

13 Effects on Wilderness All alternatives maintain the 81,320 acres in the Strawberry Mountain and Monument Rock Wildernesses. Alternative C-Modified also recommends the 5,420-acre Pine Creek area as wilderness. Remaining areas retaining wilderness characteristics in the future vary by alternative. Alternative C-Modified provides the most area retaining wilderness characteristics, followed by Alternatives I, F, A, NC and B-Modified.

The anticipated recreational demand for wilderness on the Forest is estimated to be 30,783 Recreation Visitor Days by the year 2030. All alternatives provide sufficient wilderness to accommodate this demand.

There will be no timber harvest activity inside the Wildernesses. The social and physical settings of the Wildernesses could vary by alternative based on the type and intensity of resource management adjacent to them and the type and degree of access afforded. This would affect both the solitude and the recreation experience. The higher the rate of resource management activities which take place adjacent to the Wildernesses, and the greater the ease of access, the greater the effect upon the wilderness experience. It will also mean a potential need to increase management controls in order to maintain the social attributes needed to provide an experience level consistent with the Wilderness Recreation Opportunity Spectrum (WROS) zone.

Each alternative provides a different mix of Wilderness Recreation Opportunity Spectrum classes. They vary from providing semiprimitive and primitive-trailed environments to primitive-trailed and primitive-trailless environments. Alternatives with emphasis on semiprimitive and primitive-trailed settings will have a higher capacity to accommodate wilderness users. Alternative B-Modified provides high emphasis on a semiprimitive setting. Alternatives A and F provide a blend of WROS settings while alternatives C-Modified and I emphasize a primitive setting.

Due to the lack of specific information regarding management activities in Alternative NC, the effects of this alternative cannot be estimated and evaluated to the same degree as other alternatives. Based on available information, Alternative NC will closely approximate Alternative A.

New livestock grazing allotments will not be created in Wilderness by any alternative. Livestock-grazing operations and activities are allowed to continue at levels in existence at the time of Wilderness designation. Riparian areas are the most productive forage areas on the Forest. Because of this, livestock tend to congregate there. In the Wildernesses, any adjustments in the number of livestock will be made through the Forest Service's normal grazing, land management planning, and policy-setting processes.

Monument Rock Wilderness lies within the boundaries of three livestock grazing allotments, Spring Creek and Malheur River, North Fork, on the Malheur National Forest, and Bullrun on the Wallowa-Whitman National Forest. Permitted numbers totaling 1,314 head of livestock can use this Wilderness at specified times during a grazing cycle.

Portions of three livestock grazing allotments occur within the 1984 Strawberry Mountain Wilderness addition. These allotments are Indian Creek, Sugarloaf, and Fawn Springs. Livestock numbers permitted to graze are normally Indian Creek - 75 head, Sugarloaf - 364 head, and Fawn Springs - 97 head. A portion of Rail Creek Allotment is also located within the 1984 and the original 1964 Strawberry Mountain Wilderness boundaries. A total of 150 head of livestock is currently permitted on Rail Creek Allotment.

There were no mineral claims filed at the time of establishment (June 26, 1984) of the Monument Rock Wilderness. There were no mineral claims filed by January 1, 1984, for the original Strawberry Mountain Wilderness. Therefore, mineral exploration and development is prohibited within the Monument Rock Wilderness and the original boundary of the Strawberry Mountain Wilderness. As of April 1988, there

were 11 claims which appear to be all or partially within the 1984 additions to the Strawberry Mountain Wilderness. Valid existing rights in the Strawberry Mountain Wilderness additions are any which may have existed prior to June 26, 1984

All alternatives would provide an environment where wildlife habitat is determined by natural causes and selection. The visual quality objective for wilderness is preservation.

The use of prescribed fire in wilderness is subject to preplanned and specified conditions which meet the objectives outlined in Chapter 2320 of the Forest Service Manual. Use of prescribed fire in its natural role in the wilderness ecosystem could cause a loss of visitor solitude, reduction of visibility, reduction in air quality, disturbance of the land surface, and alteration of the wilderness landscape

Alternatives that reduce the amount of available semiprimitive nonmotorized settings could increase the demand on the Wildernesses to provide this setting. Concentrations of wilderness users could cause degradation of the wilderness environment. The lakes basin of the Strawberry Mountain Wilderness is one area where users concentrate due to its attractive setting and the ease of access to the area. Alternative B-Modified has the greatest potential to impact the Wildernesses followed by Alternatives NC, A, F, I and C-Modified.

Alternatives that provide higher-standard roads to trailheads or additional roads adjacent to Wilderness boundaries will create a potential for increased use within the Wildernesses. This increased use could exceed the limits of acceptable change in parts of the Wildernesses, such as the lakes basin within the Strawberry Mountain Wilderness

All alternatives propose activities adjacent to the Wildernesses that could develop roads near the boundary. The only variation between alternatives will be how rapidly the development takes place. This development will make it easier for people to access the Wildernesses, which could have the positive effect of better distribution of use. This could also have the effect of increasing illegal entry by motorized users. The activity adjacent to the Wildernesses also has the potential of increasing the sight and sound of these activities, reducing the quality of the wilderness experience.

The Wilderness Act calls for "The preservation of their Wilderness character" (P.L. 88-577). *Changes in ecological and social qualities are inevitable. "Limits of Acceptable Change" (LAC)* are established to assure that ecological and social changes that occur as a result of human use do not reduce the wilderness character of the wilderness. These limits have been established in the Forest Service Manual System (in Regional Supplement 81) and have been adopted by each Forest. Modifications to the Regional limits of acceptable change can be adopted by a Forest with Regional Forester approval.

#### *Mitigation Measures*

Establishment and monitoring of limits of acceptable change for various wilderness recreation opportunity spectrum classes will aid in reducing impacts on the wilderness environment. The limits of acceptable change process gives primary attention to acceptable existing wilderness conditions and prescribing actions to protect or achieve those conditions. If the conditions are not met, action is taken to bring them into the acceptable range. Actions may include closure of access roads and moving trailheads away from the problem area or requiring entry permits.

Overuse by people may cause wilderness conditions to deteriorate below acceptable levels. The most effective measures for controlling use are to make heavily used areas less accessible or to control use by requiring entry permits and controlling the number of permits used. Making popular areas less accessible has been used effectively in the Pasayton Wilderness in Washington and the permit system is effectively used in the Boundary Waters Canoe Area.

The same rationale may be used for decreasing impacts to wilderness from activities on adjacent lands. If these lands are made less accessible and activities such as logging are designed to protect scenic vistas and are scheduled during periods of low wilderness use, the potential for conflict with wilderness objectives will be effectively diminished.

#### 14 Effects on Mineral Resources

The U.S. Mining Laws of 1872 and Federal Land Policy and Management Act of 1976 provide for mining on Federal lands. Exploration and development of National Forest minerals may be encouraged by assigning lands to management areas which allow access or other types of development. The relative ease by which a prospector or miner obtains access to an area is largely dependent on the restrictiveness of the management for that area. The less restrictive management areas also generally have less-stringent surface protection requirements and fewer administrative approval processes.

The majority of the Forest (approximately 95 percent) has low or unknown potential for mineral development, although locatable minerals may exist almost anywhere on the Forest. Areas of the Forest with known mineral potential have been classified according to their potential from Category IV-Low to Category I-High. Criteria for these categories can be found in Appendix F of this Final Environmental Impact Statement. There are no acres in Category I. There are 4,780 acres in Category II, 20,650 acres (5,330 in the Wildernesses) in Category III, and 50,784 acres in Category IV.

