

To lessen erosion and increase forage production for wildlife and livestock, vegetation treatments on approximately 1,200 acres per year would occur. Most of the treatment in the last 10 years has been prescribed burning of pinyon-juniper stands.

Total vegetation treatment opportunities could be realized on approximately 22,950 acres (or 3 percent of the BLM-administered lands) over the life of this plan. Based on an average of the total acres treated in the resource area during the past decade, it is reasonable to assume that approximately 1,530 acres could be successfully treated per year. Such an assumption is based on a continuation of present funding and staffing levels.

Riparian habitat would be protected by limiting grazing, surface-disturbing activities, and OHV use. Pipelines, utility structures and transportation facilities would be confined to established corridors and crossings. Special status plant habitat would be protected by limiting surface disturbance and OHV use.

VISUAL RESOURCES MANAGEMENT

Upon completion of the RMP, the existing VRM Class designations, delineated on Map 3-33, would be modified to reflect the decisions made in the plan. These adjusted visual resource values would be protected by managing activities and construction with mitigation that would protect the VRM classes.

WOODLANDS MANAGEMENT

Demand for wood products would continue at about the current level of approximately 2,500 cords per year, or increase slightly.

The selling price of a cord of wood outside the basin will remain near \$150 per cord; while selling prices within the basin will remain fairly constant at \$50 per cord.

Juniper posts and Christmas tree sales would be made available only to meet local demand.

Sale of other conifer species would only be made where it can be demonstrated to benefit either the forest or wildlife resource.

DIRECT AND INDIRECT IMPACTS OF IMPLEMENTING THE PROPOSED PLAN

This section has been changed, clarified, and strengthened in response to public and/or management comments on the draft. Analysis of the proposed plan and the alternatives to the socioeconomic structure have been expanded significantly. A summary of these impacts is provided in Table 2-15.

IMPACTS TO CULTURAL AND PALEONTOLOGICAL RESOURCES

From Management Actions for Cultural and Paleontological Resources

Requiring a paleontological survey on all lands identified as having high potential for paleontological resources, before any surface disturbing activity is permitted, would greatly reduce the potential of damage to these resources on 139,000 acres. Requiring mitigation would increase the amount of information we currently have, enabling us to better manage the resource.

Any paleontological information collected would increase knowledge of the behavior of different species of prehistoric animals, their social organization, including adaptive behavior and interspecies interactions.

From Management Actions for Fish and Wildlife Habitat Programs

Accidental disturbance of both cultural and paleontology resources would continue to occur as developments such as land treatments and water developments are completed to benefit wildlife.

Any paleontological information lost would limit the knowledge of the behavior of different species of prehistoric animals, their social organization including adaptive behavior and interspecies interaction.

Any cultural information that is lost would limit our ability to understand the behavior and social structure of past societies.

From Management Actions for Livestock Programs

Accidental disturbance of both cultural and paleontological resources would continue to occur as

developments such as land treatments and water developments are completed for livestock.

Any paleontological information lost would limit knowledge of the behavior of different species of animals, their social organization, including adaptive behavior and interspecies interaction.

Any cultural information that is lost would limit our ability to understand the behavior and social structure of past societies.

From Management Actions for Minerals Programs

Accidental disturbance of both cultural and paleontology resources that would normally occur during development of high potential oil and gas and other leasable minerals would continue to occur, but at a rate slightly less than is currently taking place.

Any paleontological information lost would limit knowledge of the behavior of different species of animals, their social organization, including adaptive behavior and interspecies interaction.

Any cultural information that is lost would limit our ability to understand the behavior and social structure of past societies.

From Management Actions for Recreation Programs

Continued operation of the John Jarvie Historic Site, interpretation of the old Rock Saloon, and a self-guided historic tour in Browns Park would allow the public to gain a better understanding of the history of that fascinating area. By preserving, displaying, and interpreting the many structures and items at the site, it would enable the public to gain a better appreciation of the need to protect and preserve cultural and paleontological resources.

Protecting the Desolation Canyon National Natural Landmark on the lower Green River would increase public awareness of the importance of John Wesley Powell's historic trip down the Green River in 1869. Establishment of the 50,784-acre Nine Mile Canyon ACEC would provide an opportunity to develop and interpret the many cultural resources in the area for public enjoyment.

Vandalism and accidental disturbance of cultural and paleontological sites would continue to occur, but at a rate slightly less than at present because of stricter

controls on resource development than exists under the current management.

Any paleontological information lost would limit knowledge of the behavior of different species of animals, their social organization, including adaptive behavior and interspecies interaction.

Any cultural information that is lost would limit our ability to understand the behavior and social structure of past societies.

From Management Actions for Special Emphasis Areas Programs

Designating Nine Mile Canyon, Lower Green River, Red Mountain-Dry Fork and the Browns Park Complexes as ACECs would increase management priority consideration for these areas. As a result, site deterioration would lessen and very few resources would be lost.

Continuing to protect the upper and lower Green River for possible designation as a wild and scenic river would compliment the protection given by ACEC designation of the areas.

Although Nine Mile Creek would not be recommended for designation as a wild and scenic river, important cultural and paleontological values would continue to be protected by the ACEC designation.

IMPACTS TO FISH AND WILDLIFE HABITAT RESOURCES MANAGEMENT

From Management Actions for Fish and Wildlife Habitat Programs

Establishing year 'round surface occupancy buffers on 8,651 acres would have significant positive impacts that would include the year-long protection of special status raptor nest sites.

Seasonal stipulations to protect 88,500 acres (49 percent of the total identified habitat) of sage grouse nesting habitat would increase the current protection period by one month and the protection zone by 1/2 mile. This should protect up to 85 percent of nests, according to the *Western States Sage Grouse Guidelines*.

Approximately 16,600 acres (or 49 percent) of the total identified potential black-footed ferret habitat would be managed in only one area for the recovery of the species. This could support up to 134 ferrets assuming 1 ferret per 124 acres, and Eight Mile Flat is selected as the

reintroduction site. This would be a moderately positive, long-term benefit because it would contribute to the overall recovery of the species. The recovery plan calls for the establishment of 10 or more separate wild populations which, before breeding, number 1,500 black-footed ferrets. This action would also meet the objectives of the Endangered Species Act and BLM special status species policy objective, as outlined in Manual 6840, which strives to conserve these species and the ecosystems on which they depend.

Approximately 123,800 acres (100 percent) of identified potential habitat would be open to the reintroduction of bighorn sheep within DMRA. Currently, an estimated 25 bighorn sheep occupy only four percent of identified potential habitat. This action would be a significant, positive, long-term benefit as it would help UDWR and BLM meet their objectives for reintroducing this native species to former historical range. The public would also benefit with the increased opportunity to watch or hunt additional populations of this popular big game species.

From Management Actions for Lands and Realty Programs

Acquiring additional public vehicle access could open 70,700 public acres of presently inaccessible public land. This action could have a negative long-term impact on wildlife populations by reducing their numbers due to increased hunter access, losing available forage to road construction and OHV disturbances, and increasing human harassment and poaching of wildlife. The Utah Board of Big Game Control, the Utah State Interagency Committee, and the Big Game Section of Utah Division of Wildlife Resources have all recommended access regulations to improve wildlife habitat security. A majority of the people attending the 1991 and 1992 Big Game Board meetings indicated that increased access and hunter crowding had a significant negative impact on buck-to-doe ratios, thus adversely affecting deer breeding success and ultimately their populations.

The recommendations to establish withdrawals on 19,400 acres of the Green River Scenic Corridor and 7,900 acres of the lower Green River provides the greatest riparian protection for wildlife of all alternatives. These riparian areas provide habitat for 24 of the 33 known special status species in DMRA. The withdrawal would prevent loss of habitat and species displacement through mineral and agricultural development for special status species as well as other wildlife associated with riparian habitat.

From Management Actions for Livestock Programs

Negotiating with livestock permittees to eliminate domestic sheep use within a 10-mile buffer of identified bighorn sheep habitat in the resource area (184,000 acres) would reduce the chances of disease transmission from domestic to bighorn sheep. This reduction of disease could significantly improve the chances for long-term survival within the resource area. This would meet BLM's objectives for a progressive bighorn sheep management program in conjunction with an appropriate level of grazing on public lands by domestic sheep. Currently domestic sheep are authorized to graze on 32 percent of public lands in the resource area while bighorns occupy one percent of public lands.

Sportsman's efforts over the past 30 years, funded through license and hunting permits to expend bighorn sheep in the state, would be supported. Finally, UDWR's plans to increase this native species' range throughout the resource area would also be enhanced.

Management actions for livestock would, overall, benefit fish and wildlife habitat. Specific grazing prescriptions with modified seasons of use should significantly and positively impact wildlife species if riparian areas, in particular, are improved. Ecological stages should improve from early and mid to late or climax increasing vegetation diversity (i.e., more willows) and thus wildlife species diversity.

