

Water yield from forests also can be increased through snow capture. ("Watershed Management In The Rocky Mountain Subalpine Zone' The Status of Knowledge," Charles Leaf, 1975, USDA Forest Service Research Paper RM-137; "Watershed Management In The Central and Southern Rocky Mountains," Charles Leaf, 1975, RM-142, "Managing Vegetation To Increase Flow In The Colorado Basin," Alden Hibbert, 1979, RM-66; and "Snow in Natural Openings and Adjacent Ponderosa Pine Stands On The Beaver Creek Watersheds," Ffolliot, et al., 1965; and others.

Most of the precipitation on the Forest occurs as snowfall during the winter and spring months. Snow typically falls to the ground or lodges in the needles of the trees. Because the Forest is arid and experiences high winds during the winter and spring, most of the snow, especially that which has lodged in tree branches or needles, sublimates directly into the atmosphere, rather than melting. More than 70 percent of the blowing snow evaporates within two miles of its origination site. However, if the snow is captured in drifts, more of it melts and passes into the ground instead of evaporating (See Hibbert, 1979; Leaf, 1975, Ffolliot, 1965).

Snow can be captured by cutting rows or patches into the forest canopy. Strips or patches cut into a forest canopy work in two ways. First, they cause the winds to swirl the snow from tree branches into the openings where it piles into drifts. Drifted snow reduces the surface area to volume ratio so that more snow melts than evaporates from the exposed surface. Patch cuts are thought to be superior to strip cuts since the drifted snow is protected more from wind. Secondly, patch or strip cuts remove some trees, and, therefore, eliminate the transpiration loss from those trees (Hibbert, 1979)

The effects of forest management on water yield, peak flows, low flows, and timing of flow have been studied for more than 60 years. Various studies have shown that increased water yield occurs at the time of snowmelt as a result of tree removal ("Effect of Clearcutting on Streamflow Generating Processes from a Subalpine Forest Slope," C.A. Troendle, August 1987 Proceedings of the Vancouver Symposium).

Water yield increases are a result of both the acres treated by various silvicultural methods and the distribution of harvest areas. They are also a result of surplus water that is dependant on climatic conditions (especially precipitation), elevation, and aspect (Hibbert, 1979, pg. 13). Water yield increases were not modeled for proposed ponderosa pine harvesting on the Forest. The climatic, elevation, and aspect zones of this species on the Forest are not favorable for significantly increasing water yield.

IV ENVIRONMENTAL CONSEQUENCES

Aspen Harvest - An important issue in evaluating the effect of the alternative timber management programs on the Forest's water resources is the reduced effect aspen harvests have on water yield compared to conifer harvests. Three factors must be taken into account. First, aspen resprouts prolifically and quickly revegetates the cut site. Therefore, the potential for increasing water yield from timber harvest in aspen stands over an 80 year rotation is relatively low. Second, rapid revegetation of the cut site lowers the risk of water quality degradation (Hibbert, 1979). When entire watersheds of decadent aspen burn within a short period of time, peak flows are increased over the whole watershed. These higher peak flows may erode bare steep slopes and scour channels. Compared with sustained yield harvesting and mitigated water yield increases, catastrophic, fire-caused increases can be much more damaging.

The Effects

Timber Harvest Water Yield Increases - For all of the alternative timber management programs, timber harvest would increase the amount of water flowing from National Forest lands. The additional water would result from (1) peak snowmelt runoff increases due to greater amounts of snow melted in logged areas and (2) increased late season flows with extra baseflow contributions from water no longer transpiring from soils in those same areas.

Table IV-9 displays the FORPLAN outputs affecting water-yield-induced sediment increases in Rows (1) through (4) and (9). The FORPLAN calculated water yield increases are shown in Row (5). These outputs were used to calculate cumulative acre-feet and percentage water yield increases for suited timber acres.

TABLE IV-9

DECADE 1 ACTIVITIES AND OUTPUTS WITH POTENTIAL TO IMPACT WATER

	Alternatives					
	1A	1C	1D	1E	1G	1H
(1) AVG VOL HARVESTED MBF/YR	35,000	19,600	19,000	61,500	38,800	45,800
(2) AVG ACRES TREATED ACRES/YR	8,582	6,091	3,581	11,505	7,327	7,957
(3) SUITED TIMBER ACRES	362,498	287,882	200,203	881,123	550,131	621,966
(4) MILES OF ROAD CONSTRUCTION MILES/YR	24	11	9	41	24	29
(5) MAXIMUM WATER YIELD INCREASE FOR DECADE ONE AF/YR	13,100	7,500	1,000	17,400	11,100	12,400
(6) CUMULATIVE TIMBER HARVEST WATER YIELD INCREASE AF/YR	30,800*	25,200*	18,700*	35,100*	28,800*	30,100*
(7) WATER YIELD FROM SUITED TIMBER AC AF/YR	347,573*	279,672*	199,884*	810,770*	509,568*	574,937*
(8) CUMULATIVE WATER YIELD % INCREASE ON SUITED TIMBER AC	8.9*	9.0*	9.4*	4.3*	5.7*	5.2*
(9) STEEP SLOPE ACRES HARVESTED OR ROADED	0	0	0	820	0	80

*-Includes 17,700 Acre Feet increase for planning years 1983 through 1988 and FORPLAN Alternative maximum water yield increase. Water yields shown are increases over the baseline total water yield from the Forest of 2.87 million acre feet/year. Baseline water yield is the runoff that would be expected if all watersheds were in a natural pristine condition.

Decade one cumulative (*) water yield increases are shown in acre feet in Row (6) and by percentage in Row (8).

Alternative 1E has the most potential to create additional water (17,400 acre feet per year) while Alternatives 1D (1,000 ac ft/year) and 1C (7,500 ac ft/year) would produce the lowest increases. The existing water yield for the suitable timber acres in the alternatives are displayed in Row (7). Three of the Alternatives (1A, 1C, and 1D) could increase the cumulative water yield for the suitable timber acres by approximately nine percent. The size of this increase is based on the low number of suitable timber acres in these alternatives and on the existing 17,700 acre feet increase for harvesting in the years 1983 through 1988.

For all the alternative timber management programs, the increased water yields generally would be spread out over the entire runoff cycle. Decreases in fall water yields are not expected. These predictions are based on current research ("The Effect of Timber Harvest on the Fool Creek Watershed, 30 Years Later," Troendle and King, Dec, 1985 Water Resources Research Volume 21, pgs. 1915 - 1922).

All of the alternatives schedule aspen for harvest. The preferred Alternative, 1G, would reduce conifer harvesting and increase aspen harvesting. The results of conifer harvesting were modeled using HYSED for the original Forest Plan. The results of this modeling are discussed in the FEIS, pages IV-66 through IV-78. Significant impacts are not expected to result from the increased aspen harvest if the cuts are dispersed throughout Forest watersheds.

Alternatives 1E, 1G, and 1H would not increase the cumulative water yield increase for the suitable timber acres more than six percent. A six percent increase is within the acceptable limits of 10 to 20 percent conversion of a drainage area to an equivalent clearcut area that is recommended for sensitive C classification watersheds (HYSED, October 1981, page 45). Significant water yield increase impacts are not expected for Alternative 1G, but the emphasis on aspen harvest in Alternatives 1E and 1H could cause a concentration of harvest in certain watersheds. This concentration of harvesting would increase the risk of channel damage and degradation in sensitive watersheds. These conclusions are based on aspen harvest research results and water yield research on the Fraser Experimental Forest (The Fraser Experimental Forest, Colorado: Research Program and Published Research 1937-1985, Alexander, Troendle, Kaufmann, Sheppard, Crouch, and Watkins, Rocky Mountain Forest and Range Experiment Station Report RM-118, pgs. 17, 18, 24, and 25).

One issue that was identified in the scoping process involved the effects increased water yields on irrigation ditches that exist on the Forest. Timber harvest in Fool Creek, Fraser Experimental Forest, increased peak discharge by an average of 23 percent when 50 percent of the timbered area of the watershed was harvested. However, Fool Creek is a 714 acre watershed and is not representative of the size of the watersheds that are used as irrigation water sources ("The Effect of Partial and Clearcutting on Streamflow at Deadhorse Creek, Colorado," C.A. Troendle and R.M. King, 1987 Journal of Hydrology 90, pgs. 145 - 157). Forest watersheds that might supply irrigation ditches are typically larger, third to fifth order watersheds. An averaging effect takes place in these larger watersheds. Soils, elevation, aspect, and subdrainage shapes integrate flows to disperse the timing of peak flow increases in the larger drainages.

Water yield increases generated by harvesting subdrainages are usually insignificant when measured at the mouth of the larger drainages. Since most of the ditch diversions are in the larger drainages, increased flows are not expected to have a harmful effect on irrigation ditches. Peak discharges are not likely to effect properly maintained ditches with diversion structures that have been designed to withstand normal variation in peak discharges. Mitigation, if necessary, can be achieved through timely ditch maintenance and diversion structure design and management.

WATER QUALITY

How Timber Management Affects Water Quality

On the National Forests sediment is the primary pollutant created by logging and road construction activities. Sediment may be introduced into stream channels from soil disturbing activities such as timber harvest, road building, and site and slash treatments. Another concern is late summer water temperatures, which have been measured at greater than 70-degrees Fahrenheit at some lower elevations on the Forest. As water temperatures increase beyond 70-degrees Fahrenheit, the cold water fisheries resource would be detrimentally affected. Removal of streamside vegetation, which provides shade and thermal insulation, can increase mean daily summer water temperatures (Richel, Lynch and Corbett, 1982), (Brown, 1980).

Increases in water yield may be accompanied by corresponding increases in sediment yield. In the worst case (if mitigation measures were not implemented) sediment increases, peak flow increases, and channel degradation could be directly proportional to the amount of harvesting and water yield increases. Substantial increases in "peak flows" and sediment levels would cause channels to be scoured due to the higher flows and the greater abrasiveness of these sediment-laden high flows. Deposition of sediment in channels as flow levels recede would constrict channels, cause accelerated flood damage during high flows, and decrease aquatic productivity.

The Effects

If timber harvesting is dispersed, no significant water quality impacts should occur for Alternatives 1A, 1C, 1D, and 1G. The impact of Alternatives 1E and 1H depends upon the inherent stability of the watersheds that would be intensively managed for timber harvest, the dispersion of harvests in these watersheds, and the willingness of the Forest to incur greater costs due to the implementation of soil and water protection measures. In the recent analysis of the ten year timber program, the Forest determined that 820 acres on steep slopes would be harvested or roaded each year for Alternative 1E and 80 acres on steep slopes for Alternative 1H. The risk of water quality degradation would be higher for these two alternatives due to the high number of steep slope acres that would be harvested or roaded.

Clearcutting aspen has less potential to degrade water quality than does cutting of other species because water yield increases are lower for aspen harvest. Aspen also sprouts and revegetates more quickly than other timber species, thus resulting in hydrologic recovery in ten to twenty years (Hibbert, 1979). Increases in aspen harvest present a lower risk of water quality degradation and channel; damaging peak flows than equivalent increases in spruce-fir or lodgepole pine.

Roads are the single biggest source of sediment contributor associated with silvicultural activities (Meghan, 1972; EPA, 1975). As the miles of new road construction increase, sediment production is likely to increase.

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The timber program does provide an opportunity to correct existing road problems. Through timber sales, problem roads can be relocated or reconstructed. Graveling roads is also commonly done to improve water quality.

In a 1986 technical conference on the management of subalpine forests, J. D. Stednick addressed the potential impacts of timber harvest on sediment production. His conclusion was that, "increases may occur from roading and harvesting, however the increase is short lived and often not measurable when Best Management Practices have been utilized" ("The Potential of Subalpine Forest Management Practices on Sediment Production," J. D. Stednick, 1987, Rocky Mountain Forest and Range Experiment Station Report RM-149). Since Alternatives 1A, 1C, 1D, and 1G (Refer to Table IV-8) have relatively low road construction mileages and "Best Management Practices" are provided by Forest Prescriptions such as the 9A Riparian Prescription, General Direction, Standards and Guidelines and Timber Sale Contracts, significant sediment increases are not expected.

Of the direct effects discussed, spruce-fir timber harvest poses the highest risk for degradation of water quality. Consequently, conifer harvest was modeled using HYSED for the original Forest Plan. The results of this modeling are discussed in the FEIS pages IV-66 through IV-78.

Need For Mitigation

Detailed conservation requirements and practices for all Forest streams are included in the Forest Standards and Guidelines. Riparian areas (including the stream, its floodplain, and the adjacent "water influence zone") are given special attention as required by 36 CFR 219.27. A special Management Prescription (9A) has been assigned to all riparian areas. This Management Prescription defines the range of acceptable activities on the Forests' riparian areas. The Mitigation Measures for Soils Resource provides additional information.

Summary of Effects on Water

Although the alternatives do vary with regard to their effects on water yield and sediment production, our analysis indicates that none of the six alternatives would result in a significant adverse impact to water resources. In addition, no alternative is expected to generate significant increases in water yield. This conclusion is based on three factors: 1) for all alternatives the most environmentally sensitive areas have been excluded from classification as lands suited for timber production, 2) harvest activities will be distributed across the Forest and over time, and 3) mitigation measures commensurate with the sensitivity of the site and the value of the resources will be included in project design. For alternatives 1E and 1G, which schedule harvest on steep slopes, the cost to produce timber would be more expensive due to the need for additional mitigation costs. For example, full bench roads and advanced logging systems are commonly needed for steep slope areas. The ability of a project to support those increased costs is not a factor in whether or not the mitigation measures are needed.

RANGE RESOURCES

How Timber Management Affects Range Management

Range vegetation and range management would be affected by aspen harvest in all of the alternative timber management programs. Four important documents have been published since the Forest Plan and FEIS were prepared. These describe the complete range of environmental effects of aspen management. These publications are:

- *Examples of Aspen Treatment, Succession and Management in Western Colorado*, Barry C Johnston and Leonard Hendzel, USDA Forest Service, 1985,
- *Guidelines for Managing Aspen*, The Aspen Panel, USDA Forest Service, 1985,
- *Silviculture of Aspen Forests in the Rocky Mountains and the Southwest*, Wayne D Shepperd, Rocky Mountain Forest and Range Experiment Station, 1986, and
- *Aspen. Ecology and Management in the Western United States*, ed. Norbert V DeByle and Robert P. Winokur, Rocky Mountain Forest and Range Experiment Station, 1985.

These publications provide a fuller understanding of the effects that range management and aspen management have on each other and on the human environment. These four publications are incorporated into this SEIS by reference.

Large, created openings in areas of widespread aspen stands are desirable for livestock (The Aspen Panel, 1985). These openings produce significantly higher short term increases in available and palatable forage for sheep and cattle. The amount of forage increase varies widely among aspen sites, and depends upon the aspen type, the site capabilities, and the time required to re-establish tall tree cover (Johnston and Hendzel).

Johnston and Hendzel showed that 1) total understory production in selected aspen stands doubled and sometimes tripled (up to 3,000 pounds/acre/year), where openings were created; 2) that the increased production usually lasted for about 10 years or until aspen saplings begin to exert dominance in the canopy; and 3) that forage production returned to original levels as the tall aspen canopy cover increased in height. This usually occurred about 18-20 years after treatment. Forage increases were greatest in "conifer-invaded aspen stands" where pre-treatment forage production was lower than in pure aspen stands.

Whenever a temporary increase in forage production occurs, such as that caused by timber sales, the practice on the Forest has been to use this as "transitory range" (temporary). Future stocking levels are not based on this temporarily increased forage. Transitory range is used to relieve other areas from overstocking or to increase livestock distribution. This practice will not change.

The distance of a created opening in aspen from a park, meadow, or other large opening that may be grazed directly affects the amount of forage use by domestic livestock (The Aspen Panel, 1985). There are also two barriers to increased livestock and wild herbivore use in a created opening. First, large volumes of slash left in the opening by loggers physically restrict animal movement through the opening (Johnston and Hendzel, 1985). Current use standards would prevent these slash barriers. The second barrier to livestock movement and use of the forage in the opening is the tremendous increase in aspen sprouts. Livestock avoidance of man-created openings in aspen stands usually begins four to six years after clearcutting. Within twenty years, or when tall tree cover has been re-established, the sites again become accessible to livestock.

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Generally, sheep eat forbs and cattle eat grass. As the aspen grows back and canopy height increases, forbs usually dominate the understory community and grasses decline.

"If cattle use an area heavily over several to many years, aspen sprouting can be significantly reduced, but rarely eliminated. Often this will happen only after all other forage has been removed or else when a stand had been grazed in the spring, before much of the cattle forage had appeared. Treatment blocks should be large, both to minimize effects of congregation on a small area and also to minimize the amount of unusable (as forage) forest edge." (Johnston and Hendzel) Browsing damage is reduced if more acres within an area are treated at one time.

The Effects

Created openings and road construction can affect livestock distribution in both positive and negative ways. In some cases, man-made openings through the forest make trailing and movement of livestock from one pasture to another easier. However, livestock (primarily cattle) may also develop new habits as a result of clearings in the forest which may make herding/trailing/gathering more difficult.

In sum, the effects of the alternative timber management programs are to vary the acreages of aspen clearcutting and create a temporary increase in the amount of forage available to livestock. The increased capacity would be considered temporary (transitory) in nature and would be used as a management tool to improve livestock distribution and use, but would not be used to increase stocking capacities. The miles of road built to reach the stands also vary by alternative and would have indeterminate effects on the distribution of livestock.

Alternatives 1E (2,791 acres) and 1H (2,000 acres) schedule the greatest number of acres of timber cutting in aspen, as well as the highest road construction mileages. Consequently, these alternatives have the greatest potential to temporarily increase forage available to livestock. Alternatives 1A, 1C, and 1D would have the least potential to increase forage, with annual aspen harvests at 310 acres for 1A, none for 1C, and 489 acres for 1D. The proposed alternative, 1G, would provide a moderate number of acres available for forage (1,370 acres).

Mitigation

Recommended mitigation measures include:

Plan aspen sales that fall within a range allotment with range management input to provide the analysis with information about possible conflicts and practical solutions (Johnston and Hendzel, 1985).

Make openings of sufficient size and number within a given area to keep the density of browsing in openings to a level that would assure adequate regeneration.

Provide for adequate structures such as cattleguards and wing fences where permanent timber sale roads may have a negative effect on livestock distribution.

ROADLESS AREAS

How Timber Management Affects Roadless Areas

On lands identified as suited for timber production, roads constructed for purposes of timber management would allow regular intrusion by humans. The roadless character of an area would be lost.

The Effects

None of the Alternatives would require entry into the Kannah Creek Area for timber cutting. Alternatives 1A and 1E would enter both the Roubideau and Tabeguache areas for timber harvesting purposes as displayed in Table IV-10 below. Table IV-10 identifies how the roadless areas would be affected by each of the alternatives.

TABLE IV-10

EFFECTS OF ALTERNATIVES ON ROADLESS AREAS (1st DECADE)

Alternative	Roadless area acres affected by proposed timber sales	Estimated # of roadless areas to be impacted	% of roadless areas impacted by proposed timber sale	Total acres entered in Roubideau	Total acres entered in Tabeguache
1A	3,009	11	3.2	349	1,067
1C	2,132	8	2.3	0	0
1D	1,253	5	1.3	0	0
1E	10,242	26	10.9	1,100	1,286
1G	4,485	20	4.7	0	0
1H	4,808	21	5.1	0	0

VISUALS/SCENERY

How Timber Management Affects Scenery

Timber management activities can affect the scenery of a National Forest by creating major changes in the line, form, color, and texture of the characteristic landscape. For example, a timber sale in a coniferous forest could result in changing the normal color of the landscape from the dark green of the forest canopy to the light brown of the soils on the forest floor. This creates contrast in line, form, color, and texture different from the characteristic landscape, and thus the logged area becomes more visible to people.