Table IV-13 displays the acres in each category which are either open under minimal restriction, under restrictive management, as described above, or withdrawn in each alternative. Generally, the semiprimitive management areas (motorized & nonmotorized) and scenic areas will be the most restrictive toward mineral development. Road construction will be minimized, and allowed only when necessary. Resource protections and reclamation stipulations will be more stringent in these areas. Additionally, mining companies may be more reluctant to pursue exploration in areas which are viewed as potential inclusions in the wilderness system.

The two Wildernesses on the Forest are withdrawn from mineral entry and no new mining claims or mineral leases may be made within them. Any valid claims which existed prior to the creation of the Monument Rock and Strawberry Mountain additions may continue to be operated. However, requirements for environmental protection and reclamation are more strict than on other areas of the Forest. In addition to the Wildernesses, most recreation and administrative sites and the Research Natural Areas (RNAs) are either withdrawn from mineral entry or will be proposed for withdrawal. The one existing Research Natural Area is within wilderness and one of the proposed RNAs is also within wilderness and will not need to be withdrawn. Alternative C-Modified recommends wilderness designation for the Pine Creek area, which is in an area considered prospectively valuable for oil and gas and for geothermal resources. Table IV-13 displays the acres with potential for natural oil and gas within restrictive assignments by alternative. Otherwise, the areas of mineral withdrawal vary little between alternatives.

**TABLE IV-13: Acres with Potential for Oil and Gas in Restrictive Assignments**

Alternative	Open	Restrictive	Withdrawn
NC	563,390	15,310	0
A	563,390	15,310	0
B-Modified	578,700	0	0
C-Modified	524,220	49,060	5,420
F	558,240	20,460	0
I	557,760	20,940	0

Mineral exploration and development will be more easily accomplished in areas which are roaded for other management activities. However, the mining laws provide a statutory right of reasonable access to operations within any lands open to mineral entry. Access to mineral resources could prove to be an exception in keeping an area roadless. Alternatives which are commodity oriented, such as Alternative B-Modified, will be most favorable for mineral development. Amenity alternatives, such as Alternative C-Modified, will be least favorable. Large acreages of unroaded management will place additional access expense on mineral exploration, and may make large mineral firms reluctant to invest their funds due to the risk that these areas could be designated as wilderness.

**TABLE IV-14: Mineralized Area Categories in Restrictive Assignments**

Alternative	Amount of Restriction	Acres by Category		
		II	III	IV
NC	Open	3,572	16,887	45,666
	Restrictive	1,108	203	7,094
	Withdrawn	20	5,510	340
A	Open	3,572	16,887	45,666
	Restrictive	1,108	203	7,094
	Withdrawn	20	5,510	340
B-Modified	Open	3,572	16,887	45,666
	Restrictive	1,108	203	7,094
	Withdrawn	20	5,510	340
C-Modified	Open	3,619	10,848	41,949
	Restrictive	1,061	6,242	10,811
	Withdrawn	20	5,510	340
F	Open	3,572	16,887	45,666
	Restrictive	1,108	203	7,094
	Withdrawn	20	5,510	340
I	Open	3,572	16,887	45,666
	Restrictive	1,108	203	7,094
	Withdrawn	20	5,510	340

15 Effects on Air Quality

On-Forest sources of air quality degradation can be smoke from burning logging slash, prescribed burning for other resource purposes such as range management, or wildfires. Smoke from slash burning is the only significant source in Alternatives A, B-Modified, F

and I. This can be mitigated by confining burning to periods when atmospheric conditions cause rapid smoke dispersal. The potential significance of this source varies in direct relation to the level of the timber harvest in each alternative.

Due to the lack of specific information regarding management activities in Alternative NC, the effects of this alternative cannot be estimated and evaluated to the same degree as other alternatives. Based on available information, Alternative NC will closely approximate Alternative A.

Burning of logging slash will be a contributing factor in Alternative C-Modified. In addition, prescribed underburning could be used to some extent as a tool in selectively thinning associated fir species to maintain a predominant ponderosa pine timber stand. The amount that fire would be used for this purpose is unknown; however, it could not be used to the point where it would have a significant impact on air quality or violate State or Federal Laws.

Aside from that potential exception, it is doubtful that any difference in effect between alternatives would be noticeable.

In recent years, use of wood-burning stoves for home heating has increased in communities within a day's drive of the Forest. Much of the fuelwood used comes from this Forest, and effects of fuelwood smoke in those communities could be considered an indirect effect of use of this Forest. Local communities have not identified a significant effect with woodstove use on air quality, however, the Boise, Idaho, metropolitan areas do have significant air quality concerns, to which woodstove use contributes. Because use of wood stoves and firewood gathering is not directly related to implementation of any alternative, it is not possible to estimate the effects of the alternatives on woodstove use in the Boise, Idaho, area. Relative availability of fuelwood in each alternative is discussed in Table II-5 in Chapter II.

## 16 Energy Effects

The net Forest resource energy balance is the difference between energy produced and energy expended in utilizing a Forest resource or service. The energy consumption component encompasses the energy required to produce and utilize Forest resources and to provide services and protection from natural calamities. Both Forest Service and non-Forest Service energy inputs are included, but only that portion of non-Forest Service energy input which relates to Forest Service activities or resources is counted. The energy yield is based on present forms of resource utilization.

Following is Table IV-15 which displays the energy balance by resource group and by planning alternative.

**TABLE IV-15: Energy Balance by Resource Group and by Planning Alternative**  
(Trillion BTUs over 50 years)

	Timber		Biomass		Range		Recreation		Water <sup>1/</sup>	
	Consume	Yield	Consume	Yield	Consume	Yield	Consume	Yield	Consume	Yield
NC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A	274.8	130.1	3.1	101.9	1.0	1.3	2.9	0.0	0.0	14.7
B-Mod	316.8	145.2	3.0	101.9	1.3	1.8	2.9	0.0	0.0	14.7
C-Mod	165.0	78.2	3.0	101.9	0.8	1.0	2.9	0.0	0.0	14.7
F	280.2	132.7	3.0	101.9	1.0	1.2	2.9	0.0	0.0	14.7
I	234.6	111.1	3.0	101.9	0.9	1.1	2.9	0.0	0.0	14.7

	Minerals		Roads		Fire		Total		Net Energy
	Consume	Yield	Consume	Yield	Consume	Yield	Consume	Yield	Balance
NC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A	0.8	0.0	1.9	0.0	0.7	0.0	285.2	248.0	-37.2
B-Mod	0.8	0.0	2.3	0.0	0.7	0.0	327.8	263.6	-64.2
C-Mod	0.7	0.0	2.3	0.0	0.6	0.0	175.3	195.8	+20.5
F	0.8	0.0	2.3	0.0	0.7	0.0	290.9	250.5	-40.4
I	0.8	0.0	2.3	0.0	0.7	0.0	245.2	228.8	-16.4

<sup>1/</sup>Consumption of water is so low that it is not measurable in tenths of a trillion British Thermal Units (BTUs)

17. Economic Effects

The economic effects of implementing the alternatives can be measured in various ways. Key indicators of effects on the local economic environment include: (1) projected changes in numbers of jobs related to timber and range sectors, and (2) projected changes in income in Grant and Harney counties. Other indicators of the effects of implementing the alternatives include payments to local governments, size of the Forest budget, and net cash flow resulting from the alternatives. The characteristics of these indicators are briefly described below.

