

communities and county and state coffers due to increased recreational dollars spent in the area.

There are some socioeconomic cumulative impacts in the Green River Scenic Corridor ACEC, Red Creek Watershed ACEC, Red Mountain, Nine Mile, Pariette Wetlands, and the designated Wild and Scenic Rivers. The social perception in the community is divided. Although sympathetic to conservation/preservation of these areas, many individuals would want to protect industry. Social perceptions in the communities are divided over wildlife management, visual resources, and scenic resources. Ranchers and business people oppose additional restrictions placed on their use of public land, and conservation groups want to protect ecosystems.

Vegetation management decisions in Alternative B allow only biological control of noxious weeds and insects within the ACECs. This may cumulatively affect adjacent lands, via degradation and loss of desired vegetation composition and production levels, causing economic losses to state and private landowners. In contrast, manipulating 1,225 acres of pinyon-juniper woodlands in the Browns Park Complex, Nine Mile Canyon and Red Mountain-Dry Fork Complex areas would have significant, long-term, positive impacts to crucial and/or high priority wildlife habitat, watershed, and water quality values both within and outside the areas.

### **Wild and Scenic Rivers**

Six river segments were determined to be eligible for further study in this alternative. All six were found to be suitable for inclusion into the NWSRS.

In the Lower Green River area, approximately 57 percent of the area is located in high potential federal mineral estate. Approximately 87 percent of this area will be closed to leasing and the remaining 13 percent shall have no surface occupancy stipulations. All federal mineral estate is currently leased in this area.

In the Middle Green River area, approximately 50 percent of the area is located in high potential federal mineral estate. Approximately 61 percent of this area will have no surface occupancy stipulations and the remaining 29 percent will have seasonal or controlled surface use stipulations. All federal mineral estate is currently leased in this area.

In the Nine Mile Canyon area, approximately 14 percent of the area is located in high potential federal mineral estate. Approximately 33 percent of the high potential federal mineral estate in this area will have no surface occupancy stipulations. All federal mineral estate is currently unleased in this area.

The areas noted above that will be closed to leasing will have significant negative impacts to oil and gas companies, as well as, federal, state, and local governments. The loss of oil and gas resources through drainage by state or private wells will result in a loss of federal, state, and county revenues. The areas closed to lease operations because of no surface occupancy stipulations will increase drilling costs due to directional drilling requirements.

Outstandingly remarkable wild and scenic river values would be protected along all six river segments identified as being eligible for further study and possible inclusion in the Wild and Scenic River System. This status would attract recreationists who enjoy various water based recreation activities as well as those interested in scenic and cultural based forms of recreation. The upper Green River is currently receiving heavy use (10,000 visitor days annually) and is increasing.

The other segments are currently receiving light use, but Wild and Scenic River designation will cause use to increase. It is anticipated that use on these segments would reach 2,000 visitor days in 10 years.



## **DIRECT AND INDIRECT IMPACTS OF IMPLEMENTING ALTERNATIVE C**

### **IMPACTS TO CULTURAL AND PALEONTOLOGICAL RESOURCES**

#### **From Management Actions for Livestock Programs**

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

completed for livestock. These disturbances would occur more frequently in this alternative than in other alternatives.

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 occur more frequently than in any other alternative, except Alternative D, because of the increased mineral development allowed under this alternative.

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 active management of the John Jarvie Historic District in Browns Park would allow the public to gain a better understanding of the history of this fascinating area. By preserving, displaying, and interpreting the many structures and items at the site, the public gains 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 below the Sand Wash Recreation Site would increase public awareness of the importance of John Wesley Powell's historic trip down the Green River in 1869.

Vandalism and accidental disturbance of cultural and paleontological sites would occur more frequently than in Alternatives A, B, and E, but approximately the same as in Alternative D, because fewer restrictions and increased development and use of resources would result in more

opportunities to encounter both cultural and paleontological resources.

### **From Management Actions for Special Emphasis Areas Programs**

Not designating Nine Mile Canyon, the Browns Park Complex, and the remaining portion of the Red Mountain-Dry Fork Complex as ACECs would make it more difficult to stabilize and protect the important cultural resources in these areas due to the lack of management priority for these areas. As a result site deterioration would continue and eventually some resources would be lost.

## **IMPACTS TO FISH AND WILDLIFE HABITAT RESOURCES**

### **From Management Actions for Fish and Wildlife Habitat Programs**

Overall, Alternative C is the least beneficial to the wildlife management program.

Continuing to allow permanent surface disturbance and routine human activity near active ferruginous hawk and golden eagle nest sites, even after the young have left the nest, could force these species to continually seek new, possibly less quality, nesting habitats. This would be the least beneficial alternative along with Alternative A and D for these species. It could further prevent the delisting of these species and thus is a significant negative long-term impact.