From Management Actions for Minerals Programs

Increased human activity and access would occur in these areas during all phases of mineral exploration and development.

Approximately 100 percent of the known Ferruginous hawk and 90 percent of the golden eagle habitat occurs within the areas affected by mineral activity. Proposed protective stipulations would protect nest sites year 'round only if these nests were active within the last two years. Older, inactive nest sites would be left unprotected and could be rendered permanently unusable should mineral development activities be allowed nearby. Such a situation could result in the loss of habitat for these species and may lead to an overall decline in their populations. This would be a significant, long-term, negative impact to these species.

Black-footed ferret reintroductions would be limited to one location within DMRA involving a maximum of 16,000 public acres, approximately 50 percent of the identified

potential habitat. Of the three alternatives proposing such reintroductions, the proposed plan affords the least amount of acreage and thus the least amount of ferrets capable of being reintroduced. Any proposed reintroduction areas would be considered a significant, long-term, positive impact to the survival of this species.

Approximately 38 percent (27 miles) of priority fisheries habitat, including proposed Critical Habitat for the four endangered fish in the middle section of the Green River, would not be protected from future mineral entry under proposed protective withdrawals. Loss or severe degradation of this habitat caused by increased human disturbance could have significant negative, long-term impacts on these special status fish species.

ACEC designation would be proposed on 28 percent (196,620 acres) within DMRA, protecting and enhancing crucial wildlife habitat identified in those areas. The proposed plan, along with Alternative B, afford the greatest protection and habitat enhancement for the four endangered fish species and two endangered raptor species found along the Green River corridor.

From Management Actions for Recreation Programs

Restricting OHV use to designated roads and trails seasonally or yearlong on 409,400 acres would reduce displacement of wildlife from preferred habitats. Wildlife would be protected from disturbance during crucial reproductive seasons and vegetation would not be damaged by OHV use on 58 percent of the resource area. According to the UDWR, increased human access is directly proportional to increased poaching. Restricting OHV use to designated roads and trails would have a significant long-term positive effect by protecting wildlife from increased poaching.

From Management Actions for Riparian Programs

Approximately 79 percent of DMRA's riparian habitat is in an early or mid ecological stage. With grazing systems establishment and rangeland improvements proposed for this plan, the riparian habitat would improve. This would be a long-term positive impact to fisheries habitat and riparian habitat-dependent wildlife. Improved riparian areas might help afford the opportunity for downlisting or removal from listing of the long-billed curlew, western snowy plover, black tern, white-faced ibis, and the Great Basin silverspot butterfly under the Endangered Species Act. Forage production would be expected to increase as well as vegetative cover, streambank stability, and instream habitat quality. These long-term, positive

benefits could correlate up to a two percent population increase for over 20 big game, upland game, and non-game wildlife species.

BLM's 1991 Riparian Wetland Initiative goal was to have 75 percent of riparian zones in proper functioning condition by 1997. The public also commented on the need to improve riparian areas during the Draft RMP comment period. Management actions to improve riparian areas would meet these concerns and would be a long-term positive impact.

From Management Actions for Special Emphasis Areas Programs

Public land currently designated as WSA (7,240 acres) would be managed consistent with the principles for semi-primitive nonmotorized areas if not designated wilderness. This would be a positive benefit to wildlife as existing habitat would not be degraded or compromised by removal of forage or cover. Wildlife would not be displaced from preferred habitats as a result of increased human activity associated with multiple use. Reduced motorized access would also reduce poaching.

Not identifying the middle Green River segment for protection and further study under the Wild and Scenic River Act would leave the segment open to uses that could damage identified habitat. Increases in human activity could also displace special status raptor species which use the river corridor for nesting and hunting.

From Management Actions for Vegetation Programs

The proposed plan allows wildlife forage demand to increase from current levels of 27,600 AUMs to 40,000 AUMs, a 45 percent increase. Also, preliminary monitoring indications show that total forage available is close to meeting wildlife objective use and existing livestock preference levels. The additional AUMs are proposed due to wildlife transplants and allowable herd increases.

Treating 22,950 acres of vegetation would have a significant benefit to livestock and wildlife in improved quantity (3,500 AUMs) and quality of forage. Most of this treatment (18,400 acres) would consist of pinyon-juniper woodlands, with the remaining in decadent sagebrush outside of crucial deer winter range and sage grouse habitat. Additional AUMs gained from grazing systems would be approximately 500 AUMs.

From Management Actions for Woodlands Programs

Allowing for firewood harvesting would benefit wildlife due to the increase in forage resulting from increases of native and seeded grasses after removal of the trees. This alternative would provide approximately 225 AUMs from firewood harvest with approximately 100 acres a year being harvested over the life of the plan (15 years).

IMPACTS TO LANDS AND REALTY MANAGEMENT

From Management Actions for Fish and Wildlife Habitat Programs

Restrictions would be imposed on lands containing active raptor nest sites and sage grouse strutting grounds. These restrictions would affect approximately 22,900 acres and would prohibit the construction of right-of-way projects unless the impacts could be mitigated.

Designation of a black-footed ferret reintroduction area encompassing 16,600 acres would limit but not necessarily preclude right-of-way development. Applicants may be required to relocate and/or modify proposals and restrict activity to specific times.

Seasonal restrictions would be imposed on 295,000 acres to protect wildlife resources. These restrictions would not preclude land use authorizations but would limit construction periods to specific times of the year.

From Management Actions for Lands and Realty Programs

Adherence to designated corridors would prevent the proliferation of major utility systems across undisturbed public lands. To some extent, the designation of specific corridors for future major right-of-way projects may impact those companies preferring alternative locations. However, this will ensure the protection of resource values through the land use analysis process which will be required for projects proposed outside of the established corridors. Closure of the designated corridor in Jesse Ewing Canyon, upon reaching capacity, would essentially close off the only north-south passage from Wyoming through northeastern Utah on BLM-administered lands.

The disposal of land by sale, state selection, or R&PP would have a positive impact on the counties.

From Management Action for Recreation Programs

Recreation sites encompassing 5,500 acres would restrict those land use authorizations that would cause visual/aesthetics impacts and found to be inconsistent with the purpose of the recreational sites.

Land use authorizations would be prohibited on 19,400 acres within the Green River Scenic Corridor. Closure of the Jesse Ewing Canyon designated corridor, upon reaching capacity, would essentially close the only feasible north-south passage from Wyoming through northeastern Utah.

Seasonal restrictions on 8.5 miles of the designated corridor route within the Browns Park Complex would limit construction periods for rights-of-way.

From Management Actions for Vegetation Programs

Approximately 3,740 acres which contain relict vegetation would be excluded from land use authorizations. An additional 48,000 acres which contain special status plants and/or potential habitat could preclude surface disturbing activities.

IMPACTS TO LIVESTOCK MANAGEMENT

From Management Actions for Fish and Wildlife Habitat Programs

Introducing 150-400 antelope on Diamond Mountain would create a significant private landowner tolerance problem due to antelope depredation on cropland in the area. Based on the comments received on the draft in regard to increasing wildlife on Diamond Mountain, this is seen as a significant long-term, negative impact.

The reintroduction of bighorn sheep at five locations throughout the resource area may result in some forage conflicts with livestock. However, proposed rangeland improvements, such as prescribed burns, and bighorn's preference for rugged landscape unsuitable to livestock is thought to keep conflicts to a minimum.

From Management Actions for Vegetation Programs

Forty thousand (40,000) AUMs would be managed for wildlife which is 12,400 AUMs (45 percent) over current wildlife use (27,600 AUMs). It is likely that the vegetation

composition resulting from the ecological condition goals would maintain enough forage to provide for existing livestock grazing preference. Collectively, wildlife numbers may not reach forage objective levels on BLM-administered lands due to adjoining private landowners' intolerance. Pinyon-juniper and big sagebrush-browse vegetation types comprise approximately 50 percent of the resource area of which decadent old age stands would be managed in a mid seral stage which would provide the most forage. The AUMs would help to maintain livestock preference due to proposed increases in wildlife use. (Refer to Appendix 8 showing AUMs possible from rangeland improvements by allotment.)

Treating 22,950 acres of vegetation to provide approximately 3,500 additional AUMs would have a significant long-term, positive benefit to livestock by maintaining preference through improved quantity and quality of forage. Most of this treatment would consist of pinyon-juniper woodlands and decadent sagebrush prescribed burns. Additional AUMs gained from grazing systems would be approximately 500 AUMs.