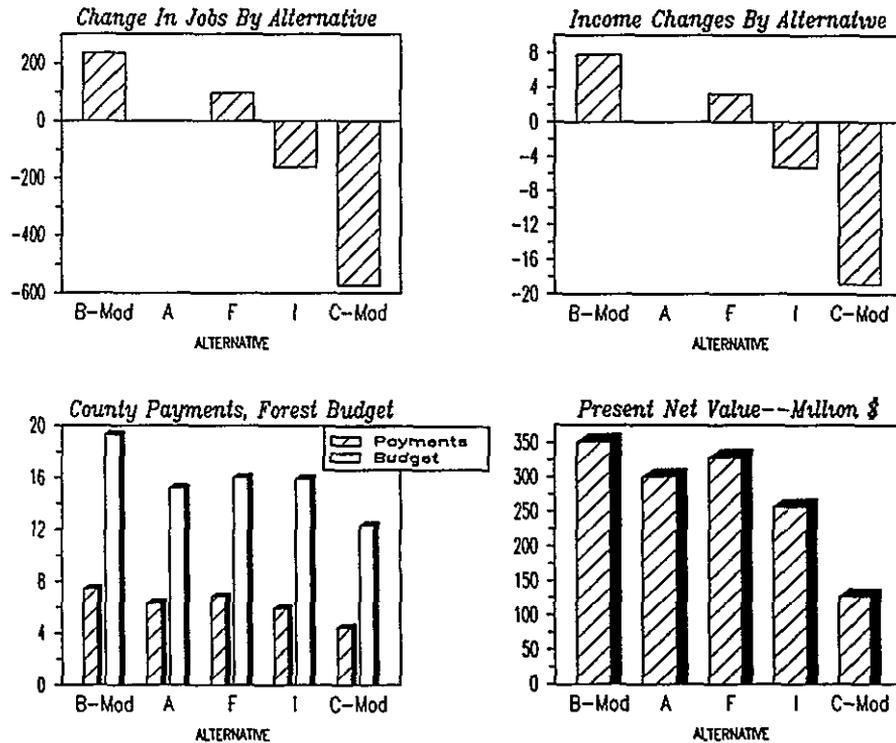
a. *Changes in Jobs*

The economy is heavily resource based, with logging and ranching as the principal sustaining industries. These industries are typically cyclical and are subject to many external forces. Despite the National Forest policies or outputs, the cyclical nature of these industries was clearly evident in unemployment rates at around 20 to 30 percent in Harney and Grant Counties in the early 1980's. Unemployment rates in these counties are now ranging from 5 to 18 percent seasonally. The changes resulting from implementation of any of these alternatives will be of much less magnitude than changes caused by external influences on these industries.

Several aspects of Forest management do affect employment opportunities, level of timber harvest is the most significant component. For each additional million board feet of timber harvested from the Forest, approximately eight to nine jobs are predicted to be added to the local economy (Additional employment opportunities are created outside the local economy by Forest timber harvests, although no attempt has been made to account for those jobs )

- b *Changes in Income*      Income is generated from implementation of the alternatives by converting raw materials from the Forest (e g , trees, forage) into products which are sold within or exported outside the local region. Other income-producing factors could include desirable attributes of the Forest which attract recreationists, hunters, and such Positive changes in income indicate added income to the local region, negative changes indicate losses (refer to Appendix B).
  
- c *Payments to Local Governments*      The Forest contributes to the finances of local counties primarily through Forest Reserve Fund (FRF) payments By law, 25 percent of each National Forest's gross receipts is returned each year to the counties in which the National Forest lies (Grant and Harney). For this Forest, almost all receipts (99 percent) are generated by the sale of timber As a result, payments to counties, primarily used to finance roads and schools, can fluctuate substantially with level of timber harvest.
  
- d *Forest Budget*      Annual projected costs of managing the Forest according to each alternative are displayed in Figure IV-15 for the first decade The economic effects of this expenditure are substantial because a large portion of the Forest budget enters the local economy through employee expenditures Shortfalls in the funding of any alternative may result in lowered outputs, employment, income, and payments to counties
  
- e *Net Cash Flow*      Net cash flow, which is total revenue minus total Federal cost, is an important indicator for two reasons First, net cash flow measures the ability of the Forest to "make money" for the American people. After Receipt Act payments (i.e., payments to counties) are deducted from net cash flow, the remainder, if any, can be applied toward reducing the Federal debt A second application of net cash flow is as an indicator of the economic viability of the Forest's timber sale program. Timber sales account for about 99 percent of the total revenue generated from the Forest; timber-related expenditures account for about 70 percent of the Forest budget. In every alternative, significant cash flow is generated, indicating that the timber program generates revenue in excess of expenses Below-cost timber sales would be very infrequent
  
- f *Summary*      Displayed in Figure IV-15 are the results by alternative Following the figure is a discussion of the most significant economic effects expected for each alternative

**FIGURE IV-15: Summary of Economic Indicators for the First Decade**



1/The No Change Alternative is based upon the 1979 Timber Resource Management Plan. This plan was not an integrated resource management plan, and not all resource uses and outputs were valued. Consequently, some economic indicators of the NC Alternative are not strictly comparable to the economic indicators of all other alternatives.

Employment and income prospects would continue to trend upward under the No Change (NC) Alternative (when compared to the 1980-89 averages). Payments to local government, projected in the 1979 Timber Resource Management Plan, are in the higher end of the range of alternatives. However, differences in economic assumptions between this alternative and all other alternatives make comparison of these economic indicators suspect. In general, Alternative NC would result in substantial returns to the Treasury (because of the high timber harvests).

Alternative A would maintain income and employment prospects at about the current level. Moderate growth in the local economy would occur, and local school and road budgets would increase over time resulting from increased payments to counties from Forest receipts. This alternative would continue to generate a high amount of net receipts for the Government.

Alternative B-Modified would generate about a 14 percent increase in local timber and range employment in the first decade, and over time the highest employment level of all alternatives would be sustained; income generated would parallel employment trends. Over five decades, the highest rate of growth in the local economy would occur. Net cash flow is near the midpoint of all alternatives because of the high expenditures and investments proposed by this alternative.

Under Alternative C-Modified, local employment in the timber and range sectors would be reduced by about 33 percent, the most severe of all alternatives, and substantial decreases in income would occur as a result of reduced timber and range outputs. Other

economic indicators are the lowest of all alternatives. This alternative has the potential to destabilize the existing local economy more than any other alternative.

Employment opportunities in timber and range would increase by about 6 percent under Alternative F, and income generated would increase substantially. Other economic indicators would increase to varying degrees over historic levels, the local economy would incur moderate growth. New cash flow would be near the highest of all alternatives.

Alternative I employment in timber and range jobs would decrease by approximately 9 percent. This alternative provides timber availability at lower levels than during the last 10 years on this Forest (however actual timber production could be at levels higher than that realized during the last 10 years), with emphasis on ponderosa pine production to ensure future revenues to counties. Range outputs would be slightly lower, but with outputs near recent average historic levels, employment and income would remain fairly stable. Other economic indicators are near the midpoint of the range of all alternatives. In general, this alternative would result in a stabilized local economy, accompanied by a slow growth rate.

## 18. Social Effects

Social groups are categories of people who share the same interests and concerns. There are several social groups that may be affected by Forest outputs and land management, including ranchers, timber industry workers, hunters, and people who enjoy nonmotorized recreation activities. These groups are not mutually exclusive, and individuals may be included in more than one group.

Because these groups may be affected by Forest policies and management practices, the alternatives raise social issues. When social groups within the Forest's zone of influence differ significantly in their expectations for Forest resource use, conflict may arise. For example, alternatives that emphasize timber harvest and livestock grazing are most acceptable to ranchers, timber industry workers, and others whose livelihood is linked to resource utilization. On the other hand, alternatives that emphasize amenities and reduced resource outputs are most acceptable to recreationists and other people who expect the Forest to provide a attractive recreation experience, or natural setting.

To estimate the effects of the alternatives on the social environment, four variables were examined. These variables are detailed below.

