HIGH LEVEL MANAGEMENT ALTERNATIVE

The High Level Management Alternative refers to a higher level of BLM management and involvement than either the Continuation of Existing or Low Level Management Alternatives. Depending on the specific issue, high level would mean more restrictions on development which would provide a greater degree of protection and enhancement of resource values.

Minerals

Coal

The 9,360 acres of Federal coal currently found suitable for further consideration pending further study could further be reduced if additional locally important multiple use values are identified which conflict with the coal resource. The impacts would be the same as those identified in the Low Level Management Alternative, though a smaller area would be available for leasing consideration.

Oil and Gas Leasing

Designating approximately 70,000 acres of land as sensitive would result in a greater delay between the time these lands become available for leasing, and the time the lease is issued (since non-sensitive lands are immediately available for re-leasing). It is probable that special protective stipulations would be applied to these areas. Exploration operations could be more restricted. Overall, this impact is not significant.

Land Tenure Adjustment

The disposal of certain tracts of public land would have no direct impact on mineral resources or development, since mineral rights would not be disposed of or exchanged for less than equal value. The loss of surface control might constrain mineral access or development, since the BLM or a mining company would have to obtain access into the tract. However, this is not a significant impact.

Classifications

A protective withdrawal which would segregate the lands within the Pryor Mountain area from mineral entry would result in a loss of opportunity and less incentive to prospect for locatable mineral resources.

Recreation Access

Should legal access for recreational purposes be obtained into the tracts described in this alternative, access for development of mineral resources would also be secured. This would increase BLM's latitude for developing saleable minerals (such as rock, sand or gravel) since BLM generally would not acquire or condemn access for saleable resources development.

Wilderness

Mining claims within the Twin Coulee WSA were located after the passage of the Federal Land Policy and Management Act (FLPMA), and therefore may not impair wilderness suitability. The opportunity to develop a potential mineral resource would be foregone. Mining claims located in the Burnt Timber Canyon WSU and Pryor Mountain WSA predate the passage of FLPMA, and therefore may degrade wilderness quality (though activity must still be performed in a manner so as to prevent unnecessary and undue degradation). Refer to the General Impact section, Minerals, for further discussion.

Conclusion

The eastern half of the Pryor Mountains (includes three Pryor Mountain WSAs and WSUs) administered by BLM would be closed to locatable mineral exploration and development. Though mineral potential is unknown and suspected to be low, it would be a significant impact unless actual potential were evaluated, and found to be low. Oil and gas leasing could be delayed in the designated sensitive areas. Exploration activities in these areas could be restricted.

If designated a component of the National Wilderness Preservation System, the Twin Coulee WSA would also be essentially closed to exploration and development of locatable and leasable minerals eliminating the possibility to develop the mineral resource.

Obtaining legal access for recreation purposes would also allow access for mineral exploration and development of saleable minerals. The potential for mineral deposits in the identified tracts is unknown.

There would be an irreversible and irretrievable loss of coal, oil, gas and other non-renewable resources to the extent that these resources are developed in this alternative.

Soils/Watershed (Erosion and Runoff)

Grazing Management

In the long term, watershed conditions would improve through better distribution of livestock and water sources, and manipulating vegetation in some areas of poor to fair range condition (28,383 acres). The following specifically addresses short- and long-term impacts caused by sagebrush burning. In the short term: erosion susceptibilities would be moderate to high for water and severe for wind; runoff potential would be rapid to very rapid; and average annual runoff would equal 1,607 acre-feet. In the long term: erosion susceptibilities would be moderate for water and wind; runoff potential would be medium due to increased rainfall intercept; and average annual runoff would equal 1,176 acre-feet.

The following specifically addresses short- and long-term impacts caused by mechanical treatments to native and crested wheat rangeland. In the short term: erosion susceptibilities would be moderate to high for water and severe for wind; runoff potential would be moderate; and average annual runoff would equal 565 acre-feet. In the long term: erosion susceptibilities would be moderate for water and wind due to increases in cover and roughened surface; runoff potential would be reduced to slow; and average annual runoff would equal 424 acre-feet.

Wild Horse Management

Erosion and runoff on and from the Pryor Mountain Wild Horse Range would decrease due to the improving range conditions. Runoff in the short term would average 7,057 acre-feet per year, and in the long term, would decrease to 6,742 acre-feet per year.

Timber Management

Erosion and runoff impacts from timber harvesting would be the same as those described in the Continuation of Existing Management Alternative, Soils/Watershed.

Coal, Oil and Gas Leasing, Classifications and Off-road Vehicle Use

The impacts are the same as those described in the General Impact section.

Environmental Education

Development of an environmental education site near Acton would have both positive and negative impacts. While closing the 60 acre site to ORV use would enhance the watershed condition and decrease soil erosion and runoff, there would be the potential for development of trails and parking areas. This could cause local erosion problems within the site.

Wild Horse Interpretation

Construction of a wild horse interpretive site could have slight negative impacts on watershed. The area is fragile, consisting of thin soils and sparse vegetation. There would be potential for increased soil erosion during site construction, and soil compaction if the site incurred heavy use.

Soils/Watershed (Water Quality and Streambank Protection)

Grazing Management

Water quality and streambank erosion would improve as described under the Continuation of Existing Management Alternative, Soils/Watershed. The exception to this statement is the total impact caused by vegetative manipulations. Vegetative manipulation on 28,383 acres would increase water quality pollution in the short term. In the long term, decreased erosion and runoff would reduce the suspended and total dissolved solids concentrations in streams near treatment areas. Also, leafy spurge spraying near streams could cause reduced streambank vegetation, and increased suspended solids and chemical pollutants.