The degree to which the characteristic landscape of an area is changed by management activities is determined by several factors. These include:

- 1) the extent of the area affected by the activity,
- 2) the shape of the project area (unnatural geometric lines and angles would contrast more than lines which follow the natural landscape),
- 3) vegetation composition (variety, distribution of total vegetation cover, and height of the vegetation),
- 4) natural openings (size and distribution),
- 5) soil color contrast (lighter soils have greater contrast potential), and

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6) slope (as slope increases, greater portions of the timber management activity would be visible).

Every management activity which alters the landscape through vegetation and soil manipulation or by introducing structures would affect visual resources. The extent of the effect would ultimately be determined by how well the treatment blends with the surrounding landscape

The Effects

The VQO's would be the same for all alternatives of the Forest Plan. However, the amount of visual change from the present visual condition would be greatest in alternative 1E and 1H; moderate for alternatives 1A and 1G; and least in alternatives 1C and 1D.

Need For Mitigation

Each management activity on the Forest, especially timber management and road construction activities, must be designed to meet the Visual Quality Objectives for the area in which the activity occurs. Each project must conform to the Standards and Guidelines described on pages III-7 through III-9 of the Forest Plan. No activity would result in significant environmental effects from the visual resource management standpoint. There is no need for mitigation of the effects of the alternative timber management programs on the Forest's visual resources

RECREATION OPPORTUNITIES

With the exception of the changing timber management program objectives, other management programs for the Forest are unchanged from one alternative to another. The following section focuses on the effects of the timber management alternatives on dispersed recreation. The developed recreation, downhill skiing, and wilderness recreation programs are unaffected by the range of alternatives evaluated in this final SEIS and remain unchanged from the 1983 Forest Plan.

How Timber Management Affects Recreation Opportunities

Timber harvesting and the associated road building usually result in a modified environment which falls into the Roaded Natural or, rarely, the Urban Recreation Opportunity Classes. Acres which are currently roadless or have a very low density of roads may be classed as Semi-primitive Non-motorized or Semi-primitive Motorized. Timber harvesting in these areas would typically result in constructing roads and changing the character of the area in a way that would result in a change of the ROS class to Roaded Natural. In some cases the semi-primitive classification of some areas could be maintained following harvesting if special precautions were taken in planning of harvest activities and if roads were closed and obliterated following the harvest.

The Effects

Table IV-11 displays the approximate acres in each ROS class by alternative as a result of ROS changes by the end of the first decade.

TABLE IV-11

**RECREATION OPPORTUNITY SPECTRUM CLASSES IN THOUSAND ACRES/
Thousand RVD's/Year Capacities**

Alternatives

ROS CLASS	1A	1C	1D	1E	1G	1H
Primitive	218/37	218/37	218/37	218/37	218/37	218/37
Semi-Primitive Non-Motorized	772/510	784/517	784/517	752/496	770/508	765/505
Semi-Primitive Motorized	1222/806	1235/815	1235/815	1200/792	1219/804	1213/801
Roaded Natural	707/12662	682/12215	682/12215	749/1341	712/12752	723/12949
Rural	33/2128	33/2128	33/2128	33/2128	33/2128	33/2128

The number of acres in the primitive ROS category remains the same for all alternatives. These primitive acres would be unaffected except in the alternatives where semi-primitive acres are reduced. "Back country" use, now being satisfied in semi-primitive areas, may be concentrated in the remaining primitive and semi-primitive areas. This would result in a reduction in the quality of the back country experience for the user, especially during the peak-use periods of hunting season and summer holidays.

Semi-Primitive (both Motorized and Non-Motorized) opportunities change among the alternatives. Alternative 1E would create the largest loss of Semi-Primitive acreage with an estimated decrease of 5%. Alternative 1H would have the next largest loss in acreage in semi-primitive with an estimated decrease of 4%. These decreases would include losses in sensitive areas such as Kebler Pass corridor, Dallas Divide, Cimarron (area west of Silver Jack Reservoir) and McClure Pass. Alternatives 1A and 1G would create an estimated loss of 3% and Alternatives 1C and 1D would create an estimated loss of 2%.

The demand for dispersed recreation opportunities has steadily increased over the last 15 years. Changes in acreage among Recreation Opportunity Classes from the current direction (Table IV-11) to the projected alternative direction should meet the projected demand in all demand categories. Alternatives showing the greatest loss of semi-primitive acres are at the greatest risk of having demand exceed theoretical capacities at the end of 50 years. Reduction in the semi-primitive component of the Recreation Opportunity Spectrum appears to tip the balance of dispersed recreation away from the lower intensity end of the spectrum. However, the Grand Mesa, Uncompaghre, and Gunnison National Forests continue to provide a balanced mix of recreation opportunities under all of the alternatives analyzed (unusual for any National Forest in the National Forest System).

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Need For Mitigation Public land managers and those participating in recreational endeavors on the National Forests are often concerned about the compatibility of recreation with other resource management activities. An issue frequently raised by reviewers of both the draft SEIS and the proposed amendment was whether timber harvest was detrimental to the recreation experience on the Forest, and, ultimately, the community income generated by recreation activities. Because a perception of "naturalness" in the recreation environment is important to the recreational user, consideration of recreation and scenic values is woven into all resource management activities on the Grand Mesa, Uncompaghre, and Gunnison National Forests

Each management activity, specifically timber management and road construction projects, would be planned and designed to meet the physical setting criteria for each Recreation Opportunity Spectrum Class and its associated Visual Quality Objectives. Each management activity would conform to the Standards and Guidelines.

WILDLIFE AND FISH

How Timber Management Affects Wildlife and Fish

A great variety of birds, fish, and animals inhabit the Grand Mesa, Uncompahgre, and Gunnison National Forests. Commercial timber management activities can affect the Forest's wildlife and aquatic resources by reducing, changing, or improving their habitat conditions, or by displacing individual animals. Individual species as well as groups of species, respond differently to commercial timber management activities. Timber management operations can improve ecological conditions for some species while reducing the quality of these conditions for other species. The changes in habitat are, in part, determined by the methods of harvest used, the characteristics of the sites where timber harvest and road-building take place, the timing and the intensity of harvest, the size and distribution of the harvest areas, and the sensitivity of the wildlife and fish species occupying the harvest areas.

The effect and size of the changes that commercial timber management activities bring to habitat conditions is best determined by predicting the changes which would occur at each project site in relationship to the surrounding landscape. Specific habitat capabilities and habitat effectiveness levels for big game and indicator species would be measured at the project level using two Regional models, R2 HABCAP and R2 FSSIM. However, we can generalize about the kinds of changes the alternative timber management programs would create in existing habitat conditions, the general significance these changes would have for wildlife populations, and the trends of habitat capability and habitat effectiveness for management indicator species.

The environmental effects of the alternative timber management programs on the Forest's wildlife and fish resources are indicated in terms of the effects on wildlife species diversity (or richness), management indicator species, big game movements, big game habitat effectiveness, riparian areas, aquatic resources, and threatened and endangered species.

Timber harvesting, and associated road construction activities, have the potential to create significant adverse effects on the riparian ecosystem. Davis (1977) stated that the alteration of the aquatic/riparian ecosystem complex is thought to be one of the more significant causes of (species) extinction, i.e., *when wildlife niches are altered, a species must move, adapt, or die.* Riparian habitats provide living conditions for a greater variety of both aquatic and terrestrial wildlife than any other habitat type. Riparian habitats are of paramount importance in producing and maintaining biotic diversity. They are the most critical wildlife habitat types in the managed forests and rangelands with more wildlife species depending entirely upon, or spending disproportionately more time in, this habitat than in any other type (Thomas et al. 1977).

Any loss or disturbance of riparian areas through road building or timber harvest activities could adversely impact affect systems. Although riparian systems associated with the streams on Forest Service lands vary considerably in terms of plant diversity (i.e , some are totally exposed or have a riparian community consisting primarily of willow species while others have stratified riparian vegetative communities consisting of conifers, deciduous trees and shrubs), timber sale units are usually associated with the more diverse, stratified riparian systems. These are the riparian systems where timber harvesting activities can cause the most habitat disturbance or degradation. The loss or modification of these riparian systems can cause irreversible changes to the aquatic system and result in long-term habitat degradation.

The major objectives of the fisheries resources management program are the maintenance, improvement, and enhancement of aquatic habitat. Aquatic habitat degradation may result from timber harvest and road building primarily from increased sediment loads throughout the watershed. These sediment loads may cause a loss of spawning and rearing habitat, thus reducing the productivity of the stream by the elimination of micro-habitat, by covering and embedding stream gravels and smothering developing eggs and juveniles. Not only can this affect the various salmonids, but also the increased sediment loads could affect the macroinvertebrate food base by filling in the interstitial spaces between the gravels and small rubble with soil. These gravel and rubble areas are the most productive areas for the production of aquatic invertebrates and are an essential aspect of a stream's ability to support a healthy and diverse fishery by providing for an adequate food-base.

Removal, or significant reduction, of riparian vegetation may result in increased water temperatures, decreased streambank stability, streambank erosion, channelization, and a greater amount of sediments and debris reaching the stream due to the lack of "filtering" provided by the riparian vegetation. Timber harvest and/or road building within the aquatic/riparian corridor may cause the alteration of the natural stream channel and result in the loss, or reduction in quality, of pools, meanders, undercut banks, and riffles that provide food, cover, and shelter for fish and other aquatic life. These types of disturbances may also cause the stream to become wider and shallower through erosion. As the stream becomes wider, any benefits from the riparian system in terms of leaf litter, organic input, and terrestrial insects as a food base begin to diminish. The overall change in stream channel morphology may ultimately result in a less diverse and less stable aquatic community and thus reduce the value of the Forest's aquatic resources.

The Effects on Management Indicator Species and Diversity

Aspen

Aspen is a major habitat type for many wildlife species. Aspen stand maintenance and regeneration to provide a mix of structural stages is important for both habitat diversity and species richness. Separating large contiguous blocks of non-regenerating, mature aspen through mechanical means will contribute to a desirable distribution of different structural stages which are of value to many wildlife species. Species dependency on aspen and the various structural stages within the aspen type varies. The mature stages provide the necessary habitat for species requiring the later structural stages of aspen such as the red-naped sapsucker. This species is highly dependent on the later aspen stages and therefore is an indicator of this structural stage. This species, and the group of species it represents, would be adversely affected by decreased habitat capability as more acres of mature aspen are treated, (the amount of mature aspen is an indicator of the amount of snags). This decrease would be realized for up to 90 years, until the regenerated aspen stand would again provide seven inch and larger DBH snags. The less the amount of mature aspen harvested, the higher the habitat capability would be for this group during the first decade.

The earlier structural stages in aspen provided by the grass-forb/seed-sapling stages typically exist following disturbance of mature stands. These earlier structural stages can be created through natural means such as fire or through man-induced operations -- generally clearcutting. Although no known species are solely dependent on this structural stage, foraging species such as elk and deer are highly attracted to this stage and serve as indicators for the earlier structural stages. Elk and deer, and the group of species they represent, would benefit most as more acres of mature aspen are harvested, provided a sufficient level of habitat effectiveness exists (see discussion on big game habitat effectiveness). Habitat capability for cover, depending on the stand structure prior to cutting, would be temporarily decreased until the stand reaches a height and density able to hide 90% of an elk at 150 ft ; this would generally occur in four to six years.

The mid-structural stages of aspen are necessary to provide both the link from the early to late stages and diversity. They also afford necessary nesting habitat for the warbling vireo. The warbling vireo is an indicator of the post/pole stages, generally trees in the 5-9" DBH category. Due to the low demand for products in this size category and the low volume of wood fiber existing in these stands, they are generally not scheduled for cutting and would advance to the mature stage naturally. Harvesting of the mature stands would provide the post/pole nesting stage for the warbling vireo approximately 15 years after the cut, during which time the habitat capability would be low. This post/pole stage would last for approximately 20 years at which time the habitat capability of the stand for the warbling vireo would decrease. Table IV-12 displays the average annual level of aspen harvest by alternative for the first decade. The large majority of these acres would be in the mature to old growth class. Those alternatives which harvest the most mature aspen acres would have the most adverse impact on those species which use the later structural stages of aspen, while those which are attracted to the earlier structural stages would be most positively affected.

TABLE IV-12

**AVERAGE ANNUAL ASPEN HARVEST ACRES BY ALTERNATIVE
(FIRST DECADE)**

	Alternatives					
	1A	1C	1D	1E	1G	1H
Clearcut Acres	310	0	489	2797	1376	2006

Conifer Forests

The effects of vegetative treatment in the conifer browse, shrub, and grassland types must be considered on the management indicator species. Table IV-12 displays the number of acres treated by alternative and decade for the timber types and method of treatment. Table IV-13 summarizes the first decade average annual vegetation treatment acres by method in all vegetative types except aspen.

TABLE IV-13

VEGETATION TREATMENT BY METHOD

	Alternatives					
	1A	1C	1D	1E	1G	1H
Clearcut	1186	0	0	733	733	733
Shelterwood	7086	6091	0	7975	5218	5218
Selection	0	0	3092	0	0	0
Total	7827	6091	3092	8708	5951	5951

Those acres displayed in Table IV-13 that are cut through the clearcut, shelterwood and selection methods are in the mature to old growth structural stages. All alternatives which include treatment activities would gradually reduce the old growth/mature structural stages of the Forest. Clearcutting would reduce this stage the most and the selection method the least. This loss could have long term effects on many wildlife species, particularly old-growth dependent species. The loss is directly related to the rate of natural succession of the earlier structural stages to offset removal of later structural stages through treatment activities. Localized decreases in habitat capability for these species would be reduced for 80 to 140 years depending on the vegetation type cut. Due to the mobile nature of the species dependent on mature/old growth, this reduced habitat capability would have varying effects. Alternatives which harvest higher levels would reduce habitat capability for these species the most and for longer periods of time. This would cause greater losses of habitat capability for longer periods of time. Alternatives with lower harvest levels would still experience a loss; however, the loss would be more localized and would be offset sooner through natural succession of other stands.

All management indicator species require hiding cover. Short-term loss of hiding cover occurs in all of the alternatives during the first two decades. Cuts in the conifer types may destroy hiding cover up to 15 years following treatment. During this time, species would be displaced to adjacent, possibly less attractive, sites to find their hiding cover needs. In most cases the regenerated stands would provide better hiding cover for big game than the mature stands once they reach an average height of six feet. Of greater concern is the long-term loss of big game thermal cover which would result in all alternatives. The removal of mature/old growth vegetation causes a reduction in thermal cover. These reductions would not be recovered until the stand achieves a 70% canopy and a 40 foot height. Elk are used as an indicator species which require thermal cover. Those alternatives which schedule larger numbers of acres of mature stands for harvest have the potential to reduce the hiding cover (short term) and thermal cover (long term) for all indicator species, and so reducing the habitat capability for these needs; those with lower levels have the least potential to reduce habitat capability for hiding and thermal cover.

The alternatives which harvest trees all have the potential to increase forage opportunities for species which are attracted to the earlier structural stages. These species' habitat capability would be increased for foraging purposes. Edge dependant species and those species which use edge for daily activities will also be enhanced. Those alternatives which cut larger numbers of acres of mature stands have the potential to increase the forage needs and edge component the most; those with lower levels have the least potential to provide these needs.

The effects of logging on the needs of management indicator species must also address the limiting factors. In most cases, on summer ranges, hiding cover needs are more limiting than foraging needs. For big game these needs vary by seasonal ranges. In terms of forage, winter ranges are considered the limiting factor for big game numbers. On the average, an estimated 2091 elk and 5816 deer winter on the Forest lands associated with each of the six alternatives. Based on the differences among the alternatives, the changes in populations are insignificant since such a small percentage of big game wintering habitat is located on National Forest lands. Also, limited timber harvesting occurs on these winter ranges due to the low commercial value of these resources. Thus, the average annual outputs for elk and deer for the first decade are 2091 and 5816, respectively.

These numbers are a result of the effects of all harvests, including aspen. Cuts which occur on winter ranges have the most significant impact on population numbers. Cuts on summer ranges have the potential to increase or decrease habitat capability and effectiveness for elk and deer; however, the numbers are controlled by winter range capabilities. Implementation of Forest Direction (see mitigation measures) on harvest sites would provide a level of habitat capability and effectiveness on summer ranges to accommodate the numbers limited on winter ranges.

The Effects on Habitat Effectiveness

Aspen

Habitat for elk and deer is greatly influenced by open roads and the composition of forage and cover. Mature aspen can offer varying degrees of security and forage. Mature stands with no regeneration generally offer little hiding or big game browsing opportunities but may provide forbs and grasses for foraging. However, these stands offer little value on winter ranges when the grasses and forbs are unavailable. Mature stands with conifer invasion offer more security cover but less forage value. The early structural stages of aspen that are created by harvesting offer less hiding cover than mature stands, however, within four to six years hiding cover increases. The harvested stand would immediately release aspen suckers, grasses, and forbs and provide generous amounts of forage and browse for big game. On winter ranges the increase in aspen suckers is particularly important since this may be the only forage available due to snow cover.

Vegetative hiding cover becomes less important as the level of human disturbance decreases. The open forage areas of the early structural stages are used more heavily as human disturbance decreases. In contrast, increased human disturbance creates a need for more hiding cover and open foraging areas become less important. Therefore, the capability of these habitats to support elk and deer is directly affected by the amount of human disturbance that is present. These human disturbances can be a direct result of forest activities, such as, aspen harvesting, or roads constructed for aspen harvest and left open for continued public use. The levels of disturbance are displayed by alternative in Tables IV-12 and IV-14. As more acres of aspen are harvested, the level of disturbance to big game will increase and the suitability of the habitat will decrease. However, this decreased habitat suitability would be short-term and would stop when the activities stop. Roads which would remain open following logging activities are a good indication of the amount of human disturbances that could to be expected. Although the current Forest direction is to close all newly constructed roads unless documented analysis dictates a need to keep them open (Forest Direction #0075), those alternatives with the most miles of road construction per year also have the greatest potential to keep more roads open. Those alternatives which have the highest open road density would have the most negative impact on big game habitat effectiveness. Those with the lowest open road density would have the least effect on habitat effectiveness.

TABLE IV-14

AVERAGE ANNUAL MILES OF LOCAL ROAD CONSTRUCTION IN ASPEN TYPE

	Alternatives					
	1A	1C	1D	1E	1G	1H
CONSTRUCTION (miles)	2.2	0.0	3.5	20.6	9.7	14.2
RECONSTRUCTION (miles)	1.5	0.0	2.4	14.5	6.7	9.8
TOTAL	3.7	0.0	5.9	35.1	16.4	24.0

IV ENVIRONMENTAL CONSEQUENCES

Conifer Forests

The effects are directly related to the amount and kind of harvest, the location of the harvest, and the level of human activities during and after the treatment. Concurrent activities both within a geographical area would affect a larger portion of the Forest since elk and deer would be forced to move to areas outside of their preferred habitat and occupied by other species. This would occur during the actual harvest activities and could continue indefinitely depending upon the administrative management of the area and the level of habitat effectiveness as determined by human disturbances. The addition of a single lane road prism, 11 feet wide, removes an estimated 2.6 acres of habitat per mile from elk use (Pedersen 1978). The total loss of habitat can be calculated by the amount of new open roads that would result from the alternatives. Many local roads would be scheduled or designated for closure following the logging activities in order to meet wildlife habitat and other resource objectives (see Forest Direction #0075). However, with the continuing combination of activities associated with logging, many roads may be open again prior to their final closure, and the result would be an ever increasing disturbance to elk and deer. These levels of road construction are displayed in Tables IV-14 and IV-15.