Allowing grazing use after April 1 on winter/spring grazing permits only when spring grazing can be rotated, deferred or rested could impact 11 allotments/permittees (183,906 acres). If spring deferment grazing prescriptions could not be reached, approximately one month (April 1 to April 30) of spring grazing would be eliminated on these allotments. This would force the grazing operators to find alternate spring grazing elsewhere or to feed hay. In most cases spring deferment grazing prescriptions could be implemented offsetting such an impact.

From Management Actions for Woodlands Programs

Allowing for firewood harvesting would benefit livestock preference due to the increase in forage resulting from increases of native and seeded grasses after removal of the trees. This alternative would provide approximately 225 AUMs from firewood harvest with approximately 100 acres a year being harvested over the live of the plan (15 years).

IMPACTS TO LEASABLE MINERALS MANAGEMENT - GILSONITE

From Management Actions for Vegetation Programs

Development of gilsonite would be precluded by fish, wildlife, and T&E plants on about one-third of the highest potential gilsonite lands in the resource area. In addition,

development would be highly restricted on a significant portion of the remaining potential gilsonite lands by measures to protect black-footed ferret habitat.

These impacts would occur on lands anticipated to become attractive for development by the end of the decade. Both exploration and development activities would be either precluded or so highly restricted that development would not occur.

Nationally, alternative sources of gilsonite do not exist.

IMPACTS TO LEASABLE MINERALS MANAGEMENT - OIL AND GAS

From Management Actions for Fish and Wildlife Habitat Programs

Based on public comment the large amount of seasonal restrictions will alter drilling schedules, reduce the value of oil and gas leases and increase exploration costs. Seasonal stipulations to protect deer and elk crucial winter habitat will have significant negative impacts on 13,000 acres of high potential mineral estate in the Myton Bench-Nine Mile Canyon and the Clay Basin oil and gas producing regions.

No surface occupancy stipulations and timing stipulations to protect sage grouse nesting areas and strutting grounds will have significant negative impacts on 46,000 acres of high potential mineral estate in the Myton Bench-Nine Mile Canyon, Horseshoe Bend-Ashley Valley and the Clay Basin oil and gas producing regions. Timing restrictions from March 1-June 30 may result in altering drilling schedules of lessees which may further cause increased drilling costs. Significant surface disturbing geophysical exploration will be limited to designated roads and trails. This could influence the amount and quality of geophysical data collected.

Raptor protection zones will have minor adverse impacts in the Myton Bench-Nine Mile Canyon and the Horseshoe Bend-Ashley Valley oil and gas producing regions.

Black-footed ferret reintroduction and associated impacts could occur in the Eight Mile Flat area. Table 4-3 outlines general information concerning the potential Eight Mile Flat reintroduction area:

Prior to ferret releases in the Eight Mile Flat area restrictions on surface-disturbing activities would increase operational costs by rerouting or moving surface disturbing activities (such as access roads, pipelines, drilling pads, and production facilities) in order to avoid areas of high prairie dog density (> 10 burrows per acre).

**TABLE 4-3:
POTENTIAL BLACK-FOOTED FERRET
REINTRODUCTION AREA:
EIGHT MILE FLAT**

Oil and gas potential	High
Identified habitat (in acres)	16,600
Percent of area leased	98
Current number of producing wells*	55
Projected number of new wells	100
Oil/gas spacing (in acres)	40
*Source: BLM Automated Lands and Minerals Record System and Automated Inspected Records System, 1991.	

This will affect the overall orderly development of oil and gas fields by restricting the regular and orderly placement of wells. The amount of surface disturbing activities will be limited to a maximum of 10% of the area of Eight Mile Flat (or 1,660 acres) to protect potential black-footed ferret reintroduction areas. This may substantially limit the amount of exploration and development activities and subsequent economic benefits to federal, state, and county governments. Significant surface disturbing seismic geophysical activities will be restricted to existing roads and trails. This may affect the quality and quantity of seismic data collected and may have an affect on subsequent exploration or production programs.

Should ferrets be released in the Eight Mile Flat area no new surface disturbing activities relating to oil and gas would be allowed between March 1 through August 31, within 1/4 mile of the habitat occupied by black-footed ferrets to protect reproductive and active litter periods (approximately 20,600 acres would be affected by the quarter mile buffer surrounding the proposed Eight Mile Flat reintroduction area). This restriction would limit all exploration, production, and associated oil and gas surface disturbing activities from September 1 to February 28. Such a restriction would cause some exploration production activities and associated construction to take place during winter months. This would cause increased construction and drilling costs. Increased costs would also be incurred by operators by the requirement of installing mufflers on all equipment within 1/4 mile or within the black-footed ferret occupied reintroduction area. Periods of heavy vehicular traffic (i.e., drilling) would be encouraged during daylight hours. To the extent BLM has the authority, human activity would only be allowed during daylight hours after sunrise to 2 hours before sunset. The only exceptions would be, in case of emergencies, petroleum drilling, and associated servicing

related traffic. This would cause most exploration, production, and associated oil and gas activities to take place during daylight hours. This would cause delays in exploration or production activities and would increase exploration and development costs. There would be no impact to the maintenance and operation of existing production facilities.

From Management Actions for Recreation Programs

Closing semi-primitive, non-motorized areas to surface disturbances by imposing no surface occupancy stipulations will have significant negative impacts on 2,000 acres of high oil and gas potential areas in the Myton Bench-Nine Mile Canyon and the Clay Basin oil and gas producing regions. This will increase drilling costs due to directional drilling requirements. These stipulations will also increase the possibility of loss of oil and gas resources through drainage by state or private wells and loss of associated federal revenues. Surface disturbing seismic geophysical will be precluded in the subthrust oil and gas play (See Appendix 4). This will reduce the amount surface disturbing seismic geophysical information available in order to define oil and gas prospects in this region and may increase economic risks. Based on public comment, closing semi-primitive non-motorized areas which also have high oil and gas potential, to surface disturbance will increase drilling costs, increase exploration and production costs, and reduce the value of oil and gas leases.

From Management Action for Special Emphasis Areas Programs

The areas closed to lease operations because of no surface occupancy stipulations in the Brown's Park Complex, Lower Green River, and the Pariette proposed ACECs will have significant negative impacts on oil and gas operations, as well as on surface disturbing seismic geophysical exploration. An increase in drilling costs due to directional drilling requirements will occur. These stipulations will also increase the possibility of loss of oil and gas resources through drainage by state or private wells and loss of associated federal revenues. Surface disturbing seismic geophysical exploration will be precluded in the no surface occupancy areas. This may hinder the identification of subsurface oil and gas resources and reduce the amount and quality of information gathered. When restrictions to surface seismic geophysical exploration are combined with no surface occupancy stipulations, both the risk and cost of oil and gas exploration will be increased in these areas.

From Management Actions For Visual Resources Programs

Minor negative impacts will occur on 3,200 acres of high potential mineral estate in the Nine Mile Canyon area. The oil and gas operations may be required to be moved to less visible regions or painted with certain environmentally sensitive colors. Roads necessary for the operation may have to be specially routed. This will cause delays in oil and gas operations and additional operational costs.

IMPACTS TO LEASABLE MINERALS PROGRAMS - PHOSPHATE

Lands now under preference right lease for phosphate (7,650 acres) would be open to development and/or occupancy with specific restrictions to minimize adverse impacts to special status raptor species and crucial deer winter habitat.

IMPACTS TO LEASABLE MINERALS - TAR SANDS

Development of asphaltic materials in the Pariette STSA would be impacted under this alternative. In some areas leasing and development would be precluded. In others, restrictions to protect sensitive plants would limit or possibly preclude leasing and development.

Duchesne County representatives have expressed a keen interest in the STSA. A small area, of approximately 20-40 acres within the STSA of particular interest to the county, would be classified as category 3 (open to leasing with no surface occupancy) under this alternative. Other portions of the STSA are category 2 (open with restrictions). However, the relatively high density of sensitive plant species in the area could cause the area to be closed, after field examination, under this alternative. Development of asphaltic materials by the county requires surface occupancy. No surface occupancy designation of these lands effectively closes them to this activity. According to the county, extensive field searches have shown that their area of particular interest is uniquely suited to their needs. They have indicated that alternative sites do not exist.

IMPACTS TO RECREATION MANAGEMENT

From Management Actions for Cultural and Paleontological Programs

Yearlong OHV restrictions to designated roads on 2,400 acres to protect cultural sites eligible for or listed on the

National Register of Historic Places, and closing the Desolation Canyon National Historic Landmark may prevent some users from pursuing sightseeing and hunting interests. This would result in a reduction of approximately 100 visitor days annually to the area for hunting, OHV use, and driving for pleasure. These users would move to other areas on the resource area without OHV restrictions.

