SUMMARY OF ENVIRONMENTAL CONSEQUENCES BY ALTERNATIVE

A comparison of the impacts on major resources is presented in Table 2.6. There would be no significant impacts and no significant difference in impacts between alternatives for climate, topography and geology, and these components are not included in the summary table.

Quantification of resource factors is given when possible. The reference point for determining change is the existing situation. During the years 1984-1991, the selected alternative or combination of alternatives would be implemented. Short-term impacts are those that would occur during this implementation period. Long-term impacts would occur by the year 2009. The following discussion emphasizes the most significant impacts by alternative.

Proposed Land Use Plan

Improvement of ecological range condition on the "I" category allotments would increase significantly in the long term due to improved grazing management and proposed range developments. The acreages in excellent and good range condition would increase by 84% and 88% respectively and range in fair and poor condition would decrease by 71% and 78% respectively. Within the "M" and "C" category allotments, range in good condition would increase by 4% and range in fair and poor condition would decrease by 6%. This would be accomplished primarily from sagebrush burning on 7,400 acres within these allotments. Vegetation allocations to livestock would increase by 17% over the long term.

Without a rest rotation grazing system, current ecological range conditions in the PMWHR in Montana would remain static with a slight upward trend in the long term on the existing 38,213 acres. Range conditions on the remaining 6,083 acres in the PMWHR in Wyoming would remain static. Management cost would increase moderately. These acreage figures include BLM, Forest Service, NPS, state and private lands.

Land tenure adjustment could result in a reduction of approximately 49,809 acres currently under Federal management. Given the new management policy of land exchange as the predominant method of land disposal, this acreage figure would be greatly reduced. In addition, lands acquired by exchange would be more desirable in terms of public resource values and benefits.

Surface disturbances could result in a loss of 3,483 acres of native vegetation in the short term. Grazing management, reseeding and rehabilitation could reduce this figure significantly in the long term.

Spraying with Tordon would decrease leafy spurge on 100 acres in the short term.

The amount of timber harvested would be 560 thousand board feet in the short term and 1,190 thousand board feet in the long term. Areas protected from commercial timber harvest would decrease by 34% leaving 9,500 acres protected.

Wildlife habitat would improve moderately in the short term and significantly in the long term. Additional livestock watering sources would expand wildlife habitat moderately on "I" category allotments. Burning 21,520 acres of sagebrush in small parcels over a large geographic area would slightly decrease chukar and sage grouse habitat in the southern part of the resource area. Burns conducted in the northern part of the resource area in several years time may slightly increase nesting and feeding habitats for sharp-tailed grouse. Chukar partridge habitat would expand by 1,600 acres due to additional wildlife watering sources. Development of reservoirs and nesting islands, fencing of selected reservoirs and the planting of 25 acres of dense nesting cover would significantly expand waterfowl habitat, resulting in an increase of an estimated 350 ducks annually. Nesting cover for upland game birds would increase on an estimated 57,900 acres due to decreased ORV use. Ecological range condition on 80% of 41 miles of woody floodplain zone would improve or be maintained at good and excellent condition. Wildlife harassment and relocation levels would increase moderately through the short and long term. Aquatic habitat would increase significantly due to livestock reservoir and fishery developments. Sedimentation in aquatic habitat would significantly decrease. Competition for wildlife forage and habitat would decrease moderately due to improved grazing management.

Coal reserves (40,000 tons) from the existing surface coal lease in the Bull Mountains would be depleted in 4 years, but emergency leases would continue current production. An anticipated additional surface mine in the Bull Mountains would deplete reserves by 4,350,000 tons in the long term. This represents approximately 3% of the total coal reserves in the area, and is considered insignificant. If additional multiple use considerations are identified they would further reduce the 9,360 acres currently found acceptable for further consideration pending further study. An anticipated underground mine in the Joliet/Fromberg area would deplete reserves by 630,000 tons in the short term and 2,550,000 tons in the long term. Total coal reserve figures for this mine are unavailable at this time.

Oil and gas would be leased with standard stipulations on 579,443 acres and special stipulations on 70,000 acres. There is also a strong probability that some areas would not be leased. Nine hundred and eighty (980) acres would be segregated against locatable mineral entry.

Watershed conditions would improve significantly due to intensive grazing management and an improvement in ecological range conditions. Water quality would decrease in the short term due to waterfowl nesting island construction. In the long term, water quality would increase due to decreases in sediment yield.