TABLE IV-15

AVERAGE ANNUAL MILES OF LOCAL ROAD CONSTRUCTION CONIFER TYPES

	Alternatives					
	1A	1C	1D	1E	1G	1H
CONSTRUCTION (miles)	21.6	11.0	5.6	20.4	14.6	14.6
RECONSTRUCTION (miles)	23.7	15.0	7.6	24.2	16.5	16.5
TOTAL	45.3	26.0	13.2	44.6	31.1	31.1

The Effects on Big Game Movements

Aspen

As previously discussed, elk and deer movements and their presence can be influenced by human activities. These movements can be a result of such Forest activities, as aspen harvesting or the amount of open roads available for public use. Those alternatives which schedule the most acres of aspen for harvest and have the highest open road density, as displayed in Tables IV-12 and IV-14, would have the most probability of displacing big game from their preferred seasonal ranges. The impacts of these displaced herds on private lands would depend upon where the activities occur in relation to the private lands. Herds which occupy Forest lands adjacent to private lands may be displaced to either those private lands or to adjacent Forest land. Big game movements will react similarly in the aspen type as in other timber types.

Conifer Forests

The effects of timber harvesting on displacing big game to private land would be the same on elk and deer as discussed under Big Game Habitat Effectiveness. *The effect would be more far reaching however, since displaced herds affect not only other objectives on Forest Service lands but also the resource objectives of private landowners.* Among the potential impacts are the damage or consumption of forage and fruit crops, damage from trampling and compaction of soils, damage to fences and other range improvement, and damage to irrigation ditches. Impacts would vary with the degree of livestock use on and adjacent to Forest lands, weather conditions, hunting pressure, current and past vegetative treatments on summer and winter ranges, and the availability or palatability of the forage and other habitat conditions on private lands. Increases in the acres of disturbance and the resulting accessibility from open roads would decrease habitat effectiveness on Forest land. If these activities are of a large enough magnitude within a watershed and adjacent watersheds do not provide adequate levels of habitat effectiveness, these animals may be displaced to private lands. This may also cause increased damage claims by private landowners to the Colorado Division of Wildlife. Due to the limited amount of winter range on Forest Service land, the restrictive activities of the 5A and 5B Management Area Prescriptions (winter range management emphasis), and the limited opportunities to treat vegetation during the winter months, *this potential problem is not a concern on winter ranges. Those alternatives which treat more acres and build more roads, as displayed in Table IV-13 and IV-15, have the most potential to displace big game to private lands, the opposite is also assumed to be true*

The overall effects of timber harvesting on big game damage on private lands adjacent to the Forest are among the most difficult to estimate. In light of the discussion above, some broad generalizations must be made.

- Private lands that lie within big game winter ranges would be used by elk and deer, particularly during severe winters, regardless of conditions or practices on the adjoining Forest lands.
- As elk and deer fluctuate in numbers, corresponding fluctuation in use of private lands and Forest lands would occur, regardless of other factors or mitigation measures.
- Providing high quality habitat for big game on Forest lands, especially on winter ranges, may reduce impacts to private lands.

RIPARIAN

The Effects On Riparian Areas

Aspen

The direct effects of harvesting aspen within the riparian ecosystem would be minimal because of the limited amount of harvesting which occurs in the riparian zone. This is due to the restrictive activities of the riparian management area prescription (9A), which include maintaining an upper mid-seral successional stage. These restrictions are applicable wherever riparian zones occur on the Forest. However, the effects of clearcutting aspen outside the riparian zone can have an impact. Harvesting activities have the potential to affect streams and riparian zones through increases in sedimentation, debris barriers, changes in water temperature, and streambank breakdown. This is especially true within the area directly affected by the harvest activities although the impact could be realized many miles downstream. The potential for impacts to riparian areas are expected to be directly related to 1) the amount of area harvested and type of cut, 2) slope, and 3) distance of harvest activities from the riparian zone. Alternatives with a high number of acres to be harvested are expected to increase the risk of impact; the opposite is also assumed to be true.

Road construction is often necessary to harvest aspen. Road construction has a more critical and long lasting impact on riparian zones than any other management activity (Hoover and Wills, 1984). The incremental sediment contribution from roads is often many times that from all other land management activities, including log skidding and yarding (Yee and Roelofs 1980). Sedimentation studies by Corning and Farmer (1964) on three tributaries of the North Fork of the Poudre River, Colorado, indicate that roads are the source of 80% of the suspended sediments (Hoover and Wills 1984). The potential for impacts to riparian areas as a result of road construction is directly related to the number of newly constructed roads. The amount of newly constructed roads are usually a direct result of the amount of timber harvesting that occurs. In addition to the increased number of roads constructed by alternative, the increased number of acres harvested is expected to increase the risk of impact, the opposite is also assumed to be true. These levels are displayed by alternative in Table IV-12 and IV-14.

Conifer Forests

With the application of the 9A Management Area Prescription throughout the Forest, the effects of treatment on other timber types in the riparian zone would be similar to the effects discussed above. Forest Standards and Guidelines specify riparian best management practices and are assumed to be sufficient to prevent stream, streambank, and riparian zone degradation. However, the potential for riparian zone degradation does exist as a result of vegetative treatments outside of the riparian zone. The alternatives which cut more acres and build more roads would have an increased risk of impact; the opposite is also assumed to be true. These levels are displayed in Table IV-13 and IV-15.

The increased sediment yield and aquatic habitat degradation (based on percent increase in water yield) associated with Alternative 1E would have the greatest potential for affecting the Forest's fisheries and aquatic resources. Alternative 1C and 1D would have the least impact based on projected increases in water yield and subsequent increased sediment load (refer to Water Resources, Table IV-9, page IV-27).

In road construction, culvert placement, and associated activities, Alternative 1E would cause the greatest adverse impacts on aquatic resources. Alternatives 1C and 1D would have the least effect based on miles of construction. Alternatives 1A, 1G and 1H would appear to have low high to moderate potential for affecting the aquatic resources depending on the quality of road construction, road location and culvert placement (refer to Water Resources, Table IV-9). However, any of these roads have the potential to significantly impact aquatic/riparian systems if proper long range planning and design are not considered in terms of how these roads relate to the total watershed.

Of all the alternatives considered, Alternative 1E would have the greatest potential for adversely affecting the aquatic resources. This is due primarily to increased water yields, possible sedimentation, and the relative percentage of the timber base scheduled for cutting. Alternatives 1E, 1H, 1G and 1A would have the greatest potential for affecting aquatic/riparian systems from road location and construction.

In road design and construction Culvert placement is one of the most important factors to consider in protecting the fisheries resource. If culverts associated with road construction are not properly designed, significant downstream impacts would result from increased sediment loads, barriers to fish migration, and channel erosion. Haugen et al. (1982) suggests best management practices (BMPs) for road planning and design, road construction, and maintenance. By following these BMPs, and the Forest Directions and prescriptions, impacts to the aquatic and riparian systems should be held to a minimum.

THREATENED AND ENDANGERED SPECIES

The Effects On Threatened And Endangered Species

Although any management activity has the potential to affect threatened and endangered species, compliance with the Endangered Species Act and the consultation processes on a case by case basis would assure that there would be no adverse effect to these species under any of the alternatives. This was the consensus of the U.S. Fish and Wildlife Service (USFWS) in both the consultation process which occurred in the original planning stages and the subsequent findings described in the May 25, 1983 memo from the Acting Field Supervisor of the USFWS to Jimmy Wilkins, Forest Supervisor, Grand Mesa, Uncompahgre and Gunnison National Forest. The "no effect" determination by the USFWS model holds true within this analysis. The Forest Service would closely evaluate all land use practices and appropriately justify the "may affect" or "no effect" determination as required by Section 7 of the Endangered Species Act. If the determination is "may effect" for listed species, a written request for formal consultation and a copy of the biological assessment and/or relevant information, would be sent to the Colorado State Supervisor of the USFWS.

Need For Mitigation Many of the management techniques used to mitigate the impacts on wildlife and fish species discussed above do not significantly vary by alternative. These are discussed in Chapter 3 of the approved Forest Plan. These are some of the directions for mitigation that relate to the identified issues and concerns.

Management indicator species and wildlife diversity

- Created openings would generally not be more than 40 acres in size.
- Suitable security areas would be left between all openings, natural or created.
- Within diversity units 5% or more should be in old growth and 5% should be in the grass forb structural stages.
- Created or modified openings would have a Patton edge index of at least 1.4 and have at least a medium-edge contrast.
- At a minimum, an average of 6-10 snags would be present per 10 acres of minimum D.B.H.
- Forest Direction #0408, P. III-19, 20 and 21 require specific standards for each indicator species for the critical habitat needs.
- Habitat capability for all species on the Forest would be maintained at 40% or more of potential and 80% for indicator species.
- In forested ecosystems, a minimum of 50% of the diversity unit would be maintained as hiding cover.

Big game habitat effectiveness and movements

- Maintain habitat effectiveness of at least 50% throughout the Forest as well as 80% on areas emphasized for big game management and 90% on winter ranges.
- Manage road use to provide for habitat needs of indicator species, this would include road and area closures.
- Maintain cover that hides 90% of an elk at 200 yards along 75% of all arterial and collector road edges.
- Close all newly constructed roads to public motorized use unless a documented analysis shows a need and the road does not adversely impact other resources.

IV ENVIRONMENTAL CONSEQUENCES

Aquatic/Riparian

- Manage forest cover types to perpetuate tree cover and provide healthy stands, high water quality, and wildlife and fish habitat.
- Maintain all riparian ecosystems in at least an upper mid-seral successional stage
- Prevent stream channel instability, loss of channel cross-sectional areas, and loss of water quality that would result from activities that alter plant cover.
- Locate roads and trails outside riparian areas unless alternative routes have been reviewed and rejected as being more environmentally damaging
- Maintain at least 80% of existing plant density within 100 feet of the edges of all perennial streams, lakes, and other water bodies, or to the outer margins of the aquatic/riparian ecosystem where that ecosystem is wider than 100 feet
- Site specific considerations would provide the basis for harvest decisions for riparian and sensitive areas.

Aquatic Resources

- The need for mitigation would be dictated by the degree of implementation of the Forest Plan. The *9A Riparian Prescription* considers the aquatic habitat associated with these riparian systems and provides specific standards and guidelines for the protection of aquatic as well as riparian habitat. The *Forest Direction for Aquatic Habitat Management* also provides standards and guidelines for protection of aquatic habitat and should preclude the need for extensive mitigation efforts.

Threatened and Endangered Species

- Compliance with the Endangered Species Act would preclude the need for mitigation measures for any listed species.

FOREST PEST MANAGEMENT

How Timber Management Affects the Probability of Insect and Disease Epidemics

Timber management activities affect the potential for insect and disease infestation in several ways. Most timber harvest methods remove the weakest and oldest trees. These are the trees most susceptible to attack by forest pests. Also, logging reduces the number of trees competing for sunlight, water, and nutrients on a single site. Without competition, the remaining trees have greater access to these elements, become more vigorous, and are better able to ward off attacks by insects and diseases. (See, for example, Stevens, R.E., W.F. McCambridge, and C.B. Edminster. 1980 Risk Rating Guide for Mountain Pine Beetle in the Blackhills Ponderosa Pine.)

The Effects The alternatives with higher ASQ levels offer the greatest opportunity to provide tree stand conditions with a lower risk for insect attack. Alternatives 1A, 1E, 1G, and 1H would contain both ponderosa pine and lodgepole pine as components of the ASQ. This would emphasize growing stock level reductions to consequently reduce mountain pine beetle risks, which have become an epidemic on the Uncompahgre Plateau. All alternatives offer spruce-fir in the ASQ which would provide the opportunity to treat stands over the long run to reduce the potential for spruce beetle epidemics similar to the one that devastated the Flattops area on the White River National Forest in the 1940's.

Need For Mitigation Pest outbreaks that threaten Forest users and/or resources inside or outside of visually sensitive areas would be suppressed. Methods that minimize visual resource degradation would be emphasized.

WILDFIRE

How Timber Management Affects The Probability Of Wildfire The probability of wildfire occurring on the Forest is influenced by weather, topography, the availability of fuel, and sources of ignition. Timber harvesting (and associated activities) can produce large quantities of residue in amounts and distribution which provide fuel for fires, or preclude effective fire protection, for a number of years. Timber management activities also can increase the likelihood of wildfire ignition by bringing equipment and people into the forest who otherwise might not be there.

On the other hand, we can reduce the likelihood of wildfire on the Forest by controlling the amount of woody residue in forest stands through timber management operations. As a general rule, more intensive management of forested stands (management achieved through thinning and timber harvest activities) lessens the availability of fuel for wildfire. The amount of fuel is smaller in an even-aged management stand than it is in an uneven-aged stand. "Ladder fuels" (those which enable a fire to be carried from the ground level to the tree canopy level) also occur less frequently in even-aged stands. Intensive management of even-aged stands usually results in the removal of trees infested with insects or disease. These dead or dying trees are also removed as a potential source of fuel for wildfire.

Timber harvest also has the positive effect of creating more roads which, in turn, makes areas more accessible and fire suppression more rapid and efficient. At some time, the unmanaged areas will burn, the question is when.

The Effects Alternatives with the highest ASQ levels create the most short-term fire potential as a result of a buildup of logging residues. At the same time these alternatives also decrease the long-term potential by bringing timber stands under management and reducing fuels created by dead and dying trees.

Need For Mitigation Mitigation of the impacts on the fire environment can be accomplished by controlling the risk of human-caused fires and by reducing hazardous residues from management activities where those residues constitute a problem.

ECONOMICS

Introduction

The environmental effects of the alternatives are discussed in terms of the following economic components: payments to counties from 25% of gross receipts, changes in employment, and changes in total income.

Unless otherwise noted, effects are for the first 10 years of the alternatives. Chapter II, Tables II-6 and II-9, summarizes the environmental consequences of the alternatives on local economics.

The IMPLAN input/output analysis model is used to determine the effects of the alternatives on local employment and total income (See section V, appendix B). The information provided by IMPLAN is based on an aggregation of the eight counties (Delta, Gunnison, Hinsdale, Mesa, Montrose, Ouray, San Juan, and San Miguel) within the Forest using 1982 baseline data. The model was constructed to reflect the employment and income effects of changes in the timber program and the forest budget among the alternatives. The IMPLAN model does not reflect induced changes outside the eight county area.

The Effects

All of the alternatives show payments to counties from 25% of gross receipts which are greater than the 1988 base of \$740,000 in 1982 dollars. The increased payments are due to the Forest's efforts to reduce timber costs and raise timber revenues across all of the alternatives.

Each year local counties receive 25% of gross Forest and other Federal land management agency receipts. Counties also receive payment in lieu of taxes (PILT) funds at either ten cents per acre of Federal land, or based on a population/acreage dollar ceiling minus the previous years 25% of gross receipts payments according to a somewhat complex formula (See Payments in Lieu of Taxes Act 31 USC 1601-1607). Counties obtain the higher of the two possible PILT payments.

None of the alternatives will affect total (25% of gross receipts plus PILT) payments to Delta, Garfield, Mesa, Montrose, Ouray or San Juan Counties. Gross Forest timber receipts would have to increase by much as \$12,000,000 to affect these counties (See Appendix B Section VIII). In comparison, Alternative 1E which has the highest gross timber receipts produces only \$1,030,000 in receipts.

The alternatives will affect total payments to Gunnison, Hinsdale, Saguache and San Miguel counties because PILT payments are calculated at ten cents per Federal acre without considering 25% of gross receipts payments. Generally an increase or decrease in gross timber receipts will increase or decrease payments to these counties, except for Gunnison County. Gunnison county is on the boarder line between the two PILT calculation methods. A decrease in Forest gross receipts of approximately \$60,000 (See Appendix B Section VIII) will mean Gunnison County total payments are subject to a population/acreage ceiling, in which case Gunnison will receive a flat rate of approximately \$270,000 in total payments annually. Alternatives 1C and 1D will decrease Gunnison County total payments to \$270,000 annually, or \$65,000 annually from Forest timber revenues (See Appendix B Tables B-VIII-2 & 3).

A major factor in determining changes in local jobs and income is whether or not the local waferwood plant remains in the area. This analysis does not try to predict the aspen timber harvest volume at which the waferwood plant would leave but instead identifies the relative risk of the plant leaving. The closer an alternative comes to providing 100% of waferwood industry needs, the lower the risk the industry would leave the area.

Chapter II displays the changes in jobs and income which may occur by alternative. Whether or not changes occur depend on the ability of timber mills to obtain logs from other sources.

If the local waferwood plant closes, the Delta-Montrose area would lose approximately 353 jobs and \$5.9 million in employee income. The relative risk of the waferwood plant closing ranked from low risk to high risk is:

Alternative 1E
Alternative 1H
Alternative 1G
Alternative 1D
Alternative 1A
Alternative 1C

Many timber mills process sawtimber, therefore the sawtimber industry can still exist even if one or more sawtimber mills close. Timber harvesting during the last five years was greatest in 1989 when 27 MMBF were harvested from the Forest. Using 1989 as a base, the potential effects on the sawtimber industry are presented in Table IV-17.

TABLE IV-17

POTENTIAL EFFECTS ON SAWTIMBER INDUSTRY

YEAR/ ALTERNATIVE	SAWTIMBER JOBS	EMPLOYEE INCOME
1989 harvest	313	\$3,458,700
Alternative 1A	366	\$4,035,150
Alternative 1E	359	\$3,962,517
Alternative 1G	244	\$2,690,062
Alternative 1H	244	\$2,690,062
Alternative 1C	228	\$2,512,573
Alternative 1D	192	\$2,113,266

SOCIAL ENVIRONMENT

Introduction

The alternatives have the potential to affect the quality of the human environment in the Forest's area of influence. This area of influence is defined as that which includes the population most affected, directly and indirectly, by various program alternatives.

Categories of social effects have been identified as encompassing the primary social effects of the Forest Plan alternatives. People's lifestyles and the attitudes, beliefs, and values they have about the Forest are reflected, in part, in the public issues identified in Appendix A and discussed in Chapter I. These issues also are an expression of community cohesion or conflict.

How Timber Management Affects Lifestyles

Patterns of work and leisure, customs and traditions, and relationships with family, friends, and others are all elements of lifestyle. Forest Service policies and practices may affect people's lifestyles through (1) direct economic relationships such as employment in an industry using National Forest commodities or holding special use permits or (2) esthetic and amenity ties

Effects are changes in the whole pattern of work-leisure activities which influence ties to the Forest. Effects are created by actions which change (1) employment opportunities (jobs and income), (2) freedom of use of the Forest for recreation because of increased resource conflicts, (3) the diversity of recreational opportunity, or (4) the environmental qualities of the area

Work patterns based on the use of Forest resources such as timber harvesting, and leisure patterns such as hunting, fishing, driving for pleasure, camping, or a visit to a developed site, can all be affected

Industries using timber resources from the Forest have direct economic ties to the Forest. The harvest level affects those lifestyles which depend on woods and sawmill work. Table IV-18 depicts the changes in timber harvest levels from the Current Forest Plan. An increase of more than 10 percent in timber harvest volume would probably strengthen and/or support the logging-lumbering patterns of work as in Alternatives 1E, 1G, and 1H. Alternative 1A, the current direction, would not change Forest Plan harvest levels. A decrease of more than 10 percent in the timber harvest volume may hurt lifestyles built around wood and mill work, as in Alternatives 1C and 1D. Changes in job opportunities could lead to the breakup of family-owned timber-dependent businesses and cause employees to seek work elsewhere.

