forage available for wildlife and livestock.

If forage allocation reductions are necessary to maintain, meet or make significant progress towards rangeland health in this locality and demonstrated conflicts are between wildlife and livestock the Proposed RMP would proportionately reduce sheep and pronghorn AUM use but pronghorn use would not be reduced below 239 AUMs, making the Proposed RMP more beneficial to wildlife than livestock than Alternatives C and E because the Proposed RMP eliminates conflicts for forage with wild horses.

If additional forage is available and rangeland health is being sustained, or significant progress is being made towards sustaining rangeland health and the additional forage meets the needs of livestock and wildlife, then sheep and wildlife use would be increased proportionately with available forage. If additional forage meets the needs of livestock, and pronghorn then livestock and wildlife use would be increased proportionately in accordance with available forage because no are within this area. As in the other situations described above, in this case the Proposed RMP would be more beneficial to wildlife than Alternative D (No Action) because, under the Proposed RMP, no wild horses are within this area potentially resulting in more additional forage for wildlife.

4.21.2.3.3.2. AUMs Alternative A

Under Alternative A, horses would not be gathered and removed from the locality but no AUM allocations would be made to maintain the wild horse population there. In this case, Alternative A would be more beneficial to wildlife than Alternative D (No Action) due to the fact that Alternative A would not allocate AUMs to wild horses whereas Alternative D (No Action) would allocate 1,020 AUMs to wild horses. However, horses would still use AUMs under Alternative A because they would still be present.

If forage allocation reductions are necessary to maintain, meet or make significant progress towards rangeland health in this locality and demonstrated conflicts are between wildlife and livestock Alternative A would proportionately reduce sheep and pronghorn AUM use but pronghorn use would not be reduced below 239 AUMs. Under Alternative A, while conflicts between wild horses and livestock or between wild horses and wildlife may arise they would not be addressed (no management prescriptions) because wild horses would not be managed under Alternative A. In this situation Alternatives A and D (No Action) would have approximately the same impact on wildlife because neither alternative specifies management for this issue.

If additional forage is available and rangeland health is being sustained, or significant progress is being made towards sustaining rangeland health and the additional forage meets the needs of livestock and wildlife then sheep and wildlife use would be increased proportionately with available forage. If additional forage meets the needs of wild horses, sheep, and pronghorn then sheep and wildlife use would be increased proportionately in accordance with available forage because wild horses would not be managed under this alternative. As in the other situations described above, in this case Alternative A would be more beneficial to wildlife than Alternative D (No Action) because, under Alternative A, wild horses would not be managed potentially resulting in more additional forage for wildlife.

4.21.2.3.3.3. Alternative B

Alternative B would be the same as the Proposed RMP except, if forage allocation reductions are necessary to maintain, meet or make significant progress towards rangeland health in this locality and demonstrated conflicts are between wildlife and livestock, then Alternative B would reduce wildlife AUM use but not below 239 AUMs and 147 AUMs for pronghorn and deer, respectively. If additional forage is available and rangeland health is being sustained, or significant progress is being made towards sustaining rangeland health and the additional forage meets the needs of livestock and wildlife, the management prescriptions under Alternative B would be the same as those under the Proposed RMP. Because the management prescriptions would be the same, the impacts would be the same compared to Alternative D (No Action).

4.21.2.3.3.4. Alternatives C and E

Forage allocation decisions in the Bonanza Wild Horse Herd Area locality would be the same under Alternatives C and E as under Alternative D (No Action). Because the management decisions would be the same under each of these alternatives, the impacts would be the same. Under these alternatives there would be minimal impact on wildlife due to the small number of AUMs (1,020) allocated for wild horses under these alternatives.

If forage allocation reductions are necessary to maintain, meet or make significant progress towards rangeland health in this locality and demonstrated conflicts are between wildlife and livestock, under Alternatives C and E wildlife use would not be reduced but livestock use would. If conflicts are between wild horses and livestock wild horse use would be reduced to as low as 480 AUMs and livestock use would be reduced with no minimum level specified. If conflicts are between wild horses and wildlife, wild horse and wildlife use would be reduced proportionately. In this case, Alternatives C and E would be more beneficial to wildlife than Alternative D (No Action) because Alternatives C and E would allocate more AUMs for wildlife whereas Alternative D (No Action) does not specify management.

If additional forage is available and rangeland health is being sustained, or significant progress is being made towards sustaining rangeland health and the additional forage meets the needs of livestock and wildlife pronghorn and deer use would be increased in accordance with available forage but livestock use would not be increased above permitted use. If additional forage meets the needs of wild horses, sheep, and pronghorn then AML would not increase, but pronghorn use would increase until there are conflicts with sheep and sheep use would increase in accordance with available forage. These actions would be beneficial to wildlife because they would make additional forage available for use by wildlife species. In this case the impacts of Alternatives C and E would be the same as Alternative D (No Action), because the management decisions would be the same.

4.21.2.3.3.5. Alternative D (No Action)

Under Alternative D (No Action), 1,020 AUMs would be allocated for wild horses. AUMs for livestock and wildlife are not specified. The allocation of AUMs to wild horses rather than wildlife would adversely impact wildlife by reducing the forage available to them.

If forage allocation reductions are necessary to maintain, meet or make significant progress towards rangeland health in this locality and demonstrated conflicts are between wildlife and livestock then pronghorn use would not be reduced below 289 AUMs but sheep use would be reduced. Under Alternative D (No Action) no management prescriptions are specified for situations where conflicts are between wild horses and livestock or between wild horses and wildlife.

For situations where additional forage is available and rangeland health is being sustained, or significant progress is being made towards sustaining rangeland health and the additional forage meets the needs of livestock and wildlife pronghorn use would be increased until there are conflicts with sheep and sheep use would increase in accordance with available forage. For situations where the additional forage meets the needs of livestock, wildlife, and wild horses the management prescriptions, and therefore impacts, would be the same under Alternative D (No Action) as under Alternatives C and E.

4.21.2.3.4. BOOK CLIFFS LOCALITY**4.21.2.3.4.1. Proposed RMP**

Under the Proposed RMP, 1,325 unallocated AUMs acquired by the acquisition of private lands at Cripple Cowboy would be reserved for watershed. Livestock and wildlife would not be excluded from utilizing these AUMs but no additional AUMs would be allocated for either livestock or wildlife. In this case, the Proposed RMP would be more beneficial to wildlife than Alternative D (No Action) because the Proposed RMP explicitly states that additional AUM use would be for watershed but would not exclude wildlife.

Under the Proposed RMP, in the Winter Ridge/Hill Creek Herd Area the wild horse population would be gathered and removed from the area over an approximately 10 year period. Initially, 2,340 AUMs would be allocated to wild horses under the Proposed RMP in this locality but these AUMs would be decreased overtime as horses are gathered. Under the Proposed RMP these AUMs would be reallocated through future planning processes. In this situation, the Proposed RMP would be more beneficial to wildlife than Alternative D (No Action) because the Proposed RMP would phase out wild horses potentially leaving more AUMs for wildlife.

Under the Proposed RMP, when additional forage is present in cattle allotments 60% would be allocated to cattle to restore suspended AUMs and 40% would be allocated for wildlife. After all suspended cattle AUMs have been restored additional AUMs would be allocated proportionately between cattle and wildlife.

Under the Proposed RMP, when additional forage is present in sheep allotments forage increases would be allocated proportionately between livestock and big game.

4.21.2.3.4.2. Alternative A

Under Alternative A, forage decisions with respect to Cripple Cowboy would be the same as the Proposed RMP, therefore the impacts would be the same compared to Alternative D (No Action).

Under Alternative A, 1,200 and 1,740 AUMs would be allocated to wild horses in the Winter Ridge and Hill Creek Herd Areas, respectively. Alternative A would be more detrimental to wildlife than Alternative D (No Action) because Alternative A would allocate more AUMs for wild horses over all leaving fewer AUMs available for wildlife use.

If monitoring shows that reductions are necessary in all areas because of conflicts between wildlife, livestock, and/or wild horses under Alternative A forage use would be reduced proportionately between the conflicting animal groups. In these situations Alternative A would be less beneficial to wildlife than Alternative D (No Action) because forage for big game would be reduced under Alternative A but this action is not specified under Alternative D (No Action).

Under Alternative A, when additional forage is present in cattle allotments 60% would be allocated to cattle to restore suspended AUMs and 40% would be allocated for wildlife. After all suspended cattle AUMs have been restored additional AUMs would be allocated to livestock.

Under Alternative A, when additional forage is present in sheep allotments forage increases would be allocated proportionately between livestock and big game.

4.21.2.3.4.3. Alternative B

Under Alternative B, 1,325 unallocated AUMs acquired by the acquisition of private lands at Cripple Cowboy would be allocated to livestock. In this case Alternative B would be less beneficial to wildlife than Alternative D (No Action) because Alternative B would allocate additional AUMs to livestock therefore making these AUMs unavailable to wildlife.

Under Alternative B, horses would not be gathered and removed from the Winter Ridge/Hill Creek Herd Area but no AUM allocations would be made to maintain the wild horse population there. Alternative B would be more beneficial to wildlife than Alternative D (No Action) because Alternative B would not allocate AUMs to wild horses. However, this benefit would be limited because horses would still be present and using the resource.

If monitoring shows that reductions are necessary in all areas because of conflicts between wildlife and livestock under Alternative B big game use would be reduced. In this situation Alternative B would be less beneficial to wildlife than Alternative D (No Action) because forage for big game would be reduced under Alternative B but this action is not specified under Alternative D (No Action).

When additional forage is present in cattle allotments Alternative B would allocate 60% of the additional forage to cattle to restore suspended AUMs and 40% to wildlife. After restoring all suspended AUMs additional forage would be allocated to livestock. In this case, Alternative D (No Action) would be more beneficial to wildlife than Alternative B because Alternative D (No Action) would optimize wildlife levels and Alternative B would explicitly allocate additional forage to livestock rather than wildlife.