Hunting opportunities would increase significantly because of wildlife habitat improvement and expansion plus additional access to public lands. Fishing and floating opportunities would increase significantly due to increased access to rivers and the development of three additional fish ponds. Physical restriction to cross-country access would increase moderately due to additional fencing and land treatments. Restrictions on ORV use on 57,830 acres would result in a 4% increase from the current level. Seventy-seven acres would remain available for environmental education with an additional 56 acres to be utilized if visitors exceed 6,000 people annually. Environmental education sites would be eliminated if major vandalism begins to occur. Wild horse interpretation would remain at existing levels with the exception of a possible interpretive panel located along the Bad Pass Highway and several roadside signs.

Surface disturbing activities could affect 182 cultural sites. This would be insignificant due to mitigating practices.

Minor adverse impacts to visual resources would occur under this proposed action in the long term, and is considered insignificant.

Wilderness values would be preserved on 22,907 acres. In the long term, multiple use proposals could be permitted on 9,395 acres not recommended for wilderness designation. These actions would be insignificant in terms of wilderness opportunities available in the region.

Animal unit month changes and permit values would be the same as described in the High Level Management Alternative. Social and economic impacts resulting from coal development are also the same as described in the High Level Management Alternative.

Range improvement costs would total $995,725. Noxious weed control would result in a $3,000 annual cost.

Wild horse range improvements would cost $56,500. In the short term, approximately $21,000 in costs would be incurred annually to excess wild horses.

Improvements for the benefit of wildlife would total $75,500.

Continuation of Existing Management Alternative

Improvement of ecological range condition in the "I" category allotments would increase moderately in the long term. The acreages in excellent and good range condition would increase significantly by 84% and 58% respectively, and range in poor and fair condition would decrease by 78% and 44% respectively. These changes would occur during the long term. Ecological range conditions would remain static in the "M" and "C" category allotments. Vegetation allocations to livestock would increase by 4% in the short term and 5% in the long term.

Current ecological range conditions in the PMWHR in Montana would remain static with a slight upward trend in the long term. Range conditions in the PMWHR in Wyoming would remain static. Management cost would increase slightly.

Land Tenure Adjustment could result in a loss of 1,142 acres currently under Federal management in the short term and 3,570 acres in the long term. Overall, the effect on management would be insignificant.

Surface disturbances could result in a loss of 1,076 acres of native vegetation in the short term. Grazing management, reseeding and rehabilitation could reduce this figure substantially in the long term. Therefore, this loss would be insignificant.

Spraying with Tordon would decrease leafy spurge on 100 acres in the short term.

The amount of timber harvested would be 360 thousand board feet in the short term and 765 thousand board feet in the long term. The areas protected from commercial timber harvest would remain at 14,457 acres.

Wild horse populations on 44,296 acres in the PMWHR would be maintained at 121 head, although carrying capacities could increase slightly. This population figure is the total number of horses on the PMWHR at the beginning of the winter grazing season. Approximately 80% of the horses would be 2 years old or older.

Wildlife habitat for big game, upland game birds and nongame species would improve slightly in the short term and moderately in the long term. Wildlife habitat would expand slightly on "I" category allotments. Chukar partridge habitat would expand by 3,800 acres. The development of reservoirs, nesting islands and fencing of selected reservoirs would significantly expand waterfowl habitat resulting in an estimated increase of 140 ducks annually. The nesting potential for upland game birds would increase on 55,870 acres due to decreased ORV use. The competition of wildlife for forage and habitat would decrease moderately due to improved grazing management. Wildlife harassment and relocation levels would remain moderate primarily due to oil and gas exploration and development, commercial timber harvest and additional range developments. Aquatic habitat would increase moderately due to reservoir construction.

Coal reserves (40,000 tons) from the existing surface coal lease in the Bull Mountains would be depleted in 4 years, but would be an insignificant decrease of the total coal reserves in the Bull Mountains. Current production would be maintained by emergency leasing. This would disturb 12 acres of land in the 8 years of production allowed under an emergency lease.

Oil and gas would be leased with standard stipulations on 599,573 acres, and with special stipulations on 49,870 acres. Currently, there are 28,586 acres in the PMWHR segregated against mineral entry. This segregation would remain the same. The PMWHR may be leased with no surface occupancy under existing management.

Watershed conditions would improve moderately with the exception of 28,585 acres in need of vegetative manipulation. Runoff potential in these areas would remain moderate to severe in the short term. Water quality would increase primarily due to decreases in sediment yield.

Hunting opportunities would increase slightly because of wildlife habitat improvement and expansion. Fishing and floating opportunities would remain the same. Physical restrictions to cross-country access would increase slightly due to fencing. Restrictions on ORV use on 55,870 acres would remain the same. Seventy-seven acres would remain available for environmental education. Wild horse interpretation would remain at current levels.

Surface disturbing activities could affect 24 cultural sites. However, with proper mitigation, these impacts are considered insignificant.

Minor adverse impacts to visual resources would occur under this alternative in the long term, and are considered insignificant.