TABLE IV-18

PERCENT CHANGE IN HARVEST LEVEL FROM FOREST PLAN

	Alternatives					
	1A	1C	1D	1E	1G	1H
Percent Change in Harvest Levels from Forest Plan	0	-44	-46	+76	+11	+31

How Timber Management Affects Attitudes, Beliefs, and Values

Attitudes, beliefs, and values include the feelings, preferences, and expectations people have for the Forest and the management and use of particular areas. Such things as the desire to harvest Forest commodities or to enjoy its aesthetic qualities are included as are the preference or dislike for specific management practices, or the desire to preserve familiar, sacred, archaeological, and historic sites.

Actions which run counter to the attitudes, beliefs, and values that people have about the Forest create negative social effects; actions consistent with people's expectations create positive effects.

Many of the feelings, preferences, and expectations people have expressed for the Forest, and for the management and use of the Forest and particular areas, have been listed in Appendix A and analyzed in Chapter I. The ID Team considered each issue or concern as a reflection of an attitude, belief, and value about the Forest. From the ID Team perspective, the social effect variables are often interrelated. Some of the issues that items that may affect attitudes, beliefs, and values are described in the communities and lifestyles sections of Social Effects above. In the following section, the ID Team identified two general issue-related areas where direct impacts to attitudes, beliefs, and values may occur.

The size of timber harvest and the amount of land provided for timber management on the Forest is a focal point for the expression of attitudes, beliefs, and values about overall forest management. Many people in the local area believe that timber harvest levels should be maintained or increased in order to continue using a renewable forest resource and to assist in maintaining community stability. Alternatives 1E, 1G, and 1H all would provide more board foot volume than the current planned yield (see Table II-4, page II-30).

Other people with aesthetic and recreation ties to the Forest believe that timber harvest adversely affects many other resources. Alternatives 1C and 1D would strengthen expectations for decreased timber harvest due to amenity interests or values.

IV ENVIRONMENTAL CONSEQUENCES

While several alternatives do not show a total decline in harvest levels, some may cause the closure of sawtimber or waferwood mills due to the balance of production between sawtimber and aspen POL. Alternatives 1A, 1G, and 1H are most likely to result in a loss of jobs even though the total harvest levels do not decline.

Public support, as well as public opposition, has been voiced about the number of miles of road construction (past and future).

The proposed miles of local roads to be constructed for Decade 1 are displayed in Table IV-19. People whose preferences and expectations are for fewer additional roads in order to maintain more of the Forest in a natural condition and/or to manage big game and other resources, would find that Alternative 1D reinforces these attitudes and beliefs the most since Alternative 1D has the lowest level of road construction with nine miles of road construction each year. Alternative 1C has the next greatest level of road construction at 11 miles of construction. Alternatives 1A, 1G, and 1H include a 50 percent increase in local road construction to 24-29 miles a year. People who prefer more road development in order to reach more of the Forest, and use roaded recreation opportunities would find that Alternative 1E provides the greatest support for their expectations and preferences.

TABLE IV-19

TOTAL LOCAL ROAD CONSTRUCTION DECADE 1

	Alternatives					
	1A	1C	1D	1E	1G	1H
Miles	240	110	90	410	240	290
Open Road Density Index (Mi/Sq. Mi)*	.79	.79	.79	.80	.79	.80

* Calculations were based upon 75% of newly constructed roads being closed

How Timber Management Affects Social Organizations

Social organization is the structure of a society described as roles, relationships, norms, institutions, infrastructure, and/or a community's capacity to define problems, including change, and resolve those problems without major hardships or disruptions to groups or institutions.

Effects are indicated by a change in the solidarity of a community and the degree of conflict or division. Significant negative effects occur when several decisive issues divide a community (polarizing issues). However, controversy, if directed outward, can also make a community more cohesive.

Social effects are also indicated by changes in solidarity or degree of conflict or by division in a group or community. The interests of various groups can be inherently at odds due to their perspective on the Forest. Many of the potential differences between groups and communities with interests in the Forest are reflected in the issues. In fact, groups have been started and have evolved in response to the various sides of issues

Sensitive Roadless Areas

Management of the roadless areas on the Forest has been, and remains, a polarizing issue for environmental groups and economic interests. Often, different persons or different groups are directly involved with specific areas (Roubideau, Tabeguache and Kannah Creek being the most sensitive) Either retention of roadless areas or development of the areas tends to preclude options for the interest groups on the "opposite side of the fence." Alternatives 1C, 1D, 1G, and 1H would retain the three sensitive roadless areas in a roadless state while Alternatives 1A and 1E propose to enter both Roubideau and Tabeguache areas. Alternatives 1A, 1C, and 1D (propose entering 1-3%) all tend to support viewpoints which agree that sensitive roadless areas should be left undeveloped Alternatives 1E, 1G, and 1H (propose entering 5-11%) tend to support the viewpoints which urge development of resources and areas. Alternatives that project either full development or full retention of sensitive roadless areas would tend to divide forest-related groups and communities Alternatives that project some degree of "balanced" development and retention of sensitive roadless areas, as occurs in Alternative 1A or 1G, may focus possible conflict over the management of specific areas.

Timber Harvest

The timber issue is one that is central to how the Forest is managed; therefore, the issue creates high interest among a wide variety of groups Alternatives which emphasize a particular value or resource, or propose a high degree of change, may have a higher probability of creating or reinforcing group or community division Alternatives emphasizing economic values include 1E, 1G, and 1H; amenity values are emphasized in Alternatives 1A, 1C, and 1D.

Population Characteristics

The alternatives probably would not cause changes in the economic and social conditions of the area of influence great enough to affect the populations in a predictable way. If the Louisiana-Pacific mill in Olathe closes, 1.1% of the total area workforce could be affected.

Summary of Social Effects

The following is a summary of the general effects of each alternative during the next 10-15 years. The degree of change from current or historic output levels and/or change in the character of the Forest has a potential influence on the social environment. Some alternatives propose relatively large changes The alternatives proposing the largest changes would have the greatest potential impact.

Alternatives 1E, 1G, and 1H increase timber production and therefore create relatively more roads, modified conditions, and change on the Forest. Each of these alternatives tends to support or strengthen communities and lifestyles dependent upon logging and lumbering. Recreation based on roads would be enhanced. The expectations and views of people who support the use of renewable forest resources and traditional economic values are strengthened and reinforced. However, the expectations and preferences of people with aesthetic or recreational ties to the Forest may not be met. This may produce group or community division.

Alternatives 1A, 1C, and 1D provide for decreased timber production and/or do not provide enough aspen POL to maintain existing industry. The Forest is characterized by more natural or natural-appearing environments and lower commodity output levels. The principal change is one of reduced emphasis on timber. Each of these alternatives tends to discourage or decrease livelihoods based on Forest resource use. Recreation based on more natural settings is featured. The expectations and preferences of those people with aesthetic or recreational ties to the Forest would be supported. However, the expectations and views of those parties with resource use and economic ties to the Forest may not be met.

SIGNIFICANT CUMULATIVE EFFECTS OF THE ALTERNATIVES

Sometimes the combined environmental effects of actions taken by several landowners or regulatory agencies are both more substantial than those of individual actions and of a qualitatively different nature. Because Forest Plans propose broad programs of action for long periods of time, decision makers must consider the cumulative effects of National Forest management activities as a collection of activities and with the environmental effects of current and expected activities on adjacent ownerships.

The kinds of significant cumulative effects scientists consider important are incremental effects of repeated developments on the environment, repeated removal of materials or organisms from the environment, precedent-setting developments which might stimulate other activities (especially in fragile or sensitive environments), significant environmental changes over large areas and long periods of time, fundamental changes in the behavior of the ecological systems of the Forest, and severe habitat fragmentation.

Forest Plans state the intention to perform broad kinds of actions in each area of the National Forest and to perform those actions during each decade of the Plan. However, individual actions are not defined in detail nor is their exact location or timing known. Therefore, the cumulative effects of the amendments to the Forest Plan must be described in terms of probability of occurrence, rather than being estimated in exact terms. This section describes the *probability* that *significant* cumulative effects would result from the proposed amendments to the Forest Plan.

To assess the probability that any of the proposed amendments to the timber management program of the Forest Plan would result in significant cumulative effects, an inventory was made of the past, current, and reasonably foreseeable activities taking place on the National Forest System lands and adjacent ownerships. Environmental trends were also examined.

PAST, PRESENT AND FUTURE ACTIONS IN THE SAME AREA

Past Events And Trends

Some changes are always taking place in the condition of the National Forest System lands. Many of these are significant changes, and they would continue even if all human activity ceased. These changes may continue to take place under any alternative. These changes are not the result of one of the alternative timber management programs. They are described here to help distinguish between normal, on-going environmental changes and those which would result from implementation of the alternative amendments to the timber program.

The National Forest is at a higher elevation than the surrounding countryside. A significant portion of the National Forest is underlain by unstable soils. Wind and water are erosive in these circumstances and cause constant weathering of rock and soil. The following types of slope failures have been observed on the GMUG National Forest: rock falls, rockslides, debris slides, slumps, earthflows, rotational slides, translational slides, block slides, and soil creep. These soil failures range in size from millions of cubic yards of material on the larger areas (Slumgullion, Owl Creek, Buzzard Divide, McClure Pass, Tabeguache Basin, the upper Muddy Creek Area) to small slumps and slides that may be only 10 to 20 cubic yards in size.

Several important kinds of natural successional changes are taking place in the Forest's rangelands and tree communities. On the Uncompahgre National Forest, ponderosa pine is being replaced by Douglas-fir. Many of these pine stands are infested with pine bark beetle. Coniferous trees (pine, spruce, fir, and lodgepole pine) are replacing aspen on approximately 100,000 acres of the National Forest.

These successional changes have long-term implications for management of the National Forest and for use of its resources.

Some wildlife species migrate naturally to the Forest's environment while others decline as part of a regular and normal ecological process.

Under undisturbed conditions population sizes of each animal species are assumed to be stable and to remain so relative to each other. However, changes in plant communities may affect these balances. Over a long period of time, the successional changes taking place in aspen-conifer communities and in the coniferous forests could be expected to affect deer and elk populations by reducing the forage available to them on winter ranges and by changing the migration paths to winter range.

The appearance of the landscape changes even in an undisturbed environment --- sometimes slowly and sometimes suddenly.

IV ENVIRONMENTAL CONSEQUENCES

The appearance of the landscape is also changed by sudden catastrophe. Lightning-caused fires can blacken forested slopes or rangelands. Fire can completely destroy the vegetation in canyons and along streambanks which stabilizes earth movement and preserves the water quality of streams. Once the restraining vegetation is gone, water movement may cause massive earth and rock movement. The streams and canyons may become choked with debris and the water may carry heavy sediment loads for several seasons.

Past Use or Management

To understand the significance of the changes directly attributable to the alternatives, these changes must be placed in the context of processes set in motion by earlier human use and management of the National Forest.

The current condition of the Forest environment and historical development of Forest management are described in Chapter III of the FEIS. Generally, changes have been made to soil, water, and air as a result of recreation use, road building, timber management, and livestock grazing. These activities have probably increased the amount of soil movement and, in some cases, sediment in the streams.

Changes have been made to forest and range plant communities as a result of past timber and range management activities. Early and recent timber production activities have changed the species proportion and age structure of some forested areas. Timber management activities have also caused regeneration of timber stands. Generally, these activities have resulted in a younger forest in the Forest's lands and a more diverse mix of tree and associated plant communities. The overall effect has been to create more diversity in forest ecosystems than might appear if no logging had taken place.

Some changes have been made to the normal wildlife population as a result of human occupation of the area and Forest management activities. Predators have either been reduced or eliminated. Elk populations have increased. The general diversity of animal populations probably has increased as a result of increasing diversity in plant communities, but winter ranges on lands outside of the National Forest, BLM, and State lands are diminishing due to human occupation or development. The majority of winter ranges in the area are not on the Forest.

Many changes in the Forest environment are apparent to people. Roads, bridges, towns, ranches, mines, campgrounds and many other human artifacts are present. There have been successive waves of settlers in the area and, all of these have left behind characteristic buildings, equipment, and signs of settlement.

**CURRENT
ACTIVITIES**

**Lands Adjacent to
the National Forests**

Few environmentally disturbing developments have taken place in recent years on the lands adjacent to the National Forest. There is little or no agricultural development. In fact, agricultural development has constricted in the past several years. In general, local community growth has also been declining in recent years. The only moderate to large developments taking place are these. A large reservoir and recreational complex has been developed in the Ridgeway area. The Powderhorn and Telluride ski area communities are expanding. A waferboard wood products plant has been constructed and is operating in the Olathe area. The plant uses aspen, primarily from private lands. As a result, aspen harvest on lands adjacent to the National Forests has significantly increased during the last four years but is expected to decline again in the near future.

National Forest

There are no significant developments presently occurring on the Forest. Land use continues as it has in the past.

**FORESEEABLE
ACTIVITIES**

**Lands Adjacent To
The National Forests**

Few environmentally disturbing activities are planned for the future on lands adjacent to the National Forests. Many of the adjacent lands are administered by the Bureau of Land Management. BLM Resource Management Plans indicate that these lands will continue to be used as they have in the past. The dominant use will be grazing. An experimental fluidized-bed-combustion power plant is planned for Nucla. A nuclear waste processing plant is planned for the Uravan area but is expected to have no environmental effect. Aspen timber harvests are projected to occur on private lands in the Grand Mesa area.

National Forests

The major changes which would take place in the National Forest environment as a result of each of the proposed alternatives to the Forest Plan have been described earlier in chapters II and IV. The activities proposed include changes in timber harvest levels and local road construction.

**EXPECTED
CUMULATIVE
EFFECTS AND THEIR
SIGNIFICANCE**

On the GMUG National Forests the possibility of additional significant cumulative effects occurring because of the interaction of forest management activities with activity on adjacent lands is greatly mitigated by terrain and topography. The topography of the Forest is such that movement of materials between the Forest and adjacent lands is restricted. Movement of materials is largely confined to the atmosphere and to one-way transference of materials in streams and rivers flowing from the Forest onto adjacent lands.

The movement of wildlife and other living organisms between adjacent lands and the Forest is common. Therefore, developments or environmental disturbances on adjacent lands, with the exception of winter ranges, have relatively little effect on the Forest.

No significant cumulative effects on air quality are expected to result from Forest management activities. Air pollution in the valleys may worsen, which could degrade air quality on the Forest, but this is not expected to be significant.

IV ENVIRONMENTAL CONSEQUENCES

Activities affecting streams and rivers on the Forest would affect downstream users. These effects would be both positive and negative. Increased water production on National Forest System lands would translate into increased dilution of salts and toxicants downstream. However, increased road-building activity may result in increased sedimentation of some streams. The effect on downstream aquatic habitat is not expected to be environmentally significant.

The prevalent cumulative effect on National Forest System Lands is sedimentation and the resulting effects on aquatic productivity. The quantity and quality of roads, skid trails, and mechanized site preparation treatments would determine the cumulative effect of Forest vegetative management on sedimentation. To mitigate potential cumulative effects the Forest will:

- Use Prescriptions, Forest and General Direction, and Standards and Guidelines to address the "quality" of construction and harvest (Stednick, 1987)
- disperse timber harvest throughout planning watersheds rather than concentrating it in order to address the "quantity" of activities focused in a watershed at a given point in time

Clearcutting aspen has a lower potential to degrade water quality than the harvest of other species. Aspen sprouts and recovers much faster than other harvested species and, thus has a lower risk for water quality degradation and channel-damaging peak flows.

Of the three direct effects discussed, spruce-fir harvest poses the highest risk for degradation of water. Mechanized compaction, road construction, slash disposal and site treatments, felling and removal operations, and hydrologic recovery times all have the potential to cumulatively impact harvest sites.

As winter ranges on private lands continue to decrease in quantity and quality, the treatment of timbered lands on the Forest through both commercial and non-commercial methods would provide big game animals with additional food and thermal conditions. This, in turn, would put the animals in a better condition before they arrive on those winter ranges.

Repeated Removal Of Materials Or Organisms From The Forest Environment

Timber harvesting and roadbuilding would take place but would not result in significant removal of nutrients from the environment. The use of identified silvicultural methods would protect sites from nutrient loss. Additionally, guidelines proposed in the Forest Plan provide direction to ensure that all of the activities associated with timber and road construction provide necessary mitigation measures to protect the Forest resources. Monitoring and evaluation are a part of the Forest Plan implementation process. Monitoring requirements can be found in Chapter IV of the Forest Plan.

Precedent-Setting Developments On The Forest

Scheduling of commercial timber sales in currently roadless areas would occur in all Alternatives. This means that the roadless areas would have permanent system roads under these alternatives.

Sensitive or fragile areas examined during the planning process on the Forest include threatened and endangered habitat, winter range, unstable soil areas, wetlands, and riparian areas. No precedent setting activities would take place in these areas.

Change Over Large Areas Or Long Periods Of Time

The proposed timber management program would result in increased management of the aspen forests. This would include development of additional roads.

There would be a reduction in the amount of old growth coniferous forests. However, reductions would be mitigated by Forest Standards and Guidelines. *Areas would be identified in diversity units that would be managed for old growth in adequate quantity to meet wildlife needs.*

Habitat Fragmentation

The proposed timber management program would alter the mix, arrangement, and internal characteristics of the aspen plant community on the Forest. Continuous changes in the aspen communities would have an effect on winter range and might improve forage conditions for big game animals on transitional ranges.

Although no wildlife species are known to be totally dependent upon an aspen community's structural stage or interspersion, several species heavily use various structural stages for their daily activities including foraging, thermal, and security cover.

Certain habitats such as old growth, may be reduced but none are expected to become rare. Management objectives for diversity include the recognition of the need to increase the abundance of early succession stages in the Forest types.

Even-aged management practices would create more edge effect over the Forest.

CONFLICT WITH THE PLANS AND POLICIES OF OTHER AGENCIES

A review of other federal, state, and local government policies and plans to determine possible conflicts with the management of the Forest under the alternatives was conducted.

RECREATION

The alternatives are compatible with the State Comprehensive Outdoor Recreation (SCORP) Plans written by Colorado Planning Agencies.

WILDLIFE AND FISH

The Colorado Department of Wildlife has developed long-range population goals for managing wildlife populations on the Forest. Each plan involves considerable input, not only from land management agencies but also from a large segment of the public. Projected wildlife outputs from all alternatives would contribute and not conflict with these population goals. Logging and the associated activities would be designed, whenever possible, to increase the habitat capability for all species, especially those species of economic importance to the State DOW. *Where potential conflicts arise, adequate mitigation measures would be taken. Unless these are factors outside the control of the Forest Service, no alternatives would prevent these overall population goals from being met.*

IV ENVIRONMENTAL CONSEQUENCES

THREATENED AND ENDANGERED SPECIES

There are no significant conflicts with U.S. Fish & Wildlife Service recovery plans for threatened and endangered species as required under the Threatened and Endangered Species Act

WATER

A variety of federal, state, and local government plans and policies relate to concerns about water quality. Each concern relates to a potential for conflict.

Points of concern include the following.

- Maintenance of instream flows in the State of Colorado
- Meeting state point and non-point water quality standards.
- Meeting city and county goals for water and water-related activities and programs.
- Maintaining water quantity and quality in forest municipal watersheds.
- Meeting federal water pollution standards.