Wildlife

The construction of 50 waterfowl nesting islands could cause short-term impacts to reservoir water quality. Suspended solids and turbidity would increase due to runoff from exposed soils on islands and damaged shoreline areas.

Recreation Access

If physical access for recreation purposes is obtained into the areas described in this alternative, recreation use would increase. This increase would create localized problems on segments of the 30 miles of woody floodplain types identified in Chapter 3. These problems would include streambank erosion and sedimentation to the river. Vehicular travel during wet periods would further increase the impacts.

Conclusion

Grazing management under this alternative would improve watershed conditions significantly. There would be 28,383 acres of vegetation manipulated to reduce erosion susceptibilities and runoff potentials. Wild horse management would significantly benefit watershed conditions since erosion and runoff would decrease. Due to the small area proposed for timber harvesting, impacts to watershed would be insignificant. Average annual runoff could be increased by only 0.4 acre-feet in the cutting areas.

Development of an environmental education site and a wild horse interpretive site would cause localized increases in erosion and runoff.

Water quality and streambanks would improve under this alternative. Short-term insignificant impacts to reservoir water quality would be negative due to waterfowl nesting island construction. Physical access to rivers could cause small segments of increased streambank erosion, but are insignificant.

The loss of soil in this alternative due to erosion would be irretrievable but not irreversible. There would be no irretrievable or irreversible loss of water resources.

Vegetation

Grazing Management

Improved grazing management practices would result in significant improvement in range condition and productivity, particularly on the 22 "I" allotments.

However, there are also significant actions proposed on some M and C allotments (see Table 1.8 for summary of current range condition by category).

Dense canopies of sagebrush account for 14,120 acres in the I allotment and an additional 7,400 acres in the M and C allotments. These areas would not significantly respond to grazing management in the short term. There would be some response over the long term, but trend studies in existing AMPs have shown this response to be slow. Vegetative manipulations are required on these sites to show a significant improvement in range condition in the short term. There would be a positive but insignificant response to grazing management in the absence of vegetative manipulation.

The prescribed burning of 21,520 acres combined with grazing treatments would improve 12,912 acres presently in fair and poor condition, to good and excellent condition over the long term, assuming 40% of the planned burn area would remain unburned. Sagebrush would be significantly reduced overall, but not eliminated due to the typical mosaic patterns resulting from unburned islands of sagebrush.

Interseeding practices to renovate unproductive crested wheatgrass stands would improve approximately 5,118 acres of crested wheatgrass. Forage increase estimates based on studies in Canada and Montana (Lodge, Smoliak and Johnson 1972) showed that productivity of crested wheatgrass can be doubled by interseeding 1 pound of alfalfa per acre.

The annual spraying of 45 acres of leafy spurge with Tordon would reduce its density in the treatment area (100 acres) and control the possibility of its spreading to surrounding areas. Treating this small acreage has a relatively insignificant impact on total leafy spurge problems in Carbon County. A cooperative effort between landowners and other Federal and state agencies would help control leafy spurge in BLM grazing allotments and help prevent it spreading to other lands.

Discing or chiseling treatments combined with prescribed grazing treatments would improve 1,700 acres from poor and fair, to good and excellent ecological range condition.

Proposed water developments and fences would improve livestock distribution, facilitate grazing systems and reduce grazing impacts at watering sites, particularly drainage bottoms. The 16 proposed reservoirs would inundate approximately 50 acres of native vegetation. This would decrease forage available to livestock insignificantly. Increased trampling around these watering sources would occur but improved livestock distribution would result in better range condition.

Two proposed spring developments would allow for reestablishment of riparian vegetation on areas adjacent to a permanent water supply.

A minor short-term disturbance of vegetation along 31 miles of stockwater pipelines would occur. The disturbed area is normally confined to approximately 2 feet on each side of the pipeline trench and natural revegetation would occur within 2-5 years. The 47 proposed water catchments available forage by an insignificant amount. The benefits derived from these water developments would outweigh the short-term disturbances caused during installation. In addition to providing water for livestock, the catchments would also benefit some wildlife species. The 10 proposed wells and 46 miles of fence are necessary in implementing the prescribed grazing treatments but would not directly impact vegetation. All structural improvements, though not having a direct impact, would have an indirect positive impact on vegetation if placed in the proper locations. This would be accomplished through the implementation of grazing systems. However, vegetation can be adversely affected where improperly located range improvements cause livestock concentrations, trailing and overuse.

The majority of the actions proposed under this alternative are directed toward the I allotments. All of these allotments would either have a new AMP developed or an implemented AMP revised. Improvement in range condition would be accomplished through grazing management and vegetative manipulations. Following is a summary of impacts to vegetation resulting from actions proposed under this alternative. These figures only apply to the "I" allotments.

Acres maintained in excellent condition: 3,553
Acres maintained in good condition: 29,060
Acres maintained in fair condition: 5,000
Acres maintained in poor condition: 1,495
Acres maintained as rock outcrop: 3,839
Acres improved from good to excellent: 2,995
Acres improved from fair to good: 31,161
Acres improved from poor to fair: 5,458
Crested wheatgrass renovation: 5,118

Approximately 6,600 acres in the M and 800 acres in the C allotments are proposed for sagebrush burning. This would improve 4,440 acres to good condition, assuming a 60% burn. Additionally, there are 18 implemented AMPs that would continue to improve or maintain their current satisfactory condition. As proposed improvements are installed on non-AMP allotments, vegetative condition would also improve through better distribution of livestock.