Currently, there are 32,302 acres under wilderness study. There is a long-term potential loss of wilderness values because of no legislative protection under this alternative, coupled with the potential for timber harvesting. This loss would be insignificant.

Twenty-eight ranches would show increases in income due to a 19% increase in BLM AUMs in the long term. Net annual income for representative livestock categories would range from $187 on small operations to $1,203 on very large operations. Grazing permit values would increase $3,600 for small operations, $9,300 for medium size operations, $12,500 for large operations and $18,800 for the very large operations. These economic factors would be significant to some local operators but would be insignificant on a regional basis.

Structural range improvements would cost $314,000. Weed control would cost $3,000 annually and structural improvements on the PMWHR would total $56,500. The wild horse excessing program would continue to cost approximately $21,000 annually. Structural improvements for the benefit of wildlife management would total $42,100.

Low Level Management Alternative

Improvement of ecological range condition in the "I" category allotments would be minimal. The acreage of range in good condition would increase by 10% and range in fair condition would decrease by 9%. These changes would occur during the long term and are insignificant. Ecological range conditions would remain static in the "M" and "C" category allotments. Vegetation allocations to livestock would decrease by an insignificant amount of 2% in the short term and 0.6% in the long term.

The acres of range in poor condition in the Montana portion of the PMWHR could increase by as much as 293% and range in fair and good condition could decrease by 100% in the long term. Range conditions in the Wyoming portion of PMWHR would decrease in the long term.

Surface disturbances could result in a loss of 1,875 acres of native vegetation. However, this figure could be much less as a result of mitigating practices such as reseeding and rehabilitation, and are insignificant.

The amount of timber harvested would be 720 thousand board feet in the short term and 1,530 thousand board feet in the long term. Areas protected from commercial timber harvest would decrease significantly by 98%, leaving 217 acres in a protection category.

Inbreeding, disease, harsh winters and poor range conditions could reduce wild horse populations drastically under a worst case situation. Management cost of the wild horse program would significantly decrease in the long term. The area available for wild horse grazing would decrease significantly by 7,696 acres.

Wildlife habitat for big game, upland game birds, waterfowl and nongame species would remain static or may show a very slight improvement, primarily due to vegetation production increases on the "I" category allotments. Wildlife habitat within the PMWHR would severely decline due to increased horse populations and a decrease in range condition. Competition for remaining wildlife forage would significantly increase. Nesting cover for upland game birds would increase slightly on 55,870 acres due to decreased ORV use. Harassment and relocation of wildlife species would increase significantly, primarily due to increased surface disturbing activities such as mining and logging. Aquatic habitat (streambank vegetation) would deteriorate slightly since no new range improvements would be constructed, and sedimentation would moderately increase.

Coal reserves (40,000 tons) from the existing surface coal lease in the Bull Mountains would be depleted in 4 years, however, emergency leasing would continue these operations. An anticipated additional surface mine in the Bull Mountains would deplete reserves by 4,350,000 tons in the long term. This represents approximately 3% of the total coal reserves in the Bull Mountains and is considered insignificant. Nine thousand three hundred and sixty (9,360) acres would be considered under competitive leasing procedures as acceptable for further consideration for coal leasing pending further study to meet the current and projected future demand.

An anticipated underground mine in the Joliet/Fromberg area would deplete coal reserves by 630,000 tons in the short term and 2,550,000 tons in the long term. Total coal reserve figures for this mine are unavailable at this time.

Oil and gas would be leased with standard stipulations on 649,443 acres with no acreage being segregated from locatable mineral entry.

Watershed conditions in the PMWHR would deteriorate moderately in the long term due to a decrease in range condition. Water quality would decrease primarily due to increases in sediment yield.

No significant long term increases in hunting or fishing opportunities would occur, primarily due to lack of wildlife habitat improvement or expansion. River floating would remain the same. Restrictions on ORV use on 55,870 acres would remain the same with the exception of 13 miles of roads being reopened. Existing areas for environmental education would be eliminated. Wild horse interpretation opportunities would remain the same.

Surface disturbing activities could affect 30 cultural sites. These sites would be mitigated and impacts would be insignificant.

Surface disturbances from timber cutting and mineral activities along with reduced wild horse management practices would have significant adverse impacts to visual resources.

This alternative could result in a potential loss of wilderness values on 32,302 acres under a no-wilderness recommendation. This would be insignificant in terms of wilderness opportunities in the region.

Twenty-eight ranches would have a significant decrease in income in the short term due to a loss of 20% of their AUMs with implementation of this alternative. The average decline in net annual income would range from $551 on small operations to $3,408 on very large operations.

By the end of the short term (8 years) the available forage would increase to the point where only an 11% decrease from the original allocations would be in effect. The same 28 ranches would still be affected. These losses range from $305 on small operations to $1,886 on very large operations.