- a *Changes in Population* Population is primarily affected by economic conditions. For example, as growth occurs in the local economy resulting in new or additional jobs and occupations, people are attracted to the area to compete for those jobs. Similarly, in a declining economy, population drops as people lose their jobs and move out of the area to seek employment elsewhere. The historical pattern for both Grant and Harney counties has been a fluctuation in the health of the economy based on the typical cycle of the resource-based industries.
  
- b *Changes in Lifestyles* For purposes of this analysis, changes in lifestyles are defined as changes in the patterns of work and leisure of the local population. Lifestyles can be affected by the quantity and mix of Forest outputs. For example, a segment of the local population may be affected because of a direct economic relationship to the Forest resources, as in the case of employment in the timber or ranching industries. Ranchers themselves represent a way of life symbolic of the American West. The Forest is also important because of the environmental quality which it adds to the area. Clean air, open spaces, and scenic vistas are all important to local quality of life and the opportunity for outdoor-oriented self sufficiency. The importance of such opportunities is expressed by people who hunt, fish, and gather firewood in the Forest.

c *Attitudes, Beliefs, and Values*

Individuals have a relationship with the Forest based on personal choices. Those choices comprise the expectations people have about the Forest and management of specific areas within the Forest. These expectations represent the individual's deeply held attitudes, beliefs, and values. The reality of how on-the-ground management of the Forest meets an individual's expectations affects that person's sense of personal freedom, self sufficiency, and sense of control over the future. In order to measure this relationship, an estimate is made of the effect on an individual's ability to pursue a preferred activity (e.g., to cut firewood, to graze cattle, to hike in remote areas, etc.) This estimate is called "opportunities foregone" because it measures the loss of opportunity to engage in an activity in the future.

d. *Social Well-Being*

Social well-being occurs when the people in a community hold each other and their community in high regard; in other words, the community is cohesive. The degree to which a community of people can be considered cohesive depends on the degree of unity and cooperation among those people in achieving common goals. When a community is not cohesive, people divert time, energy, and resources from common goals and use them in opposing each other's goals.

e *Summary*

The following is a discussion of the most substantive social effects expected for each alternative.

Under Alternatives A and NC, the local population would continue to increase, primarily due to employment opportunities in timber-processing industries. The traditional lifestyles of most local residents would be supported and continued, as growth would generally occur in the traditional industries. The growth in population would generally increase diversity of local communities as individuals each bring unique backgrounds and interests to the area.

Implementation of these alternatives would affect future opportunities of wilderness advocates, people who enjoy nonmotorized recreation in backcountry settings, people who expect the Forest to provide the opportunity for spiritual renewal or ties to Native American cultural activities such as root-gathering or berry-picking, and people interested in fish habitat improvement. These impacts are primarily the result of roading and development of nearly all of the currently unroaded areas on the Forest and the high intensity of timber and grazing activities that would occur across the Forest. Community cohesion would be reduced as a result of this alternative because the above groups would find themselves opposed to the goals of those who favor resource development and use.

Under Alternative B-Modified, the local population would increase more than any other alternative because of greatly expanded employment prospects during the 50 year planning period. The traditional lifestyles of most local residents would be supported and continued as growth would occur in the traditional industries. The resulting growth in population would increase diversity of the local communities as individuals bring unique backgrounds and interests to the area.

Implementation of this alternative would greatly affect the future opportunities of wilderness advocates, people who enjoy nonmotorized recreation in backcountry settings, and people who seek spiritual renewal or cultural ties from the Forest. This is due to the high level of timber activity, as well as the development of virtually all unroaded areas on the Forest. People interested in fish habitat improvement would not be as adversely affected as they would in Alternative A, because of the emphasis on salmon and steelhead fish production through artificial improvement measures. However, ranchers may feel some adverse impact due to the measures needed to improve some anadromous fish habitat on the Forest. Community cohesion would be reduced as a result of this alternative because of the uneven split of costs and benefits between commodity and amenity users.

Alternative C-Modified would result in the largest decrease in local population, primarily due to reduced employment opportunities in the timber and ranching industries. Associated declines in retail employment opportunities would also contribute to population losses. Lifestyles throughout the community would be adversely affected as some long-term residents became unemployed or suffered income reductions.

Implementation of this alternative would affect the future opportunities of people in ranching and timber industries as well as local business people because of the significant reduction in both timber and grazing activities on the Forest. Local governments would also be affected by reduced revenue and by secondary economic effects in the local communities. People who rely on logging for firewood supplies would also have a somewhat reduced opportunity to engage in that activity because no additional Forest area would be developed and there would be less logging slash available. Community cohesion would be reduced as a result of this alternative, although not as much as in Alternative B-Modified. This is because in Alternative B-Modified, adverse impacts would fall disproportionately among commodity and amenity users.

Under Alternative F, increases in local population would occur, primarily due to increased employment opportunities in timber processing industries. Traditional lifestyles of most local residents would be supported and continued as growth would generally occur in the established industries. Growth in population would increase diversity of local communities as individuals each bring unique backgrounds and interests to the area.

Opportunities for wilderness advocates, nonmotorized recreationists, and people seeking spiritual renewal or ties to Native American cultural values would be moderately reduced by implementation of this alternative because of development of over 60 percent of the currently unroaded area of the Forest and the intensive timber harvest activity occurring across the Forest. Ranchers will also likely feel some adverse impact to their activity due to an emphasis on riparian area improvement in specific areas. Community cohesion would be slightly reduced as a result of the uneven distribution of costs and benefits among groups, although this effect is less than in Alternatives B-Modified and C-Modified.

Alternative I would result in slight decreases to the local population as compared to the past 10 year period (1980-89), accompanying reductions in timber and range employment opportunities projected under this alternative. Existing lifestyles throughout the local community would generally be maintained or enhanced.

Future opportunities of wilderness advocates, people who enjoy nonmotorized recreation in backcountry settings, and people who seek spiritual renewal or Native American cultural ties from the Forest would be affected moderately by this alternative because of development activities throughout the forest. People engaged in the timber industry would also be moderately affected by the reduction in future opportunity for timber harvest opportunities. Some ranchers may feel a moderate adverse impact as a result of changes in riparian area management and reductions in permitted grazing. People who seek wildlife or fish-oriented recreation experiences would continue to enjoy a sustained supply of high-quality experiences. The benefits and adverse effects of this alternative are distributed among the Forest user groups, with slight to moderate adverse impacts expected, community cohesion would be expected to remain stable or be enhanced.

## 19. Cumulative Effects

Discussions on cumulative effects are included to set a framework to review alternative designs for potential cumulative environmental effects. These are effects that are projected on the physical, biological, economic and social environmental factors, specific to the Malheur National Forest. Similar to non point source pollution outputs, cumulative effects are difficult to ascertain. To predict the sum total of many different activities, over many years, one must know the processes involved. Generally, these are the sum of direct and indirect effects, spatial and temporal distance between effects, and natural or

artificial response (often rehabilitation) to the effects. Below are summary discussions of predicted cumulative effects, by alternative, for key Forest resources related to the four environmental factors

**a Cumulative Effects on Soils**

The direct effect of land management activities on soils is typically a loss of productivity. Early grazing practices resulted in accelerated erosion. Tractor logging compacts the soil. Both conditions are examples of direct effects that are known to reduce productivity. The Forest-wide Standards applicable to all alternatives and strict Forest policy ensure that the loss of soils, and associated productivity, will be within acceptable limits. The cumulative effect of all land management activities is likewise, a loss or potential loss of productivity depending on the magnitude of each activity (timber harvesting, grazing, road construction, etc.) planned for each alternative.