Under Alternative B, when additional forage is present in sheep allotments forage increases would be allocated to sheep. In this case, Alternative D (No Action) would be more beneficial to wildlife than Alternative B because Alternative D (No Action) would optimize wildlife levels and Alternative B would explicitly allocate additional forage to sheep.

4.21.2.3.4.4. Alternatives C and E

Under Alternatives C and E, 1,325 unallocated AUMs acquired by the acquisition of private lands at Cripple Cowboy would be allocated to wildlife. Alternative C and E, in this respect, would be more beneficial to wildlife than Alternative D (No Action) because these alternatives would explicitly allocate additional AUMs for wildlife.

In the Winter Ridge Herd Area under Alternatives C and E 1,200 AUMs would be allocated for wild horses. In the Hill Creek Herd Area under these alternatives 1,740 AUMs would be allocated for wild horses. Under Alternatives C and E the total allocation of AUMs to wild horses in these areas would be 2,940. In the Winter Ridge Herd Area Alternatives C and E would be less beneficial to wildlife than Alternative D (No Action) because Alternatives C and E would allocate 1,200 AUMs for wild horses in this area and Alternative D (No Action) would not provide wild horse AUM allocations in this area. In the Hill Creek Herd Area Alternatives C and E would be more beneficial for wildlife than Alternative D (No Action) because Alternatives C and E would allocate fewer AUMs for wild horses than Alternative D (No Action) potentially making more AUMs available for wildlife use.

If monitoring shows that reductions are necessary in all areas except Wild Horse Herd Areas because of conflicts between wildlife and livestock under Alternatives C and E livestock use would be reduced. In this case, Alternative C and E would be more beneficial to wildlife than Alternative D (No Action) because Alternatives C and E explicitly state that livestock use would be reduced.

When additional forage is present in cattle allotments Alternatives C and E would allocate 60% of the additional forage to cattle to restore suspended AUMs and 40% to wildlife. After restoring all suspended AUMs additional forage would be allocated to wildlife. In this situation Alternatives C and E would be more beneficial to wildlife than Alternative D (No Action) because Alternatives C and E would explicitly allocate additional forage for wildlife.

Under Alternatives C and E, when additional forage is present in sheep allotments forage increases would be allocated to big game. However, if forage were not needed by big game, it would be given to livestock. Under these alternatives in this situation big game numbers would be allowed to increase to the point that livestock permitted use would not be reduced. Alternatives C and E would be more beneficial to wildlife than Alternative D (No Action) because they account for wildlife forage use first and livestock secondarily.

4.21.2.3.4.5. Alternative D (No Action)

Under Alternative D (No Action) no management prescriptions are specified for the 1,325 unallocated AUMs acquired through the acquisition of private lands at Cripple Cowboy.

In the Hill Creek Herd Area under Alternative D (No Action), 2,340 AUMs would be allocated for wild horses. No allocations or prescriptions are specified for the Winter Ridge Herd Area under this alternative.

Under Alternative D (No Action) there are no prescriptions specified for situations where monitoring shows that reductions are necessary in all areas except Wild Horse Herd Areas because of conflicts between wildlife and livestock.

When additional forage is present in cattle allotments under Alternative D (No Action) the following would apply: (1) Additional forage in the Book Cliffs locality would be used to provide for optimum wildlife levels where conflicts with livestock do not exist; specific to deer,

habitat would be managed to support significantly increased levels. (2) Target livestock AUM figures are not final stocking levels. (3) All livestock use adjustments would be implemented through documented mutual agreement or by decision. (4) When livestock use adjustments would be implemented by decision, it would be based on operator consultation and monitoring of resource conditions. (5) Any necessary adjustments in stocking levels or other management practices, including changes or additions to existing management facilities, would be based on allotment evaluations. In this situation, Alternative D (No Action) would generally have beneficial impacts to wildlife because it would optimize wildlife levels.

When additional forage is present in sheep allotments under Alternative D (No Action) the same items would apply as for cattle allotments except that habitat on the East Bench would be managed to support increased levels of pronghorn. In this situation, Alternative D (No Action) would generally have beneficial impacts to wildlife because it would optimize wildlife levels.

4.21.2.3.5. BLUE MOUNTAIN LOCALITY

4.21.2.3.6. PROPOSED RMP AND ALTERNATIVE A

Under the Proposed RMP and Alternative A in the Blue Mountain locality if monitoring of forage indicates that AUM allocations cannot be met livestock permitted and wildlife use would be reduced proportionately. In this case, in the Blue Mountain locality Alternative D (No Action) would be more beneficial to wildlife than the Proposed RMP and Alternative A because Alternative D (No Action) only specifies livestock use adjustments whereas the Proposed RMP and Alternative A would reduce livestock and wildlife use proportionately.

Under the Proposed RMP and Alternative A when there is additional forage in the Blue Mountain locality it would be allocated proportionately between livestock and big game. This strategy would generally provide additional forage to wildlife under these conditions when compared to Alternative D (No Action).

4.21.2.3.6.1. Alternative B

Under Alternative B in the Blue Mountain locality if monitoring of forage indicates that AUM allocations cannot be met wildlife use would be reduced to a level at which no livestock/wildlife forage conflict exists and any additional reductions would be made to livestock. Under these conditions Alternative D (No Action) would be more beneficial to wildlife than Alternative B because Alternative B would reduce wildlife use first.

Under Alternative B when there is additional forage in the Blue Mountain locality it would be allocated for livestock. In this situation Alternatives B and D (No Action) would have about the same impacts because both alternatives would allocate additional forage to livestock.

4.21.2.3.6.2. Alternatives C and E

Under Alternatives C and E in the Blue Mountain locality if monitoring of forage indicates that AUM allocations cannot be met livestock permitted use would be reduced. In this situation

Alternatives C and E would be more beneficial to wildlife than Alternative D (No Action) because they explicitly state that permitted use would be reduced potentially leaving more forage available for wildlife.

Under Alternatives C and E when there is additional forage in the Blue Mountain locality it would be allocated for wildlife. Under these conditions Alternatives C and E would be more beneficial to wildlife than Alternative D (No Action) because Alternatives C and E would explicitly allocate additional forage to wildlife.

4.21.2.3.6.3. Alternative D (No Action)

Under Alternative D (No Action) if monitoring of forage indicates that AUM allocations cannot be met livestock use adjustments would be implemented by mutual agreement or by decision. Decreases in livestock forage would be implemented over a five year period. Alternative D (No Action) would generally benefit wildlife because it would generally reduce livestock forage use when forage allocations cannot be met.

Under Alternative D (No Action) when there is additional forage in the Blue Mountain locality the same process would be followed as when monitoring of forage indicates that AUM allocations cannot be met.

4.21.2.3.7. DIAMOND MOUNTAIN LOCALITY

4.21.2.3.7.1. Proposed RMP and Alternative A

Under the Proposed RMP and Alternative A in the Diamond Mountain locality if monitoring of forage indicates that AUM allocations cannot be met livestock and wildlife use would be reduced proportionately. In this case, in the Diamond Mountain locality the Proposed RMP, Alternative A, and Alternative D (No Action) would benefit wildlife to approximately the same extent because Alternative D (No Action) would employ a mix of management actions resulting in livestock and wildlife use reductions (see Section 4.19.2.3.7.4).

Under the Proposed RMP and Alternative A, when there is additional forage in the Diamond Mountain locality it would be allocated 1) in the area's northern half to livestock until wildlife demands require them, and 2) in the southern half proportionately between livestock and big game on non-crucial wildlife areas. The impacts of the Proposed RMP and Alternative A on wildlife would be about the same as the impacts under Alternative D (No Action) because the management prescriptions are about the same.

4.21.2.3.7.2. Alternative B

Under Alternative B in the Diamond Mountain locality if monitoring of forage indicates that AUM allocations cannot be met wildlife use would be reduced to a level at which no livestock/wildlife forage conflict exists and any additional reductions would be made to livestock. Under these conditions Alternative D (No Action) would be more beneficial to wildlife than Alternative B because Alternative B would reduce wildlife use first.

Under Alternative B when there is additional forage in the Diamond Mountain locality it would be allocated for livestock. In this situation Alternatives B and D (No Action) would have about the same impacts because both alternatives would allocate additional forage to livestock.

4.21.2.3.7.3. Alternatives C and E

Under Alternatives C and E in the Diamond Mountain locality if monitoring of forage indicates that AUM allocations cannot be met livestock permitted use would be reduced. In this situation Alternatives C and E would be more beneficial to wildlife than Alternative D (No Action) because they explicitly state that permitted use would be reduced potentially leaving more forage available for wildlife.

Under Alternatives C and E when there is additional forage in the Diamond Mountain locality it would be allocated for wildlife or retained for watershed. Under these conditions Alternatives C and E would be more beneficial to wildlife than Alternative D (No Action) because Alternatives C and E would explicitly allocate additional forage to wildlife.

4.21.2.3.7.4. Alternative D (No Action)

Under Alternative D (No Action) in the Diamond Mountain locality reductions would be made using the following criteria. (1) Livestock temporary, nonrenewable AUMs above permitted use would be reduced first. (2) On wildlife crucial habitat, livestock permitted use would be reduced if there is a conflict between use by livestock and wildlife, and if wildlife numbers are within the herd unit or population objective levels. If there is no conflict and the reduction is necessary because of overuse by either livestock or wildlife, the number of grazers would be reduced. (3) On non-crucial wildlife habitat, livestock permitted use and wildlife numbers would be reduced equally. The first year, there would be an initial 10% adjustment in permitted use. Five-year agreements would be developed and signed at the same time outlining the process for phased reductions in the desired level. (4) Temporary adjustments in use due to effects of drought would be made to livestock and/or wildlife as shown needed by monitoring.