After 25 years, the 28 ranches would show losses of about 3% from their original allocations. These decreases would range from $87 on small operations to $519 on the very large operations.

Initial grazing permit value losses would range from $3,800 on the small ranches to $19,700 on the very large ranches. After 25 years, annual losses would decrease to $600 on the small operations and $3,000 on the very large operations.

No additional operational expenses would be incurred under this alternative since no new project developments for grazing, wildlife or wild horses would be implemented.

High Level Management Alternative

Improvement of ecological range condition in the "I" category allotments would increase significantly in the long term due to improved grazing management and proposed range developments. The acreages in excellent and good range condition would increase by 84% and 88% respectively and range in fair and poor condition would decrease by 71% and 78% respectively. Within the "M" and "C" category allotments, the range in good condition would increase by 4% and the range in fair and poor condition would decrease by 6%. These increases would be due primarily to sagebrush burning on 7,400 acres within these allotments. Vegetation allocations to livestock would increase by 17% over the long term.

The acreage in good condition on that portion of the PMWHR in Montana would increase significantly by 368% and the range in fair condition would decrease by 448% in the long term. The range in poor condition would remain static in the long term. Range conditions on that portion of the PMWHR in Wyoming would remain static. The long-term carrying capacity on the existing 44,296 acres within the PMWHR would increase significantly by 48% from 121 head of horses to an estimated 179 head.

Land tenure adjustment could result in a reduction of approximately 49,809 acres currently under Federal management. Given the new management policy of land exchange being the predominant method of land disposal, this acreage figure would be greatly reduced. In addition, lands acquired by exchange would be more desirable in terms of public resource values and benefits.

Surface disturbances would result in a loss of 3,242 acres of native vegetation in the short term. Grazing management, reseeding and rehabilitation could reduce this figure significantly in the long term.

Spraying with Tordon would decrease leafy spurge within a 100 acre tract in the short term.

The amount of timber harvested would be 360 thousand board feet in the short term and 765 thousand board feet in the long term. The areas protected from commercial timber harvest would increase by 8% to 15,607 acres.

Inbreeding of wild horses would increase slightly. Development of an interpretation site and rest rotation grazing may increase the harassment of wild horses significantly. Wild horse management costs would increase significantly.

Wildlife habitat would improve moderately in the short term and significantly in the long term. Additional livestock watering sources would expand wildlife habitat moderately on "I" category allotments. The burning of 21,500 acres of sagebrush in small parcels over a large geographic area would slightly decrease chukar partridge and sage grouse habitat in the southern part of the resource area. Burns conducted in the northern part of the resource area in several years time, may slightly increase nesting and feeding habitats for sharp-tailed grouse. Chukar partridge habitat would expand by 6,400 acres as a result of additional wildlife watering sources. The development of reservoirs and nesting islands, fencing selected reservoirs and the planting of 25 acres of dense nesting cover would significantly expand waterfowl habitat resulting in an increase of an estimated 350 ducks annually. Nesting cover for upland birds would increase on an estimated 139,870 acres due to decreased ORV use. Wildlife harassment and relocation levels would increase moderately in the short-term implementation period and be of minor significance in the long term. Aquatic habitat would increase significantly due to livestock reservoir and fishery developments. Sedimentation in aquatic habitat would significantly decrease. Competition for wildlife forage and habitat would decrease moderately due to improved grazing management.

Ecological range condition on 80% of the 41 miles of woody floodplain zone would improve or be maintained at good and excellent condition.

Coal reserves (40,000 tons) from the existing surface coal lease in the Bull Mountains would be depleted in 4 years, however, emergency leasing would continue these operations. An additional surface mine in the Bull Mountains would deplete reserves by 4,350,000 tons in the long term. This represents approximately 3% of the total coal reserves in the area and is considered insignificant. Application of additional multiple use constraints may further reduce the 9,360 acres of Federal coal considered acceptable for further consideration for coal leasing pending further study. An anticipated underground mine in the Joliet/Fromberg area would deplete reserves by 630,000 tons in the short term and 2,550,000 tons in the long term. Total coal reserve figures for this mine are unavailable at this time.

Oil and gas would be leased with standard stipulations on 579,443 acres and with special stipulations on 70,000 acres. There is also a strong probability that some areas would not be leased. Within the PMWHR, 28,586 acres would be segregated against mineral entry.

Watershed conditions would improve significantly due to intensive grazing management and an improvement in ecological range conditions. Water quality would decrease in the short term due to waterfowl nesting island construction. In the long term, overall water quality would increase primarily due to decreases in sediment yield.

Hunting opportunities would increase significantly because of wildlife habitat improvement and expansion plus additional access to public lands.