From Management Actions for Fish and Wildlife Habitat Programs

Restricting OHV use to designated roads on 229,400 acres of sage grouse strutting grounds (year long), nesting habitat (March 1 to April 30), deer and elk winter range (December 1 to April 30), and antelope fawning areas (May 1 to June 30), and bighorn sheep habitat (September 1 to June 30) would limit access to these areas. Driving for pleasure and use of OHVs would be affected most, some individuals that enjoy hiking or horseback riding in the areas would see a positive impact because they would encounter other recreationists less frequently. However, the majority of the users would be limited to designated roads and trails. This would affect the quality of the recreational experience people have come to expect from public lands in the area. Overall recreation uses such as driving for pleasure and OHV use would go down, by an estimated 1,050 visitor days each year.

OHV use will be restricted on 3,800 acres around the south side of Red Mountain to protect crucial deer and elk wintering areas between December 1 and March 31. This is an exception to the time period established to protect deer and elk in the rest of the resource area. This would allow OHV use to take place earlier each spring on this popular OHV area, thus filling a need for riding areas close to town. This would result in an increase of an estimated 200 visitor days annually.

If a reintroduction of black-footed ferrets is made, use by OHVs on 16,600 acres would be limited to designated roads and trails yearlong. All use would be prohibited during early morning and evening hours. This would impact antelope and small game hunting in the area. Fewer hunters would participate. This would result in a displacement of 50 visitor days for hunting each year to other parts of the resource area. This would be a long-term impact.

From Management Actions for Lands and Realty Programs

Acquiring public access specifically for vehicles or foot/horseback will provide hunters and recreationists

with additional opportunities on 77,800 acres of public lands that are surrounded by private land and currently unreachable. Increased public access would result in an increase of 7,500 visitor days to the area each year.

A protective withdrawal would be recommended for the lower Green River that would protect the corridor from mineral and agricultural development, and the staking of mining claims. This would protect scenic values over the long term.

Establishing a window where Four Mile Draw enters the lower Green River to allow a crossing point for pipelines would impact recreation use of the river corridor at that point. Disturbances created adjacent to the river during pipeline construction would be noticed by floaters going down the river. This intrusion would last about 10 minutes. It would not be significant enough to affect the proposed Wild and Scenic River designation.

From Management Actions for Minerals Programs

Development of identified high potential oil and gas areas would result in 150,900 acres currently identified as possessing semi-primitive, motorized values in the Three Corner and Myton areas, dropping one class to roaded natural in the recreation opportunity inventory. This would result in a less natural recreation experience. Individuals that enjoy more primitive remote experiences would be displaced to other areas. However, OHV use may increase as individuals displaced from other areas search for new areas where they can use their OHVs with minimal restrictions. The number of persons affected is not known at this time, but it is expected to be significant over the long term.

From Management Actions for Recreation Programs

Seventy-one (71) percent or 43,200 acres identified as having semi-primitive, nonmotorized values would be protected for the enjoyment of primitive forms of recreation. Use of these areas is expected to increase 5 to 10 percent annually over the long term.

Managing for both primitive and developed forms of recreation would provide opportunities for both people preferring primitive types of experiences such as hiking, backpacking, horseback riding, and bicycling as well as those that prefer more developed and concentrated forms of recreation. Both types of use would increase and use of public lands would be greater. It is estimated that overall use would increase approximately 5 to 10 percent a year, with the greatest increases (10 percent) taking

place on the existing Special Recreation Management Area (SRMA) in Browns Park and the proposed Red Mountain-Dry Fork SRMA north of Vernal.

Although it is expected that recreation visits will go down in areas where OHV access is limited to protect critical resource values, overall use in the resource area will not be significantly affected. Use patterns will simply change and people will move to areas with fewer restrictions.

Not allowing baiting to attract bear while hunting on public lands could limit this form of hunting to private or state property. A positive impact would be the elimination of untended baiting stations on public lands in an area of increasing hiking and day use activities.

Dropping the 40-acre Bear Hollow Recreation Site from consideration for development could, at some future point, affect recreation use in the area. It is, however, unlikely this would ever become a significant problem. There are alternate areas close by that could be used by recreationists.

Limiting OHV use on the 1,240-acre Red Mountain Recreation Site would limit use on the area to designated roads and trails yearlong. This would also lessen the conflict that is currently taking place between various recreation user groups.

From Management Actions for Soil and Water Programs

Limiting OHV use to designated roads (March 1 to April 30 and September 1 to October 31) on 74,400 acres of highly erodible and saline soils, and floodplains, could affect OHV use, driving for pleasure and, in the fall of the year, access by hunters to some hunting areas. It is expected that 1,200 visitor days to the area would be displaced to other areas because of this restriction.

From Management Actions for Special Emphasis Areas Programs

Outstandingly remarkable wild and scenic river values would continue to be protected along the upper and lower segments of the Green River. Recommending that these two river segments be designated as scenic rivers in the W&SR System, would attract increased recreation use. The upper segment through Browns Park is currently receiving heavy use (10,000 visitor days in 1991) and is increasing annually. The lower Green River segment currently receives very little use but wild and scenic river designation would cause use to increase an estimated 10 percent annually to 1,300 visitor days in 10 years.

Not identifying the middle Green River segment, two segments along Nine Mile Canyon, and one in Argyle Canyon for protection and further study, would leave the stream corridors open to uses that could damage identified outstandingly remarkable values along the corridors. It is anticipated that the impacts to these rivers would be minor because cultural resources, scenic values, and riparian areas would continue to receive protection.

From Management Actions for Vegetation Programs

Restricting OHV use to designated roads on 27,100 acres of relict vegetation communities and special status plant habitat in Pariette Draw would limit hunting opportunities. Use would be expected to decrease by 650 visitor days annually. This use would move to other areas in the resource area.

From Management Actions for Visual Resources Programs

Restricting OHV use to designated roads year long on 17,100 acres along the Green River Scenic Corridor and the lower Green River areas could limit public land users requiring vehicular access for fishing, hunting or other recreational pursuits. However, this decrease in use is expected to be more than offset by the recommendation to designate these river for inclusion in the Wild and Scenic River System. It is anticipated that use will increase at least 10 percent annually. The fishermen and hunters displaced by the OHV restrictions would be displaced to other areas.

From Management Actions for Woodlands Programs

Firewood gathering would provide family-centered recreation opportunities for 300 families on 172,800 acres. This could increase to 400 and still maintain the woodland stands.

IMPACTS TO RIPARIAN HABITAT RESOURCES

From Management Actions for Vegetation Programs

Implementing rangeland improvements and improved grazing prescriptions on the uplands would improve these riparian areas. This improvement would be accomplished by implementing prescribed grazing practices conducive

to riparian improvement, along with rangeland improvements and noxious weed eradication. Maintaining a minimum of three inches of herbaceous growth after grazing in riparian areas would insure maintenance of plant vigor, provide streambank protection, and aid in deposition of sediments to rebuild degraded streambanks. This will result in a positive, significant long-term improvement to riparian resources.

IMPACTS TO SOCIOECONOMICS

From Management Actions for Cultural and Paleontological Programs

Developing interpretive facilities at the Old Rock Saloon and Nine Mile Canyon sites and constructing a self-guided tour for the Browns Park Area could lead to a number of affects which may trigger causes with ensuing affects. Development of such facilities could attract more visitors to DMRA stimulating the local economy especially in the trade and services sectors. In addition it is probable that the contracts would be awarded locally, stimulating the construction and other sectors.

Total costs for the above developments are estimated to be about \$87,000. These projects could help stimulate contracting businesses involved in this kind of work. Such development and administrative costs may average \$45,800 annually over the life of the plan (\$5,800 development plus \$40,000 administrative).

From Management Actions for Fish and Wildlife Programs

Increasing wildlife allocation by 12,400 AUMs to 40,000 AUMs could lead to increased animals, increased hunting pressure, and ultimately to more expenditures. If there were a one-to-one relationship, this increase of forty-five percent would lead to an increase of \$1,527,750 totalling to \$4,922,750 for the fish and wildlife resource; however, this relationship may not necessarily hold true. There are many steps between the allocation of additional AUMs in the planning process and the additional expenditures by increased hunter participation, which make analysis of this procedure difficult at best. Further, increased allocation may lead to more conflicts with private landowners due to increased crop damage issues. This additional allocation would require approximately \$6,000/year.

Administrative costs for developing habitat for cavity dwelling birds, restricting activities on deer and elk crucial winter range, antelope fawning areas, bighorn sheep winter and lambing areas, and sage grouse strutting grounds could cost about \$23,000 annually.

Opening 123,800 acres for bighorn sheep reintroduction and negotiating the removal of domestic sheep to eliminate disease transmission could improve the vigor of the herd and lead to greater economic returns for the fish and wildlife resource. In 1989, 590 permits auctioned to the public have sold for as much as \$33,000, which reflects the high demand for bighorn sheep. Opportunity costs would most likely take the form of foregone domestic sheep grazing to permittees. This recommendation contrasts with the current situation which only proposes 31,000 acres for reintroduction.