Each alternative is expected to meet the plan and policy requirements of others, none of the alternatives are expected to cause serious conflicts with any water related plan or policy

AIR

A potential conflict exists with adjoining National Forest and National Parks that are responsible for managing designated Class I Wilderness Areas (The Clean Air Act provided for prevention of significant deterioration (PSO) of air quality. In Class I areas only, a very small amount of air quality deterioration is permissible). Smoke from prescribed burning on the Forest could affect Class I areas by contributing to regional haze which could affect visibility for short periods of time

ROADS

Counties have a variety of policies relating to commercial use (i.e. oil and gas operating or log hauling) of county road systems. Some policies may increase the cost and permit requirements for a purchaser of Forest products

SOCIAL AND ECONOMIC

A variety of federal, state, and local agency plans and policies encompass the GMUG. None have been found to be in conflict with the alternatives proposed in this FSEIS.

Contacts were made with other agencies when there was some doubt as to whether or not a conflict existed. Contacts were made with both Gunnison and San Miguel counties as to whether or not their land use plans might conflict with the levels of timber harvest proposed in the alternatives. While both counties expressed a concern over some of the timber harvest levels, neither had anything in their land use plans which conflicted with the alternatives.

Gunnison county is concerned that an increased timber harvesting program would occur at the expense of tourism. Gunnison County wants to maintain tourism at current or greater levels. Timber harvest levels proposed by the alternatives are not expected to affect tourism.

San Miguel County's policy is to allow timber harvesting to occur as long as it does not have to be subsidized by county tax dollars. The county is concerned that road maintenance repair costs from logging traffic are greater than the federal and state funds currently available for repairs. Federal funds available include "Payment in Lieu of Taxes" (PILT) funds and "25% of Gross Receipts" funds. In 1986 these two funds contributed \$56,000 to San Miguel County. The amount of state funds available for county road repairs is unknown.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

The information provided in this section supplements the discussion in the original FEIS, Chapter IV, page 128.

An irreversible commitment of resources results from actions altering an area to the extent that it cannot be returned to its undisturbed condition through perpetuity or for an extended period of time. It is also a commitment which completely uses a non-renewable resource.

Irretrievable commitments resulting from implementation of the proposed alternative include lost production or lost use of renewable resources due to the passage of time. The opportunity to use a renewable resource is foregone during the time that it is committed to other uses or during periods of non-use.

RELATIONSHIP BETWEEN SHORT-TERM USE AND LONG-TERM PRODUCTIVITY

The information provided in this section supplements the discussion in the original FEIS, Chapter IV, pages 131-132.

- Those amendment alternatives that propose higher ASQ levels than the original Plan would have more acres under timber management. This would accelerate the replacement of existing, slow-growing, or stagnated stands of trees with younger, faster growing stands that would increase long-term timber production.

UNAVOIDABLE ADVERSE ENVIRONMENTAL EFFECTS

The preceding sections of this chapter identify the environmental effects associated with each of the alternatives and the measures which would be used to mitigate the adverse effects. Technically, and feasibly, all adverse environmental effects could be avoided, but the costs for some measures would be prohibitive.

Implementation of any alternative would result in some adverse environmental effects that cannot be avoided. Standards and guidelines and mitigating measures are intended to keep the extent and duration of these effects within acceptable levels, but adverse effects cannot be completely avoided.

IV ENVIRONMENTAL CONSEQUENCES

Areas of potentially significant adverse effects:

- Intermittent decrease in air quality due to dust from road construction, maintenance, and use and from smoke due to prescribed burning.
- Short-term and local increases in soil erosion and stream sedimentation due to land disturbing activities
- Short-term changes in the landscape from silviculture and road construction that may be disturbing to Forest visitors.
- Disruption of prehistoric or historic evidence of man's occupation of the Forest.
- Elimination of small areas from vegetation production due to construction of permanent physical developments such as roads.
- Increased conflicts between recreation use and other land use activities related to commodity production
- Solitude loss due to increased management and use in certain areas
- Temporary wildlife disturbance in some locations because of increased human activity.



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V LIST OF PREPARERS

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V LIST OF PREPARERS

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Steven L Posey - Paonia District Ranger
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Eighteen years Forest Service experience at both the District and Supervisor's Office levels.

Management Team member.

Frank Robbins - Transportation Planner
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Jeffrey L Ulrich - Operations Research Analyst
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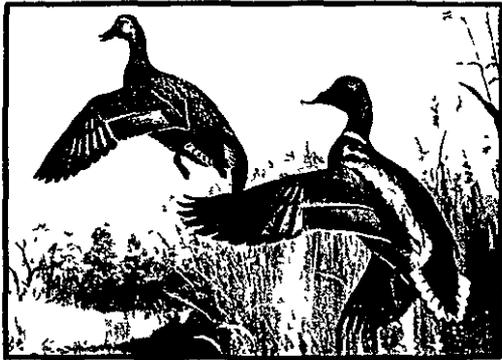
Core Team member; built FORPLAN model; conducted cost/benefit (FORPLAN) demand, job, income, timber suitability, and timber price sensitivity analyses; summarized analysis data for presentation to ID Team, Management Team and others; authored, edited and reviewed socioeconomic and other sections of the FSEIS and Plan Amendment.

* Indicates person is no longer assigned to the Grand Mesa, Uncompahgre and Gunnison National Forest

ACKNOWLEDGEMENTS

The following individuals provided clerical and cartographic support:

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Alietta Valdovinos
Gaye Rhode
Jon Gregg
Linda Schmidt
Lori Rodriguez
Melanie Serha



VI. Consultation and List of Agencies, Organizations, and Persons to whom Copies of the Statement are Sent

VI. CONSULTATION AND LIST OF AGENCIES, ORGANIZATIONS, AND PERSONS TO WHOM COPIES OF THE STATEMENT ARE SENT

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CHAPTER VI

RESPONSE TO PUBLIC COMMENT

INTRODUCTION

The Forest Service in 1989 invested extensive effort into gaining a broad spectrum of informed public comment regarding the Forest Plan Amendment. Federal, State, and local agencies were informed and consulted throughout the planning effort, as their letters in this chapter will indicate. Indicative of the success in reaching individual and group users of the National Forests are the more than 2,700 letters received from that sector.

A Notice of Intent to prepare a Supplemental Environmental Impact Statement for this Forest Plan Amendment was published in Federal Register on Wednesday, September 2, 1987.

The planning effort included holding Open Houses at Forest Service offices in Denver, Grand Junction, Gunnison, Montrose, Norwood, and Paonia during the public comment period. In addition, 524 copies of the Proposed Amendment, Environmental Impact Statement, and related maps were delivered to public libraries, schools, local government offices, and interested organizations throughout Colorado.

The initial comment period was expanded from 90 to 105 days to ensure ample time for the public to comment. That period was later extended by 30 additional days at public request.

Government agencies forwarded 28 letters which are printed in their entirety in Chapter 6, along with Forest Service responses.

The 2,700 letters from individuals and groups contained 7,627 separate comments which were considered in formulating the Final Amendment. The majority of commentors reside in Colorado, about 61 percent live in or near the Grand Mesa, Uncompahgre, and Gunnison National Forests.

Every letter was read by a member of the core planning team. Some 200 representative letters were duplicated and distributed to Management Team members and their staffs. The core team identified the 7,627 comments and organized them into 546 generalized comments by combining similar thoughts and ideas contained in the 2,700 letters.

A comment analysis team, made up of a district ranger, a regional public affairs specialist, a public affairs officer, two ranger district employees, and two oversight members from the Forest Headquarters, met January 16 - 19, 1990. This group worked to identify all separate issues raised by the 546 generalized comments, then classified each comment under the issue to which it pertains.

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The interdisciplinary team then developed responses to these 49 issue statements. Where possible, the response addressed all of the generalized comments. In many cases, issue statement responses could not adequately address each generalized comment. Those generalized comments are addressed separately and appear in Chapter 6 as sub-paragraphs to the main issue statement.

Each issue statement is followed by the number of comments made about that issue. [NOTE: Comments, not commentors, are shown. Some commentors chose to make more than 100 comments; the longest letter was 105 pages long.]

If you wish to locate where your comment was incorporated into the process, please find your name in the alphabetical listing following the responses to the comments at the end of this chapter. Under your name will be shown the issue number your comment was assigned to.

All of the original letters are on file in the Planning Records. Your letter can be brought forth if you wish to see what concerns were identified in your letter.

1. Some people feel the proposed timber harvest levels could affect the climate or global warming. [98 comments]

RESPONSE: Forests in the northern latitude may play an important role in absorbing carbon dioxide, although not as significant a role as equatorial forests. However, it is not yet known whether northern latitude forests can play a role in stabilizing world carbon cycles, nor is there any firm scientific idea as to what that role may be. Forests on the Grand Mesa, Uncompahgre and Gunnison National Forest are high-elevation forests that grow relatively slowly. The stands of trees on this Forest are likely to absorb small, but measurable amounts of carbon dioxide and carbon-based gasses, but it seems likely that understory vegetation here contributes little to carbon absorption.

Certainly, the continued health and growth of existing forests is important to this nation's efforts to stabilize global change. Consequently, the modern silvicultural and vegetation management practices discussed in the Supplemental EIS are designed to simulate natural events in the GMUG as closely as possible. The practices are no greater in scale, timing, area, tempo or duration than typical forest events such as insect attacks, the course of disease in stands, naturally caused wildfire, or the normal pattern of decay in spruce-fir stands which have reached the end of their life spans. These events are important to regeneration of spruce-fir and aspen stands in the natural world, and they are important to biological diversity, stability and resistance to catastrophic events, such as sudden climatic change. We believe that designing our silvicultural practices to be of the same magnitude as natural events is an important response to the prospect of global change.

Well-designed silvicultural practices can be used to perpetuate spruce-fir and aspen stands. These increase the health and vigor of individual stands by thinning to allow the remaining trees to have greater access to the limited nutrients and water of the site. This, in turn, improves the ability of each stand to ward off the disabling events described above. Through the use of shelterwood silviculture, spruce-fir stands are being perpetuated. Natural processes of decay in undisturbed spruce-fir stands last for 50-60 years, and an equal amount of time is often required before the regeneration process fully takes hold. Therefore, we are attempting to perpetuate these spruce-fir stands instead of permitting them to decay.

The diversity of stands and species can be improved by regenerating and retaining the existing aspen stands within a coniferous area, and by creating a mosaic of different age classes among conifer stands. Such diversity helps to increase the general resilience of the forests -- is the best method of permitting the Forest Service to provide a "quick and flexible response" to potential climatic change.

2. Many people expressed opinions and comments on matters that are beyond the scope of the Forest Plan Amendment. [285 comments]

RESPONSE: Many comments were received which were beyond the scope of the Forest Plan Amendment and therefore could not be dealt with here. Some comments were not appropriate to deal with because of the limited role of the Forest Service; others were merely privately held-opinions. The purposes of the amendment are twofold. (1) re-assess the timber demand situation on the Forest, and (2) address the concerns expressed by the Secretary of Agriculture's remand which dealt exclusively with the timber management situation on the Forest. A representative listing of those public comments follows:

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- "Louisiana-Pacific Corporation is a bad neighbor in that it violates air quality standards inside and outside the plant. Waferboard is a sub-standard product Their plant is too noisy."
- "Environmental groups .have `played dirty' throughout the planning process, they have torn up pro-logging petitions, have misrepresented the facts in their literature, and know very little about forest management."
- "A let-burn fire policy should be adopted."
- "The Draft SEIS did not address pipeline safety "
- "The Amendment may affect oil and gas stipulations and availability of lands "
- "People out of work in the area should leave and move to areas where workers are needed."
- "The Forest Service should object to timber harvest levels mandated by the Congress and should be held accountable for mismanagement of forest lands."
- "Increases in the timber harvest level should be matched with increases in wilderness area designations "
- "More wilderness should have been designated."
- "Timber sale appraisal allowances should be made for increased costs of winter logging."
- "Four-wheel-drive vehicles damage wetlands."
- "Shipping timber overseas is improper."
- "The timber industry should grow its own trees or hire private landowners to do it "

3. Some people disagree with assumptions and procedures the Forest Service used in its economic analysis of the Proposed Amendment. [62 comments]

RESPONSE: The Forest examined the assumptions and procedures used in the economic analysis of the Proposed Amendment. Assumptions and procedures found to be incorrect or misleading there were changed in the FSEIS

3-A. Why does timber Present Net Value (PNV) (Page II-28) show a greater negative value than estimating PNV from cash flow values for Alternative 1E on page II-47, table II-9 of the DSEIS? The Forest has improperly valued variable average annual cash receipts on volumes projected to be above demand.

RESPONSE: This problem occurs in Alternatives 1B and 1E with the OAC component, which have timber production levels above the estimated level of demand. The PNV analysis does not count timber revenues above the estimated level of demand as a means of weighing the overall value of an alternative. The cash flow analysis does count timber revenues above the estimated level of demand as a means of displaying whether a timber program will pay for itself if successfully implemented. The problem was eliminated in the FSEIS because no alternative has a timber harvest level above the estimated level of demand.

3-B. The cost/benefit figures in the DSEIS are inaccurate and don't reflect the benefits of tourism and recreation in Ouray, Montrose and other counties.

RESPONSE: The cost/benefit figures in the DSEIS and FSEIS are designed to show the efficiency of implementing an alternative on the Forest. Cost/benefit figures include only the costs and benefits the Forest can take credit for. Cost/benefit figures do not take credit for costs and benefits created by the local business community. The Forest does consider tourism and recreation benefits provided by the local business community by accounting for the jobs and income which are associated with each alternative.

3-C. The Forest claims only a \$30.00/day benefit from downhill skiing, while Colorado Ski Country USA says it is worth \$117.00/day.

RESPONSE: The Forest Service claims a benefit only for the portion of a downhill skiing recreation visitor day it can take credit for. The Forest provides only the land on which the ski area exists, it does not operate the restaurants, run the ski area, provide ski equipment, etc -- hence, that portion of the benefit is excluded from Forest Service analyses.

3-D. The cost/benefit analysis in the DSEIS included only economic values, and there are other ways to measure value and importance.

RESPONSE: A cost/benefit analysis is, by its nature, one which uses only economic values. The analysis in the DSEIS and FSEIS go beyond the cost/benefit analysis to measure value and importance. Chapter II in the DSEIS (page II-11 through II-18) and FSEIS indicate the different ways the value and importance of the alternatives are determined.

3-E. The proposed amendment's timber program (timber alone) has a PNV of minus- \$20,860,000 when all timber costs are considered, which is lower than the 1983 Plan.

RESPONSE: The Proposed Amendment (FSEIS Alternative 1G) does have a negative timber PNV (-\$22,514,987) that is more negative than the 1983 Plan Amendment (FSEIS Alternative 1A, -\$20,599,136). Please see FSEIS Table II-8. Alternative 1G is considered to be the better alternative even though it has a lower timber PNV -- because it will help save jobs and help maintain the timber industry in this area while perpetuating aspen and protecting the Forests.

3-F. The Forest arbitrarily drew a line between fixed and variable timber costs. All timber costs should be variable, depending on the size of the timber program. The Forest must consider the entire program costs, not just individual timber sale costs. In this light, even Alternative 1F is not really financially efficient. It only looked at individual timber sale costs, not program, or fixed costs too.

RESPONSE: The Forest reexamined fixed and variable costs for the FSEIS and determined all but \$160,000 (in 1982 dollars) should be categorized as variable costs. The FSEIS as well as the DSEIS (See page II-29 of the DSEIS) consider total timber program costs. In the FSEIS at current average timber prices, no timber on the Forest is financially efficient. The timber harvest volume for FSEIS Alternative 1F is zero.

3-G. Using a four percent discount rate is inappropriate.

RESPONSE: A four percent discount represents the real (after inflation is taken out) long-term rate of return of AAA rated bonds. Four percent, real discount rate, is the rate of return expected of government funds, and correlates well with current interest rates. If the rate of inflation is six percent, then the four percent real interest rate corresponds to a 10 percent actual discount rate. The analysis is not conducted at actual interest rates because future inflation rates are unknown, but would have to be used in the calculations. Instead, the analysis is conducted in constant 1982 dollars (all costs and benefits obtained from other years are converted to 1982 dollars with known historic inflation rates) with a four-percent-interest discount rate.

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3-H. The DSEIS failed to look at methods of producing nontimber benefits, such as water augmentation, that are cheaper than timber harvesting.

RESPONSE: The DSEIS did look at cheaper methods of producing nontimber benefits. Please see page II-9 to II-11 of the DSEIS.

3-J. The demand for future livestock grazing is in conflict with the 1983 projections and is too low. Statements in the DSEIS about national cattle levels and average prices are incorrect. Reassessment of cattle demand in a timber remand is inappropriate. How do demand projections affect stocking levels?

RESPONSE: Livestock projections were used to calculate total Forest wide PNV and do not affect stocking levels. The FEIS analysis will display only timber PNV and will not address livestock demand levels.

3-K. Justifying treatment of pine stands to reduce future fire threat is a waste of money since the Forest only burns about 290 acres per year and we can't really know which stands need treating anyway. The decision to treat pine stands does not identify the non-timber amenity benefits and who would be affected by the change as required by the USDA decision. In addition, since lodgepole pine and ponderosa pine have negative PNV's there is no financial or economic reason for treating them for timber value alone.

RESPONSE: There are additional benefits to harvesting pine stands besides reduction of fire threat. These include reduction of insect and disease outbreaks as well as providing jobs to local industry (Norwood, Delta, Grand Junction). Pine harvesting called for in the alternatives is modest in comparison to spruce/fir harvests, and was added to provide a modest level of management in the two pine species on the Forest. If these pine types were managed as a number one priority, the entire Forest timber program would be devoted to pine harvesting at a much greater expense. While the annual proposed treatments are modest, the treatments do have a cumulative effect and can reduce the long-term threat of large-scale intense fires and large-scale insect and disease outbreaks.

3-L. The claims for non-timber benefits are not supported or documented in the planning record.

RESPONSE: Non-timber benefits are described on page II-11 of the DSEIS. The rationale for non-timber benefits used is documented in Appendix B of the FSEIS.

3-M. The Forest valued the OAC component in its timber program efficiency calculations. Since OAC is currently above demand, it should not have been valued.

RESPONSE: The OAC component was removed from the FSEIS analysis.

3-N. The Forest failed to consider any costs accrued in additional water production. The Forest only claimed benefits and therefore overvalued the efficiency of the timber program. Much is made of water yield increases, but the land's diminished capacity to retain water should also be studied with equal fervor. None of the costs of water yield enter into the FS equation. Costs from sediment, siltation of reservoirs, recreation, fishing, wildlife, local water quality degradation, long-term soil productivity, and the export of soil nutrients are not calculated. A worst-case analysis has not been completed, and water quality has been forgotten in the analysis.

RESPONSE: Water production values reflect willingness-to-pay values or what the market is willing to pay for water above the cost of transferring, storing or using the water. In theory, timber harvesting could cause great harm to water quality; but, more than forty years of local timber harvesting indicates it does not. A case in point is the Gunnison River which has many timber harvest areas feeding water into it but is one of the best fisheries in the State of Colorado. In the case of wildlife, big game numbers exceed Colorado Division of Wildlife target population levels -- again in spite of more than four decades of timber harvesting on the Forest.

Soil productivity and nutrient export have not been shown to be timber related problems (See Grier 1989, pages 27-30).

3-O. A more complete assessment of recreation impacts and tradeoffs might reveal that logging near roads is economically inefficient when recreation losses are accounted for.

RESPONSE: While the Forest is cautious when harvesting near roads, More than forty years of timber harvesting (during a booming tourism industry) indicate the two are not incompatible. On the other hand, the FSEIS analysis indicates that, at current prices, only spruce/fir timber harvesting are economically efficient near roads.

3-P. I'm suprised to see Alternative 1C shows such a poor timber cash flow (figure II-5) while having the maximum economic efficiency.

RESPONSE: Alternative 1C maximizes economic efficiency by producing augmented water yields. Page II-14 of the DSEIS indicates the water is much more valuable than the timber being produced.