Protecting only sage grouse strutting grounds and nesting habitat within 1,000 feet of each strutting ground (3,600 acres or two percent of the total identified) seasonally could eliminate 72 percent of all sage grouse nests, reducing production. This would cause a significant long-term adverse impact to the species.

No prairie dog colonies would be maintained as potential black-footed ferret habitat and no reintroductions would be allowed. This would be a significant negative long-term impact because potentially suitable habitat would not be available for the recovery of the species. BLM Special Status Species objectives, as well as those outlined in the Recovery Plan and the Endangered Species Act, would not be met. The public comments requesting the reintroductions of black-footed ferret would also not be met.

Only 3,900 acres of existing bighorn sheep habitat (about 3 percent of the identified potential habitat) would continue to be managed for the species. An opportunity

to reintroduce bighorn sheep into additional historical habitat would be lost and the maintenance of the one existing population placed in peril. This is seen as the most significantly negative long-term impact to bighorn sheep besides Alternative D in the Draft RMP.

Big game and nongame wildlife forage assignments would be reduced from current use (35,000 AUMs) by 21 percent, to previous BLM allocated levels of 27,600 AUMs. UDWR's big game herd unit objectives would not be achieved. Planned transplants of bighorn sheep, moose, pronghorn antelope, and other species would not occur.

### **From Management Actions for Lands and Realty Programs**

No additional public access would be acquired into traditionally isolated, low human-use areas heavily used by wildlife. This is a positive, long-term impact for wildlife, and in particular, sensitive species such as black bear and mountain lion as they would not be displaced from their preferred habitats.

Allowing rights-of-way authorizations through riparian habitat as long as mitigation would improve forage would be negatively impact 14 special status species with possible road construction, increased human activity, or short-term habitat destruction.

### **From Management Actions for Livestock Programs**

Implementation of rangeland improvements outlined for this alternative which would be designed only to improve livestock forage could have an adverse impact to those wildlife species that rely on vegetation communities in a late seral stage. Rangeland improvements identified in Appendix 8 propose to convert 8,500 acres of sagebrush to grass production. This would be a 293 percent increase over the 2,900 acres identified in the proposed plan. This loss of sagebrush would be a significant, negative, long-term impact to wildlife species such as sage grouse, vesper sparrows, black-throated sparrow, Brewer's sparrow, green-tailed towhee, and sagebrush vole who rely on mature stands of sagebrush for food and cover.

Allowing livestock use in bighorn sheep habitat would increase the risk of disease transmission from livestock to bighorn sheep. This would reduce or eliminate the successful return of Rocky Mountain bighorn sheep to their native habitat within the resource area. UDWR, BLM, and Utah sportpeoples' objectives of increasing populations of this native species range within the DMRA would not be achieved. This alternative, along with

Alternative D, would have the most negative, long-term impact to this species of any alternative offered for consideration.

### **From Management Actions for Minerals Programs**

Approximately 100 percent of the known ferruginous hawk and 90 percent of the golden eagle habitat occurs within the area affected by mineral activity. Protective stipulations would protect nest sites only during the reproductive period. Before and after this reproductive period, all nest sites would be left unprotected and if rendered unusable due to human disturbance, could lead to the loss of habitat for these species and possible decline in population levels.

Approximately 77 percent (48 miles) of priority fisheries habitat, including proposed Critical Habitat for the four endangered fish in the middle and lower segments of the Green River, would not be protected from future mineral entry under protective withdrawals afforded these areas under other alternatives. Loss or severe degradation of these habitats and increased human disturbance could have significant negative, long-term impacts on these special status species.

ACEC designation would be proposed on 6 percent of the resource area to protect and enhance critical/crucial wildlife habitat on the upper section of the Green River and Red Creek only. Other critical/crucial wildlife habitat within the proposed ACECs would not be designated and thus limiting the opportunity for increased habitat enhancement and management.

### **From Management Actions for Recreation Programs**

OHV use would be restricted to designated roads and trails on 687,700 acres (97 percent) of the resource area seasonally or year long. This action would have the greatest positive, long-term impact to wildlife of all those considered in the Draft RMP. Wildlife would be protected from disturbance during crucial reproductive periods, etc., and vegetation would not be damaged by OHV use on most of the resource area. UDWR has reported a direct correlation between human access and increased poaching. This alternative would also have a significant positive long-term impact by reducing poaching efforts in the resource area.

## **From Management Actions for Riparian Programs**

Management actions for 15,650 acres of riparian habitat would provide direct long-term benefits to 14 of the 23 special status species in DMRA. 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 impacts could correlate up to a two percent population increase for over 20 big game, upland game, and non-game species. BLM objective is to have 75 percent of all riparian areas in proper functioning condition by 1997, as well as the public's concern to improve these areas could also be initiated. Thus these actions are seen to be significant to wildlife habitat management success for the resource area and the region. However, unfenced riparian areas could allow uncontrolled human and livestock use, resulting in continued deterioration of certain riparian areas in the resource area.