Wild Horse Management

The practices planned in this alternative would have generally the same result as the livestock grazing management systems. Therefore, the guide to predicting range site responses to grazing management (see Appendix 4.2) was used to determine long-term changes in range condition. The following results would occur in the long term:

Acres maintained in good condition: 2,775
Acres improved from fair to good: 10,221
Acres maintained in fair: 2,277
Acres remaining in poor condition: 7,900
Acres maintained unsuitable: 15,040
Acres in Wyoming maintained at current conditions (estimated fair and poor): 6,083

Wildlife Management

Fencing four reservoirs and planting 25 acres of dense nesting cover would result in insignificant but beneficial impacts to vegetation.

Timber Management

Approximately 45 MBF (20 acres) of timber would be harvested annually under this alternative. Impacts to vegetation would be mitigated through application of stipulations in the Programmatic EAR #MT-060-06-8-18.

Coal

Impacts would be the same as the Low Level Alternative though less area would potentially be available for further consideration due to further multiple use trade-offs.

Oil and Gas Leasing

Oil and gas development and production would disturb approximately 20 acres annually. The impacts to vegetation would be mitigated by stipulations detailing slope restrictions and revegetation standards.

Wild Horse Interpretation

Constructing an interpretive site and 1 mile of roadway would disturb 7 acres. This would result in an insignificant impact to vegetation.

Conclusion

A variety of methods, in addition to grazing management, are proposed to correct current unsatisfactory range condition under this alternative. The increases in range condition shown in the Grazing Management section are considered highly significant.

In the M and C category allotments, 4,440 acres would improve from fair and poor range condition to good range condition through vegetative manipulations.

Wild horse management, under this alternative, would result in the highly significant impacts to vegetation shown in that discussion.

Timber management, coal leasing and oil and gas development would have an insignificant impact on vegetation.

There would be no irreversible or irretrievable loss of vegetation resources in this alternative.

Livestock

Grazing Management

Rotational grazing systems would increase livestock stress slightly. However, this alternative would increase both the quantity and quality of forage as a result of grazing treatments and vegetative manipulations.

The higher protein forage produced from mechanical treatments would result in increases to the per-acre gains of livestock and maintaining these individual gains.

Development of crested wheatgrass for early spring pasture would provide nutritious forage 3 weeks earlier than native range (Wilson, Thomas and Jacobson, 1971). The per-acre gains could be increased as much as 50% where crested wheatgrass would be used as spring pasture (Johnson and Smoliak, 1979). Where alfalfa is interseeded, a potential for bloat would exist. Confinement of cows in these small pastures would make them more available to bulls, thus increasing the conception rate.

Additional range improvements, such as water developments, would improve distribution and reduce livestock stress by eliminating the need to trail long distances to and from water sources. Additional pasture fences would also improve livestock distribution but would contribute to stress when livestock are moved from one pasture to another.

Increased AUMs potentially available to livestock resulting from actions under this alternative is attributable to the following:

Grazing Systems:	3,120
Renovation of Crested Wheatgrass:	1,341
Sagebrush Burning:	5,910
Mechanical Treatments of Native Vegetation:	340
Total	10,711

See Appendix 4.1, Methodology for Grazing Management.

Example:

An allotment contains 1,000 acres and is geographically located in the 10"-14" precipitation zone of the western sedimentary plains. A survey indicates 500 acres are a silty range site in good condition, 250 acres are a silty range site in fair condition, and 250 acres are a shallow range site in fair condition.

Through improved grazing management, the 500 acres in fair condition would be improved to good and the remaining 500 acres already in good condition would be maintained as such.

Calculations:

Current Stocking Level

Acres silty in good condition = 500 x .3 AUMs/Acre =	150 AUMs
Acres silty in fair condition = 250 x .2 AUMs/Acre =	50 AUMs
Acres shallow in fair condition = 250 x .1 AUMs/Acre =	25 AUMs
Total	225 AUMs

Stocking Level After Improvement

Acres silty in good condition = 750 x .3 AUMs/Acre =	225 AUMs
Acres shallow in good condition = 250 x .15 AUMs/Acre=	37 AUMs
Total	262 AUMs

Land Tenure Adjustment

Lands identified for disposal in the Land Tenure Adjustment Area could result in the transfer of AUMs from the public sector to the private sector. However, using land exchanges for land tenure adjustments could reduce these AUMs. It is not known what grazing potential the acquired lands might have.

Conclusion

This alternative would result in a significant increase of 10,711 AUMs (long term) which would potentially be available to livestock. A potential loss of AUMs from the public sector to the private sector could result from land tenure adjustment. These would be mitigated by using land exchanges as the predominant method of land disposal.

There would be no irretrievable or irreversible loss of livestock resources in this alternative.

Wild Horses

Wild Horse Management

Fencing the boundaries of herd areas would restrict the opportunity for the interchange of horses. This would reduce the opportunity for genetic variation and increase the probability of close inbreeding.

Cross fencing herd areas, to create pastures for grazing systems and forced movement of horses from pasture to pasture, would greatly reduce the free roaming behavior of the wild horses.

Selection of horses to be retained for breeding and excessing would be intensified to eliminate close inbreeding.