3-Q. Where is the competitive bidding needed to establish a fair market price for aspen POL (Products Other than Logs). How was the \$1.90/ton aspen price determined?

RESPONSE. The \$1.90/ton aspen price was obtained from a Colorado State Timber Supply study (Barth, 1988) and reflects the average price paid to private land owners for aspen.

4. Some hold the view that the Forest Service did not listen, or respond, to public input to the Proposed Amendment. [79 comments]

RESPONSE: Public opinion has helped guide all Forest Service policies, plans, and operations during its 85 years of service. The agency still has a mandate to serve people by managing National Forests in such a way as to provide the greatest good to the greatest number. As required by law, and its continuing tradition, the Forest Service in 1989 invested extensive effort into gaining a broad spectrum of informed public comment regarding the Forest Plan Amendment. Some 2,700 letters were received from the public as a result of Forest Service efforts which included:

- Delivering 524 copies of the Proposed Amendment, Environmental Impact Statement, and related maps to public libraries, schools, local government offices, and interested organizations, throughout Colorado.
- Establishing an initial public comment period of 105 days to ensure that everyone had ample time to make known their concerns regarding the Proposed Amendment.
- Extending the public comment period by an additional 30 days at public request.
- Announcing the Proposed Amendment in Forest Service news releases that were sent to general and selected news outlets -- and achieved state-wide coverage on television, radio, and newspapers (Virtually all of that coverage included the Forest Service's request for the public to comment on the Proposed Amendment.)
- Expanding public access to the Proposed Amendment (and providing any needed clarification) by holding widely-advertised Open Houses in Denver, Grand Junction, Gunnison, Montrose, Norwood, and Paonia during the comment period.

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As a result of public comments received by October 6, 1989, the Forest Service held a news conference on that date to announce that the Proposed Amendment would be reconsidered and substantial changes would be made. Those changes are reflected elsewhere in this document. In summary, the public asked for and received:

- A reduction of aspen harvests to a level below that outlined in the Proposed Amendment (Previously proposed levels of 3,000 acres annually have been reduced to 1,376 acres per year.)

- Elimination of proposed aspen harvests in a number of scenic corridors such as Kebler Pass, Mount Sneffels, and Silverjack.

It should also be noted that any significant future changes to this Amended Forest Plan, such as an increase in timber harvest levels, would be subject to the same public involvement effort the Forest Service invested in this amendment process.

4-A. The High Country Alliance form letter was terribly slanted; the Forest Service should not give it much credence.

RESPONSE Most letters reflected writers' opinions -- opinions which often contradicted or conflicted with each other. However, all such comments regarding the Proposed Amendment were useful in gauging public opinion and in arriving at the new preferred alternative (1-G)

5. The Forest Service failed to make clear to everyone the purpose of the Proposed Amendment and its relation to the original Forest Plan, completed in 1983. [13 comments]

RESPONSE: Draft amendment documents explained in several places the purpose of the amendment. In the abstract at the front of the DSEIS, it states "...The proposed amendment deals with timber management. Changes in management of other resources such as recreation or wildlife are not proposed. Six alternatives were proposed...". The Preface to the DSEIS has two pages devoted entirely to explaining the purpose of the amendment. The Summary to the DSEIS, Chapter I of the DSEIS, and Chapter I of the Plan Amendment have lengthy discussions about the intent and purposes of the Plan Amendment. Many commentators never read these documents but did read information published by other organizations, which may have caused confusion for some commentators.

5-A. The required No Action alternative should be similar to the 1983 Alternative 2 with modifications for the interim implementation of Alternative 1. ASQ levels should not be greater than in the 1983 Alternative 1 of 35 MMBF versus Alternative 1A which has an ASQ of 38 MMBF.

RESPONSE The No Action alternative for the Amendment must represent the current management action which is the original Alternative 1. This alternative, 1A, has been corrected to reflect the original ASQ of 35 MMBF.

5-B. Combine the original 1983 Forest Plan and the Amended Plan into a single document.

RESPONSE: As stated in paragraph 2 on page I-1 of the Draft Amendment, this was planned for. The Final Amendment is an entire Forest Plan in one document.

5-C. The DSEIS & Plan focus almost exclusively on output, and obsessively on timber output.

RESPONSE: The DSEIS and Forest Plan devote some of their discussions to outputs, but the majority of each document deals with other subjects such as *environmental impacts, issues and concerns, and standards and guidelines.*

5-D. Isn't it illegal to tailor timber sales to the demands of a specific timber mill as Alternative 1E does? Is it appropriate to clearcut 195 square miles of timber over a ten year period? The 1983 Forest Plan had 480,000 acres of suited aspen with a sustained yield of 25 MMBF/year, while Alternative 1E has 281,281 acres with a sustained yield of 29.6 MMBF. Will 1E become the No Action alternative for the next round of planning? How far will this game of leapfrog go on?

RESPONSE Alternative 1E does not tailor timber sales to a specific timber mill, but does attempt to provide a large share of the woodfiber needed by both the sawtimber and waferwood industries. The fact that the waferwood industry consists of a single mill is beyond Forest Service control. Both industries are treated more or less equally in Alternative 1E to the extent the timber resource will allow. On the other hand, the Forest Service cannot discriminate against the waferwood industry solely on the basis that it is the sole source of waferwood demand on the Forests.

DSEIS Alternative 1E schedules 51,870 acres or 81 square miles of clearcutting (aspen and lodgepole pine only) in the next decade. (Please see DSEIS Table II-6) FSEIS Alternative 1E schedules 35,240 acres or 55 square miles of clearcutting (aspen and lodgepole pine only). The FSEIS preferred alternative, 1G, schedules 21,030 acres or 33 square miles of clearcutting in small lots of 40 acres or less (aspen and lodgepole pine only). (Please see FSEIS Table II-6) The reduction in Alternative 1E clearcutting, between Draft and Final, is due to the elimination of clearcutting spruce.

The 1983 Forest Plan has 22,183 suited aspen acres and a first decade aspen harvest of 35 MMBF. (Please see 1983 Forest Plan Table F-7 and 1983 EIS Table II-4.)

6. Some question the validity of the FORPLAN computer program used to evaluate certain data; others question the Forest Service's interpretation of the FORPLAN answers. [6 comments]

RESPONSE: The computer model FORPLAN is a valid method of measuring future timber production abilities. It is susceptible to human error just as is any computer program; however, it is the most reliable and efficient method that has been developed for its purpose. Interpretation is made by experienced professionals.

6-A. FORPLAN modeling inappropriately favors wildlife over domestic grazing.

RESPONSE: Because experience has shown that timber harvests have a negligible effect on wildlife and domestic grazing, both were removed from the Final Supplemental Environmental Impact Statement FORPLAN analysis. *Timbering's effect is negligible because the most productive lands for big game and domestic livestock are the Forest's range and brush lands, not timber lands.*

The purpose of the Amendment is to analyze different levels of timber production, not to change the level of either wildlife or domestic grazing production. The original 1983 Forest Plan more fully explains wildlife and domestic grazing production.

6-B. The Draft Supplemental Environment Impact Statement (DSEIS) did not explain how maximum sustained timber yield was determined.

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RESPONSE: Computations for long-term, sustained-yield capacity (LTSYC) are based on each timber area's ability to grow back again. Consideration is given to a number of variables in a process that is more fully explained in FORPLAN Version 2 User's Guide -- Release 13.

FORPLAN modeling identifies a number of timber harvests over a 150-year planning period that is based on the lifespan of trees in this region. Each planned timber harvest is associated with a new stand of timber that will mature 100 or so years later. FORPLAN takes the new stand harvest volume and divides it by the number of years it takes to grow that new stand. The result is an average annual harvest volume. LTSY is the sum of average annual harvest volumes of all timber sales scheduled over that 150-year planning period.

6-C. The Forest Service inappropriately used spruce-fir timber yield data from the more productive Grand Mesa, instead of an average for the three National Forests.

RESPONSE: Actually, the Forest Service used average forest-wide yield data from combined timber yield analysis (Please see Haines, "Silvicultural Input For The Forest Plan Remand" page 96).

6-D. Draft Supplemental Environmental Impact Statement (DSEIS) timber yield modeling assumptions overestimate both regeneration success and regenerated stand timber growth.

RESPONSE: Timber yields from R2GROW and RMYIELD were reviewed and adjusted to reflect the actual situation in the three National Forests, (Please see Haines, "Silvicultural Input For the Forest Plan Remand")

6-E. The Forest Service responded to the WCC Alternative by saying FORPLAN could not analyze it.

RESPONSE: The Forest Service developed an alternative that conceptually represented the Western Colorado Congress alternative and analyzed it through FORPLAN. That alternative can be found in the Proposed Amendment where it is shown as Alternative 1-D

6-F. The validity of HYSED needs to be examined.

RESPONSE: The computer model HYSED (which evaluates water resources) was not part of the Draft Supplemental Environmental Impact Statement (DSEIS) in or out of FORPLAN analyses. HYSED analyses from the 1983 Forest Plan were used to determine average forest-wide effects. HYSED also is used to analyze effects of specific projects.

7. There is extensive opposition to the proposed level of aspen cutting, although some agree with that level. [604 comments]

RESPONSE: A great deal of evaluation has been devoted to growth capability, soil conditions, and other criteria that influence harvesting opportunities. As a result, the level of aspen to be harvested has been significantly reduced from the old Alternative 1E to the newly proposed Alternative 1G. This reduction, from 3,000 acres to 1,376 acres per year represents the Forest Service's best professional judgement. It is based on recommendations from foresters who know the specific ground conditions in all three National Forests. Trade-offs have been made in arriving at the new harvest level. With the new level, less wood will be harvested and more trees will die of "natural" causes. However, scenic, recreation, soil, and water values will receive more emphasis under Alternative 1-G.

8. A number of people are concerned about the biology, ecology, and proposed scale of aspen harvests. Specifically, people are concerned about aspen visuals, aspen regeneration, and biodiversity . Some also are concerned over forest health, aspen inventory, and the effects of fire on aspen. [112 comments]

RESPONSE: From its first green shoot to final maturity, local aspen has an 80-to-120-year lifespan -- then gradually leans over, falls down, and decomposes.

During its life, aspen thrives on sunlight but does poorly in any sort of shade. Before enough adult trees fall away to give sunlight to new shoots, an aspen stand must deteriorate extensively for decades. More commonly, dying aspen stands become nurseries for invading evergreen trees. Heavy shadows cast by the evergreen trees rob small aspen sprouts of sunlight. Eventually, the evergreens grow large enough to starve out even the tallest aspen tree -- and the stand disappears.

Still, the aspen stand's huge, central root system remains intact and alive beneath the evergreens. In time -- perhaps 300 or 400 years -- the evergreen stand normally burns up in lightning-caused forest fires. Soon after the fire, the aspen root system sends forth abundant new growth -- thousands of aspen shoots per acre as the aspen stand begins its lifecycle anew.

Harvesting a mature aspen stand allows people to use the aspen before it rots away. If the stand is cut down all at once -- in what is called clearcutting -- the aspen's central root system soon sends forth thousands of new shoots just as it does after a fire.

[NOTE: Some other species of trees can and should be cut by the shelterwood method -- which amounts to a gradual thinning of the tree stand. That technique, when used on aspen stands, allows older trees to overshadow any new shoots that would try to replace harvested trees.]

In more than 95 percent of all aspen harvests in these three National Forests, aspen vigorously regenerates from its own root system after clearcutting has been done. Within weeks, new shoots are visible. Within a year, the shoots are knee-high saplings. And within five or six years, they grow to heights of six feet or more.

The public and the Forest Service are concerned about the appearance of areas where aspen has been clearcut -- and the possibility of marring the natural beauty of scenic areas. Given aspen's rapid regeneration, clearcuts all but disappear within a couple of years. Despite this, the Forest Service has decided to eliminate several scenic corridors from consideration for future aspen timber sales.

Too, aspen clearcuts will be held to areas of 40 acres or less -- and will average about 10 to 15 acres, each. These small clearcuts will make aspen harvesting less apparent and will offer some advantages to wildlife habitat by providing diverse ages and stand structures.

The Forest Service and others are concerned about wildlife that might be dependent on old, deteriorating aspen trees for existence. For that reason, the Forest Service some time ago began a practice of leaving several old snags in each aspen clearcut.

8-A. Aspen clearcutting benefits the timber industry in the short term at the expense of long-term scenic beauty.

RESPONSE. The timber industry, construction industry, and the economy do benefit from aspen harvesting. However, there is no indication that a long-term loss of scenic beauty will result. (Please see above discussion of aspen regeneration.)

8-B. Aspen reforestation at high altitudes is slow; aspen doesn't grow as fast as stated in the DEIS.

RESPONSE: Aspen regenerates rapidly at altitudes of 7,000 to 10,000 feet. Aspen stands above that elevation that do not have reasonable regeneration and growth potential will not be harvested.

8-C. Go slow -- the impacts of massive aspen harvesting are unknown. Widespread aspen regeneration failures occurred on the San Juan National Forest six to ten years after harvest, by an unknown cause. Spruce-fir clearcuts of the Fifties, Sixties, and Seventies in high, alpine areas have yet to regenerate.

RESPONSE: The Final Proposed Plan calls for 1,376 acres per year rather than 2,939 as proposed in Alternative 1E in the Draft. Aspen regeneration failures on the San Juan National Forest were relatively uncommon -- less than one stand out of 100 failed to regenerate. Those few that failed did so because of soil and moisture problems which are recognized today. The practice of clearcutting spruce-fir is no longer prescribed in the standards and guidelines of the Plan Amendment.

8-D. Let natural succession and burn cycles take care of aspen. Natural processes have worked well so far and are more economical at regenerating than timber harvesting is.

RESPONSE: The Forest is under mandate of law to provide wood products to the American public while maintaining long term forest productivity. Regenerating aspen stands is not the only goal we are trying to achieve.

8-E. Clearcutting aspen in greater than 10-acre patches exceeds the light needed to regenerate the stand.

RESPONSE: True, patches larger than 10 acres do bring in more than the minimum amount of light required. However, clearcuts smaller than 10 acres become less efficient and dramatically increase the potential for snow damage and livestock damage to young trees.

8-F. The proposed aspen harvest level has the potential to introduce disease to clones which will kill the clone and inhibit natural regeneration.

RESPONSE: After more than 40 years of aspen harvests on the Western Slope, no greater incidence of disease can be found in harvested areas than in nearby areas that have never been harvested. Research clearly indicates that selectively harvesting individual aspen introduces the greatest level of disease infestations.

8-G. Clearcutting is ugly. The Forest Service cannot assume responsibility to stop [evergreen] succession in the forest. Rocky Mountain Forest & Range Experiment Station publication RM 119, page 45, entitled "Vegetation Associations," indicates neither fire or clearcutting is needed to maintain aspen.

Clearcutting is unattractive to some, but probably no more so than a stand of trees killed by fire, insects, or disease. In the case of aspen, clearcutting is the optimum silvicultural method and creates primarily short-term visual disruption. [Please see response to Issue 8, above.]

On the Grand Mesa, Uncompahgre, and Gunnison National Forests, the Forest Service does not attempt to "stop" succession by invading conifer, but rather recognizes the intrinsic value of diverse conifer-invaded aspen stands for their habitat diversity for wildlife and plants as well as for scenic beauty. Typically, conifer-invaded aspen stands are the most productive sites on the Forest.

Our primary goal for providing aspen trees to the commercial wood products industry is to provide wood from a renewable resource in accordance with legal mandates to do so (Multiple-Use, Sustained Yield

Act) This is done in a manner consistent with known scientific principles of sound forest management and in a careful, professional manner

Page 45 of the RM 119 publication indicates that only some stands are self-perpetuating -- able to flourish while repelling evergreen invasions --without major rejuvenation such as is created by fire. It does not indicate that this would be true for all aspen stands. Self-perpetuating aspen stands are the exception rather than the norm.

8-H. The goal of maintaining aspen in conifer-invaded stands does not justify the proposed aspen harvest level. Non-conifer-invaded stands also will be treated. Furthermore, why is this goal of maintaining aspen a benefit to the public? If the stands were left alone, what benefits would be lost and who would be affected? According to Rocky Mountain Forest and Range Experiment Station publication RM 119, page 45: "Conifer invasion can be so slow that more than 1,000 years without fire may be required for aspen stands to progress to a conifer climax."

RESPONSE: The goal is to perpetuate aspen, using even-age silviculture as part of biological diversity maintenance. Some aspen stands may require 1,000 years to progress to conifer climax but in this area most do not. Within these Forests, some are going to be lost in the near future if not managed through harvesting and regeneration. This management provides wood fiber production as well as opportunities for maintenance of visual quality and plant and animal diversity -- all of which is in the public interest

8-J. Clearcutting does not replicate the effects of fire. Clearcutting removes nutrients from the soil while fire actually fertilizes soils. Clearcutting may cause long term nutrient losses.

RESPONSE: Fire returns some nutrients to the soil but can scorch the earth, destroying nutrients and microorganisms. Clearcutting practices used in these National Forest return nutrients to the soil in the form of harvesting debris that is scattered over the site. Neither burning or clearcutting is considered to be a perfect approach; however, clearcutting is an ecologically sound alternative. The Forest will closely monitor the effects of clearcutting and subsequent regeneration results to help guide long-term management.

8-K. Clearcutting destroys the entire ecosystem; its effects must be evaluated. The DSEIS ignored aspen ecology by basing aspen types on tree size and not the seven habitat types identified in the Rocky Mountain Forest & Range Experiment Station General Technical Report RM 163, entitled, "Forest Vegetation of the Gunnison and Part of the Uncompahgre National Forests."

RESPONSE: Four decades of harvesting aspen on the Western Slope has produced no evidence indicating that aspen clearcutting is detrimental to the ecosystem.

There is more than one method of integrating aspen ecology considerations. The Forest Service bases its findings on biological diversity, vertical height, opening size, and other criteria such as landform and soils.

8-L. How much aspen and conifer need to be cut to maintain a healthy forest? A healthy forest timber program would harvest diseased, decadent, and insect-infested stands -- not even-aged, mature, old growth, or conifer-invaded stands. Do not designate and harvest aspen as a commercial wood fiber species; this exceeds the management needs of the aspen type.

RESPONSE: Given the impossibility of defining perfect "natural" balances in any given forest, the term "healthy forest" is virtually impossible to define.

The "Multiple Use, Sustained-Yield Act" of 1960 mandates timber production as one use of National Forests. The Forest Service is responsible for balancing that use with production of other goods and services -- and for maintaining vegetative variety that will support the terms of the Act.

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8-M. When the forest is left to decay, everyone loses. Clearcut aspen areas spawn thicker, healthier new growth, hold snowpack longer, give deer and elk more food, and recover quickly for visual quality. Replanting is sometimes needed for spruce, fir, and pine but is no problem for aspen.

RESPONSE: While most of this comment is accurate, it also is true that there is value in old, decaying forests. They provide habitat for certain plants and animals, unique and valuable recreation and visual opportunities, and hold other intrinsic values.

8-N. I believe the method of distinguishing self-regenerating and conifer-invaded aspen from pure aspen is flawed. The classification system doesn't really matter because all aspen is harvested anyway.

RESPONSE. Given the management focus in the "Multiple Use, Sustained Yield Act" of 1960 -- and an absence of ecological evidence to the contrary -- these aspen types are subject to harvesting within the National Forests, within the limits specified in the Forest Plan.

8-O. The Forest Service has not inventoried aspen ecology as part of its inventory process and lacks information on which aspen sites will regenerate or experience other significant problems after harvest. The Forest Service uses tree sizes and not ages to determine timber stand characteristics, yields, and timber harvesting effects. Stand age does not correlate well with stand size.