## **From Management Actions for Vegetation Programs**

Maintaining wildlife forage demands at their current levels of 27,600 AUMs with no increase and assigning additional forage to livestock would not allow DMRA to meet recreationists' and hunters' demand for increased wildlife numbers. Anticipated annual increases to the local economy of between \$63,400 to \$126,100 realized from increased wildlife numbers and wildlife species diversity would also not occur.

Protecting only sage grouse strutting grounds and nesting habitat within 1,000 feet of each strutting ground (3,600 acres) seasonally, could eliminate a minimum of 72 percent of all sage grouse nests, reducing production significantly, thus causing adverse impacts to the species.

## **IMPACTS TO LANDS AND REALTY MANAGEMENT**

### **From Management Actions for Fish and Wildlife Habitat Programs**

Restrictions would be imposed on lands containing active nest sites for raptor species and sage grouse strutting grounds. These restrictions would affect approximately 12,500 acres and would prohibit the construction of right-of-way projects unless the impacts could be mitigated.

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. The designation of specific corridors for future major right-of-way projects may impact those companies preferring alternative locations to some extent. 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 its capacity would essentially close off the only north-south passage from Wyoming through northeastern Utah on BLM-administered lands.

It can be expected that the counties of Daggett, Duchesne, and Uintah would not be largely affected by future acquisition of public lands as the preferred method for acquisition would be through exchange. 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.

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 exclude land use authorizations.

## **IMPACTS TO LEASABLE MINERALS MANAGEMENT - OIL AND GAS**

### **From Management Actions for Fish and Wildlife Habitat Programs**

Compared to all alternatives, this alternative and Alternative D have the least number of seasonal restrictions and will affect only 17 percent of high potential mineral estate. The following are specific discussions of these impacts.

Seasonal timing stipulations to protect deer and elk critical winter habitat will have adverse 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. This may result in altering drilling schedules of lessees which may further cause increased drilling costs.

The protection of sage grouse strutting grounds and known nests will have minor adverse impacts to exploration and development for oil and gas resources. Seasonal restrictions may result in altering drilling schedules of lessees which may further cause minor increased drilling costs.

Raptor protection zones will have minor adverse impacts to the exploration and development for oil and gas resources.

### **From Management Action for Soil and Water Programs**

OHV use and surface disturbing activities would be precluded in areas of critical (highly saline and highly erodible) soils, floodplains, and municipal watersheds during times of saturated soils (usually the spring runoff and fall rainy seasons). This would have a minor negative impact to oil and gas activities by causing delays in operations during wet periods.

### **From Management Actions for Visual Programs**

Minor adverse impacts would occur on 3,200 acres of high potential mineral estate in the Myton Bench-Nine Mile Canyon oil and gas region. The oil and gas operations may be required to be moved to less visible regions or painted in certain environmentally sensitive colors. Roads necessary for normal operation and maintenance may have to be specially routed. This could cause minor delays in oil and gas operations and additional operational costs.

## **IMPACTS TO LIVESTOCK MANAGEMENT**

Overall, Alternative C is the most beneficial to the livestock management program.

Forage assigned to wildlife would not increase and any additional AUMs created from management strategies or vegetation treatments would be assigned to livestock.

Most rangeland improvements conducted under this alternative would have a significant benefit to livestock in improved quantity and quality of forage. The greatest amount of vegetation treatment would occur in this alternative (27,100 acres), producing 3,600 AUMs. 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 and would apply to all alternatives.

## **IMPACTS TO RECREATION MANAGEMENT**

### **From Management Actions for Cultural and Paleontological Programs**

Limiting OHV use to designated roads year long on 2,400 acres to protect cultural sites eligible for or listed on the National Register of Historic Places and the Desolation Canyon National Historic Landmark would have an impact on hunters and people driving for pleasure. This would result in a reduction of approximately 100 visitor days for hunting, driving for pleasure, and the use of OHVs. These users would move to other areas in the resource area without restrictions.

### **From Management Actions for Fish and Wildlife Habitat Programs**

Restrictions on OHV use on 5,900 acres of special status raptor nesting areas would limit recreation uses such as driving for pleasure in these areas. This would result in an estimated loss of 30 visitor days to the area.

### **From Management Actions for Lands and Realty Programs**

No additional access to public lands presently surrounded by private lands would be provided, resulting in an adverse impact to hunters and recreationists. No additional recreation opportunities would be made available.

The recommendation to establish protective withdrawals on 8,100 public acres of high value recreation lands would protect scenic, historic, aesthetic and recreational values from future development over the long term.

### **From Management Actions for Livestock Programs**

Grazing within the Green River Corridor through Browns Park would greatly lower the quality of the recreation experience on 7,400 acres. Cattle would congregate along the riverbank and adversely affect the visual quality of the corridor. There would be a loss in visitor days use to the area, but the amount is not known. This impact would be significant and long term.