Approximately \$10,000 per year would be required to administer the construction and surface disturbance restrictions for all special status raptor species under this alternative. Opportunity costs could be higher when compared to the current situation due to the .25 mile larger buffer.

Reintroduction of black-footed ferret would require about \$4,000 per year for planning. Inventory of the 16,600 acres of potential habitat in Eight Mile Flat could demand \$10,000 per year. A one time cost of \$50,000 for a release of up to 50 ferrets includes the price of ferret releases, as well as site preparation and monitoring. If this reintroduction is successful, it may provide or contribute to the data needed to ultimately delist the species, and thus no longer hamper economic development. This alternative contrasts with the current situation in only that the present scenario recommends two releases at two potential sites over the life of the plan requiring a one time cost of approximately \$100,000.

The impacts to adjoining land owners from the reintroduction of black-footed ferrets on public lands is not considered significant. Please review the DMRA guidelines for potential black-footed ferret reintroductions in Appendix 2 for further information.

Reintroduction of pronghorn antelope, moose, bighorn sheep, river otter, and upland game birds could require \$8,000 per year for planning and \$5,000 per year cost share projects. This differs with the current situation in that only \$4,000 per year for planning and cost share of \$2,000 is required now.

Improving or maintaining habitat in bighorn sheep reintroduction areas in accordance with Map 3-33 would improve the vigor of the herd and could lead to increased expenditures by hunters. These measures would necessitate \$4,000 per year for planning and \$5,000 for cost share totalling to \$10,000 per year to administer. Again this contrasts with the current proposal, which recommends about half as much for costs.

The elimination of domestic sheep grazing within 10 miles of identified bighorn sheep habitat through negotiations to change class of livestock (from sheep to cattle) could cost \$4,000 per year to administer. Again, the opportunity costs would most probably fall on the permittees with the magnitude depending upon the feasibility of such a conversion. The current situation proposes the same changes as the proposed plan and would have similar effects on the vigor of bighorn and thus on hunting revenues.

The total costs of administering the wildlife program under the proposed plan would be an additional annual cost of \$79,500 plus the one time cost of \$50,000 for the black-footed ferret release. These expenditures by the BLM may be viewed as an economic injection into the community and region. It is important to note that the cost share funding projects by BLM are matched by other parties (private groups or other governmental agencies). These monies also enhance the economic situation of the community and region. The proposed plan for the wildlife program has the third highest administration costs of the five alternatives.

From Management Actions for Lands and Realty Programs

Allowing vehicular or foot/mountain bicycle/horseback access only for recreation and/or wildlife purposes to areas described in Map 2-6 could promote these programs and their related expenditures by participants, again only after going through an intricate and interdependent process. This process would include additional access, perception of this additional access by participants, increased participation (either in number of visitors or length of activity), and the generation of additional revenues that would hopefully increase more than additional expenditures necessary for community services (such as road maintenance). Approximating costs for legal access come to about \$200/ac totalling to \$24,200 for the proposed plan. This alternative has 14 more areas and costs \$13,600 more to administer than the current alternative recommends.

Administration costs could approach \$100,000 per year if an average of 25 land use applications are processed annually.

Cost for site developments plans on Goslin Mountain, Little Mountain, and Asphalt Ridge could require a one time cost of \$16,000 to develop, this compares with the current alternative which recommends the same dollar figure, but contrasts in that it does not allow the Asphalt Ridge site. These new communication sites could

strengthen the local communities, especially the TCPU and related sectors.

Allowing level 3 and 4 lands available for major water development rights-of-way could stimulate the local and regional economy if such projects are feasible and constructed. This recommendation contrasts with the current situation, which suggests all lands within the resource area, with notable exceptions, be considered for major water development rights-of-way with restrictions. The costs would be placed upon those parties that would lose out on development opportunities under the more conservative proposed plan.

Considering 23,980 acres of isolated tracts and community expansion lands for disposal as described in the proposed plan could decrease administration costs, conflicts, and promote development opportunities for entrepreneurs and communities. This proposed plan is much more liberal than the current situation, which allows only 4,300 acres.

From Management Actions for Livestock Programs

Average annual actual use is 38,916 AUMs, which would contribute \$385,658 annually, using \$9.91/AUM. If the AUMs taken in nonuse were activated, this could result in an additional 11,383 AUMs or \$112,806 annually.

Costs to manage the current 108 grazing allotments under the category system outlined in the proposed plan would be approximately \$62,000 annually.

From Management Actions for Leasable Minerals Program

About one third of the highest potential gilsonite would be unavailable for development under this alternative due to

fish and wildlife restrictions. This could produce 5 fewer jobs and only \$351,750 of the potential \$525,000 in salaries each year. In addition, seasonal limitations could restrict development on other sites. Interviews with operators in the eastern basin indicate that a substantial number of jobs and dollars to the community could be foregone in the future under the proposed plan. This contrasts with the less restrictive Alternative A, which allows development of the Myton area.

Table 4-4 provides an estimate of the impacts to the community from proposed decisions affecting oil and gas development.

If the above forecasted wells are precluded, a total of \$4,232,750 would be lost annually to the community. Of this total 12.5 percent or \$529,130 in royalties, would be lost to the Federal government. Of these royalties collected by the federal government, half would be returned to the State of Utah. Finally, of the royalty money returned to Utah, a percentage would be returned to the counties, based upon their total oil and gas production.

Losses from precluded wells would primarily be to oil and gas companies. The loss to the counties would be a loss of royalties, severance tax, ad valorem tax, property tax, and sales tax. There also would be a loss of revenues to oil service companies and community businesses.

Opening 7,650 acres of moderate to high grade phosphate lands with the described restrictions could result in an annual employment of 350 employees and \$4 million to the community. These benefits could be jeopardized by special status raptor species and crucial deer winter habitat.

**TABLE 4-4:
ESTIMATED ANNUAL OIL AND GAS,
REVENUES FOREGONE BY THE COMMUNITY, PROPOSED PLAN**

Region	No of Precluded Successful Wells	Estimated Precluded Annual Production		Estimated Lost Annual Revenue		
		Oil	Gas	Oil	Gas	Total
Myton Bench/ Nine Mile Canyon	14	142,200 barrels	616,195 MCF	\$2,844,000	\$924,293	\$3,768,000
Horseshoe Bend/ Ashley Valley	.3	10,600 barrels	5,300 MCF	\$212,000	\$7,950	\$219,950
Clay Basin/Manila	.4	765 barrels	153,000 MCF	\$15,300	\$229,500	\$244,800

Development of tar sands in the Pariette STSA would be precluded under this alternative, which could ultimately lead to closure of some roads in Duchesne county due to increased pavement costs. According to the county, this would mean that road surfacing plans in the area would only be accomplished by importing asphaltic materials. The additional costs of importation would be between \$500,000 and \$1,500,000.

From Management Actions for Recreation Programs

Total recreation use in DMRA in 1990 was 138,800 visits. If these are classified as "dispersed site recreation" then participants may spend \$11.76/day totalling \$1,632,288; however, if these are mostly "developed site recreation", then participants may spend \$6.54/day totalling \$907,752. An average of \$1,270,020 may be spent each year on recreational pursuits in DMRA.

Administration of the OHV program could require a one time cost of \$20,000 and an annual cost of \$40,000.

Development of 5 new recreation sites and expansion of 4 existing recreation sites could donate a substantial amount of contract work to local parties. Approximately \$395,000 over the life of the plan could be spent on development of these new sites. The new recreation sites are nearly identical to the current situation and would not have a substantially different effect.

Approximately \$240,000 may be spent on expansion of recreation sites over the life of the plan. The proposed plan has one additional site (Indian Crossing) than the current situation that would be expanded.

Limited development of facilities at identified potential sites (see Table 3-14) and along the upper Green River could cost \$120,000 over the life of the plan. The current alternative does not provide for facilities along the Green River.

Development of five interpretive facilities at Diamond Hoax, Taylor Flat, Pariette Wetlands, Clay Basin Gas Field, and Brush Creek would require about \$50,000 over the life of the plan. The current situation does not provide an interpretive facility at Brush Creek.

Development of 23 miles of hiking and/or horseback trails, as described under the proposed plan may require \$46,000. Establishing 12 miles of mountain bicycle trails using existing rural roads and trails could cost \$24,000. The current alternative provides only 15 miles of hiking trails and no bicycle trails.

Maintaining the character and values of 43,200 acres of identified semi-primitive non-motorized areas (see Map 2-7) could require \$2,000 and draw recreationists interested in such values. However, this would exclude OHV use and could have an overall decrease in revenues brought into the community. The current alternative maintains only 6,800 acres at 6-Mile Draw for its primitive values.