Selection for conformation, color and genetic characteristics typical of the Pryor Mountain wild horses would produce good quality horses, appealing to the eye of the viewer and in demand by adoptees.

Controlling the sex ratio favoring studs and maintaining the number of reproductive age mares at no more than 50% of the female population would yield a 10-15% annual reproduction rate. This would reduce the number of horses requiring excessing annually since most would be retained to replace normal annual death loss.

Controlling the numbers of horses in balance with proper grazing capacity of each herd area would produce and maintain a healthy, viable breeding herd. Rotational grazing systems would result in significant increases in the forage supply. The potential carrying capacity of 179 head may be reached in the long term. Any increase in population would be based on monitoring of forage utilization and range trend improvement.

Timber Management

In the short term, timber harvest activity would cause the horses to move from the higher elevations. This would impact the lower elevation range because of the heavier grazing pressure. This would result in a potential for increased loss of soil productivity due to wind and water erosion.

In the long term, selective timber harvest within the heavily timbered areas of the horse range would benefit wild horses and horse management. Thinning the existing stands would provide an opportunity for growing additional forage for the horses. More open stands reduce the ability of the horses to hide and escape during capture efforts and data collection processes.

Oil and Gas Leasing

Wild horse habitat may be adversely affected since the horse range may be leased. The application of special stipulations would reduce the impacts caused by exploration and production.

Classifications

A protective withdrawal would result in the prohibition of mineral exploration, production and development activities. This would provide positive benefits since the wild and free roaming behavior of horses would not be disrupted. Fewer encumberances to wild horse management would result if minerals exploration and development did not occur.

Wild Horse Interpretation

In the short term, an area established for interpretation anywhere on the horse range would temporarily alter the natural behavior of the horses. In the long term, certain bands of horses may avoid the development area while others would accept its presence.

Wilderness

Wilderness designation would have an insignificant, though positive, benefit to the wild horses because intrusions on their wild and free roaming behavior would be minimized.

There could be long-term effects on wild horse management. Restrictions on new water developments could result in a slower rate of habitat improvement, less wild horses and increased operating costs.

Conclusion

Cross fencing would have significant impacts to wild horses and wild horse management. Controlling horse populations and sex ratios would result in a healthy, viable breeding herd.

A protective withdrawal would allow for continued wild and free roaming behavior of the wild horses.

In the short and long term, a wild horse interpretive overlook would have an insignificant adverse impact on wild horses.

Designation of the study units as wilderness could have significant adverse impacts to wild horses over the long term, if some range improvements could not be installed.

There would be no irreversible or irretrievable loss of wild horse resources in this alternative.

Wildlife

Grazing Management

Given no other resource constraints the proposal to burn 21,520 acres of sagebrush as part of the grazing management program could destroy 18% of the Federally managed antelope winter range in the resource

area. Sage grouse could also be significantly impacted by this burning. A total of 28 sage grouse mating grounds and associated wintering and nesting habitat on public lands could be affected. This amounts to 25% of all known grounds located in the resource area. Approximately 8% of the chukar partridge habitat could be affected by burning. Annual vegetation created by burning could benefit chukar partridge, however. Burning would result in negative impacts on nongame species dependent on sagebrush communities.

Forty-one miles of the woody floodplain zone are identified in I category grazing allotments. Improving 80% of this vegetation type to good to excellent ecological range condition through grazing management would improve an important wildlife habitat.

Constructing 16 reservoirs, 47 water catchments and 2 springs would disperse livestock and improve range condition, providing additional spring and summer forage for deer and antelope and nesting cover for upland birds, nongame birds and waterfowl. These improvements would provide water sources for nongame and upland game, particularly chukar partridge.

Livestock Management

Vegetative manipulation may have a short-term impact due to increases in surface runoff and sedimentation to water bodies, but recovery within 1 year would benefit aquatic habitat by improving watershed conditions. Likewise, improving 41 miles of woody floodplain vegetation would help stabilize water courses, filter out sediment, provide shade to live streams and help maintain a base flow in perennial streams.

Developing 16 new reservoirs would result in a loss of 50 acres of habitat. This impact would be insignificant when compared with the opportunities for allotment management plans prior to their implementation.

Wild Horse Management

Impacts from wild horse management under this alternative would be the same as those described in the Continuation of Existing Management Alternative.

Wildlife Management

Projects such as installing 20 watering catchments would improve chukar partridge, sharptail grouse, sage grouse and nongame habitat. Each water source expands available chukar partridge range by an estimated 320 acres.

Constructing 50 waterfowl nesting islands, fencing or partially fencing 7 reservoirs and seeding 25 acres of dense nesting cover would increase waterfowl production by approximately 350 ducks annually.

Additional raptor nesting sites would provide nesting for approximately 20 pairs of birds.

Fencing seven reservoirs would enhance adjacent aquatic habitat by reducing livestock trampling and thus sedimentation. The construction of 50 waterfowl nesting islands may add sediment and increase turbidity in those specific reservoirs. Riprapping the islands would minimize erosion caused by wave action. The addition of three fisheries reservoirs increases this fishing opportunity by 60%.

Timber Management

Impacts from timber management under this alternative would be the same as those described in the Continuation of Existing Management Alternative except that less area would be available for further consideration due to possible multiple use trade-offs.

Land Tenure Adjustment

The identification of over 59,000 acres in the resource area as suitable for exchange affords a significant opportunity to acquire lands with more desirable wildlife habitat. Disposal, through sale, could mean the loss of wildlife habitat if land uses change, and would preclude the opportunity to acquire other wildlife habitat through exchange.