Fishing and floating opportunities would increase significantly due to increased access to rivers and the development of three additional fishing reservoirs. Physical restriction to cross-country travel would increase moderately due to additional fencing and land treatments. Restrictions on ORV use on 139,870 acres would result in a 150% significant increase from the current level. One hundred and thirty-three acres would become available for environmental education. Development of the Winddrinker Overlook would significantly increase wild horse interpretation opportunities.

Surface disturbing activities could affect 189 cultural sites. This would be insignificant due to mitigating practices.

Minor insignificant impacts to visual resources would occur under this alternative in the long term.

Wilderness values would be preserved on 32,302 acres. This would be insignificant in terms of wilderness available in the region.

The overall short-term impact on ranch income in this alternative would be minimal. This is because 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. The average change in net annual income for the representative livestock categories ranges from an increase of $380 on small operations to $2,400 on very large operations.

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.

Population increases resulting from coal development are projected to be less than 1% for Yellowstone, Musselshell and Carbon Counties as well as the communities of Billings, Roundup and Fromberg. These small population increases will not significantly impact social well-being, social organization or community services.

A major adjustment in landownership pattern would mean a loss or redistribution of "Payment in Lieu of Taxes" payments to the counties. There would also be an increase in the local tax base. The magnitude of these changes would be insignificant. Such an adjustment in the landownership pattern would likely result in strong reaction both from those individuals and groups favoring disposal as well as those opposed to the transfer of public lands.

Structural range improvements would cost $995,725 under this alternative. Noxious weed control would result in $3,000 annual costs. Wild horse range improvements would total $106,000 while improvements for the benefit of wildlife totals $102,500.

The costs for a wild horse interpretive facility at the Winddrinker site would exceed $100,000.

TABLE 2.6: SUMMARY OF ENVIRONMENTAL CONSEQUENCES

Environmental Element	Existing	Proposed Action		Continuation of Existing Management		Low Level Management		High Level Management	
		Short Term	Long Term	Short Term	Long Term	Short Term	Long Term	Short Term	Long Term
Vegetation									
Ecological Range Condition (1) acres									
Excellent	3,553	Increasing	6,548	Increasing	6,548	Static	3,553	Increasing	6,548
Good	32,055	Increasing	60,221	Increasing	50,496	Increasing	35,144	Increasing	60,221
Fair	36,161	Decreasing	10,458	Decreasing	20,183	Decreasing	33,072	Decreasing	10,458
Poor	6,953	Decreasing	1,495	Decreasing	1,495	Static	6,953	Decreasing	1,495
Crested Wheat	5,118	Static	5,118	Static	5,118	Static	5,118	Static	5,118
Unsuitable	3,839	Static	3,839	Static	3,839	Static	3,839	Static	3,839
Ecological Range Condition (2) acres									
Excellent	11,054	Static	11,054	Static	11,054	Static	11,054	Static	11,054
Good	106,821	Increasing	111,261	Static	106,821	Static	106,821	Increasing	111,261
Fair & Poor	72,306	Decreasing	67,866	Static	72,306	Static	72,306	Decreasing	67,866
Tame Pasture	7,865	Static	7,865	Static	7,865	Static	7,865	Static	7,865
Unsuitable	3,000	Static	3,000	Static	3,000	Static	3,000	Static	3,000
Unsurveyed	110,663	Static	110,663	Static	110,663	Static	110,663	Static	110,663
Ecological Range Condition (3) acres									
Good	2,775	Maintenance of current		Maintenance of current		Decreasing	0	Increasing	12,996
Fair	12,498	conditions with a slight		conditions with a slight		Decreasing	0	Decreasing	2,277
Poor	7,900	upward trend		upward trend		Increasing	23,175	Static	7,900
Unsuitable	15,040	Static	15,040	Static	15,040	Static	15,040	Static	15,040
Acres in Wyoming - fair/poor (4)	6,083	Static	Static	Static	Static	Decreasing	Decreasing	Static	Static

(1) Acres displayed are "I" category allotments surveyed in 1981 (Ecological Site Inventory).

(2) Acres displayed are "M" and "C" category allotments surveyed in 1981 (Ecological Site Inventory) - changes due to vegetative manipulation only.

(3) Acres displayed are only within the PMWHR in Montana surveyed in 1981 (Ecological Site Inventory).

(4) Acres displayed are only within the PMWHR in Wyoming surveyed in 1971-72 (Ocular Reconnaissance Range Survey).