### **From Management Actions for Minerals Programs**

Development of identified high potential oil and gas areas would result in 165,600 acres currently identified as possessing semi-primitive, motorized values in the Three Corners and Myton areas, dropping one class to roaded natural in the Recreation Opportunity Spectrum inventory. This would change the type of recreation opportunities available in these areas from a somewhat primitive to a less natural experience. Individuals that enjoy more primitive, remote experiences would be displaced to other areas. The number of persons affected is not known at this time, but it is expected to be significant and long term.

### **From Management Actions for Recreation Programs**

Semi-primitive, nonmotorized values on 60,800 would not be protected. This is 100 percent of this type of land in the resource area. This primitive form of recreation opportunity would, over time, no longer be available due to other management actions degrading or compromising these values. Demand for these primitive types of recreation experiences is expected to increase between 5 and 10 percent annually over the long term.

Not providing additional developed facilities, such as campgrounds and picnic areas, would limit opportunities for people who prefer more developed and concentrated forms of recreation. Many of these individuals would not spend time on public lands. However, there would be additional opportunities for people that prefer dispersed types of recreation such as hiking, backpacking, horseback riding and bicycling. These types of use would increase substantially. It is estimated that overall use would increase approximately 2 to 4 percent a year.

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

### **From Management Actions for Soil and Water Programs**

Management actions to protect highly erodible and saline soils, and municipal watersheds by limiting OHV use on 94,300 acres to designated roads (March 1 to April 30 and September 1 to October 31), could adversely affect driving for pleasure and, in the fall of the year, close access by hunters to some hunting areas. It is expected that 1,600 visits to public lands in the area would be displaced annually to other areas as a result of these restrictions.

### **From Management Actions for Special Emphasis Areas Programs**

All six river segments identified as being eligible for further study and possible inclusion in the Wild and Scenic River System would be dropped from consideration and returned for uses that would benefit other users of public lands. Recreation use would not increase as it would have if Wild and Scenic River status were maintained, and over time, identified outstandingly remarkable values may be lost. This could result in a loss of up to 5,000 visitor days annually in 10 years. This would be a long term impact.

### **From Management Actions for Vegetation Programs**

Limiting OHV use to designated roads year long on 3,000 acres to protect relict vegetation communities could affect driving for pleasure and, in the fall of the year, access by hunters to some hunting areas. This would result in a displacement of up to 35 visitor days use to other parts of the resource area annually. This would be a long-term impact.

### **From Management Actions for Woodland Programs**

Firewood gathering and Christmas tree cutting could provide family-centered recreation opportunities on 183,000 acres. This is 100 percent of the woodland type in the resource area. In addition, cottonwood could be cut on an additional 17,500 acres, allowing DMRA to meet the local demand for this resource. An increase of 28 percent could be accommodated in the cutting of pinyon

and juniper in the resource area and still meet sustained yield goals.

**IMPACTS TO RIPARIAN HABITAT RESOURCES**

**From Management Actions for Riparian Programs**

Improving approximately 7,200 acres, or 98 miles, of inventoried riparian areas from an early and mid to a late or climax ecological stage would increase vegetation and wildlife species diversity and create wildlife, recreation, and watershed benefits.

Criteria for maintaining a minimum of three (3) inches of herbaceous growth after livestock grazing in riparian areas would enhance riparian vegetation productivity, resulting in streambank and water quality improvements.

**IMPACTS TO SOCIOECONOMICS**

**From Management Actions for Fish and Wildlife Habitat Programs**

Providing 27,600 AUMs probably would not lead to increased expenditures in this program. Hunter congestion may actually decrease future participation rates if number of animals do not increase along with hunter population. Number of deer to number of hunters may prove to be a function of hunter success which could directly correlate to number of hunters in the field in following years along with their affiliated expenditures.

Habitat protection is similar to the proposed plan which would cost \$6,000 to administer.

Disallowing surface disturbing activities or OHV use on sage grouse strutting grounds and nesting areas could cost \$2,000 annually.

Creating a .25 mile buffer around all special status raptor species would have the same implication as alternative A and cost \$8,000 annually.

Providing stream habitat and allow for reintroduction of river otter and upland game birds would require about \$2,000 for planning each year. Cost share would require about \$2,000 annually from BLM with other parties contributing equal amounts totalling to \$4,000 each year.

Total costs of administering the wildlife program under alternative C would come to \$28,000 annually. These expenditures by BLM, other agencies, and concerned groups may be viewed as an economic injection into the community and region. Alternative C has the lowest cost (\$28,000) of the five alternatives for the wildlife program.