Under Alternative D (No Action) when there is additional forage in the Diamond Mountain locality it would be used to provide additional AUMs (over permitted use) to livestock on a temporary, nonrenewable basis until identified for crucial wildlife needs. Additional AUMs outside crucial wildlife areas could be assigned to livestock. In this situation under Alternative D (No Action) there would generally be beneficial impacts to wildlife because additional AUMs would be allocated to wildlife as needed.

4.21.2.4. IMPACTS OF LAND AND REALTY MANAGEMENT ON WILDLIFE AND FISHERIES RESOURCES

Land access decisions under the Proposed RMP and any alternative would generally have minimal impacts to wildlife due to the limited nature of the access that each decision would provide. On the other hand, land withdrawals would benefit wildlife in both the short- and long-term by reducing the potential for surface disturbance by mineral extraction activities. Impacts to wildlife and fisheries and their habitat would depend on the area involved in a lands and realty

activity. Acquisition or withdrawal of lands with special status species habitat would generally contribute positively to the objectives of wildlife and fisheries habitat protection.

4.21.2.4.1. PROPOSED RMP AND ALTERNATIVES A, B, C, AND E

The Proposed RMP and Alternatives A, B, C and E would pursue locatable mineral withdrawal in the Book Cliffs Natural Area (401 acres), Green River Scenic Corridor in Browns Park (8,208 acres), relict vegetation areas in Lears Canyon (1,375), and the White River (9,218 acres). Alternatives C and E would also pursue locatable mineral withdrawal in the Lower Green River ACEC (17,063 acres) while the Proposed RMP and Alternatives A and B would also pursue locatable mineral withdrawal in developed and potential recreation sites (5,000 acres).

4.21.2.4.2. ALTERNATIVE D (NO ACTION)

Alternative D (No Action) would pursue mineral withdrawals in the Green River Scenic Corridor in Browns Park (19,400); relict vegetation areas in Lears Canyon (3,600 acres); the Lower Green River ACEC (7,900 acres), and developed and potential recreation sites (5,000 acres). The total acreage of land withdrawals would be greater under Alternative D (No Action) (35,900 acres) than under the Proposed RMP and Alternatives A and B (24,202 total acres under each of these alternatives) resulting in more short- and long-term benefits to wildlife than the Proposed RMP and Alternatives A and B. On the other hand, Alternative D (No Action) would have fewer short- and long-term benefits to wildlife than Alternatives C and E because Alternatives C and E would pursue more acres (36,265) for locatable mineral withdrawal than Alternative D (No Action). Also, because of the developed nature of the developed and potential recreation sites, these withdrawals would have negligible impacts on wildlife and fisheries populations.

4.21.2.5. IMPACTS OF LIVESTOCK GRAZING ON WILDLIFE AND FISHERIES RESOURCES

Livestock grazing has the potential for both direct and indirect impacts on wildlife and fisheries populations and their habitats. Direct impacts would primarily include the removal or trampling of vegetation that would be subsequently lost as forage or cover by wildlife species. The severity of such impacts to wildlife species would depend on the density and types of livestock, extent and relative locations of grazing, and the terrain and water availability. An additional direct impact would be the transmission of disease from domestic to wild animal populations. Indirect impacts of grazing to wildlife populations would consist of changes in vegetation and habitat value due to livestock grazing. Relative percent ages of nutritive grasses and forbs, as well as total vegetative cover, can shift with livestock grazing and subsequently impact the health and survival of wildlife species dependent on that forage and cover.

Depending on its implementation, livestock grazing has the potential to improve or degrade rangeland habitat quality for wildlife. In 1997, the BLM in Utah developed Standards for Rangeland Health and Guidelines for Grazing Management. With proper rotational and seasonally restricted management, livestock grazing could have beneficial effects on wildlife and fisheries. Selective and timely grazing by livestock can increase the diversity of forage (forbs and grasses) by removing deteriorating vegetation and promote bank stabilization through healthy vegetative cover of hillsides. Hence, proper grazing could aid in reducing erosion,

increasing water quality of nearby waterways, and increasing the nutritive value of the vegetation in areas also used by wildlife such as deer, elk, pronghorn, small mammals, and birds. The mosaic pattern of varied grazing pressure that occurs with carefully monitored rotational grazing management can emulate natural habitat variation and promote an increase in select wildlife populations over time (Forest and Range Web site, 2006).

Adverse impacts to rangeland health typically occur with improper grazing management, including high stock densities, continued heavy grazing by a single stock species, and unrestricted access to riparian areas (Belsky et. al, 1999). Improper grazing practices in the western United States have been linked to such adverse impacts as losses of biodiversity, decreases of wildlife population densities, disruption of ecosystem functions including nutrient cycling and succession, changes in community organization, and changes in the physical characteristics of both terrestrial and aquatic habitats (Fleischner 1994). Because livestock in the arid West tends to congregate in riparian areas for shade, water, and an abundance of forage plants, the ecological costs listed above can easily be magnified in riparian zones. Potential specific impacts from improper grazing in the VFO might include the decreased quality and diversity of forage plants for big and small game, decreased amounts of vegetation used by wildlife for cover, increases in noxious weeds, decreased nest sites for upland game species, increased disturbance at big game fawning grounds, the trampling or disturbance of waterfowl/riparian bird nests, and decreased water quality in creeks and rivers (Forest And Range Web site, 2006).

The VFO is divided into Areas 1–7 for the purpose of livestock grazing management. Under each alternative, livestock grazing would be allowed in these areas only during specific time periods. These temporal limitations would likely affect livestock both directly and indirectly as described above. An alternative that allows livestock grazing during spring vegetation growth periods could impact wildlife by limiting the development of important forage plant quantity and/or diversity and increasing the potential for erosion and degraded water quality. An alternative that allows livestock grazing for extended periods each year might encourage increased trampling of habitat and would be more likely to increase interactions between domestic and wildlife species.

4.21.2.5.1. PROPOSED RMP AND ALTERNATIVE A

Under the Proposed RMP and Alternative A, seasons of use would be determined based on plant phenology to ensure that the physiological requirements of plants would be met. Deferments and other tools would be used to facilitate an adaptive management approach. Ensuring that the physiological requirements of plants would be met also ensures that forage resources will be available to the species that use them (wildlife and livestock). In so doing, these alternatives would have fewer adverse impacts to wildlife than Alternative D (No Action), which would allow grazing on many allotments during critical growth periods.

4.21.2.5.2. ALTERNATIVE B

The determination of season of use under Alternative B would be based on an average of billed use. The billed use is based on how the permittees are actually billed. Under this alternative

grazing on many allotments would continue during critical growth periods (April/May) of forage species without a deferment and, therefore, the impacts of Alternative B on wildlife are similar to the impacts of Alternative D (No Action).

4.21.2.5.3. ALTERNATIVES C AND E

The determination of season of use under Alternatives C and E would be based on how grazing was adjudicated in the 1960s. It is similar to Alternative A, but lacks the discretion to allow adaptive management approaches to react to change. The impacts of this alternative compared to Alternative D (No Action) would be similar to those described above for Alternative A.

4.21.2.5.4. ALTERNATIVE D (NO ACTION)

Under this alternative, seasons of use would be based on the current permitted use. Grazing on many allotments would continue during critical growth periods (April/May) of forage species resulting in short- and long-term adverse impacts to forage resources and, by extension, adverse impacts to wildlife.

4.21.2.6. IMPACTS OF MINERAL RESOURCE DECISIONS ON WILDLIFE AND FISHERIES RESOURCES

The development of leasable minerals would have long-term direct and indirect adverse impacts to wildlife and fisheries populations in the VPA. Direct impacts include a reduction in AUMs available to wildlife, loss of wildlife and fisheries habitats, and disruption and/or alteration of seasonal migration routes due to the additional construction of roads, pipelines, well pads, compressor stations, power lines, and fences in areas where mineral development would occur. Indirect impacts include habitat fragmentation and changes in behavior, distribution, activity, and energy expenditure that are caused by human disturbance. These disturbances can include human presence at project operations, improved hunter access and success, illegal hunting, and vehicle-related mortality.

The exact number and location of facilities relating to mineral development have not been determined and therefore are not analyzed in this programmatic EIS. The impacts of project-level mineral development, including location and timing, would be analyzed on a site-specific basis as required under NEPA. However, for the purposes of this programmatic analysis, it is assumed that all land categorized for mineral extraction would be developed to its full potential. Accordingly, this analysis discloses the potential impacts of the maximum potential disturbance from this development on wildlife habitat throughout the entire VPA. Additionally, programmatic protective measures have been formulated to minimize or avoid these impacts wherever possible. These measures are described by alternative and the Proposed RMP in the following sections.

4.21.2.6.1. LAND CATEGORIZATION

BLM has developed four land categories for oil and gas development that describe the conditions placed upon public domain lands in regard to their availability for fluid hydrocarbon leasing. These categories are discussed in Section 3.9 Minerals and Energy Resources.

BLM has also made land use designations for the development of mineral materials, phosphate, and Gilsonite. A discussion of these mineral developments is made in the Chapter 3 and 4 Minerals Sections. These areas are either open or closed to development which follows the same category designations as oil and gas RFD areas.

Tables 1 through 19 of Appendix H outline the land categorization of mineral development on BLM lands in the VPA by alternative and the Proposed RMP with respect to important wildlife habitats. The impacts of these land categorizations on wildlife habitat and populations in the VPA are discussed by alternative and the Proposed RMP in the following sections.