Establishing back-country byways, as described under the proposed plan, could cost \$20,000 and draw more tourists to the area, thus increasing the probability of larger revenues to the community.

If these development totals are added up and divided by the number of years in the life of the plan, an annual cost may be estimated in this alternative equalling \$61,333. In addition, there would be \$83,000 required annually to administer and maintain these projects. Thus the estimated total annual average cost of the recreation program in the proposed plan is approximately \$144,333.

Not only will these developments cause injections into the community, but more recreationists will be able to use the area at any one time, perhaps leading to greater expenditures for local merchants.

From Management Actions for Riparian Habitat Programs

Seventy-two hundred (7,200) acres of riparian habitat, to a late or climax seral stage, would require a total of \$88,500 (12.5 miles of fence and 9 miles of pipeline).

Closing riparian areas to livestock grazing that do not respond to improved grazing management could decrease the cost effectiveness of current operations. The magnitude of the loss would be dependent upon how much feed is lost and the additional management required by permittees to maintain present income.

From Management Actions for Soil and Water Programs

Vegetation treatments outlined in the proposed plan would result in the annual retention of approximately 344,250 tons of potential sediment on site, leading to an annual savings of approximately \$24,097 (\$0.07/ton) to downstream Colorado River users. Assuming one percent of these retained sediments are salts, an additional savings of \$225,002 (\$65.36/ton) could be realized by downstream Colorado River users. Thus, total erosion savings for these vegetation treatments would equal \$249,100 per year.

Oil and gas activities in the Myton Bench-Nine Mile Canyon and Horseshoe Bend-Ashley Valley regions could result in accelerated erosion producing about 5,500 tons of sediment, costing approximately \$385 per year. Additionally, salinity reclamation costs would equal \$3,595 per year, thus the total erosion costs from oil and gas would total \$3,980. The difference between retaining the soils on site versus estimated soil loss from oil and gas activities would be \$245,119 per year.

From Management Actions for Special Emphasis Areas Programs

Designating the upper and lower Green River segments for wild and scenic river status could have long term negative impacts on future water impoundments, however since there are currently no proposals for such actions in the future no socioeconomic impacts can be determined concerning these water projects. The designation could attract tourists interested in scenic river qualities, again contributing to the business community. Similar effects may occur with the designation of the Upper Green River as a scenic river.

From Management Actions for Vegetation Programs

Under the proposed plan, numerous improvement projects will be required over the life of the plan which could be contracted out locally. The projects include 43 guzzler/spring developments, 22,950 acres of vegetation treatments, 687 reservoirs, 58 miles of fence, and 35 miles of pipeline. Costs for such improvements would total \$2.5 million or \$168,267 annually (refer to Appendix 10 for a breakdown of these costs).

In addition, approximately \$46,500 would be required annually to administer this program. Thus creating a total annual cost of \$214,767. These projects and improvements would make significant long-term contributions to the wildlife and livestock programs. It should be noted that approximately 50 percent of the funds could be contributed from permittees, UDWR, and other interested parties.

From Management Actions for Woodland Programs

If 3,700 cords are taken (1,400 more than Alternative A) and personal wood cutting permits cost \$5 per cord, BLM may take in \$18,500 annually. However, if commercial wood is sold in the Wasatch Front for \$100 per cord, individuals may forgo \$95 of cost per cord or realize a total value of \$370,000 annually. A crude benefit/cost

ratio demonstrates the large benefit to individuals wood cutters on a per cord basis, $100/5 = 20$. This does not include costs of labor, equipment, and related supplies. This activity could prove valuable to individual families in the local community due to the savings over commercial wood.

Further benefits may be obtained by harvesting Christmas trees, juniper fence posts, pinyon pinenuts, live trees, and non-barrel cactus, about 400,000 more acres are available under this plan than the current situation.

IMPACTS TO SOIL AND WATER RESOURCES

From Management Actions for Minerals Programs

Over a 15-year period, approximately 1,100 acres could be disturbed on critical soils in the Myton Bench-Nine Mile Canyon and the Horseshoe Bend-Ashley Valley oil and gas producing regions. This could cause disruption of the water cycle by exposing bare soil to wind and water, accelerating erosion. This area is difficult to revegetate due to low rainfall (less than 8 inches a year) and poor soil development. This area receives frequent flash floods which produce high runoff although total annual precipitation is minimal. Because of a difficulty in revegetating these sites, accelerated erosion could increase if an active drilling program continues. This disturbance from oil and gas operations could cause increases of soil erosion loss from two to five tons per acre per year. With five tons per acre per year increase in erosion from this activity, an additional 5,500 tons of soil per year could be lost. This impact would have significant negative impacts to the water quality of the Green River.

Phosphate leases could occur on 7,650 acres. Actual surface-disturbing activities would involve a total of approximately 500 acres. It is likely the staggered surface-disturbing activities used in phosphate mining would result in staggered revegetation actions over the life of this plan. Thus, disturbance would have a short-term negative impact, causing accelerated erosion only to the immediate area involved in active mining or in early stages of reclamation and revegetation. Successful revegetation efforts would result in positive long-term benefits by improving erosion conditions.

From Management Actions for Riparian Programs

Of the 15,650 inventoried riparian acres, 7,200 public acres in early and mid ecological conditions will be converted to late and climax ecological stage. By converting these 7,200 public acres (or 98 riparian miles), water quality would be improved, water tables would be raised, streambank stability would be increased, and downstream flood damage reduced. All these factors are seen as long-term, positive on-site and downstream watershed benefits.

From Management Actions for Special Emphasis Areas Programs

The proposed plan's decision to recommend the upper and lower segments of the Green River for inclusion in the National Wild and Scenic River System, by itself, should not significantly affect the individuals and entities holding existing water rights. However, should the recommendation be accepted and designation approved by congress, some restrictions could be imposed on the existing water users to maintain the free flowing character of the river. Any restrictions and water impoundment projects that would be affected by such restrictions are presently unknown.

From Management Actions for Vegetation Programs

Treating 22,950 acres of closed, unproductive stands of predominantly pinyon-juniper and sagebrush vegetation types would improve long-term watershed conditions by increasing ground cover by herbaceous vegetation. Estimating a long-term reduction in erosion by 50 percent, 344,250 tons of sediment would remain on-site over the life of this plan (see Appendix 8 for possible treatment opportunities by type and acres for each grazing allotment).

The ecological goal of this alternative will provide for a healthy watershed. Since optimum herbaceous ground cover occurs in a mid seral stage in juniper-pinyon and big sagebrush-mountain browse vegetation types (Wright, Neuenschwander, Britten, 1979), this alternative would provide optimum watershed benefits. About 50 percent of all additional vegetation from treatment would go for watershed maintenance thus providing a long-term benefit to watershed values.

IMPACTS TO VEGETATION RESOURCES

From Management Actions for Minerals Programs

Oil and gas activity in the Myton Bench-Nine Mile Canyon and Horseshoe Bend-Ashley Valley oil and gas regions could disturb approximately 1,100 acres (1 percent of shadscale vegetation zone). This area would be cleared over a 15-year period for well pads, facilities, access roads, and pipeline development. Because of low precipitation (less than 8 inches annually) in the area, poor soil development and difficulty of vegetation reclamation, these areas may remain in an early ecological seral stage for the long-term after vegetation is cleared. Rehabilitation efforts may be postponed 5-20 years while the well is in production, resulting in a lowered state of biodiversity including perpetuation of noxious weeds.

From Management Actions for Recreation Programs

Highly erodible soils, saline soils, and municipal watersheds and associated vegetation would be protected from OHV disturbance due to a restriction of designated road use with seasonal restrictions on 117,500 acres. Restricting OHV use to designated roads and trails in relict vegetation sites will insure site damage does not occur.

From Management Actions for Livestock Programs

Allowing grazing use after April 1 on winter/spring grazing permits only when spring grazing can be rotated, deferred, or rested would insure semi-desert vegetation vigor during the critical spring growing season.

From Management Actions for Vegetation Programs

Treating 22,950 acres of closed stands of pinyon-juniper and sagebrush community types would result in increased vegetation diversity and overall community health, while providing forage production for livestock and wildlife. A benefit derived from pinyon and juniper burning is increasing diversity of herbaceous vegetation (Severson and Rinne, 1988).

From Management Actions for Special Emphasis Areas Programs

The designation of the three relict vegetation sites as ACECs will have a long-term positive benefit to the scientific community, land managers, and the general public.