**From Management Actions for Lands and Realty Programs**

Land use authorizations under this alternative would cost about \$133,333 annually to administer. There could be future constraints to development between the Wyoming and northeastern Utah corridor, which can allow only 3 more new facilities. Making 698,500 acres available for agricultural leases could promote the agriculture sector, depending upon the productivity of such lands and economic feasibility of such operations. New communication sites would be the same as discussed under the proposed plan, requiring a one time cost of \$16,000. Allowing rights-of-way for major water developments would be the least restrictive giving the

**TABLE 4-13:  
ESTIMATED ANNUAL OIL AND GAS,  
REVENUES FOREGONE BY THE COMMUNITY, ALTERNATIVE C**

Region	No of Precluded Successful Wells	Estimated Precluded Annual Production		Estimated Lost Annual Revenue		
		Oil	Gas	Oil	Gas	Total
Myton Bench/ Nine Mile Canyon	2	15,800 barrels	68,466 MCF	\$316,000	\$102,699	\$418,699
Horseshoe Bend/ Ashley Valley	.2	5,333 barrels	2,667 MCF	\$106,660	\$4,000	\$110,660
Clay Basin/ Manila	.1	100 barrels	20,000 MCF	\$2,000	\$30,000	\$32,000

most opportunities for water projects, if any are proposed. Trespass resolutions would be the same as under the proposed plan.

### **From Management Actions for Livestock Programs**

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

### **From Management Actions for Minerals Programs**

Gilsonite deposits in the Myton area would be generally available for development, which could lead to 15 additional jobs and \$525,000 each year.

Table 4-13 provides an estimate of the impacts to the community from Alternative C decisions as they affect oil and gas development.

Referring to Table 4-13, it is estimated that approximately \$561,359 could be lost annually to the community. Therefore, over the life of this plan, approximately \$9 million of oil and gas earnings (before royalty and tax payments) would not be realized. From these earnings, a total of \$1 million (12.5 percent of total oil and gas earnings) in royalty payments would not be obtained by the federal and state governments. Of this total, the State of Utah would lose total royalty payments of approximately \$557,000. In turn, the counties involved in the RMP would lose total royalty payments from the State of Utah of approximately \$139,000. In addition, counties would lose revenues from associated and supporting taxes (i.e., property, sales, ad valorem, and severance). Losses from precluded wells would be primarily 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 up 7,650 acres of moderate to high grade phosphate lands could lead to mineral development and ultimately to additional employment of 350 jobs and \$4 million each year during full production.

Tar sand development would be authorized on 66,200 acres of federal mineral estate and Duchesne county could forego between \$500,000 and \$1,500,000 annually in pavement costs, perhaps leading road paving.

### **From Management Actions for Recreation Programs**

To administer the OHV program may require a one time cost of \$20,000 and an annual cost of \$40,000.

Maintaining existing recreational facilities may require a one time cost of \$120,000 plus \$16,000 in administrative costs, and \$6,000 in maintenance costs annually.

Developing interpretive sites at Diamond Hoax, Taylor Flat, Pariette Wetlands, and Clay Basin Gas Field could demand a one time cost of \$40,000 plus \$4,000 in administrative costs, and \$1,000 in maintenance costs annually and would provide benefits identical to Alternative A.

Developing 23 miles of hiking and 12 miles of mountain bike trails as discussed under the proposed plan would require a one time cost of \$70,000 and \$12,000 in administrative costs, and \$3,000 in maintenance costs annually. It would also attract targeted participants and their associated spending patterns.

Back Country Byway specifications would be identical to the proposed plan and have a one time cost of \$20,000, \$8,000, and \$1,000 annually.

When these development totals are added up and divided by the number of years in the life of plan, an annual cost may be found, in this alternative \$18,000. In addition, there would be \$86,000 required annually to administer and maintain these projects. This additional expense would increase the total annual average cost to about \$104,000. Not only will these developments cause injections into the community, but also additional 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 Programs**

To improve the 7,200 public acres of riparian habitat to a late or climax seral stage would require a one time cost of \$88,500.

### **From Management Actions for Soil and Water Programs**

Vegetation treatments outlined in the proposed plan would result in the annual retention of approximately 406,500 tons of potential sediment on site, leading to an

annual savings of approximately \$28,455 (\$0.07/ton) to downstream Colorado River users. Assuming one percent of these retained sediments are salts, an additional savings of \$90,030 (\$65.36/ton) could be realized by downstream Colorado River users. Thus, total erosion savings for these vegetation treatments would equal \$265,688 per year.

Oil and gas activities in Myton Bench-Nine Mile Canyon and Horseshoe Bend-Ashley Valley could result in accelerated erosion of about 5,500 tons of soil costing \$385 annually. Salinity savings would equal \$3,595 and total erosion costs from oil and gas would total \$3,980.

Total savings would equal vegetation treatments minus oil and gas costs or \$261,700.

### **From Management Actions for Vegetation Programs**

Under this alternative, 10 AMPs, 12 AMP revisions, 61 guzzlers/spring developments, 657 reservoirs, 44 miles of fence, 35 miles of pipeline, and 27,100 acres of vegetation treatment would be required costing about \$2,416,700 over the life of the plan (refer to Appendix 10 for a list of estimated costs for rangeland improvements). In addition, approximately \$46,500 would be required to administer this program annually. If the total improvement costs are divided over the life of the plan, an average annual cost of \$161,113 is derived. When added to the annual administration costs, a total annual average cost of \$207,613 is generated. These projects and improvements would make essential contributions to the wildlife and livestock programs. It should be noted that approximately 50 percent of the funds will be contributed from permits, UDWR, and other interested parties.