4.21.2.6.2. HABITAT FRAGMENTATION

Current habitat fragmentation by existing roads in the VPA was analyzed using three roads effects zones (660 feet, 1,320 feet, and 2,640 feet). An analysis of existing habitat fragments 250 acres or greater shows there is currently a broad range of number, average size, and percent of wildlife habitat available outside these roads effects zones. These roads effects zones and the minimum fragment size were selected based on the latest literature dealing with wildlife habitat use and fragmentation (see the Wildlife and Fisheries Resources section of Chapter 3). Although the analysis shows that there is a relatively low rate of fragmentation in most areas of the VPA, many of these remaining habitat fragments are categorized as being open for mineral development. This may lead to further fragmentation and loss of wildlife habitat and populations in these areas. This fragmentation can separate wildlife populations into smaller "meta" populations that are more susceptible to extinction from random events such as drought, disease, introduction of an exotic predator, etc. This fragmentation also makes movement between habitat fragments more difficult during periods when resources are limited or mates are not available. Fragmentation degrades the unique habitat characteristics of large, unbroken habitat tracts; characteristics such as accessible migration corridors, cover and forage that are free from disturbance, and areas isolated from hunting and predators. In many cases, habitats fragmented by human disturbances such as roads, buildings, and structures facilitate the invasion of noxious weeds and exotic species that are better adapted to human disturbance, usually to the detriment of native species.

Efforts would be made under the Proposed RMP and all alternatives to reduce habitat fragmentation throughout the VPA to the extent possible by requiring oil and gas field development plans and encouraging such activities as well clustering, multiple drilling from a single pad, utilization of existing roads and pipelines, and other measures to minimize surface impacts.

The existing fragmentation showing all fragments and fragments larger than 250 acres created by roads and pipelines on BLM-administered lands in the VPA is outlined in Table 20 of Appendix H. This analysis is also broken down by RFD area in Tables 21-32 of Appendix H. These tables

show the number and average size of fragments at road/pipeline width (11.5 feet) and at 660-foot, 1,320-foot, and 2,640-foot functional habitat loss zones. These tables also show what proportion of these fragments would be open to surface occupying minerals development under the Proposed RMP and each alternative. This analysis shows that the West and East Tavaputs Plateau RFD areas have the least amount of fragmentation with approximately 98% and 96%, respectively, of each RFD area composing fragments larger than 250 acres; the Tabiona-Ashley Valley RFD and Monument Butte-Red Wash RFD areas with a moderate amount of fragmentation with approximately 92% of each RFD area composing fragments larger than 250 acres; and the Manila-Clay Basin RFD and Altamont-Bluebell RFD areas with the most fragmentation with approximately 89% of each RFD area composing fragments larger than 250 acres.

Even though the West Tavaputs Plateau has the least amount of fragmentation with regard to having the highest percent area consisting of fragments 250 acres or greater, this RFD area also has the highest proportion of large fragments categorized to be open to minerals development of any of the RFD areas under the Proposed RMP and each alternative. This indicates that the existing minerals development land categorization has the potential to increase fragmentation at a greater degree in this less-disturbed RFD area than in RFD areas that are already more developed. This land categorization may be inconsistent with the direction to manage for large un-fragmented blocks of continuous wildlife habitat in the VPA as identified in Chapter 2, Management Common to All for Wildlife and Fisheries.

The Altamont-Bluebell RFD area is the smallest in the VPA and has a road and pipeline density of approximately 1.45 miles of roads and pipelines per square mile. The Monument Butte-Red Wash RFD area is the largest RFD area and, while having a considerable number of large fragments over 250 acres, has a relatively high road and pipeline density of approximately 2 miles of roads and pipelines per square mile. As zones on these roads are extended out 2,640 feet, the proportion of large fragments outside of this zone is reduced to only 36% of the RFD area (Monument Butte-Red Wash RFD area), which is the lowest proportion of large fragments of all the RFD areas. The other RFD areas are between 1.23 and 1.53 miles of roads and pipelines per square mile. Under the Proposed RMP and Alternatives A, B, C, and E road and pipeline densities in all RFD areas would be reduced compared to Alternative D (No Action), except in the Monument Butte-Red Wash RFD area, where road and pipeline densities would increase by between 20% and 23% (see Tables 4.19.1 through 4.19.6).

Table 4.21.1. Functional Habitat Loss Created by Proposed Roads and Pipelines on BLM Lands in the Manila-Clay Basin RFD Area

	Proposed RMP	Alternative A	Alternative B	Alternative C	Alternative D (No Action)	Alternative E
Road and Pipeline Densities (mi/mi ²)	1.48	1.47	1.47	1.45	1.53	1.41
Percent outside a Functional Habitat Loss-660' zone	86%	86%	86%	86%	82%	87%
Percent outside a Functional Habitat Loss-1,320' zone	75%	75%	75%	75%	68%	76%
Percent outside a Functional Habitat Loss-2,640' zone	57%	57%	57%	58%	48%	60%

Table 4.21.2. Functional Habitat Loss Created by Proposed Roads and Pipelines on BLM Lands in the Tabiona-Ashley Valley RFD Area

	Proposed RMP	Alternative A	Alternative B	Alternative C	Alternative D (No Action)	Alternative E
Road and Pipeline Densities (mi/mi ²)	1.21	1.21	1.20	1.11	1.34	1.06
Percent outside a Functional Habitat Loss-660' zone	88%	88%	88%	89%	84%	90%
Percent outside a Functional Habitat Loss-1,320' zone	79%	78%	79%	80%	71%	81%
Percent outside a Functional Habitat Loss-2,640' zone	63%	63%	63%	66%	51%	67%

Table 4.21. 3. Functional Habitat Loss Created by Proposed Roads and Pipelines on BLM Lands in the Altamont-Bluebell RFD Area

	Proposed RMP	Alternative A	Alternative B	Alternative C	Alternative D (No Action)	Alternative E
Road and Pipeline Densities (mi/mi ²)	1.34	1.33	1.33	1.33	1.45	1.33
Percent outside a Functional Habitat Loss-660' zone	85%	85%	85%	85%	83%	85%

Table 4.21. 3. Functional Habitat Loss Created by Proposed Roads and Pipelines on BLM Lands in the Altamont-Bluebell RFD Area

	Proposed RMP	Alternative A	Alternative B	Alternative C	Alternative D (No Action)	Alternative E
Percent outside a Functional Habitat Loss-1,320' zone	72%	72%	72%	72%	70%	72%
Percent outside a Functional Habitat Loss-2,640' zone	51%	51%	51%	51%	49%	51%

Table 4.21.4. Functional Habitat Loss Created by Proposed Roads and Pipelines on BLM Lands in the Monument Butte-Red Wash RFD Area

	Proposed RMP	Alternative A	Alternative B	Alternative C	Alternative D (No Action)	Alternative E
Road and Pipeline Densities (mi/mi ²)	2.45	2.42	2.42	2.40	2.00	2.40
Percent outside a Functional Habitat Loss-660' zone	78%	78%	78%	79%	77%	79%
Percent outside a Functional Habitat Loss-1,320' zone	61%	62%	62%	62%	59%	62%
Percent outside a Functional Habitat Loss-2,640' zone	39%	39%	40%	40%	36%	40%

Table 4.21.5. Functional Habitat Loss Created by Proposed Roads and Pipelines on BLM Lands in the West Tavaputs Plateau RFD Area

	Proposed RMP	Alternative A	Alternative B	Alternative C	Alternative D (No Action)	Alternative E
Road and Pipeline Densities (mi/mi ²)	1.27	0.88	0.88	0.82	1.23	0.76
Percent outside a Functional Habitat Loss-660' zone	86%	90%	90%	91%	85%	91%
Percent outside a Functional Habitat Loss-1,320' zone	74%	81%	81%	82%	73%	84%
Percent outside a Functional Habitat	54%	65%	65%	68%	52%	70%

Table 4.21.5. Functional Habitat Loss Created by Proposed Roads and Pipelines on BLM Lands in the West Tavaputs Plateau RFD Area

	Proposed RMP	Alternative A	Alternative B	Alternative C	Alternative D (No Action)	Alternative E
Loss-2,640' zone						

Table 4.21 6. Functional Habitat Loss Created by Proposed Roads and Pipelines on BLM Lands in the East Tavaputs Plateau RFD Area

	Proposed RMP	Alternative A	Alternative B	Alternative C	Alternative D (No Action)	Alternative E
Road and Pipeline Densities (mi/mi ²)	0.85	0.83	0.83	0.76	1.45	0.74
Percent outside a Functional Habitat Loss-660' zone	90%	91%	91%	91%	83%	92%
Percent outside a Functional Habitat Loss-1,320' zone	82%	82%	82%	84%	69%	84%
Percent outside a Functional Habitat Loss-2,640' zone	66%	67%	67%	70%	47%	71%

Table 4.19.7 indicates existing habitat fragmentation within the VPA and the percentage of fragments that would be open to minerals development under the Proposed RMP and each alternative.