Classifications

Impacts resulting from mineral segregation are the same as those described in the Continuation of Existing Management Alternative.

Recreation Access

Acquiring recreation access into areas secluded from the public would eliminate the security of the wildlife species in those areas. Additional access could force the movement of some species and reduce the populations in these isolated tracts of public land.

Access to public lands would also accelerate streambank erosion and sedimentation which may degrade aquatic habitat. In most areas this impact would not be significant due to the absence of water sources.

Off-road Vehicle Use

Restrictions on 139,800 acres of public lands in Musselshell and Carbon Counties would result in a significant increase in the acreage protected. As such, wildlife would benefit from reduced harassment that might result from recreational ORV use.

Off-road vehicle restrictions would also help maintain good watershed conditions, thereby reducing erosion and sedimentation into aquatic habitats. However, these positive impacts would be insignificant due to the limited amount of water sources in the areas proposed for closure.

Conclusion

Burning 21,520 acres of sagebrush could potentially adversely affect 18% of the winter antelope habitat, 25% of the sage grouse mating grounds and 8% of the

total chukar partridge habitat on public lands. However, the growth of annual vegetation created by burning could benefit chukar partridge and antelope.

Improving the woody floodplain zone through grazing management and water developments for livestock and wildlife would significantly improve wildlife habitat.

Proper stocking levels of wild horses and intensive management of the range could improve range conditions and wildlife habitat in the Pryor Mountain Wild Horse Range. This would be insignificant.

Twenty water catchments would significantly increase available chukar partridge range by 6,400 acres. Constructing 50 waterfowl nesting islands, fencing reservoirs and seeding dense nesting cover would result in an annual significant increase of 350 ducks.

Coal development would have insignificant adverse impacts to the available wildlife resources in the long term. Through application of the coal unsuitability criteria, mining plans and strict reclamation stipulations, impacts are not expected to be significant. However, there would be additional habitat disturbances occurring away from the mining site associated with development of access roads and transportation of coal.

The use of land exchanges to acquire lands with higher wildlife habitat values would enhance opportunities for wildlife habitat management.

Segregation through a protective withdrawal in the Pryor Mountain area would prevent surface disturbances attributable to mining and provide security for some wildlife species.

Restrictions on off-road vehicle use in Musselshell and Carbon Counties would result in habitat protection and reduced wildlife harassment.

There would be no irretrievable or irreversible loss of wildlife resources in this alternative.

Recreation

Grazing Management

Range conditions would improve more rapidly and may likely reach their optimum level with this alternative. Wildlife habitat conditions for upland birds, antelope and deer would also improve and result in increased hunting opportunities.

Wild Horse Management

An additional 20 miles of fenceline would be proposed, which may restrict cross-country access. Improved range conditions would produce similar results to those described above.

Wildlife Management

Three new fishing reservoirs would be proposed. This would increase fishing opportunities in an area where the demand for fisheries exceeds the supply.

Timber Management

Classifying 15,607 acres as protection areas would play a major role in preserving the recreational quality of these areas.

Land Tenure Adjustment

The Land Tenure Adjustment impacts would be the same as those described in the General Impact section.

Recreation Access

Physical and/or legal access would be sought into 10 areas. This would help meet local and regional demands for access to public lands.

Off-road Vehicle Use

Most of the designations would result in only minor impacts, since ORV opportunities are limited. The ORV designations for the South Hills would help resolve conflicts between landowners and recreationists, yet provide an area close to Billings for recreational use. The limited designation for northern Musselshell County would restrict cross-country travel (this is only significant during hunting season).

Wild Horse Interpretation

An interpretive overlook may assist the public in developing an understanding of BLM's wild horse management objectives.

Conclusion

Range and wildlife habitat conditions would improve significantly, resulting in a probable increase in wildlife populations and hunting opportunities. Reservoirs may be converted into fisheries as well as livestock and wildlife watering sources.

The recreational quality of public lands would be preserved in the 15,607 acres classified for protection.

Some of the local and regional demand for access to public lands would be met should BLM obtain access to 10 identified tracts.

Off-road vehicle designations wouldn't affect recreational use. However, the two designations in the South Hills would provide an area for recreational use with reduced conflicts between recreationists and adjacent landowners.

A wild horse interpretation site would significantly increase public awareness of BLM's wild horse management program in the area.

There would be no irreversible or irretrievable loss of recreation resources in this alternative.

Visual Resources

Grazing Management

Installing 16 reservoirs would result in moderate negative impacts in the short term. In the long term, these projects would enhance the visual quality by producing additional vegetation.

Installing 47 water catchments would impact visual qualities but would be designed to meet VRM class guidelines. Negative impacts would result from numerous range project proposals. Two spring developments, 10 wells, 31 miles of pipeline, 44 miles of fence, 6,818 acres of mechanical treatment, 21,520 acres of sagebrush burning and 45 acres of noxious weed spraying would negatively impact visual resources in the short term. The majority of these projects (70-80%) are located in Class III and IV visual classification areas. The cumulative impact of these proposals would detract from scenic quality and could lower Class III areas to Class IV. Grazing treatments would have the long-term potential to improve scenic quality through increased vegetation and improved watersheds, especially in Class IV landscapes.

Wild Horse Management

The large number of developments (15-19 miles of fence and 7-8 water projects) would result in high to medium negative impacts. Increased numbers of horses and placement of additional range improvements, would result in beneficial impacts in terms of increased vegetation in the long term.