RESPONSE: Inventories are useful and desirable. However professional experience gained from four decades of aspen harvesting has indicated no significant regeneration problems within these three National Forests. Inventories will be pursued as the opportunity becomes available.

8-P. How will noxious weeds be handled after an aspen harvest is completed?

RESPONSE. Knudson-Vandenburg (KV) funds are collected from timber sale receipts to allocate to dealing with noxious weeds resulting from timber sales.

8-Q. The proposal to require 2-5 acres for deer and 30-60 acres for elk greatly increases the restrictiveness of Standard and Guideline 01 (b) on page III-24. Studies on logging traffic and elk indicate that these restrictions may be more than are needed. Why are they needed and how have they been proven effective? This is a new stipulation that was not discussed during the Keystone process.

RESPONSE: Numerous studies indicate that these averages are the minimum necessary. Support is found in the following.

* Hoover, P L. and Dale Wills, 1984, "Managing Forest Lands for Wildlife," 459p, USDA and Colorado Division of Wildlife.

* Thomas, Jack Ward, 1979, "Wildlife Habitat in Managed Forests: The Blue Mountains of Oregon and Washington," 511p, USDA Forest Service Agriculture Handbook 553.

* Confederated Salish and Kootenai Tribe, Montana Department of Fish and Game, USDA Forest Service, 1978, "Elk Habitat -- Timber Management Guidelines," 19p

* Laysen, Earle F., 1979, "Application of Existing Knowledge for Protection of Big Game Habitat in Timber Sale Design," Bridger-Teton National Forest, 31p

* Ward, A. Lorra, 1980, "Multiple Use of Timbered Areas," Rocky Mountain Forest and Range Experiment Station 24p.

This standard will not significantly affect proposed levels of timber harvests but will affect timber sale and design layout

8-R. Standard and Guideline 06 on page III-5 says entire clones should be treated, yet treating entire clones greater than 40 acres contradicts Region II limits on clearcuts over 40 acres.

RESPONSE: In the few instances where a clone greater than 40 acres is scheduled for harvest, the Forest would have to document in the environmental analysis the effects and rationale for the proposed action and then comply with national direction for proposed clearcuts over 40 acres in size. National Forest Management Act Planning Regulations state "Size limits exceeding...[40 acres].. are permitted on an individual timber sale basis after 60 days' public notice and review by the Regional Forester." 36 CFR 219.27 (d)(2)(ii) and page 3-20 of the (April 1983) Regional Guide. It usually is not necessary to harvest entire clones to achieve regeneration objectives when a clone exceeds 40 acres.

8-S. The statement "climax aspen stands can be converted to other cover types," in Standard and Guideline 06 on page III-05 contradicts the Forest Service's desire to maintain the aspen type.

RESPONSE: While the Forest Service is committed to maintaining aspen on the Western Slope, the above proviso is intended to provide an otherwise absent degree of flexibility in special situations

9. Some feel the GMUG is not abiding by the "Aspen Guidelines" that say, in part, that aspen cannot be managed (harvested) for wood fiber. [12 comments]

RESPONSE: The Rocky Mountain Region of the Forest Service has always held two fundamental positions concerning the "Guidelines for Managing Aspen," published in September of 1985 and submitted to the Regional Forester for review and consideration. 1) the Guidelines were meant to complement, not supplement nor replace Forest Plans, and 2) they were guidelines, not policy

The Guidelines were not developed through the NEPA process.

The transmittal letter for the Guidelines, dated August 5, 1985 and signed by the Regional Forester puts the Guidelines in proper perspective and states, in part, ".. There are some key points ..which need emphasis. Most importantly, we must keep in mind that these Guidelines are intended to complement, not supersede, the Forest Plans. The vast differences between Forest Plans may not permit as full implementation of the Guidelines as we would like...". The GMUG reviewed and commented on the proposed Guidelines and in a letter dated February 14, 1985, and signed by the Forest Supervisor In that letter he stated: " ..The Forest believes there are two very distinct ways to manage aspen depending on whether the aspen is on suitable or unsuitable timberlands as defined in NFMA implementing regulations...The driving force on suitable timberland is timber production without impacting the other resources Nowhere in the draft guidelines is the guidance differentiated between suitable and unsuitable timberland ..".

While the Guidelines state on page 2 that a goal (across the Region) for aspen management is not to be fiber production, the Guidelines also state on page 21 that sites capable of high fiber yield should be considered for fiber production The proposed Plan calls for designating 47% of the tentatively suited aspen as suited timber lands and entering 3 9% of the tentatively suited lands in the first decade.

This Forest Plan Amendment will supersede the Guidelines in providing direction for aspen management on these three National Forests.

10. Some people feel that the Forest Service may not adequately protect soil and water on the National Forests. [82 comments]

RESPONSE Soil and water protection was a major consideration in reducing timber harvests in the new preferred alternative, 1-G Soil and water resources are heavily protected with a number of Forest Service measures:

- The "Forest Direction" segment of the Forest Plan provides basic protection for soil and water in all three National Forests

- The "Management Area Direction" in the Forest Plan protects soil and water by land characteristics, such as geology, vegetation, and hydrology.

- Sensitive soil and water areas -- such as streambanks, lakesides and wetlands -- have received additional protection in the Final Amendment's Standards and Guidelines as well as in Management Direction.

- Analysis and evaluation are part of each timber harvest project Long before a timber sale is made, the potential impact to soil and water resources is considered Possible damage to either one is cause for project changes or cancellation. Cumulative effects on soil and water also must be evaluated before a project begins.

- Budgets and staffing are being increased to ensure soil and water protection on these three National Forests, throughout the Rocky Mountain Region, and across the nation.

- The "Monitoring and Evaluation" section (Chapter IV, Final Amendment) specifies further action to protect water and soil Ground-disturbing activities that could impact these resources must be checked and evaluated -- especially in streambank, lakeside and wetlands areas

- The same chapter also requires checking of water yield, soil productivity, riparian conditions, and sediment run-off. All monitoring and evaluation under this chapter must lead to corrective action when harm to soils and water is detected

11. Some are concerned that the budget for the Grand Mesa, Uncompahgre, and Gunnison National Forests may not adequately support implementation and monitoring of the Proposed Amendment. [19 comments]

RESPONSE: True, the Forest budget grows or shrinks each year according to Congress' priorities. Yearly, the Forest Service adjusts its level of operations as budgets shift. Although one annual budget may restrict timber sales to an 80 percent level, that restriction may not affect the level of funds this Forest chooses to use for Forest Plan monitoring purposes. Please refer to the discussion on Page W-2 of the Proposed Forest Plan.

11-A. The proposed increase in the budget required to implement the proposed amendment (60% increase over the 1983 Plan) is extravagant in this day and age of Federal belt tightening.

RESPONSE: The "budget increase," reflects a change in outputs of goods and services under the Forest Plan. It is still subject to the annual processes of Congressional appropriation and allocation of money to support it.

11-B. Since the Forest acknowledges full Forest Plan implementation is not realistically achievable (since Congress deems it appropriate to not fund the Plan at the 100% level) the alternatives, as presented, are not really implementable. Therefore the Plan is in violation of NEPA for not presenting a range of alternatives that are reasonable.

RESPONSE: The alternatives are reasonable. It is Congress' prerogative to choose to fund them or not. NEPA is not being violated as NEPA is not tied to funding execution.

11-C. The small three-percent increase in the budget for the large increase in the timber program is short sighted.

RESPONSE: This observation probably is accurate in assessing the Preferred Alternative (1-E) outlined in the Proposed Amendment. Timber sale limits have been sharply reduced in the new preferred alternative (1-G) outlined in the Final Amendment.

11-D. Where is the funding for the backlog of disturbed areas needing restoration, closure and obliteration of local timber roads, and reforestation? The backlog needs to be itemized and scheduled for a full and systematic elimination.

RESPONSE: Some of these funds are appropriated by Congress, some are provided for by the Knutson-Vandenberg Act, and other funding is provided by purchasers of timber sales contracts. There may be a few pre-1975 roads that may not have been closed or obliterated as required under current policies. That situation will be corrected in future timber sales contracts.

Reforestation of 3,500 acres in the three forests (about one in 1,000 acres) was needed as of October 1990. Most of those acres will regenerate naturally except in areas devastated by insects -- which will be replanted if necessary.

11-E. The National Forest Management Act says trees cannot be harvested if there is no assurance of funding for reforestation. Congressional funding for reforestation is not assured and therefore timber harvesting cannot occur.

RESPONSE: The law requires the Forest Service to insure timber will be harvested from National Forest System lands only where there is assurance that such lands can be adequately restocked within five years after harvest. The Forest Plan assumes that natural regeneration will be part of management plans to promote tree growth in National Forests.

11-F. How will the Standard and Guideline changes in the Proposed Plan page III-21-23 be paid for? The change was not addressed during the Keystone process and it is not a MacLeery remand issue.

RESPONSE: These standards and guidelines will be put into effect using wildlife, fisheries, and watershed segments of the Forest Service budget. Timber harvest levels were the focal point of the Keystone process, not protection of fish habitat. The change was introduced in the amendment as a sensible step in correcting an oversight in the original 1983 Forest Plan.

11-G. There is concern that timber administration will suffer from the small budget increase called for in the Proposed Amendment -- considering the marked timber increase proposed in that amendment.

RESPONSE: The Final Amendment contains a significant reduction in timber harvests proposed in the 1989 amendment. In any case, timber sale administration is fully funded in the budget process. Funding for timber sale administration increases in proportion to any increase in timber harvest. Timber sale administration funding is based on volume harvested.

12. There are strongly opposing group views on the effects of timber harvesting on recreation and on local economies. [816 comments]

RESPONSE: Recreation visitor days, big game hunting, and big-game herd size are at or near record levels at the same time timber harvesting on the Forest is at or near record levels. Harvesting timber on the Forests has been going on for more than 40 years, yet local tourism has thrived during that period -- which would indicate the two industries will continue to coexist at the adjusted harvest levels in the final plan.

The State of Colorado estimates local tourism provides roughly twice the number of jobs (1,800 versus 950) as the timber processing industry in Delta, Gunnison, Hinsdale, Montrose, Ouray and San Miguel Counties, but both industries provide about the same level of income (\$15,000,000 versus \$14,300,000). From an income point of view, the tourism and timber industries are roughly equal in importance. The tourism industry provides more jobs, and the timber industry provides higher paying jobs.

Small loggers do provide stability to the local economy, because one company cannot cause hundreds of people to be unemployed with a single decision. Small loggers on the other hand simply do not have the investment capital, or marketing ability that larger firms do to employ hundreds of people. A number of small loggers do work as subcontractors for the bigger timber-harvesting firms, and do earn a portion of the income generated by the larger firms.

Counties are responsible for the maintenance of county roads and the wear and tear caused by logging trucks. Counties do receive funds from a number of sources other than county taxpayers to provide for county road maintenance. Counties receive road-user taxes paid by commercial trucks (logging trucks) and federal road maintenance funds including a 25 percent share of all income from the National Forests. The Forest does not have jurisdiction for log truck hauling over non-Forest Service roads but is willing to work with local governments in resolving specific problems. A good example is the cooperative effort between Delta County and the Forest in obtaining funds to replace the Delta-Nucla road bridge that crosses Roubideau Creek.

13. Some people believe the Forest failed to adequately address the USDA decision by Assistant Secretary MacCleery. [8 comments]

RESPONSE: The Assistant Secretary wrote his decision letter on July 31, 1985. On September 11, 1985 he wrote a follow-up letter which stated in part: "...My principal concern is that information clearly relevant to making the decision on the allowable sale quantity be brought forward and made a part of the public record. Additional analysis may or may not be necessary. If it is, consideration should be given to the costs of carrying it out in the light of the resource values involved.." The Forest chose to do a new amendment and supplemental environmental impact statement which addresses the economic implications of the timber sale program. Planning Problems 8B, 8C, 8D, and 8E were developed to respond to MacCleery's points.

It is difficult, if not improper, to explain the rationale for a decision in either the SEIS or the Proposed Plan Amendment; this is not the purpose of these documents. The place for defending and explaining decisions, which is really what MacCleery asked for, is in the Record of Decision (ROD). A ROD is not presented with the draft documents and therefore much of what the Forest Service could have said about its rationale for a preferred alternative was not presented in the draft documents.

14. Some people feel the Proposed Amendment inadequately addresses off-site, cumulative, and immediate effects of management. [112 comments]

RESPONSE: *Off-site and cumulative effects were discussed on pages IV-56-61 of the Draft Supplemental Environmental Impact Statement (DSEIS) The Final SEIS has expanded this discussion on pages IV-58-63 Since the Forest Plan Amendment relates specifically to timber management, only environmental consequences of timber activities on the various resources have been addressed Chapter IV of the Final SEIS is a detailed description of these environmental consequences.*

14-A. The SDEIS failed to adequately assess timber management effects on, or the cumulative effects on recreation, wildlife, damage to county roads, sediment loss of tourism jobs, riparian areas, diversity, soil productivity, water quality, visual quality, range access and availability, erosion, biological oxygen demand, habitat fragmentation, noise pollution, aspen ecology, aesthetic values, topsoil loss, air quality, and the mining industry. The DSEIS should be reissued.

RESPONSE: The effects of timber management on all alternatives have been thoroughly addressed for the various resources in Chapter IV of the FSEIS. The latter portion of Chapter IV deals directly with cumulative effects of the alternatives, past, present and future actions and their effects and expected cumulative effects.

14-B. The analysis considers the effects of water benefits far downstream and off Forest, but does not consider the effects to air quality, wildlife, scenic opportunities, or other effects outside the Forest boundaries.

RESPONSE: The effects of timber management to areas outside the Forest boundaries have been discussed both in the Draft SEIS, IV-59-61 as well as in the Final SEIS, IV-61-63.

14-C. The DSEIS did not adequately disclose the effects of the proposal on air quality on Class I areas such as wilderness and National Recreation Areas.

RESPONSE: All of the alternatives considered may temporarily affect local air quality by creating dust. The dust will result from road construction and logging truck movement over the roads. However, fine particulates resulting from road dust will not have a significant effect on air quality on the Forests or within the region.

14-D. According to NEPA regulations, cumulative effects cannot be completed without a comprehensive soil survey. Impacts are not even quantified within an order of magnitude in the DSEIS.

RESPONSE: According to NEPA, completion of a comprehensive soil survey is not a requirement. The Forest is participating actively in the National Cooperative Soil Survey process. Through this effort, data is being gathered for the Forest Service by the Soil Conservation Service. Data is being gathered about the soil resource and will be correlated and evaluated to national standards with state-of-the-art knowledge. Approximately 90 percent of the survey has been completed on these three Forests. When completed, this will provide a general base of information from which indications of soil hazards, limitations and potentials can be obtained. The impacts of timber management on the Forest are discussed in the FSEIS, IV-11-17.

14-E. The majority of environmental effects, especially to soil productivity and water quality are not even approximately quantified. Need to define significant and insignificant effects. You cannot defend an ASQ (Allowable Sale Quantity) while admitting the major impacts to long-term productivity are still under study. NEPA requires a worst-case analysis when information is lacking.

RESPONSE: NEPA requires a worst-case analysis in cases where there are gaps in relevant information or when scientific uncertainty exists pertaining to the evaluation. In this situation, there is a great deal of information and scientific data available. The comprehensive soil survey for the Forest is 90 percent complete. The FSEIS, IV-19-24, 29-30 covers a detailed discussion of environmental effects to soil productivity and water quality.

14-F. Net sediment yield should be reintroduced in the analysis as a cumulative impact. A two-to-five-ton per year soil loss from timber harvesting would not be tolerable. A foot of soil will be lost in 395-937 years which is an order of magnitude greater than it is produced. A worst case-analysis needs to be done which examines: mass wasting, channel aggradation and gulying, rainsplash on soil compaction on roads, slope failure, erosion due to failure to adequately close roads and erosion impacts due to management activities. Erosion and soil analysis will show the proposed ASQ is five times greater than sustainable levels.

RESPONSE: The proposed ASQ has been lowered to a level where the impact to soil loss will be reduced significantly. In calculating soil loss per year, estimates are taken when there is no vegetation on the site. In aspen clearcuts, revegetation begins in a very short time period. Consequently, the soil loss to a particular site will be reduced each year. Refer to page IV-21 of the FSEIS for information on soil loss calculations.

14-G. What are the cumulative effects of grazing and logging on water, soil, livestock use, and wildlife in a given area? What's the effect of additional predation on domestic livestock?

RESPONSE. The current Forest environment has been formed through historical development of Forest management described in Chapter III of the FSEIS. As result of timber management, road building, livestock grazing and recreation use, changes have been made to soil, water and air. These activities have probably increased the amount of soil movement and sediment in streams, changed species proportion and age structure of some forested areas, and possibly caused regeneration of timber stands. The entire effect has been to create more diversity in forest ecosystems than might appear if no timber harvest had taken place. Some changes have been made to the normal wildlife population as a result of human occupation and Forest management activities. Animals considered predators have been reduced in numbers or eliminated on the Forest. Elk populations have increased and general diversity of animal populations probably has increased as a result of increasing diversity in plant communities. Aspen clearcutting can create a temporary increase in the amount of forage available to livestock. The increased capacity will be considered temporary and will be used as a management tool to improve livestock distribution and utilization, not to increase cattle and sheep stocking capacities.

14-H. The Proposed Amendment never considered off-site effects such as siltation of water supplies or the costs of new water treatment facilities.

RESPONSE: These off-site effects were considered in the sediment analysis. Please refer to pages IV-21-23 of the FSEIS. No significant water quality impacts are expected in Alternative 1G since timber harvesting is conducted in widely dispersed areas.

15. Some people question the Forest Service's assumptions and motives in determining future demand for timber. [62 comments]

RESPONSE: Money from Forest Service timber sales goes directly to the United States Treasury. However, the one of the agency's basic responsibilities -- as directed by Congress -- is to help meet the nation's demand for wood products. The Forest Service also has to ensure that harvests do not exceed the amount of timber a Forest can grow -- and that timber harvests do not harm other natural resources. In this way, our grandchildren and their grandchildren will have forest and timber resources they'll need in centuries to come.

As a result of comments received from the public, and findings of the Forest Service's own internal review, less timber will be harvested than was proposed in the Draft Amendment.

The amount of National Forest timber available for future harvests may not meet all of the timber industry's growing demand for wood. Given natural limits on how quickly Forests can grow timber while still meeting the environmental standards and guidelines found in Chapter III of the Plan, some local manufacturing facilities may reduce operations -- unless private land owners can meet industry's demand for wood

15-A. Increased demand for other resources such as roadless areas were ignored. Transaction evidence data to support Louisiana-Pacific's demand request is lacking.

RESPONSE Roadless areas are identified in the original Forest Plan implemented in 1983. Roadless areas and other resources are considered in each alternative in the Forest Plan and an analysis in that plan outlines what effect each level of timber harvest would have on all resources. The Proposed Amendment lacked transaction evidence to support Louisiana-Pacific's timber demand because there was no market for aspen prior to 1984. The best available information was used -- harvest records from 1984 to 1989 -- as a basis for the analysis of demand

15-B. The Forest Service failed to utilize price/quantity relationships in determining timber demand.