Miles of Woody Floodplain to Good or Excellent Range Condition		Increasing	41	0	0	0	0	Increasing	41
Timber Harvested - Mbf (thousand board feet)		560	1,190	360	765	720	1,530	360	765
Acres of Timber Protected from Commercial Harvest (does not include wilderness protection)	14,457	9,500	9,500	14,457	14,457	217	217	15,607	15,607
Loss of Native Vegetation Due to Surface Disturbance (acres)		3,483 (1)		1,076 (1)		1,875 (1)		3,242 (1)	

(1) These figures represent total acres disturbed in a 25-year period and do not take into account mitigating practices such as reseeding or rehabilitation.

Loss of Sagebrush Due to Burning (acres) (40-60% kill)		21,520	0	0	0	0	0	21,520	0
Retardation of Leafy Spurge Due to Spraying		100	0	100	0	0	0	100	0
Livestock									
Increased AUMs		0	10,711	2,200	3,120	0	0	0	10,711
Decreased AUMs		0	0	0	0	1,500	400	0	0
Stress		Moderate Increase	Minor Increase	Minor Increase on 16 new "I" allotments	None	No change	No change	Moderate Increase	Minor Increase
Distribution		Improve	Improve	Improve	Improve	No change	No change	Improve	Improve

SUMMARY OF ENVIRONMENTAL CONSEQUENCES (Continued)

Environmental Element	Existing	Proposed Action		Continuation of Existing Management		Low Level Management		High Level Management	
		Short Term	Long Term	Short Term	Long Term	Short Term	Long Term	Short Term	Long Term
Wild Horses									
Horse Populations (1)	130	121	(4)	121	121	130	(2)	121	179
Acres Available for Wild Horse Grazing	44,296	44,296 (3)	44,296 (3)	44,296 (3)	44,296 (3)	36,600 (5)	36,600 (5)	44,296 (3)	44,296 (3)
Changes in Carrying Capacity (expressed in significance)		Minor significant increase	Minor significant increase	Minor significant increase	Minor significant increase	Moderate significant decrease	Highly significant decrease	Moderate significant increase	Highly significant increase
Levels of Disturbance (harassment)		Will remain the same	Will remain the same	Will remain the same	Will remain the same	Minor increase	Minor increase	High increase	High increase
Cost of Management		Moderate significant increase	Moderate significant increase	Minor increase	Minor increase	Moderate significant decrease	Highly significant decrease	Highly significant increase	Highly significant increase
Inbreeding		Will remain the same	Will remain the same	Will remain the same	Will remain the same	Moderate significant increase	Highly significant increase	Minor increase	Minor increase

(1) Numbers are estimates based on expected carrying capacity of the Wild Horse Range allowing for use of wildlife and watershed protection; existing horse population is 130.

(2) Due to a drastic decline in ecological range condition, the carrying capacity of the Horse Range may be reduced dramatically; however, interbreeding, poor health and disease may drastically reduce the horse herd even if some forage remains.

(3) Includes all Federal, state and private lands.

(4) A slow increase in range condition will occur in the long term but, due to fragile soils, low precipitation and no rest rotation grazing system being utilized, increases in horse populations would be minimal.

(5) Includes designated PMWHR only.

Wildlife									
Terrestrial									
Big Game									
Protection from Habitat Disturbance (wilderness and/or withdrawal classifications) (acres)		20,407	20,407	28,586	28,586	0	0	60,888	60,888
Spring/summer Forage		Moderate increase	High increase	Minor increase	Moderate increase	Minor increase	Minor increase	Moderate increase	High increase
Competition for Forage and Habitat		Moderate decrease	Moderate decrease	Moderate decrease	Moderate decrease	Moderate decrease due to reduced livestock numbers	Same as short term except a significant increase in the PMWHR due to increased horse populations	Moderate decrease	Moderate decrease
Habitat Expansion (due to additional water sources)		Moderate increase	Moderate increase	Minor increase	Moderate increase	None	None	Moderate increase	Moderate increase
Habitat Reductions (due to sagebrush burning)		Minor	Minor	Minor	Minor	None	None	Minor	Minor
Harassment and Relocation (level)		Moderate	Moderate	Moderate	Moderate	High	High	Moderate	Minor
Upland Game									
Protection from Habitat Disturbance (due to decreased ORV use) (acres)		57,900	57,900	55,870	55,870	55,870	55,870	139,870	139,870
Nesting Cover		Minor decrease to sage grouse and chukar habitat due to sagebrush burning of 21,520 acres minor increase to sharptail	Same as short term	Minor increase	Moderate increase	Minor increase	Minor increase	Minor decrease to sage grouse and chukar habitat due to sagebrush burning of 21,520 acres; minor increase to sharptail	Same as short term

SUMMARY OF ENVIRONMENTAL CONSEQUENCES (Continued)