Wildlife Management

The large number of proposed projects (20 water catchments, 50 waterfowl nesting islands, 7 reservoirs, 20 raptor nests and 3 fish ponds) would primarily be located in Class III and IV visual areas. These proposals would be designed to meet VRM class guidelines.

Timber Management

Timber management proposals would result in positive impacts to visual resources. The annual allowable cut of 45 MBF would be insignificant. The visual qualities would be protected on 15,607 acres.

Coal

Impacts to visual resources would be the same as those described in the Low Level Management Alternative.

Oil and Gas Leasing

There would be minimal impacts under this alternative. The majority of the activity would be in Class III visual areas and would meet the VRM class guidelines. Visual quality in the 70,000 acres within the special stipulation areas would remain static.

Classifications

Classification impacts would be the same as those described in the General Impact section.

Recreation Access

Providing access into 10 areas would have a slight negative impact on visual quality because of the possibility of increased littering and vandalism. The presence of roads would also degrade visual quality. Restricting ORV use in these areas to existing roadways would reduce the impact.

Off-road Vehicle Use

Restricting off-road vehicle use over 139,870 acres would benefit visual resources.

Wild Horse Interpretation

The proposed parking lots, roads and building would have a negative impact to the visual resources in a localized area.

Wilderness

Wilderness designation would ensure the preservation of visual quality by prohibiting impairing activities.

Conclusion

The impacts to visual resources under the grazing and wildlife management proposals would be insignificant. Most of the proposed developments are located in Class III and IV visual classification areas. Proposed vegetative treatments would improve visual qualities in the long term.

Intensive management of the wild horse herds in the Pryor Mountains would result in short-term negative impacts. In the long term, vegetative conditions would improve, thereby improving visual qualities.

Withholding 15,607 acres of commercial timber lands from potential harvest would preserve scenic qualities.

Additional recreation access would have a negative, but insignificant, impact on visual quality. ORV restrictions would play an important role in preserving visual qualities.

Visual qualities would be negatively impacted in the vicinity of a wild horse interpretive overlook.

Wilderness designation would preserve visual resources.

There would be no irreversible or irretrievable loss of visual resourses in this alternative.

Cultural Resources

Grazing Management

Discing, crested wheat seeding, spring developments and reservoir, water catchment, pipeline and well construction would disturb 1,842 acres. This total excludes 5,365 acres presently planted into crested wheat and assumed to be already disturbed. Nine cultural resource sites may be encountered. Seven sites would be avoided; two would be mitigated.

Wild Horse Management

Water catchment construction would disturb 4 acres. There is less than 1% probability of encountering cultural resources.

Wildlife

Water catchment and fish pond construction would disturb 14 acres. There is a 2% probability of encountering cultural resources. Any site would be avoided.

Timber Management

Cutting 20 acres of timber a year would disturb 500 acres in the long term. There is a 78% probability of encountering a cultural site. The site would be avoided.

Coal

In the long term 365 acres would potentially be disturbed. There is a 56% probability of encountering a site. Impacts to the site would be mitigated through either avoidance stabilization and protection of resource values or data recovery.

Oil and Gas Leasing

Drilling 10 wells a year would disturb 500 acres in the long term. Two sites may be encountered, and both would be avoided.

Land Tenure Adjustment

The disposal or exchange of approximately 49,809 acres may impact 168 cultural sites. Based upon current inventory information and professional judgment, it's assumed that 5% of sites located within the current assessed disposal and exchange area would be highly significant and/or rare, and best kept within Federal ownership for the public. Therefore, eight sites would be avoided through ownership retention. The 160 remaining sites may or may not qualify for the National Register of Historic Places. Those that do would be mitigated if the budget permits (see Appendix 4.7), or transferred out of Federal ownership after consultation with the Advisory Council on Historic Preservation (36 CFR 800). Those that do not qualify would be transferred along with the acreage.

Recreational Access

The BLM is unable to quantify recreational access impacts. However, vandalism to acquired or existing sites may result from recreational use.

Off-road Vehicle Use

Except for restricted areas, the BLM is unable to quantify ORV impacts to the majority of the lands in the resource area open to such use. However, vandalism and site deterioration may result from ORV traffic.

Environmental Education

Development of the Acton area would disturb a small portion of the 60 acre tract. There is a 9% probability of encountering a cultural site, which would be avoided.

Wild Horse Itnerpretation

Development of a wild horse overlook in the southern ½ of the Pryor Mountain Wild Horse Range would disturb 7 acres and has the potential to directly and indirectly impact seven sites, one of which is eligible to the National Register of Historic Places.

Wilderness

Wilderness designation would also reduce potential ORV impacts and vandalism to 44 sites.

Conclusion

Anything less than 5% probability of encountering a cultural site has not been computed.

The proposals in this alternative would disturb or impact 11,943 acres. One hundred and eighty-nine sites would be encountered. Twenty sites would be avoided; 4 sites mitigated; and 165 sites mitigated or transferred out of Federal ownership. Due to mitigating practices, these impacts would be insignificant. Any site inadvertently destroyed in this alternative would be irretrievably and irreversibly lost.

Wilderness

Grazing Management

Twin Coulee WSA—There would be no significant impacts to wilderness values from proposed grazing management actions. Only 600 acres of the study area is used for livestock grazing with 69 AUMs licensed. There are no proposals for range improvement projects.