Table 4.21.7. Habitat Fragments Created by Roads and Pipelines in the VPA and Road-effects Zones Associated with These Fragments

Fragment Categories	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	PRMP: 86.6 Alt A: 93.3 Alt B: 95.2 Alt C: 84.6 Alt D: 89.1 Alt E: 76.0	736	2,194	93.6	PRMP: 85.6 Alt A: 92.9 Alt B: 95.0 Alt C: 83.9 Alt D: 88.4 Alt E: 74.5
Fragments outside the 660-foot road effects zone	2,849	492	81.2	PRMP: 85.4 Alt A: 92.8 Alt B: 95.0	696	1,891	76.3	PRMP: 84.2 Alt A: 92.3 Alt B: 94.8

Table 4.21.7. Habitat Fragments Created by Roads and Pipelines in the VPA and Road-effects Zones Associated with These Fragments

Fragment Categories	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
				Alt C: 83.6 Alt D: 87.6 Alt E: 75.0				Alt C: 82.8 Alt D: 86.5 Alt E: 73.6
Fragments outside the 1,320-foot road effects zone	2,394	477	66.1	PRMP:84.1 Alt A: 92.3 Alt B: 94.8 Alt C: 82.6 Alt D: 87.6 Alt E: 73.2	593	1,803	62.0	PRMP:82.7 Alt A: 91.7 Alt B: 94.4 Alt C: 81.6 Alt D: 86.5 Alt E: 71.6
Fragments outside the 2,640-foot road effects zone	1,510	505	44.2	PRMP:81.3 Alt A: 90.9 Alt B: 94.1 Alt C: 80.3 Alt D: 85.5 Alt E: 69.6	413	1,728	41.4	PRMP:79.6 Alt A: 90.2 Alt B: 93.7 Alt C: 79.0 Alt D: 84.3 Alt E: 67.9

As shown in the above table, Alternative B would have the greatest amount of impact on large habitat fragments, followed by Alternatives A and D, the Proposed RMP, and Alternatives C and E. In comparison with Alternative D (No Action), Alternative B would have a 7% to 11% higher acreage of large habitat fragments open to development, Alternative A would have a 5% to 7% higher acreage, Alternative C would have 4% to 6% lower acreage, Alternative E would have 15% to 19% lower acreage, and the Proposed RMP would have 3% to 6% lower acreage of large habitat fragments open to mineral development.

The sections below describe the amount of habitat for specific wildlife groups that would be in areas open to mineral development or in areas open to mineral development but subject to controlled surface use. Typically those areas designated as controlled surface use for mineral development are subject to minor constraints and seasonal restrictions to reduce impacts to wildlife or other resources. Conversely, areas open to mineral development are subject only to standard stipulations and may not cater to specific on-site wildlife concerns. Accordingly, mineral development in areas open to mineral development would typically have a greater impact on wildlife than areas designated for controlled surface use.

4.21.2.6.2.1. Big Game Species

Big game populations in the VPA include populations of mule deer, Rocky Mountain elk, pronghorn, Rocky Mountain bighorn sheep, moose, black bear, and mountain lion. The UDWR has prepared a GIS database that includes habitat coverages for each of these species, and for mule deer and Rocky Mountain elk, and has further subdivided these habitat coverages into seasonal use areas (crucial winter range, migration corridor, and fawning/calving habitat). These habitat coverages were compared to the land categorization for minerals development provided by BLM to determine potential impacts to the big game populations occurring in the VPA. The minerals development land categorization in the Proposed RMP and under all alternatives would have long-term and short-term, direct and indirect adverse impacts on these big game populations when compared to the existing levels of minerals development in the VPA.

Irby et al. (1987) were unable to detect a response by mule deer to low intensity oil and gas exploration and drilling activities along the east slope of the Rocky Mountains in north-central Montana. However, they did identify that high intensity hydrocarbon development had the potential to make wintering areas in that area unsuitable for mule deer and that strategies for oil and gas development in individual units should be decided prior to development. In the Book Cliffs, Karpowitz (1984) investigated the impacts of energy development on mule deer and found it difficult to assess. He could not quantify the effects of drilling on mule deer, but speculated that there was avoidance of active drilling sites. He observed mule deer returning to those sites after drilling ceased, but noted that habitat loss occurred as a result of drilling operations due to the construction of roads and drill pads.

Van Dyke and Klein (1996) found that elk subjected to oil well drilling in Wyoming maintained their fidelity to seasonal and annual ranges, but were observed making use of habitat and topographic features to minimize visual contact with the disturbance and avoiding direct contact with the site of disturbance that slightly reduced the total area of range that was used. Ward and Brock (1995) monitored a hunted elk population on winter range by visual observation and telemetry during short-term seismographic activity, including above ground explosions, truck vibrations, and drill and shoot activities. He observed that elk were displaced to areas beyond visual contact by all three forms of seismograph activities, with the most extreme response resulting from people walking through the project area. However, he observed that elk returned to the seismograph use areas within a few days after human activity stopped. Lyon (1997) and Lyon et al. (1985) documented a shift in elk distribution away from areas with roads or other long-term disturbances.

Compared to Alternative D (No Action), the Proposed RMP would decrease the proportion of big game habitat open to surface occupying oil and gas development by as much as 100% for some species' habitats (crucial winter mule deer, mule deer migration corridors, and crucial winter rocky mountain elk) while increasing it by as much as 33% for other species (pronghorn). Areas subject to timing and controlled surface use stipulations under the Proposed RMP would increase by as much as 194% (for bighorn sheep) and decrease by as much as 31% (for pronghorn) compared to Alternative D (No Action). Alternatives A and B would increase the proportion of big game habitat open to surface occupying oil and gas development by up to 62% and 107% respectively, when compared to Alternative D (No Action). There would also be decreases of as much as 100% for each of these alternatives. These alternatives would increase

the proportion of big game habitats in areas subject to controlled surface use by up to 170% and 171%, respectively, when compared to Alternative D (No Action), but there would also be decreases of as much as 67% under Alternative A and 70% under Alternative B. Alternatives C and E would decrease the proportion of most big game habitats open to surface occupying oil and gas development by at least 15% and 3%, respectively (and as much as 100%) when compared to Alternative D (No Action). An exception is an increase in pronghorn habitat open to surface occupying oil and gas development by approximately 36% and 24%, respectively (Alternatives C and E). Alternatives C and E would also increase the proportion of big game habitat subject to controlled surface use by up to 145% (Alternative C - crucial mule deer winter habitat) and 148% (Alternative E: crucial winter rocky mountain elk habitat) when compared to Alternative D, No Action: Pronghorn and black bear habitat would have approximately 35% and 6% less acreage, respectively, subject to controlled surface use under Alternative C and 32% and 9% less acreage, respectively, subject to controlled surface use under Alternative E (see Tables 1 to 19 in Appendix H).

4.21.2.6.2.2. Upland Bird Species

The minerals development land categorization proposed under the Proposed RMP and all alternatives would have long-term and short-term, direct and indirect adverse impacts on upland bird populations in the VPA. The analysis in this section covers pheasant, Rio Grand Turkey, Blue Grouse, and Chukar habitat managed by BLM in the VPA. A discussion of impacts to Greater Sage-grouse is given in the Special Status Species section. The UDWR has prepared GIS database habitat coverages for each of these species, and these habitat coverages were compared to the land categorization for minerals development provided by BLM to determine potential mineral development impacts to the upland bird populations occurring in the VPA.

The Proposed RMP would increase the proportion of upland bird habitat open to surface occupying oil and gas development by up to 150% compared to Alternative D (No Action). Under the Proposed RMP, the proportion of upland bird habitat open to surface occupying oil and gas development would decrease for some species (Blue Grouse and Chukar) by as much as 69% compared to Alternative D (No Action). The Proposed RMP would increase the proportion of Blue Grouse habitat subject to controlled surface use by up to 73% while decreasing the proportion of upland bird habitat subject to controlled surface use by as much as 28% for other upland bird species. Alternatives A and B would increase the proportion of upland bird habitat open to surface occupying oil and gas development by as much as 223% and 222% 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 as much as 72% and 47% respectively, when compared to Alternative D (No Action). On the other hand, Alternative A would also increase the proportion of upland bird habitat subject to controlled surface use by up to 48% (Blue Grouse). Alternatives C and E would increase the proportion of upland bird habitat open to surface occupying oil and gas development by up to 199% and 138%, respectively when compared to Alternative D (No Action). These alternatives would generally decrease the proportion of upland bird habitat subject to controlled surface use by as much as 61% and 28%, respectively, when compared to Alternative D (No Action). However, under Alternatives C and E the proportion of Blue Grouse habitat subject to controlled surface use would increase by

approximately 7% and 6%, respectively, compared to Alternative D (No Action) (see Tables 1-19 in Appendix H).

None of the alternatives presented or the Proposed RMP contained stipulations and mitigation measures relative to minerals development meant to protect and/or enhance existing upland bird habitat.

4.21.2.6.2.3. Raptors

The Proposed RMP and all alternatives would apply spatial and temporal buffers to minimize disturbances near nesting raptors. The buffers were tailored to the individual raptor species involved, and were based on factors such as line of sight distance between nest and disturbance, type and duration of disturbance, nest structure security, sensitivity of the species to disturbance, observed responses to related disturbances, and the amount of existing disturbances near the nest. Under the Proposed RMP and all alternatives, BLM would also pursue a partnership between industries, local governments, USFWS, UDWR, USFW, NRCS and others to establish a raptor management fund to be utilized for raptor population monitoring and habitat enhancement. BLM would also cooperate with utility companies, UDWR, and USFWS to prevent electrocution of raptors. A detailed description of the effects of resource decisions on special status raptor species can be found in the Special Status Species section.

4.21.2.6.2.4. Neotropical Migrants, Small Mammals, and Amphibians

Lowland riparian and cottonwood forest areas have been identified as areas typically associated with high concentrations of biodiversity and include wildlife such as neotropical migrants, small mammals, amphibians, and other wildlife species. A stipulation for mineral development common to all alternatives and the Proposed RMP is that surface mineral developments cannot be placed in wetlands or riparian zones, and must occur outside the 100-year floodplain. This stipulation would protect these lowland riparian and cottonwood forest habitats from minerals development. Therefore, minerals development would not directly impact these habitat types and those wildlife species that use them. Additionally, all alternatives and the Proposed RMP would incorporate conservation measures in accordance with Executive Order 13186 for the protection of migratory birds, as outlined in the Utah Partners-In-Flight Avian Conservation Strategy, and other scientific information into all surface-disturbing activities.

4.21.2.6.2.5. Fisheries and Riparian/Aquatic Species

Riparian areas, wetlands, and marsh areas are typically areas associated with high concentrations of biodiversity and include wildlife such as shorebirds, wading birds, waterfowl, and fish species. A stipulation for mineral development common to the Proposed RMP and all alternatives is that surface mineral developments cannot be placed in wetlands or riparian zones, and must occur outside the 100-year floodplain. This stipulation would protect these wetland and riparian zone habitats from minerals development. Therefore, minerals development would not directly impact these habitat types and those wildlife species that use them.