### **From Management Actions for Woodland Programs**

Allowing 3,700 cords per year would generate the same benefits as the proposed plan, permitting individual wood cutters to forgo \$370,000 of costs from commercial wood cutters. Further benefits may be obtained by harvesting Christmas trees, juniper fence posts, pinyon pinenuts, live trees, and non-barrel cactus on 698,000 acres.

## **IMPACTS TO SOIL AND WATER RESOURCES**

### **From Management Actions for Minerals Programs**

In critical soils in the Myton Bench-Nine Mile Canyon and the Horseshoe Bend-Ashley Valley oil and gas producing regions, approximately 1,100 acres could be disturbed, causing disruption of the water cycle by exposing bare soil to wind and water, thereby accelerating erosion. This area is difficult to revegetate due to low rainfall (less than 8 inches a year) and poor soil development. Because of difficulty in revegetating these sites, accelerated erosion could increase if an active drilling program continues. This disturbance from oil and gas operations could cause an increase 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.

Oil spills or pit failures would have the potential to cause soil contamination and loss of fertility around drill sites. If the spill were significant, either in extent into sensitive areas or amount of oil spilled, contamination could enter the area's surface water system. This could result in significant negative impacts to the area's riparian ecosystem.

### **From Management Actions for Soil and Water Programs**

Restricting OHV use to designated roads with seasonal restrictions on 94,300 acres to minimize adverse surface runoff during periods of saturated soils and to protect critical (highly erodible or saline soils) and municipal watersheds would significantly benefit these valuable resources.

### **From Management Actions for Vegetation Programs**

The 27,100 acres of proposed vegetation treatments proposed would consist of juniper-pinyon woodlands and decadent sagebrush prescribed burns and pinyon and juniper firewood harvesting (refer to Appendix 8). These improvements would provide long-term watershed benefits by increasing ground cover through natural establishment and seedings of herbaceous vegetation. One benefit derived from juniper and pinyon burning is increasing diversity of herbaceous vegetation species such as western wheatgrass (Severson and Rinne, 1988). An ancillary benefit derived from this would be greater

ground cover to lessen soil movement (see Appendix 8 for treatment type and acres by allotment).

Under this alternative 50 percent of all additional forage would go to consumptive use and the remaining 50 percent for watershed maintenance, thus providing for a healthy watershed.

In Alternative C, 7,200 acres of riparian habitat would be improved. This improvement would result in on-site and downstream watershed benefits improving water quality, raising water tables, increasing streambank stability, and reducing downstream flood damage.

## **IMPACTS TO VEGETATION RESOURCES**

### **From Management Actions for Livestock Programs**

Designation of the three relict vegetation communities as ACECs, Red Mountain, Castle Cove and Lears Canyon, will be a positive commitment by management to afford priority management consideration to DMRA's foundation resource for livestock management-vegetation.

### **From Management Actions for Minerals Programs**

Oil and gas activities in the desert Myton Bench-Nine Mile Canyon and the Horseshoe Bend-Ashley Valley oil and gas regions could disturb approximately 1,100 acres. Low precipitation (less than 8 inches annually) and poor soil development in these areas creates difficulty in vegetation reclamation. Surface-disturbed sites in these areas may remain devoid of desired vegetation for years, allowing opportunities for undesired plant species such as halogeton to invade. Wells may produce for five to twenty years before any rehabilitation efforts take place.

### **From Management Actions for Recreation Programs**

Restricting OHV use to designated roads with seasonal restrictions would protect vegetation from damage on 75,000 acres of highly erodible soils and saline soils.



## **From Management Actions for Vegetation Programs**

Treating 27,100 acres would result in high vegetation diversity and forage production because most of the treatment is pinyon-juniper and sagebrush vegetation types in closed stands. A benefit derived from pinyon and juniper burning is increasing diversity of herbaceous vegetation (Severson and Rinne, 1988).

## **IMPACTS TO VISUAL RESOURCES**

### **From Management Actions for Lands and Realty Programs**

Not establishing protective withdrawals on the upper and lower Green River would leave these areas open to locatable mineral development which could cause VRM standards to be degraded. VRM Class II would be affected on the upper Green River and Class III on the lower Green River. Any deterioration of visual quality would impact recreation users. These scenic areas would become less popular and visitor use would decrease. The amount of this reduction cannot be determined.