Environmental Element	Existing	Proposed Action		Continuation of Existing Management		Low Level Management		High Level Management	
		Short Term	Long Term	Short Term	Long Term	Short Term	Long Term	Short Term	Long Term
Upland Game (Continued)									
Habitat Expansion (due to additional watering sources)		Moderate Increase	Moderate Increase	Moderate Increase	Moderate Increase	None	None	Moderate Increase	Moderate Increase
Expansion of Chukar Habitat (due to additional wildlife watering sources) (acres)	75,000	Increase of 1,600	Increase of 1,600	Increase of 3,800	Increase of 3,800	None	None	Increase of 6,400	Increase of 6,400
Harassment and Relocation (level)		Moderate	Moderate	Moderate	Moderate	High	High	Moderate	Minor
Loss of Habitat		Minor	Minor	Minor	Minor	Minor	Minor	Minor	Minor
Waterfowl									
Nesting Cover		Moderate Increase	High Increase	Minor Increase	Moderate Increase	None	None	Moderate Increase	High Increase
Habitat Expansion		High Increase due to 19 reservoirs, 50 nesting islands and fencing of 7 existing reservoirs and 25 acres of dense nesting cover	High Increase due to 19 reservoirs, 50 nesting islands and fencing of 7 existing reservoirs and 25 acres of dense nesting cover	Moderate Increase due to 4 reservoirs, 20 nesting islands and fencing of 7 existing reservoirs	Moderate Increase due to 4 reservoirs, 20 nesting islands and fencing of 7 existing reservoirs	None	None	High Increase due to 19 reservoirs, 50 nesting islands and fencing of 7 existing reservoirs and 25 acres of dense nesting cover	Same as short term
Production		Increase of 350 ducks annually	Increase of 350 ducks annually	Increase of 140 ducks annually	Same as short term	No Increase	No Increase	Increase of 350 ducks annually	Same as short term
Non-game									
Habitat Expansion		Moderate Increase	High Increase	Moderate Increase	Moderate Increase	None	None	Moderate Increase	High Increase
Harassment and Relocation (level)		Moderate	Moderate	Moderate	Moderate	High	High	Moderate	Minor
Aquatic									
Habitat		Moderate Increase	High Increase	Moderate Increase	Moderate Increase	No Increase	Minor decrease in streambank vegetation due to no range improvements	Moderate Increase	High Increase
Loss in Aquatic Habitat Due to Sedimentation		Moderate decrease	Moderate decrease	Minor decrease	Minor decrease	Moderate Increase	Moderate Increase	Moderate decrease	High decrease
Minerals									
Coal									
Depletion of Coal Reserves from Existing Surface Mine (10,000 ton/yr)	40,000	80,000 (1)	170,000 (1)	80,000 (1)	170,000 (1)	80,000 (1)	170,000 (1)	80,000 (1)	170,000 (1)
(1) Emergency leasing would continue current production.									
Depletion of Coal Reserves from Anticipated Surface Mine (high - moderate)									
0-4 yrs - none	114,850,000	0		No additional leasing anticipated	No additional leasing anticipated	0		0	
5-11 yrs - none	114,850,000	0				0		0	
12-25 yrs - 300,000 ton/yr	114,850,000		4,350,000				4,350,000		4,350,000
Depletion of Coal Reserves from Anticipated Underground Mining									
0-3 yrs - none	Coal reserve figures are unavailable at the present time	0		No additional leasing anticipated	No additional leasing anticipated	0		0	
4-8 yrs - 30,000 ton/yr (1)		630,000				630,000		630,000	
9-25 yrs - 150,000 ton/yr			2,550,000				2,550,000		2,550,000
(1) 30,000 tons for 4th year and 150,000 tons/yr thereafter.									

SUMMARY OF ENVIRONMENTAL CONSEQUENCES (Continued)

Environmental Element	Existing	Proposed Action		Continuation of Existing Management		Low Level Management		High Level Management	
		Short Term	Long Term	Short Term	Long Term	Short Term	Long Term	Short Term	Long Term
Coal (Continued)									
Acres Disturbed									
0-4 years		6		6		6		6	
5-8 years		6		6		6		6	
9-25 years			365		25		365		365
Oil and Gas									
Acres In No-Lease Category	0	0 (1)	0 (1)	0	0	0	0	0	0
Acres Leased with Special Stipulations	49,870	70,000 (1) (2)	70,000 (1) (2)	49,870	49,870	0	0	70,000 (2)	70,000 (2)
Acres Leased with Standard Stipulations	599,573	579,443	579,443	599,573	599,573	649,443	649,443	579,443	579,443

(1) There is a strong probability that some areas will not be leased; acreage cannot be quantified at this time.