The VFO would also assist in implementing the strategic plan for Utah's Initiative on Blue Ribbon Fisheries by managing aquatic and riparian habitats to maintain a quality cold-water sport fishery along the Green River from the Ashley National Forest border to the Colorado/Utah border. Additionally, the VFO would assist in managing Pelican Lake as a quality warm-water sport fishery. Any other aquatic and riparian habitats associated with identified Blue Ribbon Fisheries would be managed by BLM for quality sport fisheries. The VFO would implement this initiative to the extent consistent and appropriate with the Vernal RMP and other land use authorizations.

Although the restrictions on mineral development in wetlands, riparian zones, and floodplains protect aquatic resources from direct impacts, it would not protect them from indirect impacts. The Water Quality section of this EIS identifies that although stipulations would mitigate the negative impacts of minerals development on water quality, the mineral development outlined for each alternative and the Proposed RMP 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 the Proposed RMP and each alternative. Accordingly, Alternative B would have the greatest potential of impacts to aquatic habitat, followed by Alternatives A and D, the Proposed RMP, and Alternatives C and E.

Mineral development under the Proposed RMP and each alternative has the risk of increasing surface disturbance in selenium rich soils, and consequently impacting aquatic organisms. However, at this programmatic level, it is not known where specific developments would occur. Accordingly, the impacts of actual implementation phase of mineral development on selenium rich soils and associated aquatic resources would be analyzed on a site-specific basis at the project level under NEPA.

4.21.2.7. IMPACTS OF NON-WSA LANDS WITH WILDERNESS CHARACTERISTICS DECISIONS ON WILDLIFE AND FISHERIES RESOURCES

4.21.2.7.1. PROPOSED RMP

Under the Proposed RMP, approximately 106,178 acres of non-WSA lands with wilderness characteristics would be managed with special protections to maintain their wilderness characteristics. This area would be managed as VRM Class II, OHV use limited to designated routes, closed to oil and gas leasing, and closed to woodland product harvest. This management would result in less surface disturbance than under Alternatives A, B, C, or D (No Action) and would have greater beneficial impacts to wildlife and fisheries, as described elsewhere in this section (4.13), than these alternatives. Compared to Alternatives A, B, C and D (No Action), the Proposed RMP would have indirect, long-term benefits to wildlife and fisheries in the form of reduced soil erosion and sedimentation and salinity in streams, reduced human disturbance of wildlife, and reduced surface disturbance and fragmentation of wildlife habitat.

4.21.2.7.2. ALTERNATIVES A, B, C, AND D (NO ACTION)

Under these alternatives, lands with wilderness characteristics outside of designated WSAs 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.

4.21.2.7.3. 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. This area would be managed as VRM Class I, closed to OHV use, closed to mineral disposal, excluded from new ROWs, closed to road construction, closed to wood cutting and seed collecting, and retained for federal ownership. This management would result in less surface disturbance than under any other alternative and would therefore have the greatest beneficial impacts to wildlife and fisheries, as described elsewhere in this section (4.13). Compared to Alternatives A, B, C, and D, Alternative E would have greater indirect, long-term benefits to wildlife and fisheries in the form of reduced soil erosion and sedimentation and salinity in streams, reduced human disturbance of wildlife, and reduced surface disturbance and fragmentation of wildlife habitat.

4.21.2.8. IMPACTS OF RANGELAND IMPROVEMENTS ON WILDLIFE AND FISHERIES RESOURCES

Wildlife and fish populations would directly benefit over the long-term from rangeland improvements proposed under the Proposed RMP and all alternatives. These rangeland improvements would include conducting vegetation treatments aimed at improving forage composition, installing additional fencing, constructing guzzlers or other reservoirs, constructing wells or improving springs, and installing additional water pipeline. These improvements would improve existing wildlife habitat and provide water during high-stress drought periods. It can be assumed that the level of relative positive impacts for the Proposed RMP and of each alternative would be directly related to their respective level of rangeland improvements. The amount of each of these rangeland improvements under the Proposed RMP and each alternative is described in Table 4.21.8 below.

Table 4.21. 8. Rangeland Improvements Proposed under the Proposed RMP and Alternatives¹

	Proposed RMP	Alternative A	Alternative B	Alternative C	Alternative D (No Action)	Alternative E
Vegetation treatment (acres)	34,640	34,640	50,900	45,860	40,390	45,860
Fencing (miles)	68.5	68.5	368.5	129	65	129
Guzzlers/reservoirs	812	812	1,165	811	775	811
Wells/springs	51	51	78	87	74	87
Water pipeline (miles)	37.5	37.5	51	29.5	35	29.5

¹ These range improvements acres are projected and are not an upper limit.

The Proposed RMP and Alternative A would increase the miles of fencing and water pipelines over Alternative D (No Action). The Proposed RMP and Alternative A would decrease the amount of vegetation treatment and the number of wells/springs that would be developed area.

Alternative B would propose more vegetation treatments, more miles of fencing and water pipelines, as well as additional guzzlers/reservoirs and wells/springs than Alternative D (No Action).

Alternatives C and E would propose more vegetation treatments and more miles of fencing as well as additional guzzlers/reservoirs and wells/springs than Alternative D (No Action). However, they would propose fewer miles of water pipelines.

4.21.2.9. IMPACTS OF RECREATION AND TRAVEL ON WILDLIFE AND FISHERIES RESOURCES

4.21.2.9.1. RECREATION

The Proposed RMP and 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. This action is not specified under Alternative D (No Action). All alternatives would manage Pelican Lake (1,020 acres) and Red Mountain – Dry Fork (24,259 acres) as SRMAs. Lands in Browns Park and Nine Mile Canyon would also be managed as SRMAs under all alternatives but the acreage would differ between some alternatives and the Proposed RMP (Browns Park: 18,490 acres under the Proposed RMP; 18,474 acres under Alternatives B and D (No Action); 52,720 acres under Alternatives A, C and E; Nine Mile Canyon: 44,168 acres under the Proposed RMP; 44,181 acres under Alternatives B, and D; 81,168 acres under Alternatives A, C and E). Lands in Blue Mountain, the Book Cliffs, Fantasy Canyon, and the White River would be managed as SRMAs under some alternatives and not under others. Acreages would differ as well. Lands in Blue Mountain (42,758 acres), Fantasy Canyon (69 acres), and the White River (2,831 acres under the Proposed RMP and 47,130 acres under Alternatives C and E) would be managed as SRMAs under the Proposed RMP and Alternatives C and E. Alternative A would managed all of these lands as SRMAs except Fantasy Canyon and the White River would consist of 24,183 acres. Under Alternatives B and D (No Action), these lands would not be managed as SRMAs. Lands in the Book Cliffs (273,486 acres) would be managed as SRMA under Alternatives A, C and E but not under the Proposed RMP and Alternatives B and D (No Action). The Proposed RMP and Alternatives A, C, and E would SRMAs improve, develop, and/or sign up to 400 miles of non-motorized trails. Up to 800 miles of motorized routes would be improved, developed, and/or signed under the Proposed RMP and Alternatives A, B, and D (No Action).

These designations and improvements would have both long-term beneficial and adverse impacts on wildlife and fish populations in these areas. Beneficial impacts SRMAs would stem largely from the fact that managed and focused recreation, such as in SRMAs, tends to result in fewer adverse impacts to wildlife and associated resources than dispersed recreation with minimal management. However, because increased visitor use would be projected under SRMA management and with the addition of BLM Back Country Byways, some adverse impacts on

wildlife and fish populations SRMAs would occur. Both long-term beneficial and adverse impacts on wildlife and fish populations in these areas would be much the same between alternatives, except that they would be proportional to the acreage of land proposed for management as SRMAs.

Alternative D (No Action) would not designate any BLM Back Country Byways. BLM would continue to provide minimal management oversight for recreational use of the White River. No specific management plans would be made for Blue Mountain or Fantasy Canyon. The Book Cliffs would continue to provide for unlimited and unconfined recreation. Browns Park (18,474 acres), Red-Mountain Dry Fork (24,285 acres), Pelican Lake (1,020 acres), and Nine Mile Canyon (44,181 acres) would continue to be managed as SRMAs that would include providing important habitat for fisheries and wildlife. Roughly 55 miles of hiking and/or horseback trails along the Green River and on Dry Fork, Ashley Creek, Beaver, Willow, Nine Mile, and other places in the resource area would be developed. Two miles of mountain bike trails using existing rural road and trails would be established. A non-motorized trail along Sears Canyon would be developed, and the Red Mountain trail would be managed as a motorized trail. The recreation decisions would continue a relatively hands-off approach to managing recreational areas associated with the VPA. This approach has historically allowed for relatively little disturbance to wildlife and fish populations in the area. However, this approach could lead to declines to wildlife and fish populations and habitats as areas in the VPA become more popular recreational destinations and other uses increase without additional protective measures placed on critical areas.

4.21.2.9.2. TRAVEL

With respect to travel management, the main difference between the 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 the Proposed RMP and Alternatives A, B, C, and E are similar, ranging from 6,202 acres under the Proposed RMP and 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 the Proposed RMP and Alternatives A, B, C, and E, the number of acres designated as the more restrictive Limited category of OHV use are roughly similar, ranging from 1,326,024 under Alternative E to 1,659,901 under Alternative E. The Proposed RMP and Alternative A would designate 1,643,475 acres as Limited to designated routes while Alternative C would designate 1,353,529 acres as Limited to designated routes. 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 wildlife habitat, noise, habitat fragmentation, increased wind erosion in sensitive habitats would still occur but the risks of these impacts on wildlife would be substantially reduced under the Proposed RMP and Alternatives A, B, C, and E, when compared to Alternative D (No Action). The minimal management of OHV use would lead to declines of wildlife and wildlife habitats as areas in the VPA become more popular for OHV recreation.