The identified utility corridors pass through areas identified as being VRM Class II in Jesse Ewing Canyon, the Green River Scenic Corridor in Browns Park, along the Taylor Mountain Road north of Vernal, and in Nine Mile Canyon near Gate Canyon. It is doubtful adequate mitigation could be accomplished to maintain the Class II standard if transmission lines are constructed nearby. Any deterioration of visual quality would impact recreation users. These scenic areas would become less popular and visitor use would go down. The amount of this reduction cannot be predicted.

### **From Management Actions for Minerals Programs**

Disposal of mineral materials within the Green River Scenic Corridor (VRM Class II) could degrade VRM values at specific locations along the river.

Development of high potential oil and gas resources in the Nine Mile area could impact as much as 3,200 acres of VRM Class II, therefore VRM Class II could not be maintained.

## **IMPACTS TO WOODLAND MANAGEMENT**

Woodland harvesting would continue to meet demand on 183,000 acres (100 percent of the woodland stands in the

resource area). Commercial quality woodlands open to cutting on 85,500 acres could support an annual harvest of 4,300 cords over an extended period of time on a sustained-yield basis. This means an increase of 28 percent could be accommodated in the annual cut and still meet sustained yield goals over the long term.

## **CUMULATIVE IMPACTS OF IMPLEMENTING ALTERNATIVE C**

### **AREAWIDE CUMULATIVE IMPACTS**

The cumulative effect of implementing the decisions outlined in this alternative, coupled with already existing decisions implemented by other land-managing federal, state, and local agencies affecting the Uinta Basin, is expected to have no significance.

The cumulative impacts to fish and wildlife under Alternative C would be:

- Special status raptor nest sites would only be protected seasonally from permanent surface disturbing activities resulting in a significant negative long-term loss of habitat for these species. This is the same impact as Alternatives A and D.
- Black-footed ferret reintroductions would not be permitted. BLM would be neglecting its policy (Manual 6840) and the Endangered Species Act of conserving special status species habitat and aiding in the recovery of the species. This is the same impact as Alternative D.
- Approximately 36,000 acres (2 percent) of crucial sage grouse nesting habitat would be seasonally protected and only within 1,000 feet of existing strutting grounds. This would protect less than 10 percent of all nests and be a significant negative, long-term impact to the survival of the species.
- Only 3,900 acres (3 percent) of identified bighorn sheep habitat would be maintained for bighorn sheep. This would limit the population to 40-50 bighorn sheep within the resource area and be a significant negative, long-term impact to the survival and reintroduction of this native species.
- Wildlife forage assignments would remain at the current use of 27,000 AUMs which would require a 21 percent reduction from current use levels of 35,000 AUMs. UDWR herd unit objectives, as

well as future wildlife transplants, and the public's demand for more wildlife associated recreation would not be achieved.

- OHV use would be restricted to designated roads and trails on 687,700 acres (97 percent) of the resource area seasonally or year long. This action would be the most significant positive impact related to OHV use and wildlife, of all those considered in the Draft RMP. Wildlife would be protected from disturbance during reproductive and other crucial periods and vegetation would not be damaged from OHV use within most of the resource area. Limiting access would also reduce poaching of wildlife according to UDWR.

The irreversible and irretrievable commitment of resources would be the same as described in the proposed plan.

Utilizing a route for above-ground transmission lines through or near Nine Mile Canyon, in Alternative C, is inconsistent with land management objectives identified by other surface management agencies for lands adjacent to DMRA. Under this strategy, management in this area would be inconsistent with back-country byway objectives, and conflict with the special cultural and visual values present as well.

The cumulative impacts to oil and gas activities under this alternative are summarized below in Table 4-14 by 1) oil and gas producing regions, 2) oil and gas potential, and 3) level of protection (level 2-no surface occupancy).

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 Alternative C, benefits are over 10 times as much as costs, making it an economically feasible option.

The biggest cost comes from the vegetation program and the biggest potential additional benefits are from the

**TABLE 4-14:  
SUMMARY OF CUMULATIVE IMPACTS TO OIL AND GAS ACTIVITIES  
UNDER ALTERNATIVE C**

OIL AND GAS PRODUCING REGIONS	HIGH POTENTIAL				MODERATE POTENTIAL			
	MANAGEMENT LEVEL 1		MANAGEMENT LEVEL 2		MANAGEMENT LEVEL 1		MANAGEMENT LEVEL 2	
	Acres*	%**	Acres*	%**	Acres*	%**	Acres*	%**
Myton Bench-Nine Mile Canyon	0	0	120	<1	0	0	2,900	1
Horseshoe Bend- Ashley Valley	0	0	630	1	0	0	2,500	2
Clay Basin-Manila	0	0	60	<1	0	0	30	<1

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

minerals program. The lowest costs are from the riparian program with the livestock program generating the lowest potential additional benefits (which is larger than the zero benefits under fish and wildlife). The problem is with inter-connected costs and benefits, for example, the costs of the vegetation program generate benefits that show up in the livestock, wildlife, and soils programs. The magnitude of most economic impacts would be dependent upon the magnitude of the individual program changes.