IMPACTS TO VISUAL RESOURCES

From Management Actions for Minerals Programs

Development of high potential oil and gas resources in the Nine Mile Canyon area may impact as much as 3,200 acres, or 5 percent of the 60,000 acres of Class II VRM the resource area; therefore, VRM Class II could not be maintained. Any deterioration of visual quality would be a long-term, negative impact on recreation users. These scenic areas would become less popular and visitor use would decrease. The amount of this reduction would occur over the long term and cannot be predicted.

From Management Actions for Special Emphasis Areas Programs

Designating the upper Green River as both an ACEC and wild and scenic river would increase management priority in the area resulting in Class II visual resources being maintained. Not recommending Argyle Creek for designation as a wild and scenic river and managing it to protect its outstandingly remarkable scenic values could, over time, result in a deterioration of these values on approximately 4,000 acres, or 7 percent of the 60,000 acres, of Class II scenery. Any deterioration of visual quality would impact recreation users. These scenic areas would become less popular and visitor use would go down. Users would be displaced to other areas in the resource area or to lands administered by other agencies. The amount of this reduction cannot be predicted.

IMPACTS TO WOODLAND MANAGEMENT

From Management Actions for Recreation Programs

To protect potential wild and scenic river values and special status species along the Green River Corridor, cottonwood could not be harvested from 7,400 acres within the Green River corridor between the Ashley Forest Boundary near Little Hole and the Utah-Colorado state line, or 7,900 acres from within this same corridor between Ouray and the Uintah-Carbon County line. This

would reduce the amount of cottonwood available for harvest on public lands in the resource area by 75 percent. Although other types of wood (pinyon and juniper) could be substituted for cottonwood, cutting it would cause inconveniences to the people involved. Therefore, the local demand could only be partially accommodated by DMRA.

From Management Actions for Woodland Programs

Pinyon, juniper, and cottonwood outside the Green River Corridor could be harvested for firewood to meet demand on 175,000 acres (96 percent). Juniper fence posts and Christmas trees could continue to be harvested on 172,800 (94 percent) acres to meet the local demand on 94 percent of woodland areas in the resource area. Commercial quality woodlands open to cutting on 74,700 acres could support an annual harvest of 3,700 cords over an extended period of time on a sustained-yield basis. This means an increase of 23 percent could be accommodated and still meet sustained yield goals. This would be a long-term benefit to the local economy.

CUMULATIVE IMPACTS OF IMPLEMENTING THE PROPOSED PLAN

AREAWIDE CUMULATIVE IMPACTS

The cumulative effect of implementing the decisions proposed in this plan, coupled with the already existing decisions implemented by other land-managing federal, state, and local agencies in the area, is expected to have some limited long-term negative significance. Proposed decisions resulting in new restrictions to OHV users and new oil and gas leases, when compounded with existing restrictions, could further limit OHV opportunities and curtail or preclude oil and gas exploration and development in certain areas of the resource area.

The proposed plan also offers specific and strongly worded decisions that would result in significant long-term positive support to the Basin's desire for increased recreation and tourism development. These proposed decisions are seen as being consistent with, and complimentary to, the current management plan of other federal, state, and local land managing agencies involved in the Uinta Basin.

The cumulative impacts to fish and wildlife habitat under the proposed plan alternative would be:

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- Special status raptor nest sites would be protected year-long instead of the existing seasonal protection from surface disturbing activities; a significant positive, long-term impact.
- Black-footed ferret reintroductions would be realized on one site, involving a possible maximum of 16,600 acres, aiding in the recovery of the species. This could represent 49 percent of all identified black-footed ferret habitat in DMRA.
- Approximately 88,500 acres (49 percent) of crucial sage grouse nesting habitat would be seasonally protected within two miles of all strutting grounds. This is a 31,500 acre increase over the existing situation. In addition, the protection period would increase by one month and OHV would be limited to designated roads and trails, all significant positive, long-term impacts.
- Areas authorized for the reintroduction of bighorn sheep would increase to 123,800 acres from the existing 31,000 acres, allowing a population increase from about 25 animals in one area to a minimum of 600 in four areas.
- Wildlife forage assignments would be allowed to increase 31 percent over current use to 40,000 AUMs, a significant, positive, long-term impact.
- OHV use would be restricted to designated roads and trails on 409,400 acres (58 percent of the resource area) seasonally, or yearlong. This would protect wildlife from disturbance during reproductive and other crucial periods and prevent their displacement from preferred habitats. UDWR has also reported that increased human access is directly proportional to increased poaching of wildlife. This action would

have a significant positive long-term impact for wildlife by aiding to reduce poaching and human harassment of wildlife.

The only irreversible commitment of resources for wildlife under the proposed plan would be the loss of habitat to urban expansion. Species affected include deer, elk, and non-game wildlife, and deer and sage grouse, respectively. There would be no irretrievable commitment of resources for wildlife under the proposed plan alternative.

Right-of-way construction will be affected by seasonal restrictions on the 8.5 mile corridor route (71 percent) within the Browns Park Complex. This will have negative, cumulative effects on a local scale. However, the restrictions will simultaneously mitigate impacts on crucial deer winter range, raptor habitat, cultural properties, semiprimitive-nonmotorized areas, and highly erodible soils.

It is expected that range improvements and improved management will provide sufficient AUMs to maintain existing livestock preference. Wildlife numbers could increase due to increasing available forage from 27,600 AUMs to 40,000 AUMs which could have a significant negative impact on private agricultural lands in the area. Private landowner intolerance may prevent wildlife numbers from increasing significantly.

In the proposed plan, land use authorizations would be prohibited on a total of 6,900 acres and would be discouraged on 82,800 acres. This acreage totals one percent and 12 percent of the total surface estate administered by DMRA, respectively.

The cumulative impacts to oil and gas activities under this alternative are summarized below in Table 4-5 by 1) oil and gas producing regions, 2) oil and gas potential, and 3) category (Category 3-no surface occupancy).

**TABLE 4-5:
SUMMARY OF CUMULATIVE IMPACTS TO OIL AND GAS ACTIVITIES
UNDER THE PROPOSED PLAN**

OIL AND GAS PRODUCING REGIONS	HIGH POTENTIAL				MODERATE POTENTIAL			
	CATEGORY 4		CATEGORY 3		CATEGORY 4		CATEGORY 3	
	Acres*	%**	Acres*	%**	Acres*	%**	Acres*	%**
Myton Bench-Nine Mile Canyon	0	0	11,700	8	0	0	25,400	13
Horseshoe Bend-Ashley Valley	0	0	1,400	2	0	0	9,000	6
Clay Basin-Manila	0	0	830	5	0	0	6,700	16

* Acres of public land mineral estate ** Percentage of total high or moderate potential oil and gas mineral estate for the indicated region

Referring to Table 4-4, it is estimated that approximately \$4,233,000 could be lost annually to the community. Therefore, over the life of this plan, approximately \$64 million of oil and gas earnings (before royalty and tax payments) would not be realized. From these earnings a total of \$7.9 million (12.5 percent of total oil and gas earnings) in royalty payments would not be obtained by the state and federal governments. Of this total, the State of Utah would lose total royal payments of approximately \$4 million. In turn, the counties involved in this RMP would lose total royalty payments from the State of Utah of approximately \$1 million. In addition, counties would lose revenues from associated and supporting taxes (i.e., property, sales, ad valorem, and severance).

The cumulative impacts are significant and negative in nature because (see Tables 4-4 and 4-5): 1) the amount of no surface occupancy restrictions is high, and 2) the number of seasonal restrictions is high. Generally, the significant negative impacts in the proposed plan are much greater than Alternative C and D, but are less than Alternatives A and B. In summation, the cumulative negative impacts under the proposed plan would restrict oil and gas development and subsequent economic benefits.

To protect watershed resources, soils, scenic and recreation values, wildlife habitat and nesting sites, relic vegetation, and threatened and endangered plant species habitat: 299,600 acres would be open to use by OHVs; 45,200 would be closed; 327,800 acres would be restricted seasonally; and, 36,400 acres would be restricted yearlong.

Restricting OHV use to designated areas with seasonal or yearlong restrictions, along with rangeland improvements, together will mitigate negative, cumulative, erosion impacts within the resource area.

Traffic counter and visitor register information in Browns Park indicate that visitor-use on the upper Green River corridor will continue to increase between ten (10) and fifteen (15) percent annually. This increase may create cumulative impacts on human health and safety, water quality, and aesthetic values within the river corridor.

For the sake of analysis, costs represent expenditures by BLM which go into the community, thus stimulating the economy. On the other hand, benefits are a bit less tangible which are often based on economic forecasts that may be lacking adequate data. For example, the cultural program has well documented costs for various projects and developments, however the additional use or benefits that may occur due to these expenditures is not clear, neither is the "cause or effect" relationship.