The cumulative effects of each alternative can be determined on a relative basis by ranking and evaluating livestock grazing levels (related to Animal Unit Months), miles of new road construction, and timber management factors including the intensity of timber harvest prescriptions (acres of clearcut and shelterwood regeneration harvests), tractor logged acres, and acres of machine piling. The planning horizon for this cumulative effects discussion is 50 years. It should be noted here that the results of intensive soil monitoring completed on the Malheur National Forest have shown excessive amounts of compaction on tractor units that have been logged and machine piled more than once. This is a cumulative effect of multiple entries on the soil resource.

Table IV-16 presents the ranking of alternatives by output level for five major soil disturbing activities. Ranking is from highest to lowest potential to reduce soil productivity.

**TABLE IV-16: Ranking of Outputs for Major Soil Disturbing Activities.**  
Ranking is from highest to Lowest Potential to Reduce Soil Productivity.

Alternative	Range Outputs For Decade 5 (Thousand AUMs)	Road Construction Total in 50 Years (New Road Miles)		Regeneration Cuts Total in 50 Years (Thousand acres)		Tractor Logging Total in 50 years (Thousand acres)		Machine Piling in Decades 1 thru 5 (Thousand acres)	
	AUMs	Alternative	Miles	Alternative	Acres	Alternative	Acres	Alternative	Acres
A	131	B-Mod	1541	B-Mod	546	B-Mod	1500	F	79
B-Mod	119	F	1432	F	491	A,F	1450	B-Mod	77
F	118	A	1383	A	486	I	1050	A	76
I	116	I	1159	I	376	C-Mod	950	I	65
C-Mod	105	C-Mod	843	C	200	C-Mod	52		

Table IV-17 gives an overall summary of the cumulative effects analysis for each alternative as related to key factors used to evaluate potential adverse impacts on soils conditions across the Forest. Alternatives B-Modified and, to a lesser degree, F and A will have the greatest adverse cumulative effect on soils since they have the highest level of management activity of all the alternatives. Alternative I will have an intermediate level of adverse cumulative effects, while Alternative C-Modified will have the least effects. As it is the management objective of the Forest to keep adverse cumulative effects to a minimum and always within the Forest-wide Standards, no alternative is anticipated to exceed any threshold level. All alternatives are expected to have cumulative effects that are within acceptable levels of change. However, those alternatives that result in greater adverse impacts are considered to have higher potential for long term risk to Forest soils resources.

**TABLE IV-17: Cumulative Effects Assessment for Soils by Alternatives**

Alternatives	Potential for Adverse Cumulative Effect
B-Mod	Greatest
F	
A	to
I	
C-Mod	Least

**b Cumulative Effects on Vegetation**

Vegetative manipulation, generally from silvicultural practices, will have direct effects on Forest conditions for all alternatives. Additionally, the cumulative effects of timber harvest and thinning will eventually reduce the amount of big-game cover across the Forest. Effects will vary by specific area, but the overall change on the Forest will tend to be a reduction from current conditions.

Alternative B-Modified will have the most profound effect on reducing cover over time. There will be a steady decline in vegetative cover, until regenerated stands begin providing cover at a future point in time. Alternative C-Modified will also reduce cover, but not at the faster rates of the other alternatives. The remaining alternatives fall within these bounds and are believed to have moderate effects. Along with cover reductions, the structural composition of the Forest will also change as a result of timber harvest and associated cultural practices (thinning, weeding, planting). Included in this are the cumulative effects of reducing old growth across the Forest. Forage vegetative conditions across the Forest follow similar trends as timber harvest and cover changes. Generally, alternatives that remove cover tend to increase forage quantity.

The cumulative effect of each alternative can be determined on a relative basis by ranking and evaluating acres of timber harvests, percent of Forest in cover after five decades, acres of old growth remaining after five decades, and acres of precommercial thinning. Note that these are estimates of variations between alternative designs, and although may closely resemble the effects of an alternative for the entire Forest, specific and localized effects are not identified. As cumulative environmental effects are the result of specific and localized impacts, this analysis is limited to broad general conditions.

Table IV-18 presents the ranking of alternatives by output level for five major vegetative manipulation activities.

**TABLE IV-18: Output Rankings of Acres Available for Major Vegetative Manipulation Activities.**

Ranking is from Highest to Lowest Potential Adverse Cumulative Effect.

Timber Harvest Land Available (Thousand acres)		Thinned acres in Decades 1 thru 5 (Thousand acres)		Total Cover Amts Remaining after Decade 5 (Forest)		Old Growth Stands after Decade 5 (Thousand acres)		Timber Management Intensity <sup>1/</sup> (Thousand acres)	
Alternative	M ac	Alternative	M ac	Alternative	%	Alternative	M ac	Alternative	M ac
NC	1117	F	872	B-Mod,I	41%	B-Mod	91	NC	965
B-Mod	987	B-Mod	841	A,F	46%	NC,A	105	B-Mod	910
A	967	A	839	C-Mod	50%	F,I	121	F	860
F	951	I	683			C-Mod	179	A	824
I	905	C-Mod	459					I	700
C-Mod	831							C-Mod	573

<sup>1/</sup> Acres prorated by timber management intensity, where high intensity is weighted 1.0, moderate intensity 0.67, and low intensity 0.33. For alternative summaries of management intensities, see Figure IV-3.

Table IV-19 gives an overall summary of the cumulative effects analysis for each alternative as it relates to vegetative conditions across the Forest. Rankings of alternatives are listed in order from greatest to least potential adverse cumulative effect. An alternative with greater adverse effects than another alternative is considered to have a higher potential for long term impact on Forest resources. Alternative NC is not summarized due to non-comparability to other alternatives, and lack of information beyond the first decade of analysis.

**TABLE IV-19: Cumulative Effects Assessment on Vegetation by Alternative**

Alternatives	Adverse Cumulative Effects on Vegetation
B-Mod	Greatest
F	
A	to
I	
C-Mod	Least

*c. Cumulative Effects on Wildlife Habitat*

Forest management activities, specifically silvicultural practices, will have direct effects on vegetation, which will affect wildlife resources, including big game habitat. This is a general trend for the Forest in all alternative designs. The cumulative effects of timber harvest and thinning will immediately reduce the amount of vegetative cover across the Forest and, for the first two or three decades, there is the potential to improve the cover spacing conditions that exist at present. As the spacing may actually improve for all alternatives, the quality of this cover will generally decrease. Effects will vary by specific area, but the overall change on the Forest will be a reduction from current conditions, as dense, overmature stands are replaced by second-growth or manipulated stands. In many cases, satisfactory cover conditions will be replaced by stands of marginal cover. This is the result of applying intensive timber management practices to extensive amounts of the Forest land base. Effects vary slightly by alternative, and are described below.

In terms of elk habitat, all alternatives would have decreases in habitat effectiveness values for open road densities if road closures were not employed, as more roads would be constructed/reconstructed. Alternatives A, B-Modified, and F retain the highest amount of open road densities, while Alternatives C-Modified and I maintain somewhat lower levels.

The cumulative effect of each alternative can be determined on a relative basis by ranking and evaluating the factors that influence habitat effectiveness indices for elk. This includes the amount of cover (percent of Forest remaining in cover, which is related to cover spacing) after five decades, the quality of the cover that remains, and open road densities. In addition, other wildlife resource factors include the disposition of old growth acres remaining after five decades, and the provisions for cavity nester habitat. It should be noted here that these are estimates of variations between alternative designs, and although may closely resemble the effects of an alternative for the entire Forest, specific and localized effects are not identified. As cumulative environmental effects are the result of specific and localized impacts, this analysis is limited to broad general conditions across the Forest. However, this generalized cumulative effects array should be effective in describing some of the more profound differences between alternatives.

Table IV-20 presents the ranking of alternatives by output level for five major activities that have potential for adverse cumulative effects on wildlife.