Pryor Mountain WSA, Burnt Timber Canyon WSU, Big Horn Tack-On WSU—There would be no impacts on wilderness values as none of the lands in the three study units are licensed for domestic livestock grazing.

Wild Horse Management

Pryor Mountain WSA, Burnt Timber Canyon WSU, Big Horn Tack-On WSU—Intensive management of the Pryor Mountain wild horses would improve range condition and should allow a healthy population to increase in size. Both of these factors would benefit wilderness characteristics. Intensive development, such as forced movement of horses from pasture to pasture, installation of water catchments (one proposed in Pryor Mountain WSA), boundary fences (17-19 miles of boundary fence and 2 miles of cross fence) in the Pryor Mountain WSA, could slightly impair wilderness characteristics. It is highly unlikely that these projects would be foregone with designation as none of them would be so extensive as to impair the apparent naturalness of the three areas.

Timber Management

Twin Coulee WSA—Timber management in the Twin Coulee WSA would not impact the wilderness qualities as there would be no harvest under this alternative.

Pryor Mountain WSA, Burnt Timber Canyon WSU, Big Horn Tack-On WSU—All acreage including the 600 forested acres in Pryor Mountain WSA would be protected. Timber management would be a benefit to preserving wilderness values with this alternative.

Oil and Gas Leasing

Twin Coulee WSA—There would be no significant impacts to wilderness values from oil and gas leasing. Impacts would be the same as those discussed in the Continuation of Existing Management Alternative.

Pryor Mountain WSA, Burnt Timber Canyon WSU, Big Horn Tack-On WSU—Leasing oil and gas in the Pryor Mountain complex, with special stipulations to protect natural values through stringent rehabilitation, would probably result in no significant impacts to the wilderness values present. The BLM considers the potential for discovery of oil and gas reserves to be low and the probability of exploration and/or development is also low.

Wilderness Management

Twin Coulee WSA—Wilderness designation would result in the protection and preservation of 6,870 acres. However, as discussed in Chapter 3, Evaluation of Wilderness Quality, this WSA, while containing outstanding opportunities for solitude, has little else to offer in enhancing the quality and diversity of the NWPS. The area has little opportunity for primitive recreational use. There are some scenic vistas in the WSA, but because the area consists of a series of deep parallel drainages with dense stands of timber, these vistas are limited.

Since there are no valid existing rights and the entire block contains public lands, the area would be manageable as wilderness over the long term.

Pryor Mountain WSA—Wilderness designation would result in the protection and preservation of 16,927 acres. This WSA contains exceptional opportunities for solitude and offers diverse primitive recreation opportunities. There are a number of special features described in Chapter 3. All of these qualities would combine into one outstanding area which would enhance the quality and diversity of the NWPS.

The entire WSA is included in the Pryor Mountain Wild Horse Range and as such is managed to retain its wild character. Wilderness designation would ensure long-term legislative protection of those values. Because of its size, lack of resource conflicts and the fact there are no inholdings, this area could be managed as wilderness.

Burnt Timber Canyon WSU—Wilderness designation would result in the protection and preservation of 3,950 acres. Like the Pryor Mountain WSA, much of this area possesses outstanding wilderness values. There is one area of approximately 525 acres in the southern tip of the area which lacks vegetative screening, contains the remnants of uranium prospecting and would offer little to the quality and diversity of the wilderness system. Because of its size, the 3,950 acre area could be best managed in combination with the contiguous Lost Water Canyon U.S. Forest Service Wilderness Study Area. Other than its small size, there are no resource conflicts or landownership patterns which would affect the long-term manageability of the area as wilderness.

Big Horn Tack-On WSU—Wilderness designation would result in the protection and preservation of 4,550 acres in two separate tracts. As discussed in Chapter 3, Evaluation of Wilderness Quality, this area, while containing some outstanding opportunities for solitude, is affected from offsite sights and sounds. The area is not of sufficient size or configuration to be managed as wilderness on its own. With this alternative, the area is only suitable for wilderness designation if the contiguous Park Service study area is designated as wilderness.

Conclusion

In the case of Twin Coulee WSA, there are few resource conflicts which would affect the ability to manage the area as wilderness. However, the quality of the area is such that inclusion in the NWPS would do little to increase the quality or diversity of this system.

The Pryor Mountain WSA and Burnt Timber Canyon WSU contain no resource conflicts which would affect their long-term manageability. Both areas contain outstanding opportunities for solitude and primitive recreation as well as a number of special features. Both areas would enhance the quality and diversity of the NWPS.

The Big Horn Tack-On WSU contains some outstanding opportunities for solitude and primitive recreation. The area is too small to be managed as wilderness unless the contiguous National Park Service study area is designated a component of the National Wilderness Preservation System.

There would be no irreversible or irretrievable loss of wilderness resources in this alternative.

Social

Grazing Management

The social well-being of the families dependent upon the 43 affected ranches would improve in the long term. Eleven of these operations fall into the small herd size category where the positive effects would be greatest. Since the proposed actions would be developed jointly by BLM and the operator, it's anticipated that the affected operator's attitudes would be positive.

Coal

The coal impacts are the same as those described in the Low Level Management Alternative.

Attitudes Toward the Alternative

No specific information on attitudes toward this alternative has been collected. This alternative proposes higher levels of BLM management and involvement, with more restrictions on development and greater protection of the environment. These actions may be viewed by some as unwarranted governmental interference and control. Others may consider these actions necessary in order to provide adequate resource protection.