Comparison between the "costs" and "benefits" is not reasonable for a variety of reasons; the lack of comparables, interrelated resources, missing measurable benefits, and omitted industry sizes (to give perspective to alternative impacts). However, if the available benefits are divided by the available costs, a crude benefit/cost ratio may be devised. For the proposed plan, benefits are approximately twice as much as costs, making it an economically feasible option.

Treating 22,950 acres of closed stands of pinyon-juniper and decadent or closed sagebrush community types and improved grazing systems would result in increased vegetation diversity, increased forage for livestock and wildlife (approximately 3,500 AUMs), and improved watershed conditions (344,250 tons sediment left on site).

Improving 7,200 acres (or 98 miles) of riparian areas, and requiring a minimum of three (3) inches of herbaceous growth after grazing use while improving upland vegetation watersheds through rangeland improvement and improved grazing practices, would ensure maintenance of plant vigor, increase species diversity, aid deposition of sediments to rebuild degraded streambanks, thereby providing protection and increasing wildlife habitat, recreation, and watershed benefits.

Oil and gas development in the Myton Bench/Nine Mile Canyon and the Horseshoe Bend/Ashley Valley Regions could potentially increase soil erosion to 5,500 tons annually. However, seasonally restricting OHV use to designated roads, approximately 75,000 acres of critical soils, 23,200 acres of floodplain, and 19,300 of municipal watersheds, along with rangeland improvements (saving 22,950 tons annually) together will mitigate negative, cumulative erosion impacts within DMRA.

SPECIAL EMPHASIS AREA CUMULATIVE IMPACTS

Under the proposed plan, the Green River Scenic Corridor ACEC and the Red Creek Watershed ACEC would continue. The cumulative impacts attributable to the designation of the six ACEC proposals are described below. As a result of this analysis, three distinct "influence zones" within the resource area were identified:

<u>ACEC Nomination</u>	<u>Influence Zone within Resource Area</u>
Browns Park Complex Red Creek Watershed	Browns Park, Daggett County
Red Mountain-Dry Fork Complex	Population areas of Vernal, Maeser, and Dry Fork within Uintah County
Pariette	Uintah and Duchesne Counties

Lower Green River
Nine Mile Canyon
Lears Canyon

The following are the cumulative impacts affecting any one or all of the influence zones within DMRA.

The protection of areas and objects significant to the traditional lifestyle and religious ceremonies of the Ute Tribe occurring within these ACECs will have a long-term positive impact on the social diversity and thus social health of the resource area, Uinta Basin and the nation as a whole.

The reintroduction of bighorn sheep, black-footed ferrets and other historical wildlife species to these ACECs may result in long-term positive impacts. Such reintroductions may increase the biological diversity and thus overall health and stability of the ecosystems on which these species are dependent, both within the resource area and the intermountain west as a whole.

The suppression of large-scale wildfires in the relict vegetation communities of Lears Canyon and Red Mountain-Dry Fork areas will have long-term positive impacts to the regional network of native vegetation comparison areas, used for scientific research and study. The fire management objectives for the Browns Park Complex will result in long-term positive impacts to crucial deer winter and important bighorn sheep habitats by improving or maintaining desired vegetation composition and productivity. Additional positive impacts will be realized due to the reduction of hazardous fire fuel buildups, thus increasing human safety and reducing private property damage or loss in the Browns Park area.

Lands decisions involving exclusion areas and protective withdrawals in level 1 lands, and avoidance areas in level 2 lands within all the ACECs will result in long-term positive benefits to the water quality of the Green River, as well as scenic and recreational values of the remaining level 1 areas. These actions will support the tri-counties' desire to expand the tourism industry in northeastern Utah.

Continuation of livestock grazing in ACECs on level 2, 3, and 4 lands will have long-term positive impacts on the social and economic health of the Uinta Basin residents dependent on public grazing for their traditional, rural lifestyles and economic welfare. The closure or restriction of livestock grazing on the Green River through Browns Park within level 1 lands will result in less river recreator/livestock conflicts. A secondary positive benefit to the basin's economic future will be the closure of developed recreation sites to livestock grazing, areas

where recreation activities and livestock use have been perceived to be historically incompatible.

Oil and gas leasing and geophysical activities would be allowed on all lands within the ACECs, with restrictions designed to protect the identified high value resources. Significant surface disturbing geophysical activities would not be allowed on level 1 and 2 areas. The area between Ashley Creek Gorge and Dry Fork Creek in the Red Mountain-Dry Fork ACEC would be closed to phosphate development. These restrictions may pose short-term negative economic impacts on energy companies; however, the long-term positive economic gains to northeastern Utah from recovery of these minerals outweigh the short-term negative impacts. Level 1 areas within the Browns Park Complex, Lears Canyon, and Red Mountain-Dry Fork Complex will be protected under a withdrawal to preclude mining activity other than casual use. This would pose a negative long-term impact to those individuals or companies dependent on mining activity for all or a portion of their economic livelihood.

There will be impacts to the northeastern portion of the RMP area from increased visitor days due to the development of facilities in level 1 and 2 areas. Impacts may include, but are not limited to, riparian zone site damage, wildlife disturbance, and an overall lessening of recreational experiences from increased water travel, hiking, OHV use, and camping. Increased visitor days will impact human health and safety along the high intensity use areas of the Green River Scenic Corridor (Browns Park Complex) and the Desolation Canyon National Natural Landmark (lower Green River). The positive impacts to the tri-counties' economies, however, due to the increased recreation use in the area can not be emphasized enough.

Vegetation management objectives in the proposed plan relating to riparian, wildlife, and special status plant species will have positive impacts for those resources, as well as sediment control and watershed stability in the designated ACECs and adjacent areas.

Wild and Scenic Rivers

Six river segments were determined to be eligible for further study and possible recommendation for designation into the National Wild and Scenic River System (NWSRS).

They include three segments of the Green River, two on Nine Mile Creek, and one on Argyle Creek.

The proposed plan would protect the upper and lower Green River segments for possible inclusion into the

NWSRS. The middle Green River segment, two Nine Mile segments, and Argyle Creek would be dropped from consideration.

Continue Protection

Continuing to protect the upper and lower Green River segments for possible future designation as wild and scenic rivers would compliment the protection given to cultural resources by proposed ACEC designations.

Areas closed to lease operations because of no surface occupancy stipulations proposed for these two areas will have significant negative impacts on oil and gas operations, as well as on surface disturbing seismic geophysical exploration. An increase in drilling costs due to directional drilling requirements will occur. These stipulations will also increase the possibility of loss of oil and gas resources through drainage by state or private wells and loss of associated federal revenues.

Outstandingly remarkable values identified on these two segments would continue to be protected and recreation use would increase.

Designation could have long term negative impacts on future water impoundments, however, since there are currently no proposals for such actions in the future, no socioeconomic impacts can be determined concerning these water projects.

The proposed plan's decision to recommend these two segments for inclusion in the system, by itself, should not significantly affect the individuals and entities holding existing water rights. However, should the recommendation be accepted and designation approved by Congress, some restrictions could be imposed on the existing water users to maintain the free flowing character of the river.

Drop From Further Consideration

Dropping the middle Green River segment, both Nine Mile segments, and the Argyle segment from further consideration for inclusion into the NWSRS would have the following impacts:

- Even though Nine Mile Creek would not be recommended, important cultural and paleontological values would continue to be protected by the proposed ACEC designation.
- The middle Green River segment would be left open to uses that could damage identified wildlife habitat. Increases in human activity could also

displace special status raptor species which use the river corridor for nesting and hunting.

- Not identifying the middle Green River segment, two segments along Nine Mile Canyon, and one in Argyle Canyon for protection and further study, would leave the stream corridors open to uses that could damage identified outstandingly remarkable values along the corridors. However, it is anticipated that the impacts to these rivers would be minor because cultural resources, scenic values, and riparian areas would continue to receive protection.

DIRECT AND INDIRECT IMPACTS OF IMPLEMENTING ALTERNATIVE A

IMPACTS TO CULTURAL AND PALEONTOLOGICAL RESOURCES

From Management Actions for Fish and Wildlife Habitat Programs

Accidental disturbance of both cultural and paleontology resources would continue to occur as surface disturbing actions such as land treatments and water developments are completed to benefit wildlife.

Any paleontological information lost would limit knowledge of the behavior of different species of animals, their social organization, including adaptive behavior and interspecies interaction.

Any cultural information that is lost would limit our ability to understand the behavior and social structure of past societies.

From Management Actions for Minerals Programs

Accidental disturbance of both cultural and paleontology resources by activities associated with mineral exploration and development would continue to occur at approximately the current rate. This rate is unknown.

Any paleontological information lost would limit knowledge of the behavior of different species of animals, their social organization, including adaptive behavior and interspecies interaction.

Any cultural information that is lost would limit our ability to understand the behavior and social structure of past societies.