**TABLE IV-20: Ranking of Alternatives by Output Level for Five Major Activities.**  
 Ranking is from Highest to Lowest Potential Adverse Cumulative Effect.

Satisfactory Cover Remaining after Decade 5		Average Elk Cover Quality in 50 yrs (5 low 10 high)		Open Road Density after Decade 5 (miles/sq mile)		Old-Growth Stands after Decade 5 (Thousand acres)		Cavity Nesting <sup>1/</sup> Habitat (Snags in Potential Pop'ns)	
Alternative	%	Alternative	Index	Alternative	mi/mi <sup>2</sup>	Alternative	M ac	Alternative	%
B-Mod	10%	B-Mod	56	B-Mod	3.1	B-Mod	91	B-Mod	41.3
F	12%	F	59	A,F	2.6	A	105	F	41.5
A	13%	A	61	C-Mod,I	2.2	F,I	121	I	41.7
I	15%	I	66			C-Mod	179	A	42.6
C-Mod	20%	C-Mod	70					C-Mod	61.0

<sup>1/</sup> Potential snag levels listed here are strictly for comparison purposes as they indicate only those acres in General Forest (MA 1) and Riparian (MA 3) Management Areas. Old Growth, Wilderness, roadless areas and scenic areas, where snag levels are naturally higher, would increase the absolute values of snags across the Forest.

Table IV-21 gives an overall summary of the cumulative effects analysis for each alternative as it relates to wildlife conditions across the Forest. Alternatives are ranked in order of their potential for adverse cumulative effects. An alternative with greater adverse effects than another alternative is considered to have a higher potential for long term risk to Forest resources. Alternative NC is not summarized due to non-comparability to other alternatives, and the lack of information beyond the first decade of analysis.

**TABLE IV-21: Cumulative Effects Assessment on Wildlife Habitat by Alternative**

Alternatives	Adverse Cumulative Wildlife Effects
B-Mod	Greatest
F	
A	to
I	
C-Mod	Least

**d Cumulative Effects on Watershed and Riparian Zones**

The effects of land management activities on riparian and watershed conditions can be direct, indirect, and cumulative in nature. The typical detrimental impacts are adverse impacts on water quality (sedimentation, increases in stream temperatures, and the resulting loss of fish and wildlife habitat productivity). Water quantity is assumed to be a more general function of climatic fluctuations and not management activities. Early timber harvests and associated road construction along with grazing practices resulted in accelerated erosion and streambank instability. These impacts are known to reduce productivity of fish habitat. The Forest-wide Standards applicable to all alternatives and strict Forest policy ensure that the loss of soils, vegetation, and associated productivity, will be within acceptable limits. Stream temperature standards and thresholds for sedimentation and turbidity ensure that all land management activities on National Forest land are within acceptable levels. However, the cumulative effect of all land management activities is likewise, a loss or potential loss of productivity depending on the magnitude of each activity (timber harvesting, grazing, road construction, etc) planned for each alternative.

The cumulative effects of each alternative can be determined on a relative basis by ranking and evaluating the potential for sedimentation, the total amount of acres available for timber harvest within riparian zones, the gross amount of timber harvests planned within riparian zones, watershed improvement activities, and the relative response of the fisheries resource to all of these activities and practices. The best use of the ranking of alternatives and subsequent alternative summary of anticipated outputs is that of risk analysis. If the assumptions that are used to form the anticipated outputs are correct, then the alternatives with the highest potential to adversely impact watersheds are also those alternatives with higher environmental risks. The planning horizon used for this cumulative effects discussion is 50 years.

Table IV-22 presents the ranking of alternatives by output level for five key riparian and watershed impacting and ameliorating activities.

**TABLE IV-22: Ranking of Alternatives by Output Level for Five Key Riparian and Watershed Indicators. Ranking is from Highest to Lowest Potential to Adversely Effect Watershed Resources.**

Sediment Outputs Decades 1 thru 5 (Relative Index)		Harvest Potential in Riparian Zones (Thousand acres)		Scheduled Harvest in Riparian Zones (MMCF per decade)		Improvements Made to Watersheds (Amt per decade)		Anadromous Fish Improvement Decade 5 (Thousand lbs)	
Alternative	Value	Alternative	Acres	Alternative	MMCF	Alternative	Acres	Alternative	M lbs
B-Mod	2552	B-Mod	40	B-Mod	16.9	A,B-Mod	200	A	46
F	2378	F	36	A	15.4	F	500	F	193
A	2291	A	34	F	14.2	C-Mod,I	1000	B-Mod	218
I	2255	I	20	I	8.6			I	253
C-Mod	2155	C-Mod	0	C-Mod	0.0			C-Mod	340

Table IV-23 gives an overall summary of the cumulative effects analysis for each alternative as it relates to watershed conditions across the Forest. All alternatives are expected to have cumulative effects that fall within acceptable levels of change. However, those alternatives that are assessed as having greater adverse cumulative effects are considered to have higher potential for long term risk to Forest resources.

**TABLE IV-23: Cumulative Effects Assessment on Riparian and Watershed Conditions by Alternative**

Alternatives	Adverse Watershed Cumulative Effect
B-Mod F A I C-Mod	Greatest  to  Least

*e Cumulative Effects on Economic Indicators*

The cumulative environmental effects of each alternative on several economic indicators are briefly described below. Although there may be a range of differences between alternatives, the potential for understanding direct and indirect economic effects that influence the cumulative effects on the economy are somewhat difficult to describe. The economic indicators used to portray these differences between alternatives in this analysis include the total amount of land suitable for timber production, allowable sale quantity, payments to local governments, livestock grazing capacity, and wildlife and fish user days. To put these direct and indirect relationships into the cumulative effects perspective, a planning horizon of 50 years is used. Given this, the relationship between alternatives is estimated and described at a point in time after the fifth decade. Differences in the cumulative effects of each alternative are anticipated to show more clearly at that time.

Alternative C-Modified will have the greatest adverse effect on most economic indicators, and cumulative economic effects would generally follow. On the other extreme, Alternative B-Modified would maintain the greatest economic returns after five decades, a result of retaining the highest timber harvest levels. Returns to county governments are also anticipated to be the highest of any alternative. Payments to the Federal Government are considered to be beyond the scope of this cumulative effects analysis. The other alternatives fall between these extremes and are anticipated to have intermediate adverse impacts associated with cumulative environmental effects concerning the economic outputs of the Forest.

Additionally, the cumulative effects of each alternative from other factors is more difficult to determine. It is a general assumption that the potential for adverse cumulative effects on the economy increases as less timber land is determined suitable for timber harvest. The general assumption taken is that the major economic outputs are related to the supply of available timber and livestock forage, potentially both a direct and indirect result of the amount of land allocated to these activities, as well as the intensity of the management activities

Effects of each alternative can be determined on a relative basis by ranking and evaluating the previously-mentioned economic attributes in place after five decades of each alternative. It should be noted here that these are estimates of variations between alternative designs, and should closely resemble the economic effects of the alternatives for the area of effect (Forest). Any change in economic indicators of response, such as new sources of revenue (tourism, recreation, etc.) are not identified. A change in assumptions related to economic factors has the great potential to result in significantly-different cumulative effects, and hence variations to what is portrayed here. If the general assumption is false that the major economic indicators in the local area are not related strongly to timber harvest and livestock grazing, then a suitable cumulative effects analysis would be quite different. However, using other assumptions would be outside the range of historical information and is not currently available for discussion here.



Table IV-24 presents the ranking of alternatives by output level for five key economic indicators used to describe potential cumulative effects

**TABLE IV-24: Ranking of Alternatives by Output Level for Five Key Economic Indicators.**  
Ranked from Highest to Lowest Adverse Cumulative Economic Effect.