Based on the attitudes toward specific issues (Chapter 3, Social and Economic Conditions) it appears that those individuals and groups concerned with environmental protection would support many aspects of this alternative. These include the restrictions on timber harvest, oil and gas leasing and the deletion of additional coal because of multiple use constraints, the retention or development of two environmental education sites and the enhancement of wildlife habitat. Some individuals may favor the proposal to designate the four areas under study as part of the National Wilderness System. They would probably favor land exchanges where high value recreation land or wildlife habitat was acquired, but oppose land sales.

Individuals and groups concerned with resource development may feel the increased restrictions on timber harvest, oil and gas leasing and land to be made available for coal leasing would hinder development. They may oppose the inclusion of the four areas in the NWPS. In addition, some individuals may favor the increase in land sales while others may feel this could create problems with resource development.

Ranchers would react positively toward this alternative because it increases the number of AUMs available for livestock. Individuals who are concerned about coal development would favor the inclusion of environmental, economic and social planning steps in determining the land to be made available for coal leasing. Individuals or groups who wish to purchase public lands would favor the increase in land sales proposed in this alternative.

Ranchers who are not currently in a position to purchase public lands may be concerned about increases in sales.

Recreationists would react positively to this alternative because it includes increased hunting and fishing opportunities and increased access. Depending on many factors, this group would be divided on whether wilderness designation would increase or decrease recreation opportunities.

Individuals who favor intensive management of the wild horse herd and development of the wild horse interpretive overlook would favor this alternative.

Conclusion

The social well-being of the families dependent upon the 43 affected ranches would improve in the long term. Moderate impacts to the social organization in Fromberg could occur due to the development of the subsurface mine. This alternative would probably be viewed favorably by individuals and groups concerned with environmental protection. However, those individuals concerned with resource development may feel this alternative proposes too many restrictions on development.

Economics

Grazing Management

Ranch Related Economic Impacts: See Appendix 4.1 for an explanation of the methodology used in this section.

The short-term impact on ranch income in this alternative would be minimal. The only identifiable change in AUMs would be the temporary disruption of grazing as mechanical treatments are applied or grazing systems implemented.

In the long term, 43 ranches would show an increase in income due to a 38% increase in BLM AUMs. These increases are shown in Table 4.8 by representative size category. The average change in net annual income for the representative livestock categories ranges from an increase of $380 on small operations (13% of their current livestock income) to $2,400 on very large operations (4% of their current livestock income).

Increased income resulting from increases in BLM forage would improve the economic well-being of operators in a number of ways. Those individuals who might have diverted funds for allowance for depreciation, deferred maintenance or deferred principal and interest payments would be in a position to use more funds for these purposes. Increased income might also be used to raise the living standards of some operators.

In this alternative, permit values would increase $7,300 for the small operations, $18,600 for the medium operations, $25,000 for the large operations and $37,500 for the very large operations in the long term. This represents a 38% increase in permit value for each representative size category. These increases would have a beneficial effect on ranchers' borrowing capacity and the sale value of affected ranches. There would be no short-term change.

Timber Management

The existing annual cut of 45 MBF would continue to meet local demand for BLM timber and have no impact on earnings and employment related to wood products. The current annual cut is less than 1% of the total volume received by sawmills in the resource area for 1981.

Coal

Economic impacts are the same as those described in the Low Level Management Alternative.

Land Tenure Adjustment

An adjustment in landownership pattern could mean a decrease of payment in lieu of taxes (PILT) to counties involved. The PILT funds for the State of Montana have decreased 65% from 1979 to 1982. Those counties which contain large Federal acreages would be in a somewhat better position in terms of property tax revenues if some public lands pass into private ownership since PILT payments are less than property tax payments.

Wilderness

All the study areas would be recommended for wilderness designation under this alternative. There are 600 acres with 69 AUMs licensed in a single allotment (#4936) in the Twin Coulee WSA while the other study areas are not grazed by livestock. Wilderness designation would have a negligible impact on grazing activities since this use would continue. There is no timber harvesting occurring in the areas and none is planned under the Continuation of Existing or High Level Management Alternatives. Therefore, no additional timber values would be foregone. There are 166 mining claims in the Twin Coulee WSA and accessibility and exploration of known deposits might be inhibited by vehicle use restrictions.

Information necessary to calculate the value of minerals is not available for the study areas.

Conclusion

In the long term, 43 ranch operations would have increases in income due to increases in BLM AUMs. These income increases range from 13% on small operations to 9% on large operations. The High Level Management Alternative would have an impact on the economy of the area due to coal development. The community of Fromberg would experience some increase in economic activity while other areas would experience little or no impact. It is expected that the impact of a population influx on community services in Fromberg would be minimal. Other resources would have little or no impact on employment and earnings in the resource area.

There would be no irreversible or irretrievable loss under this alternative.

TABLE 4.8: ESTIMATED LONG-TERM IMPACTS OF THE HIGH LEVEL MANAGEMENT ALTERNATIVE ON NET ANNUAL RANCH INCOME ON AFFECTED RANCHES

Ranch Size Category	Size by # of Brood Cows	# of Ranches	Average Increase BLM AUMs Per Ranch	Average Annual Net Income Per Ranch	Change in Income $	Change in Income %
Small	1-100	11	73	$2,846	380	13.3
Medium	101-250	14	186	$10,662	1,209	11.3
Large	251-499	7	250	$24,501	1,600	6.5
Very Large	500-up	11	375	$65,341	2,400	3.7

Source: BLM, 1982