The cumulative, significant, negative impacts to oil and gas activities are minimal in this alternative (see Tables 4-9 and 4-10) since: 1) the amount of lands closed to leasing or with no surface occupancy restrictions is low, 2) the number of seasonal restrictions is low, and 3) the number of areas having multiple, overlapping seasonal restrictions is low.

Referencing recreation management objectives in Alternative C, approximately 20,500 acres would be open to OHV use and 688,500 acres would be restricted to designated and/or existing roads. This could impact watershed resources, soils, scenic values, wildlife habitat and nesting sites, and special status species. 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 have cumulative impacts on human health and safety, water quality, and aesthetic values within the river corridor.

Management decisions in Alternative C to improve 7,200 acres (or 98 miles) of riparian areas, by requiring a

minimum of three (3) inches of herbaceous growth after grazing use, will insure maintenance of plant vigor, increase plant and animal species diversity, provide streambank protection and aid deposition of sediments to rebuild degraded streambanks, and augment wildlife, recreation, and watershed benefits.

Ranchers, business people and workers would support lands actions that would encourage commodity development. Recreation, cultural, and visual resource programs draw tourism, which is beneficial, but if commodity development is restrained by restrictions and special management designations, support for these resources may decline.

Oil and gas development in the Myton Bench-Nine Mile Canyon and the Horseshoe Bend-Ashley Valley oil and gas producing regions may reduce vegetation ecological conditions to an early stage, disturbing and/or eroding approximately 5,500 tons of soil per year. In reference to vegetation and rangeland management objectives, improvements on 27,100 acres of rangelands will mitigate a loss of 20,250 annual tons of sediment, and increase both vegetation diversity and forage production for both wildlife and livestock.

### **SPECIAL EMPHASIS AREA CUMULATIVE IMPACTS**

The management prescriptions for the adjoining Red Creek Watershed and Green River Scenic Corridor ACECs may create cumulative impacts in the northeast portion of the resource area. All other designated ACECs do not have significant, cumulative impacts in DMRA. The

management prescriptions proposed for the three (3) relict vegetation communities in the ACECs are small and scattered throughout the resource area, and therefore will not result in any appreciable cumulative impacts outside their immediate zones of influence, however, they may add to the overall understanding of the ecology of the Intermountain West.

Not designating the remaining ACEC proposals (Nine Mile Canyon, the middle and lower Green River, the remaining areas within the Red Mountain-Dry Fork Complex, and Pariette Wetlands) may result in long-term, negative impacts culminating in cumulative losses in recreation, aesthetics, social well being, local economics, and cultural sites within this region. Also, current and planned management under this alternative may lose sight of and/or compromise values in these local, commercial and non-commercial resources.

The protection of areas and objects to the traditional lifestyle and religious ceremonies of the Ute Tribe occurring in the Green River Corridor will have a long-term, positive impact on the social diversity and health of the people and resources area, Uinta Basin, and the nation as a whole.

Alternative C fire management objectives will give human health and safety highest priority. At the same time, however, this will allow for a build up of hazardous fire fuels, which may potentially create an even more damaging, large-scale wildfire in the reasonable foreseeable future.

Establishing a corridor for a common river crossing in level 2 lands in the Green River Scenic Corridor ACEC, and avoidance areas in level 2 lands in the Red Creek Watershed ACEC will mitigate negative, cumulative visual and watershed impacts.

There may be potential impacts to the northeast portion of the resource area from increased visitor-use days. This would be due to the development of additional facilities in level 2 areas and allowing OHV use in the Green River Scenic Corridor ACEC. Impacts may include riparian zone site damage, wildlife disturbance, increased hunting pressure, increased human health and safety risks, and an overall lessening of the recreational experience.

There are some socioeconomic cumulative impacts in the Green River Scenic corridor ACEC, Red Creek Watershed ACEC, Red Mountain, Nine Mile, Pariette Wetlands, and the designated Wild and Scenic Rivers. The social perception in the community is divided. The worker group, although sympathetic to conservation/preservation of these areas, would want to protect industry. Social

perceptions in the communities are divided over wildlife management, visual resources, and scenic resources. Ranchers and business people oppose restrictions placed on commodities, labor groups want to protect industry, and conservation groups want to protect ecosystems.

### **Wild and Scenic Rivers**

Six river segments were determined to be eligible for further study in this alternative. They are the upper, middle, and lower segments of the Green River, two segments on Nine Mile Creek and one segment on Argyle Creek.

All six river segments would be dropped from consideration and returned for uses that would benefit other users of public lands. Recreation use would not increase as it would have if Wild and Scenic River status were maintained and, over time, identified outstandingly remarkable values could be lost. This could result in a loss of up to 5,000 visitor days annually in 10 years. This would be a long-term impact.

## **DIRECT AND INDIRECT IMPACTS OF IMPLEMENTING ALTERNATIVE D**

### **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 developments 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 Livestock Programs**

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