Alternative	Timber Harvest Sutable Land (Thousand acres)	Allowable Timber Sale Quantity (1,000,000 cu ft)	Payments to Local County Government Decades 1 thru 5	Annual Livestock Grazing Capacity (1,000 AUMs Dec 5)	Wildlife and Fish User Days (WFUDs) (1,000 Fish-Game)
Alternative	M ac	Alternative MMCF	Alternative MM\$	Alternative M AUM	Alternative WFUDs
C-Mod	770	C-Mod 26	C-Mod 21	C-Mod 105	A 152
I	836	I 35	I 31	I 116	B-Mod 167
A	898	A 39	A 35	F 118	F 171
F	919	F 41	F 37	B-Mod 119	I 189
B-Mod	957	B-Mod 44	B-Mod 39	A 131	C-Mod 198

Table IV-25 gives an overall summary of the cumulative effects analysis for each alternative as it relates to economic indicators across the Forest. As can be seen, Alternative C-Modified results in the greatest risk of adverse cumulative effects, while Alternative B-Modified would have the least adverse effect. Those alternatives that are assessed as having greater cumulative effects on the key economic indicators are considered to have higher potential for adverse long-term economic impacts.

**TABLE IV-25: Cumulative Effects Summary of Economic Indicators by Alternative**

Alternatives	Adverse Cumulative Economic Effects
C-Mod	Greatest
I	
A	to
F	
B-Mod	Least

*f Cumulative Effects on Roadless Areas*

The cumulative environmental effects of developing currently unroaded areas are briefly described below. As there is a broad range of differences in the total amount of unroaded areas between alternatives, the potential risk of adverse environmental effects that are cumulative are readily described. For all alternatives there will be a general reduction in the amount of unroaded areas that are retained across the Forest. The sole exception to this is Alternative C-Modified, which will maintain all roadless areas to at least RARE II boundaries.

Alternative B-Modified will have the most profound effect on reducing the total amount of roadless areas on the Forest. By decade 5, the opportunity for semiprimitive recreation activities outside of Wilderness will be the lowest for all alternatives. In addition, the retention of old-growth stands within roadless areas will be less than any other alternative. In contrast, Alternative C-Modified will maintain the highest level of potential nonwilderness semiprimitive recreation opportunities. The cumulative effects of reducing old growth across the Forest are ameliorated by the retention of all unroaded acres, and the subsequent old growth within these roadless areas. The other alternatives run between these extremes and are anticipated to have intermediate risks associated with cumulative environmental impacts on potential for recreation opportunities and retention of old growth.

Additionally, the cumulative effects of each alternative on other physical effects is more difficult to determine. It is a general assumption that the potential for adverse cumulative effects on watersheds increases as more road construction and reconstruction occurs. As roads are most often the greatest contributor to adverse soil movement, the alternatives that develop the greatest amount of unroaded areas have the highest potential to trigger adverse cumulative effects. This is independent of mitigation measures that are designed to reduce this risk. The analysis of cumulative effects of roadless area development on downstream watersheds is thus based directly on the amount of roadless area retained.

Effects of each alternative can be determined on a relative basis by ranking and evaluating acres of roadless area retained unroaded, acres of old growth remaining after five decades, and the potential for adverse watershed impacts. It should be noted here that these are estimates of variations between alternative designs, and although they may closely resemble the effects of an alternative for the entire Forest, specific and localized effects are not identified. As cumulative environmental effects are the result of specific and localized impacts, this analysis is limited to broad general conclusions.

Table IV-26 presents the ranking of alternatives by output level for three key roadless area attributes



**TABLE IV-26: Ranking of Alternatives by Output Level for Three Key Roadless Area Attributes. Ranking is from Highest to Lowest Potential Adverse Cumulative Effect.**

Unroaded Areas after Decade 5 (Thousand acres)		Old-Growth Within Unroaded-Decade 5 (Thousand acres)		Adverse Impact on Forest Watersheds (Relative risk)	
Alternative	M ac	Alternative	M ac	Alternative	Index
B-Mod	13	B-Mod	8	B-Mod	93
A	59	A	25	A	67
F	67	F	33	F	63
I	80	I	35	I	56
C-Mod	193	C-Mod	90	C-Mod	0

Table IV-27 gives an overall summary of the cumulative effects analysis for each alternative as it relates to roadless area management across the Forest. As can be seen, alternatives that are assessed as having greater adverse cumulative effects from roadless area indicators are considered to have higher potential for long-term resource impacts.

**TABLE IV-27: Cumulative Effects Risk Assessment of Roadless Areas by Alternative**

Alternatives	Adverse Physical Cumulative Effects
B-Mod	Greatest
A	
F	to
I	
C-Mod	Least

20 Environmental Consequences of the Alternatives on Civil Rights, Consumers, Minority Groups, and Women

None of the alternatives have significant effects on Civil Rights. The effects on consumers, minority groups, and women are primarily a result of effects on available jobs, returns to counties, and lifestyles. These effects are discussed on the preceding pages. Probably, the most significant change between alternatives is in the amount of work in reforestation and timber stand improvement which would be available. This type of Forest work employs crews that have greater than the average number of minority contractors and employees.

All alternatives propose between 1,900 and 6,900 acres of planting annually over the planning horizon. Alternatives B-Modified and F have the highest acres and Alternative C-Modified has the lowest acres.

Indirect but minor effects that would change by alternative are fuelwood availability and housing.

21. Effects on Plans of Others  
a. State and County Planning

In Oregon, city and county comprehensive management plans are designed to carry out Statewide planning goals. A purpose of the plans is also to incorporate plans and programs of various governmental units into a single management tool for the planning area. The State governmental body responsible for reviewing county comprehensive plans is the Oregon Land Conservation and Development Commission.

County plans recognize the National Forest as "primary forest," "timber/grazing," or similar designation. Although counties do not have responsibility for regulating use on Federal lands, the Forest Service and county governments attempt to coordinate planning efforts to avoid conflicts. The alternatives discussed in this Environmental Impact Statement are generally compatible with local governmental plans

Following are the Statewide planning goals to which county plans must adhere, and a statement of how the Forest Plan alternatives meet the goals (State of Oregon, 1980):

Goal No. 1 "To develop a citizen involvement program that insures the opportunity for citizens to be involved in all phases of the planning process "

The public involvement process used to develop this environmental impact statement is consistent with the State of Oregon's emphasis on citizen participation in the planning process

Goal No. 2 "To establish a land use planning process and policy framework as a basis for all decisions and actions related to use of land and to assure an adequate factual base for such decisions and actions."

The Statewide goal for the planning process is consistent with the process established by the National Environmental Policy Act of 1969 (NEPA) and the National Forest Management Act of 1976, the guiding policies for the National Forest Land and Resource Management Planning program

Goal No. 3. "To preserve and maintain agricultural lands "

Livestock grazing potential on National Forest lands varies by alternative. However, National Forest lands which, by State definition, qualify as agricultural land are maintained as such in all alternatives.

Goal No. 4: "To conserve forest lands for forest uses."

The land management areas of the various alternatives for areas defined as "forest lands" and "forest uses" are consistent with this Statewide goal. However, guideline B 2 states that "Forest lands should be available for recreation and other uses that do not hinder growth." In many Forest Plan management prescriptions, consideration for use other than wood production has resulted in less than maximum wood growth. In this sense the preferred alternative does not comply with the Forest lands goal

Goal No. 5 "To conserve open space and protect natural and scenic resources."

This goal is incorporated by all alternatives. Protection of cultural resources is required by law and Forest Service policy. The protection of scenic resources will vary by alternative but will provide various levels of protection. By their nature and purpose, National Forests provide open spaces

Goal No. 6: "To maintain and improve the quality of air, water, and land resources in the State "

All alternatives are supportive of this State goal.