(2) This area encompasses the Twin Coulee WSA, PMWHR, Youngs Point, Hamilton's (Asparagus) Point, Beartooth Face, Bad Canyon, Steamboat Butte, Castle Butte, Weatherman's Draw, Crooked Creek Natural Area, Bridger Fossil Area, Red Dome, Red Valley, Petroglyph Canyon, Shepherd Ah-Nei, Acton area and Federal minerals within 2 miles of the Yellowstone River. New areas will be delineated where application of special stipulations is necessary.

Locatable Minerals									
Acres Segregated from Mineral Entry	28,586	980	980	28,586	28,586	0	0	28,586	28,586
Watershed									
Watershed Condition		Moderate significant improvement	Highly significant improvement	Minor significant improvement	Moderate significant improvement	Minor significant deterioration	Moderate significant deterioration	Moderate significant improvement	Highly significant improvement
Water Quality and Streambanks + indicates increased quality - indicates decreased quality		- due to construction of waterfowl nesting islands	+	- due to construction of waterfowl nesting islands	+	-	-	- due to construction of waterfowl nesting islands	+
Recreation									
Hunting Opportunities (1)		Moderate increase	High increase	Minor increase	Moderate increase	Will remain the same	Minor increase	Moderate increase	High increase
Fishing Opportunities		Moderate significant increase due to access to 7 river sites and construction of 3 fish ponds	Moderate significant increase due to access to 7 river sites and construction of 3 fish ponds	Will remain the same	Will remain the same	Will remain the same	Will remain the same	Moderate significant increase due to access to 7 river sites and construction of 3 fish ponds	Moderate significant increase due to access to 7 river sites and construction of 3 fish ponds
River Floating Opportunities		Highly significant increase due to access to 7 river sites	Highly significant increase to access to 7 river sites	Will remain the same	Will remain the same	Will remain the same	Will remain the same	Highly significant increase due to access to 7 river sites	Highly significant increase due to access to 7 river sites
Physical Restriction to Cross-country Access Due to Fences, Land Treatments, etc.		Moderate increase	Moderate increase	Minor increase	Minor increase	Will remain the same	Will remain the same	Moderate increase	Moderate increase

SUMMARY OF ENVIRONMENTAL CONSEQUENCES (Continued)

Environmental Element	Existing	Proposed Action		Continuation of Existing Management		Low Level Management		High Level Management	
		Short Term	Long Term	Short Term	Long Term	Short Term	Long Term	Short Term	Long Term
Recreation (Continued)									
Restrictions to ORV Use									
Acres Closed	70	70	70	70	70	70	70	70	70
Acres Limited	55,800	57,830	57,830	55,800	55,800	55,800	55,800	139,800	139,800
Roads Opened (miles) (2)		9	9	0	0	13	13	0	0
Roads Closed (miles)		2	2	0	0	0	0	2	2
(1) Dependent upon habitat improvement and expansion.									
(2) Use limited to designated open roads only.									
Acres Available for Environmental Education Opportunities	77	77-0-133 (1)	77-0-133 (1)	77	77	0	0	133	133
(1) Dependent upon loss of facility due to heavy vandalism and demand.									
Wild Horse Interpretation Opportunities		Minor Increase	Minor Increase	Will remain the same	Will remain the same	Will remain the same	Will remain the same	Moderate Increase	Moderate Increase
Cultural Resources									
Existing Sites	1,262 (1)								
Potential Sites (disturbed)		182 (2)		24		30		189 (2)	
(1) Includes all Federal, state and private lands within the resource area.									
(2) Does not include known sites within wilderness study areas.									
Visual Resources (adverse impacts)		Moderate significant impacts	Minor significant impacts	Moderate significant impacts	Minor significant impacts	Moderate significant impacts	Highly significant impacts	Moderate significant impacts	Minor significant impacts
Wilderness	Four areas containing 32,302 acres under wilderness study	Potential loss of wilderness values primarily in the Twin Coulee WSA from timber harvest	Preservation of wilderness values on 22,907 acres; potential loss of wilderness values on 9,395 acres	Potential loss of wilderness values primarily from timber harvest	Potential loss of wilderness values because of no legislative protection	Potential loss of wilderness values from timber harvest or oil and gas development	Potential loss of wilderness values because of no legislative protection to all 32,302 acres	Preservation of wilderness values on all 32,302 acres	Same as short term
Social/Economic									
Number of Ranches Affected		43	43	28	28	28	28	43	43
Economic Impact to Rancher of Decreases in BLM AUMs		0	0	0	0	Moderately significant	Moderately significant	0	0
Economic Impact to Rancher of Increases in BLM AUMs		Moderately significant	Moderately significant	Insignificant	Insignificant	0	0	Moderately significant	Moderately significant
Impact to Regional Economy		Insignificant	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
Impact on Attitudes		Insignificant	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant

Source: BLM, 1982