4.21.3. IMPACTS OF RIPARIAN ON WILDLIFE AND FISHERIES RESOURCES

4.21.3.1. PROPOSED RMP AND ALTERNATIVES A, B, C, AND E

Under the Proposed RMP and 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 four inches or 30% utilization. If riparian conditions need improvement, stubble height on key riparian plant species would be set at six inches or 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 in the mature and dead categories. Woody vegetation utilization would be set at 30%. Alternative B varies from the other action alternatives in that key herbaceous riparian vegetation in riparian areas, other than the stream banks, would not be grazed more than 50% during the growing season, or 60% during the dormant season. Likewise, under Alternative B, key riparian woody vegetation would not be used more than 50% of the current annual twig growth that is within reach of the animals.

This would help maintain or improve riparian areas in the VPA more effectively than Alternative D (No Action). 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.

4.21.3.1.1. ALTERNATIVE D (NO ACTION)

Under this Alternative, the objective would be to maintain an average minimum herbage stubble height of three inches after livestock grazing where grazing is allowed on riparian areas within the Diamond Mountain portion of the VPA. Within the Book Cliffs portion of the VPA there would be no management prescriptions for average minimum herbage stubble height. Efforts would be made to provide sufficient herbaceous biomass to meet requirements of plant, vigor, maintenance, bank protection, and sediment entrapment. However, this alternative would not provide the level of protection to riparian habitat and associated wildlife species that the action alternatives would provide.

4.21.3.2. IMPACTS OF SPECIAL DESIGNATIONS ON WILDLIFE AND FISHERIES RESOURCES

4.21.3.2.1. PROPOSED RMP AND ALTERNATIVES A, B, C, D (NO ACTION), AND E

Special Designation areas ACECs would generally have a long-term beneficial impact on the wildlife and fisheries known to occur within their boundaries. Normally, only activities that would maintain or enhance habitat used by wildlife and fisheries would be permitted in these areas, although some of these areas would remain open to minerals development. In areas where minerals development may impact wildlife and fisheries, restrictive lease stipulations would be required to minimize these impacts. The designation of these areas, or lack thereof, would have

similar impacts between alternatives and the Proposed RMP. Alternatives C and E propose the most ACECs (647,063 acres and 533,885 acres respectively for Alternative C and Alternative E) and the greatest quantity of river segments as suitable for Wild and Scenic River designation (164 miles in addition to segments of the Upper and Lower Green River that would continue to be suitable). The Proposed RMP proposes the fewest ACECs (131,700 acres) and river segments as suitable for Wild and Scenic River designation (two segments, the Upper and Lower Green River that would continue to be suitable). Alternatives B and D (No Action) propose about the same number and acreage of ACECs (179,356 acres and 165,944 acres respectively for Alternative B and Alternative D, No Action) and river segments as suitable for Wild and Scenic River designation (those segments of the Upper and Lower Green River that would continue to be suitable). Alternative A proposes approximately 345,850 acres of ACECs and 57 miles of river segments as suitable for Wild and Scenic River designation. A summary of the total ACECs by alternative and the Proposed RMP is given below in Table 4.21.9. The acreage of WSAs is the same under the Proposed RMP and each alternative.

Table 4.21.9. ACEC Designations for the Proposed RMP and Alternatives

ACECs	Acres					
	Proposed RMP	Alternative A	Alternative B	Alternative C	Alternative D (No Action)	Alternative E
Bitter Creek/P.R. Spring	0	0	0	78,591	0	0
Coyote Basin	0	87,743	47,659	0	0	0
Coyote Basin – Coyote Basin	0	0	0	26,590	0	26,590
Coyote Basin – Kennedy Wash	0	0	0	10,670	0	10,670
Coyote Basin – Myton Bench	0	0	0	36,670	0	36,670
Coyote Basin–Shiner	0	0	0	21,957	0	21,957
Coyote Basin–Snake John	0	0	0	28,274	0	28,274
Four Mile Wash	0	0	0	50,280	0	50,280
Lears Canyon	1,375	1,375	1,375	1,375	1,375	1,375
Middle Green River	0	0	0	6,768	0	6,768
Lower Green River (Corridor and Expansion)	8,470	10,170	8,470	10,170	8,470	10,170
White River	0	17,810	0	47,130	0	47,130
Browns Park	18,490	52,721	18,474	18,474	52,721	52,721
Red Mountain – Dry Fork	24,285	24,285	24,285	24,285	24,285	24,285
Nine Mile Canyon	44,168	48,000	44,181	81,168	44,181	81,168
Pariette	10,437	10,437	10,437	10,437	10,437	10,437
Red Creek	24,475	24,475	24,475	24,475	24,475	24,475
Main Canyon	0	0	0	100,915	0	100,915
Total Acreage	131,700	345,850	179,357	647,063	165,944	533,885

4.21.3.3. IMPACTS OF SPECIAL STATUS SPECIES DECISIONS ON WILDLIFE AND FISHERIES RESOURCES

Alternatives that incorporate decisions to protect special status plant and animal species would also likely benefit general wildlife and fish populations. The Proposed RMP and Alternatives A and B would provide more protection than Alternative D (No Action), but less protection than Alternatives C and E for special status species, and indirectly other wildlife and fish populations.

4.21.3.4. IMPACTS OF SOILS AND WATERSHEDS ON WILDLIFE AND FISHERIES RESOURCES

The Proposed RMP and Alternatives A, B, C, and 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 wildlife and fisheries by reducing soil erosion on steep hillsides.

4.21.3.4.1. PROPOSED RMP AND ALTERNATIVE A

Under the Proposed RMP and Alternative A, surface disturbances on slopes between 21–40% would require erosion control, GIS modeling, and surveying, and slopes greater than 40% would not be disturbed unless other proposed construction alternatives would cause unnecessary degradation. These actions would also provide indirect, long-term beneficial impacts to wildland and fisheries by reducing soil erosion and subsequent stream sedimentation.

4.21.3.4.2. ALTERNATIVE B

Alternative B would require erosion control, GIS modeling, and surveying on slopes greater than 20% for unavoidable surface disturbances, with similar indirect beneficial impacts to wildlife and fisheries as described for the Proposed RMP and Alternative A, but without the restrictions to disturbances to slopes greater than 40% as described under the Proposed RMP and Alternative A.

4.21.3.4.3. ALTERNATIVES C AND E

Alternatives C and E would have greater indirect beneficial impacts on wildlife and fisheries than the other alternatives by applying the same management actions on 21–40% slopes as the Proposed RMP and Alternative A and by prohibiting surface disturbances (and thus reducing the risk of increased stream sedimentation) on slopes greater than 40%.

4.21.3.4.4. ALTERNATIVE D (NO ACTION)

Alternative D (No Action) restricts surface disturbance only for mineral activities on slopes greater than 40% and does not specifying slope restrictions on slopes less than 40%. The reductions in stream sedimentation imposed by management actions that limit surface disturbances would improve water quality and reduce stream embeddedness, which, in turn, would improve macroinvertebrate habitat and increase fish spawning success.

The Proposed RMP and Alternatives A and B would provide more protection to aquatic resources than Alternative D (No Action), but less protection than Alternatives C and E. Alternative E would provide the most restrictions on surface disturbance, and would, consequently, provide the greatest protection for water quality and aquatic habitat.

4.21.3.5. IMPACTS OF WILDLIFE AND FISHERIES MANAGEMENT DECISIONS ON WILDLIFE AND FISHERIES RESOURCES

4.21.3.5.1. PROPOSED RMP

This Proposed RMP would not allow surface disturbance activities within McCook and Monument Ridge mule deer migration corridors from April 15 through May 31. 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 December 1 through April 30. This restriction would not apply if deer and elk are not present, or impacts could be mitigated through other management actions. New surface disturbance within crucial mule deer winter range would be limited to no more than 10% that would remain unreclaimed at any given time. This 10% surface disturbance threshold in crucial deer winter range would only apply to new disturbances. All compensatory mitigation would be approached on an as appropriate basis where it can be performed on-site, and on a voluntary basis where it is performed offsite, or, in accordance with current guidance. New surface disturbance or restoration in crucial mule deer winter range is not specified in Alternative D (No Action). These actions would have an overall benefit to mule deer and elk populations when compared to Alternative D (No Action).

Under the Proposed RMP (as well as Alternatives A, C and E) the BLM would provide habitat and forage for the emigration and/or reintroduction of Rocky Mountain bighorn sheep in the following areas: 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; Toliver's 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 benefit bighorn sheep populations when compared with Alternative D (No Action).

The BLM would continue to work cooperatively with UDWR and other entities on the Book Cliffs Bison Management Plan, with long-term, beneficial impacts on this species within the VPA. Further, habitat and forage would be provided for the emigration and/or reintroduction of moose, which would benefit moose populations in the VPA when compared with Alternative D (No Action).

4.21.3.5.2. ALTERNATIVE A

This alternative would not allow surface disturbance activities within McCook and Monument Ridge mule deer migration corridors from April 15 through May 31. 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 through April 30. This restriction would not apply if it is determined through analysis and coordination with UDWR that impacts could be mitigated. New surface disturbance within crucial mule deer winter range would be limited to 560 acres per township, or 2.4% of the township, and prorated based on the percentage of the crucial mule deer winter range within the township. All surface disturbances within sagebrush habitat on crucial mule deer winter range would be reclaimed or enhanced at a ratio of 1.5 to 1. New surface disturbance or restoration in crucial mule deer winter range is not specified in Alternative D (No Action). These actions would have an overall benefit to mule deer and elk populations when compared to Alternative D (No Action).