Goal No. 7: "To protect life and property from natural disasters and hazards "

No actions included in any of the alternatives are projected to contribute significantly to the potential for loss of life or property due to natural disaster

Goal No. 8: "To satisfy the recreational needs of the citizens of the State and visitors."

Recreational needs are considered in all alternatives. Dispersed recreation use is emphasized on National Forest lands.

Goal No. 9: "To diversify and improve the economy of the State."

The alternatives are projected to contribute to the economy of the area and State at varying levels. Depending on the objectives of the alternative, the economy may or may not be improved.

Goal No. 10: "To provide for the housing needs of citizens of the State."

This goal refers primarily to the availability of suitable land for housing. The Forest Plan is not likely to affect housing land needs. The alternatives do provide for various amounts of wood products for use in housing construction.

Goal No. 11: "To plan and develop a timely, orderly, and efficient arrangement of public facilities and services to serve as a framework for urban and rural development."

None of the alternatives are likely to have significant effect on this Statewide goal. The Forest provides land for utility corridors and other facilities that are in the public interest.

Goal No. 12: "To provide and encourage a safe, convenient and economic transportation system."

The Forest does and will continue to coordinate the needs of the Forest transportation system with those of the State and local governments.

Goal No. 13: "To conserve energy."

There are no prohibitions placed on development of potential geothermal or mineral power sources except in areas withdrawn from entry for such purposes.

Goal No. 15: To provide for an orderly and efficient transition from rural to urban land use.

None of the alternatives are projected to affect the Statewide goal.

Goals 14, 16, 17, 18, 19. These goals pertain to resources which are not applicable to the Malheur National Forest.

*b Confederated Tribes of the Umatilla*

1 The Umatillas are concerned that management to protect and enhance natural fish habitat should have top priority. None of the alternatives conflict with this goal.

2 Another concern of the Umatillas is that Forest Plans should emphasize land uses and management practices which reduce watershed runoff during winter/spring high-flow periods and increase discharge during the summer/fall drought periods.

Opportunities are limited to affect runoff and groundwater recharge due to the relatively low elevation of the Forest, limited snow zones, and lack of high-elevation terrain suitable for timber harvest activities which would delay snowmelt runoff.

*c Water Resources Department (State of Oregon)*

John Day River Basin Objectives (9/12/86)

1 Achieve better seasonal distribution of runoff to reduce high streamflows and increase low streamflows.

2 Protect groundwater quality and quantity.

3 Encourage water conservation, efficient use of water, and elimination of waste.

4 Protect existing high-quality riparian areas and improve degraded riparian areas.

Existing Forest Service policy and Manual direction subscribe to all of the above objectives. The Forest embraces the concept of multiple use where all resources are considered during the planning and implementation of any management project. The alternatives developed for the Environmental Impact Statement differ, concerning the emphasis by resource as to where, when, and how they will be accomplished.

Implementation of the State Water Quality Management Plan on lands administered by the USDA Forest Service is described in a Memorandum of Understanding between the Oregon Department of Environmental Quality and the U.S. Department of Agriculture (2/79) Water Quality Standards for the State of Oregon are met through the application of Best Management Practices

*d. Department of  
Environmental Quality  
(State of Oregon)*

Coordination is accomplished through a slash burning smoke management system. State plans include a smoke management system for minimizing the impact of smoke from use of fire in management of forest and rangeland on areas designated or others sensitive to smoke. The designated areas of restriction include all forest lands west of the summit of the Cascades and the fire protection areas of the Mt. Hood and Deschutes National Forests east of the Cascades. Sensitive areas include areas such as certain designated wildernesses.

The alternatives considered in the Malheur National Forest land management planning effort treat removal of forest debris as a necessary part of forest environmental management. One objective while using fire in debris disposal is to minimize the impact of smoke from controlled burning while achieving specific resource management goals.

The Malheur National Forest will provide slash disposal management to maintain a satisfactory environment within wildernesses. To accomplish this task, consideration will be given to the number of acres involved, amount of slash, evaluation of potential smoke column vent height, direction and speed of smoke drift, mixing characteristics of the atmosphere, and distance from designated area for each burning operation. Slash disposal through burning in smoke-sensitive areas such as mountain recreation areas will include minimizing the effect to users. Air quality is a consideration during all slash-burning operations to facilitate smoke dispersion, without regard to project location. These considerations pertain to time of ignition, condition of slash, and rate of burning. The objectives of the smoke management system are to vent most of the smoke to high elevations and to minimize the amount of smoke drift.

These objectives are fully compatible with Oregon air quality and smoke management objectives. The effect of all alternatives where debris disposal is done through burning is increased amounts of smoke in the atmosphere.

*e. Forestry Program for  
Oregon*

A summary of the response of alternatives to the basic objectives of the Forestry Program for Oregon can be found in Table IV-4.

*f. Bureau of Land  
Management (BLM)*

Coordination with the Bureau of Land Management was accomplished through review of and comments on Bureau of Land Management Resource Management Plan proposals, especially the John Day Resource Management Plan proposal for land use alternatives which may directly or indirectly affect or influence land management programs of the Forest. The Burns District BLM Office shares with the Forest the responsibility for wild horse management on the Murderers Creek Wild Horse Territory. Common objectives

and population numbers were agreed upon during the review and input period utilizing this process

*g. Federal, State, and  
County Weed Control  
Planning*

In Oregon, a coordination process exists that includes the State Department of Agriculture, formally organized County Weed Control Districts, and all interested parties concerned with noxious weed control, including the Malheur National Forest

The alternatives considered address the policy of the Oregon Department of Agriculture and organized County Weed Control Districts, which is

- 1 Prevent establishment and spread of noxious weeds
- 2 Encourage and implement eradication of infestations of designated noxious weeds.
3. Encourage and assist in organization of noxious weed control programs.
- 4 Cooperate with county and State weed control officers, Oregon State University, and others in developing control measures, conducting surveys, and making project analyses.
- 5 Develop programs for biological control of noxious weeds

A new program for managing competing and unwanted vegetation is being developed by the Pacific Northwest Region (Oregon and Washington) of the USDA Forest Service. The Environmental Impact Statement is being developed for this new program. This new program is the result of a lawsuit filed against the USDA Forest Service by Northwest Coalition for Alternatives to Pesticides, Oregon Environmental Council, and Audubon Society. District Court Judge Burns issued an injunction in 1984 banning use of herbicides in the Pacific Northwest Region of the Forest Service until a "worst case analysis" was completed and properly considered by decisionmakers. The Forest Service completed a Human Health Risk assessment for herbicides which included a "worst case analysis". The Forest Service is now incorporating the risk assessment into their programs for managing competing and unwanted vegetation. The scoping process for preparation of the Environmental Impact Statement is currently underway to identify issues, concerns, and opportunities. The goal is to have a thorough and balanced Environmental Impact Statement and vegetation management program. The program will establish Regional policies, standards, and guidelines for management of vegetation on the Malheur National Forest. The Forest will then develop plans for its own site-specific projects in accordance with the Regional Environmental Impact Statement.

**22. Adverse  
Environmental Effects  
Which Cannot be  
Avoided Should the  
Proposal be Implemented**

Implementation of the preferred alternative would result in some adverse environmental effects. These effects have been discussed in detail earlier in this Chapter. The severity of the adverse effects can be minimized by adhering to the direction in Forest-wide and Management Area Standards in Chapter IV of the Forest Plan.

Some adverse impacts will unavoidably occur to soils, mature and old-growth dependent wildlife species, riparian vegetation, fish habitat, cavity-nesting species habitat, some recreation experiences, and some cultural resources.

Some temporary adverse impacts will occur to insect-dependent birds and air quality.

Most adverse impacts will be within acceptable limits.