Under this alternative the BLM would provide habitat and forage for the emigration and/or reintroduction of Rocky Mountain bighorn sheep as described under the Proposed RMP above.

Habitat and forage would be provided for the emigration and/or reintroduction of bison in the southern Book Cliffs, with long-term, beneficial impacts on this species within the VPA.

Habitat and forage would be provided for the emigration and/or reintroduction of moose, which would benefit moose populations in the VPA when compared with Alternative D (No Action).

4.21.3.5.3. ALTERNATIVE B

This alternative would not allow surface disturbance activities within McCook and Monument Ridge mule deer migration corridors from April 15 through May 31 and September 1 through 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). Disturbance activities would not be allowed from December 15 through March 15 that would displace mule deer and elk from more than 10% of their total winter habitat at any time. Waivers would be granted if deer and elk are not present, topography or other attributes screen the activity sufficiently so that the proposed activity would not displace the subject species, or disturbance resulting from the proposed activity could be mitigated. This would be a reduction of the dates when compared to Alternative D (No Action). This alternative would not provide UDWR an opportunity to be involved in analyzing exceptions to these dates as with the Proposed RMP and Alternatives A, C, and E. Within crucial deer winter range, no more than 10% of such habitat would be subject to surface disturbance and remain un-claimed at any given time. This 10% surface disturbance threshold in crucial deer winter range would only apply to new disturbances (same as the Proposed RMP). Disturbance within sagebrush habitat on crucial deer winter range would be reclaimed at or enhanced at a ratio of 1 to 1. New surface disturbance or restoration in crucial mule deer winter range is not specified in Alternative D (No Action). These actions would have an overall benefit to mule deer and elk populations when compared to

Alternative D (No Action), but these benefits would not be as great as those outlined for the Proposed RMP and Alternatives A, C, and E.

Under Alternative B, BLM would only support Rocky Mountain bighorn sheep if natural emigration occurs in the same areas as described under the Proposed RMP above. This would expand the reintroduction effort for bighorn sheep in the VPA and would benefit bighorn sheep populations when compared with Alternative D (No Action). However, this alternative limits the establishment efforts for Rocky Mountain bighorn sheep to emigration versus reintroduction; therefore, benefits of this alternative to bighorn sheep are not as great as those outlined for The Proposed RMP and Alternatives A, C, and E.

This alternative would have adverse impacts to moose and bison, as the BLM would not support them (i.e., habitat and forage would not be provided) in the Book Cliffs.

4.21.3.5.4. ALTERNATIVES C AND E

These alternatives would not allow surface disturbance activities within McCook and Monument Ridge mule deer migration corridors from April 15 through May 31 and September 1 through 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 through 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. This would be an extension of the dates and provide UDWR an opportunity to be involved in analyzing impacts when compared to Alternative D (No Action). Total new surface disturbance within crucial mule deer winter range would be limited to 560 acres per township, or 2.4% of the township, and 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 actions would have an overall benefit to mule deer and elk populations when compared to Alternative D (No Action).

Under Alternatives C and E, management actions for bighorn sheep would be the same as the Proposed RMP and Alternative A. This would expand the reintroduction effort for bighorn sheep in the VPA and would benefit bighorn sheep populations when compared with Alternative D (No Action).

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.

4.21.3.5.5. ALTERNATIVE D (NO ACTION)

This alternative would not allow surface disturbance activities within mule deer migration corridors on Monument Ridge from May 11 to May 31 or on McCook Ridge from October 2 to May 31. The allowable amount of new disturbance in crucial deer winter range and the reclamation of sagebrush habitat on crucial deer winter range would remain unspecified. Surface-disturbing activities would not be allowed in crucial winter elk habitat in the Book Cliffs from November 1 to March 31 and in Diamond Mountain from December 1 to April 30, with exceptions if deer and/or elk are not present or if impacts could be mitigated through other management actions. These actions would benefit mule deer and elk populations in the VPA.

This alternative would allow for the reestablishment of bighorn sheep in Browns Park and provide forage and cover to support an average annual population of about 300 to 400 animals on public lands in the Browns Park Habitat Management Plan (HMP) area. This would benefit bighorn sheep in this area of the VPA.

The reintroduction of bison into the Southern Book Cliffs and moose throughout the VPA would remain unspecified. Therefore, this alternative would not benefit moose or potential bison populations in the VPA.

4.21.3.6. IMPACTS OF WILD HORSE DECISIONS ON WILDLIFE AND FISHERIES RESOURCES

The alternatives would maintain wild horse herds as outlined in Table 4.21.10 below. In those areas and under those alternatives where wild horse herds would be maintained, there is the potential for wild horses to compete directly and indirectly with wildlife with respect to forage and habitat. However, efforts have also been made to allocate forage and habitat to wildlife and to wild horses to reduce the potential adverse impacts to wildlife populations from this competition (See Chapter 2). The Proposed RMP and Alternative B would offer the greatest benefits to wildlife in terms of reduced competition with wild horses because the Proposed RMP and Alternative B would either gather and remove wild horses from the planning area or not manage for them (therefore not allocating AUMs for wild horse use). The other alternatives would maintain wild horse populations on some level resulting in potential conflicts with wildlife for forage and habitat resources.

Table 4.21.10. Maintaining Wild Horse Herds by the Proposed RMP and Alternatives

	Bonanza HA	Winter Ridge HA	Hill Creek HA
Proposed RMP	No	No	No
Alternative A	No	Yes	Yes
Alternative B	No	No	No
Alternative C	Yes	Yes	Yes
Alternative D (No Action)	No	No	Yes
Alternative E	Yes	Yes	Yes

4.21.3.7. IMPACTS OF WOODLANDS AND FOREST MANAGEMENT DECISIONS ON WILDLIFE AND FISHERIES RESOURCES

4.21.3.7.1. PROPOSED RMP AND ALTERNATIVES A, B, C, AND E

The Proposed RMP and 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 as much as 554,108 acres (under Alternative B) of forest and woodland habitat and as little as 421,133 acres (under Alternative E).

The Proposed RMP and 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 and the Proposed RMP 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 allow use of forest, woodland products, biomass, and certain vegetation products in areas specified for this use to meet RMP goals. Each of these alternatives and the Proposed RMP 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.

The Proposed RMP and 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. Alternative C 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 areas proposed for protection of wilderness characteristics, which would result in fewer indirect long-term adverse impacts to wildlife and fisheries resources through reduced surface disturbance. 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 to 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, all Action Alternatives (Alternatives A, B, C, and E) and the Proposed RMP 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 catastrophic wildland fire.

4.21.3.7.2. ALTERNATIVE D (NO ACTION)

Alternative D (No Action) would allow up to 88,200 acres of forest and 200,100 acres of woodlands to have treatments or be harvested. Accordingly, Alternative D (No Action) would have similar impacts to those described for the action alternatives, but to a lesser degree due to the lower treatment acreage.

4.21.4. SUMMARY

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 and D, the Proposed RMP, and Alternatives C and E. However, it should be noted that the difference in fragmentation impacts between these alternatives is proportionally less than 10% between the alternative 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 and D (No Action), the Proposed RMP, and Alternatives C and E.

4.21.5. MITIGATION MEASURES

The mitigation measures developed to reduce impacts to wildlife and fisheries as a result of the implementation of management decisions have already been incorporated into the Management Common to the Proposed RMP and All Alternatives (See Chapter 2). These mitigation measures would likely reduce significant impacts to wildlife and fishery population viability in the VPA, but would not completely avoid adverse impacts to wildlife habitat.

4.21.6. UNAVOIDABLE ADVERSE IMPACTS

Unavoidable Adverse Impacts to fishery and wildlife populations due to management of other resources would occur due to habitat loss, degradation, and fragmentation; population isolation and reduction; loss of prey base; and ecosystem function. While mitigation measures described under Management Common to the Proposed RMP and all Alternatives (See Chapter 2) would reduce these impacts to the extent possible, they would still occur to a varying degree under the Proposed RMP and alternatives, with the greatest unavoidable impact occurring under Alternative B, followed by Alternatives A and D, the Proposed RMP, and Alternatives C and E. These unavoidable impacts could limit future expansion of wildlife and fishery populations in the VPA, particularly into current suitable habitat that may be unoccupied.

4.21.7. SHORT-TERM USES VERSUS LONG-TERM PRODUCTIVITY

Construction of roads and well pads associated with mineral development would provide a short-term resource use in terms of mineral extraction. However, that use could eventually result in long-term fragmentation of wildlife and fisheries habitat. These activities would also increase the occurrence of noxious weed infestations competing for water and space with native plants, which would likely reduce the long-term habitat productivity of the area. Other competing resource

uses, such as off-highway vehicle (OHV) use and livestock grazing, provide a short-term resource use that would also result in long-term adverse impacts to wildlife and fishery populations through disturbance, habitat degradation, and spread of noxious weeds.

4.21.8. IRREVERSIBLE AND IRRETRIEVABLE IMPACTS

Land categorization for minerals development in the VPA proposes to open, to minerals development, approximately 80% to 100% of available habitat for most wildlife and fisheries on BLM managed lands in the VPA. The habitat fragmentation associated with this development would create an irretrievable impact to wildlife populations by potentially breaking up wildlife populations into smaller populations more susceptible to population declines and possible extinction from random events. Additionally, this fragmentation would make wildlife movement between fragments difficult, as well as decreasing the habitat suitability for large mobile wildlife species that may require large habitat areas. This shift to smaller populations and smaller discrete habitats would create an irretrievable loss in wildlife productivity until the areas used as access roads and for other developments associated with minerals activities were reclaimed. Eventually those areas could be restored, so this impact would not necessarily be irreversible. However, there is the possibility of an irreversible loss of small isolated wildlife populations due to this fragmentation, particularly if reclamation of cleared well pads and roads does not occur within 20 to 30 years.