RESPONSE: No price/quality relationship was used because none could be established. Given market conditions in this area, there is no way to determine how much timber will be used at any given price

16. There were concerns that the Forest Service may not have given adequate consideration to private land as a source of timber to meet future demand. [33 comments]

RESPONSE. It is not the intent of the Forest Service to compete with private land owners, undercut prices, or set prices. With diminished timber supplies from the National Forests and the potential for increased Forest Service rates for aspen and conifer, local private land owners will have significant opportunities to meet future timber demand

17. Some people indicate insect-and-disease-control measures are inadequately addressed in the Proposed Amendment. [10 comments]

RESPONSE. Areas of forested land which are managed for timber production normally are maintained in ways that make these areas more resistant to insects and diseases. It must be accepted that those areas not managed and regenerated -- such as wilderness areas -- will run a higher risk of damage and mortality. That's the normal, natural life cycle of forests. Additional research is needed to adequately address potential insect-and-disease problems associated with aspen.

The mountain pine beetle situation on the Uncomphagre Plateau is being addressed by a separate Environmental Impact Statement, which may require further amendment of the Forest Plan.

Alternative 1G includes trade-offs that are an attempt to maximize net public benefits. Accepting a certain risk of loss due to insects and disease is part of that trade-off.

17-A. The impacts of the proposed logging program will be greater in scale than the impacts of insect and disease outbreaks; therefore, allowing nature to take its course would be better.

RESPONSE: "Allowing nature to take its course" could result in insect and disease outbreaks that could threaten all three National Forests on the Western Slope as well as neighboring National Forests, state

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forests, and trees on private land. The resultant losses to the environment, recreation, and industry would be incalculable.

It should also be noted, however, that the level of harvest put forth in the proposed amendment has been significantly reduced as a result of public comment and an extensive internal review process. Even a reduced level of harvest is in the best interests of the National Forests because analysis indicates that timber management and manipulation improve the health of tree stands.

17-B. The Forest Service failed to consider alternate treatment methods to control insects and disease. Specifically, they failed to document the cost-benefit data for using prescribed fire to control insects and disease.

RESPONSE: Use of prescribed fire to control insects and disease has no history of success. From the very advent of forest management, management of timber stands in some manner to promote stocking control and an optimum growing environment has proven to be the most cost-effective strategy to prevent insect and disease losses.

17-C. The National Forests should be more efficiently managed to remove diseased and bug-infested trees from all areas of the National Forests.

RESPONSE: An active salvage program is pursued in all areas of the National Forests -- except Wilderness Areas where timber operations are prohibited by law. Salvage programs also are limited by market demands for wood.

17-D. The Draft Supplemental Environmental Impact Statement did not address insects and disease in aspen.

RESPONSE: This was not addressed because large-scale insect and disease problems are not common in aspen in these forests. Proposed aspen harvest levels would not increase insect and disease problems but are expected to produce more insect-and-disease-free stands.

17-E. Where are the Standards and Guidelines that protect disease-resistant stands and clones of trees?

RESPONSE: No specific Standards and Guidelines address this area. Individual silvicultural prescriptions (management strategies) address the site-specific needs of individual stands of trees. Resistant stands would not necessarily be protected. It may be more advantageous to harvest, regenerate, and perpetuate these types of stands.

18. People hold conflicting views on whether the Forest Service has honored agreements made in the Keystone Process, and whether that process was fair. [19 comments]

RESPONSE: The primary purpose of the Keystone Discussions was to provide the environmental community, local and State Government, industry, and appellants to the original Plan a fair opportunity to agree on a harvest level acceptable to all parties. That goal was not achieved; not all parties were willing to discuss and agree upon specific harvest levels. Some of the invited parties chose not to attend and participate. Only organizations and individuals directly interested in the timber harvest level issue were invited. The Keystone Meetings were not meant to be a forest advisory committee, nor were issues outside of the harvest level to be discussed. Agreements were reached which placed responsibilities on the Forest Service. Those agreements, and the Forest Service response to them are found in Appendix A of the FSEIS.

Some commentors felt that the Keystone Process created a firm commitment on harvest levels, while others felt that no agreements on harvest levels were reached. As explained on page A-4 of the DSEIS, concurrence on a preferred alternative was never fully achieved. Alternative 1E in the Draft SEIS may have been a result of the Keystone Process, but was not an alternative agreed to by all the participants.

18-A. The OAC provides the dependent forest industry with a check valve in the event of increased timber demand. It is the critical Keystone agreement that allowed the timber industry to support many of the compromises demanded by the environmental community such as the increased monitoring requirements.

RESPONSE: The OAC was not considered in any alternative in the Final SEIS. The Forest believes that any increases in harvest levels should be considered in full context of the NEPA process and the public provided an opportunity to participate and comment. Many of the extra monitoring requirements have been dropped in the proposed Plan since the harvest levels will be less than in Alternative 1E.

19. Individual commentors made suggestions concerning management area designations and proposed new emphasis for these areas. The areas included Pass Creek, Little Pass Creek, Castle Creek, Overland Reservoir area, McClure Pass area, winter range areas, Little Alkalie - Red Mountain area and Coal Creek area. [10 comments]

RESPONSE The proposed Forest Plan Amendment did not involve making changes to management areas except to correct errors made in the original 1983 Forest Plan. One of the major tasks of the upcoming Forest Plan Revision (due in 1997) is to reexamine management area allocations.

19-A. Despite the different management area types, all except Wilderness management areas are subservient to timber harvesting. Even a 10A Research Natural Area is scheduled for timber harvest.

RESPONSE Proposed timber activities in that 10A area were in error and have been eliminated from the Proposed Amendment. Commercial timber harvesting can occur only on lands suited for timber production; suited lands occur in most management areas except wilderness and special areas. When timber harvesting does occur, for example, in a 2A [Semi-primitive motorized recreation emphasis] management area, the timber sale activities, including transportation system development and management, must comply with standards and guidelines unique to the 2A prescription.

20. Several people are concerned about the amount and adequacy of Forest Plan monitoring that will be done -- and the Forest Service's ability to do that monitoring. [18 comments]

RESPONSE The Forest Monitoring Plan has been revised significantly since issuance of the Draft; it is now more realistic and achievable. It reflects a reduced level of monitoring (from the Draft Plan Amendment) because proposed timber harvest levels are markedly lower than was proposed in the Draft Plan Amendment.

One key of the Monitoring Plan is the tie to budget levels for specific program activities as stated on page IV-2 of the Plan. As programs such as timber harvest increase, so does the respective monitoring level. Some monitoring, such as water quality, may require high levels of monitoring to maintain baseline data -- even when program levels are reduced.

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Some commented that, since recreation was not part of the remand, it should not be addressed in the Monitoring Plan. This Plan is a revised and updated version of the 1983 Plan and includes monitoring activities for all resource areas.

Industry commented that timber sale and harvest levels should be monitored so it would be known when to trigger the OAC program. These activities are monitored as a part of program management; however, the OAC program is not part of the proposed action.

Some felt that outside agencies or institutions should be used to monitor the Forest Plan to "get the truth out." The Forest Service will consider outside sources to help it monitor the Plan. The Forest Service will make public all information concerning its monitoring and evaluation efforts, in an annual Monitoring and Evaluation Report.

20-A. The use of "review rationale" under monitoring of created openings in the Draft Amendment page IV-15 does not make sense as it does not insure if standards and guidelines are being met.

RESPONSE: This item was dropped from the Final Monitoring Plan.

20-B. The transportation management proposal in the Draft Amendment pages IV-16 & 17 to monitor only three road closures annually is ridiculously low.

RESPONSE: The Forest Service feels that three timber sales per year are adequate when combined with the seven travel management monitoring trips (see page IV-14 of the Final Plan).

20-C. The Amendment has no provision for project water quality monitoring (See Draft Amendment pages IV-21 & 22). The only provision is to use HYSED which is inadequate for the job.

RESPONSE: The Final Monitoring Plan provides for Interdisciplinary Team monitoring of water quality and riparian areas on a project and selected watershed basis. See page IV-9 of the Final Plan.

20-D. Will the Forest be used as a grand experiment to see if timber harvesting adversely affects tourism?

RESPONSE: Timber harvesting has been occurring on the GMUG for over 40 years and the available evidence clearly points to no effect. Nevertheless, the Forest is sensitive to this issue and the beliefs that many have concerning it. The Proposed Plan calls for reduced timber harvest levels, especially in the areas that were considered "sensitive" to recreation-oriented activities.

20-E. If additional timber harvesting does occur, the Forest Service should monitor traffic levels on Forest roads & trails, general recreation use, and jobs and income from recreation dependent communities to determine what the effects are.

RESPONSE: "Additional timber harvesting" that exceeds planned harvest levels will not occur under this amendment.

20-F. I suggest monitoring the Plan page III-44 (04) (which defines shelterwood openings) to see if the definition will affect ASQ (Allowable Sale Quantity).

RESPONSE: These standards and guidelines define when a created opening (as a result of a shelterwood final removal) will no longer be considered an opening. Very few acres are scheduled in the first decade for overstory removal; even fewer (if any) acres will be determined to be stocked by these definitions. Most overstory removal and subsequent consideration as being stocked will occur in later decades.

20-G. Timber sale water monitoring stations need to gather three or more years of baseline data to provide meaningful before and after water quality results. The Stevens Gulch/Hubbard Park area should be established as a water quality monitoring area before timber harvesting begins.

RESPONSE. The Forest intends to monitor water quality near the Stevens Gulch/Hubbard Park.

21. Some people hold mutually contradictory ideas on whether the Forest Service will adequately protect riparian (wetland) areas. [12 comments]

RESPONSE: New Riparian Standards and Guidelines identified in the Final Amendment fulfill the need to be more responsive to concerns regarding riparian protection and will provide necessary land management guidance for the land manager.

21-A. The "number of vegetative treatments" used as a unit of measure on page IV-13 of the Draft Amendment is not appropriate because vegetative treatments should not occur in riparian areas. [NOTE: Page IV-13 calls for streambanks, lakesides and wetlands to be managed in such a way as to improve fisheries and wildlife habitat. Vegetative treatments include such measures as controlled burning of oak brush, fertilizing soil, and timber harvesting.]

RESPONSE: Vegetative treatment in some streamside and lakeside areas is possible and, in some instances, desirable. The decision hinges upon what the management objectives are for the area involved. If the management objective in a big game winter range area is to enhance available winter forage, for example, it may be desirable to introduce treatment methods that would stimulate riparian vegetation. This treatment would have to be consistent with other resource needs.

21-B. The proposed amendment's riparian management strategies do not protect streams from activities taking place outside the riparian zone.

RESPONSE: A combination of strategies (management prescriptions) protect streams from harmful activities that otherwise could take place near or in riparian zones. Corrective action is taken wherever needed.

21-C. Will Standards and Guidelines in the Proposed Plan, page III-180 (02-a), allow timber harvesting in riparian areas? (NOTE: PAGE III-180, (02a), limits "yarding, skidding of logs or tracking within, through or across the riparian/aquatic corridor."). Will purchasers have to pull cable to keep machines out of the riparian zone?

RESPONSE: Page III-180 does not allow timber harvesting in riparian (streamside and lakeside) areas. In a riparian zone, timber sales layout and design must include cutting units and transportation systems that minimize impacts on wetland ecosystems. This may result in the use of cable or the need to skid logs longer distances to avoid riparian zone damage.

21-D. Riparian Area Standards and Guidelines, while an improvement, are too heavy handed towards domestic grazing use. They prevent Ranger District employees from having a full range of options to improve the area. Requiring updated Allotment Management Plans is not appropriate. Remove the "prohibited" and replace with "sensitive". Standards f and g on page III-178 are totally unacceptable and should be withdrawn. (NOTE: PAGE III-178 (f) and (g) refer to provisions for protecting riparian areas by altering schedules for livestock grazing on the National Forests.)

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RESPONSE: Domestic livestock grazing can have a major impact on streamside and lakeside plant life. For that reason, some adjustments are required -- adjustments that balance the needs of the plant community with existing grazing obligations.

District Rangers have the authority to explore a full range of alternatives with the permit holder in attempting to coordinate domestic livestock grazing use and direction contained in the Land Use Plan.

The National Forest Management Act requires that all activities occurring on the National Forest be consistent with directions in the Forest Land Use Plan. This creates the need to review, revise, and update Allotment Management Plans.

The objectives of the referenced Standards and Guidelines are to provide the public land manager with direction and a range of options to protect or enhance wetland plant life. Implementation may result in some adjustments. But, in the long term, the adjustments should help maintain livestock grazing on the National Forests.

21-E. Standard and Guideline "d", page III-183, does not make sense. It seems to allow timber cutting to stabilize stream banks which are damaged beyond recovery. [NOTE: Page III-183 (d) reads, "Stabilize streambanks which are damaged beyond natural recovery, in a reasonable time period, with appropriate methods or procedures that emphasize control by vegetative management or manipulation."]

RESPONSE: The intent of that section is to emphasize stabilization of streambanks that are damaged beyond natural recovery. The section emphasizes recovery by natural means (vegetative management), rather than by mechanical or other means that may be less effective and more expensive. This is more in reference to management of domestic livestock, not timber management activities. The wording in the guideline has been clarified in the Final Amendment.

21-F. Prescription 9A allows exceptions for some streams and wet areas. Exceptions can be abused and cause problems with erosion, wildlife, fish, and water quality in riparian areas.

RESPONSE: The intent of this segment is to protect undisturbed riparian areas from off-road-vehicles -- by restricting ORVs to existing or designated trails. Corrective action will be taken where damage occurs.

21-G. Standard and Guideline "f" on page III-180 allows cutting on stream banks. This is in conflict with Standard and Guidelines "b" on page III-176 of General Direction One. [NOTE: This Standard and Guideline "f" prohibits "log landing and decking (in) areas within the stream/riparian corridor." And "b" directs foresters to "maintain riparian vegetation communities by protecting overhanging stream cover which provides stream shading, temperature control, and organic input."]

RESPONSE: Page III-180 (f) prevents people from cutting timber elsewhere and then landing and decking logs in a riparian area. It does not allow cutting on stream banks. A conflict between III-180(f) and III-176(b) is not apparent.

22. There are widely mixed opinions on the emphasis that individual resources should receive under the Proposed Amendment, especially timber and recreation resources. The comments ranged from "additional logging is not a good idea" to "additional logging is a good idea". Some felt that the level of harvesting proposed in the Draft precluded other uses of the Forest, especially recreation oriented, others said the level must be right if the Forest Service proposed it, while still others felt a higher level of

logging should occur. The majority of comments, including those from Federal, State, and local governments, felt that the level proposed in the Draft was too high. Some folks commented concerning the multiple-use policy of the Forest Service and either supported higher timbering levels as a fulfillment of the policy or felt that multiple-use goals were not being achieved for other resources because of the proposed harvest level in the draft Preferred Alternative. [1,738 comments]

RESPONSE: Management of the National Forests under the multiple use policy established by Congress emphasizes that the Forests are established and shall be administered for outdoor recreation, range, timber, watershed, and wildlife and fish purposes. The policy goes on to say that due consideration shall be given to the relative values of the various resources in particular areas. Not every acre of land can or should be managed to produce a full range of resource goods and services. By the same token, it is a rare instance when it is appropriate to manage extensive areas of Forest to the exclusion of other resources (except in wilderness)

The process of Forest Planning, Plan Amendment, Plan Revision and the public involvement that must accompany these activities has been put in place so that we can more accurately establish those levels of resource management emphasis. The process is one of change and the decisions for change will seldom be perfect solutions. At best the changes will be adjustments which bring us closer to the social and economic values of the day while still meeting the legal mandates which direct Forest Service responsibilities.

22-A. The proposed Plan will reduce the long term productivity of nontimber benefits.

RESPONSE: Chapters II & IV of the FEIS describe environmental consequences of implementing each alternative. The newly proposed alternative will provide the maximum net public benefit. There is nothing to indicate that productivity of non-timber benefits will be impaired.

22-B. The USFS was established to protect and maintain the forest. The proposed Plan would not allow this.

RESPONSE: The Forest Service has the responsibility to protect, maintain, and manage the resources of the National Forests for goods and services that meet America's needs in an environmentally sound manner. (Please see Response to 22-A, above)

22-C. The statement in S&G 01,b on page III-133 concerning coordination with adjacent land owners should be included in the 5A prescription.

RESPONSE: This error has been corrected, this Standard and Guideline has been included in the 5A prescription.

23. There is some concern about the protection of old-growth ecosystems -- places where animal and plant life depend on old trees for survival. [15 comments]

RESPONSE: The Forest Service is committed to protecting a large number of old-growth ecosystems in the Grand Mesa, Uncompahgre, and Gunnison National Forests. This commitment is spelled out in the Plan and includes the following requirements:

* Five to twelve percent or more (234 square miles and greater) of these National Forests will be managed in such a way as to protect old growth. These old-growth areas must be dispersed throughout the

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Forests, rather than assigned to a single location. The areas will average 100-200 acres whenever possible, and will be no smaller than 30 acres.

* Old growth ecosystems must be managed in such a way as to assure retention of these areas -- and to support species that are dependent on old growth environments

23-A. Little old growth is mapped or inventoried. The 30 acre-minimum size restriction may be too small to retain old growth characteristics. Species that require larger tracts of old growth will be vulnerable. The Forest failed to take into account the possible irreversible risks to old growth diversity. Contradictions in the application of old growth definitions may destroy all existing old growth.

RESPONSE: The Forest Service has not yet completed an intensive, on-the-ground, old-growth survey in all three million acres of the Grand Mesa, Uncompahgre, and Gunnison National Forests. In the meantime, the Forest Service uses a method of rating old growth stands that is based on the most current research available. The 30-acre stand is a minimum size established by this Plan Amendment. In practice, most old-growth stands are considerably larger, averaging 100-200 acres.

The overall vegetative diversity of an area, including old growth, ensures that all successional stages are present. These provide habitats for all species.

The 234 square mile minimum of forest being managed to protect old-growth resources virtually eliminates the possibility of all old growth being destroyed either through "irreversible risks" or other causes.

23-B. Can the Forest Service meet the Standard and Guideline on page III-8(a) of the Plan Amendment -- since the bark beetle has wiped out most of the ponderosa pine on the south end of the Uncompahgre Plateau? [NOTE: III-8(a) refers to managing "to retain a minimum of ten percent of the larger old growth ponderosa pine, spruce-fir, and Douglas fir trees in Visual Management Guideline Class 1 and 2.]

RESPONSE: The guideline means that if conditions exist, then the Forest Service must manage to meet a certain standard. Obviously, if the trees are already dead, the opportunity to manage to meet a certain visual management standard is foregone. The primary purposes of managing ponderosa pine stands is to prevent future outbreaks of insects so that a forested stand remains on site.

24. People hold mixed opinions on the range of alternatives presented and on which alternative should be chosen. [105 comments]

RESPONSE. According to NEPA, the range of alternatives should include all reasonable alternatives, as well as other alternatives which are eliminated from detailed study with a brief discussion of the reasons for eliminating them. Each alternative must be rigorously explored and objectively evaluated. The alternatives in the Final Plan Amendment have been changed from the Draft to reflect both public issues and to better identify an adequate basis for identifying the alternative that comes closest to offering the greatest net public benefits. A detailed description and comparison of each alternative is in Chapter II of the Final Supplemental EIS.

24-A. Alternative 1A should be considered for implementation.

RESPONSE. This alternative continues the current timber management direction as prescribed in the Forest Plan; however, the volume of aspen scheduled for harvest in the first decade would not use a significant portion of the aspen lands for commercial purposes. The conifer sawtimber harvest level in alternative 1A pushes the realistic limits of the suited land capabilities within standards and guidelines and public comment and would require entry into many unroaded areas.

24-B. Alternative 1B should be considered for implementation.

RESPONSE: This alternative is not feasible because the timber harvest level is too high. A thorough field validation verified that there is insufficient acreage to maintain such a harvest level.

24-C. Alternative 1C should be considered for implementation.

RESPONSE: This alternative maximizes economic efficiency. Under this alternative, no aspen trees would be available for fiber production.

24-D. Alternative 1D should be considered for implementation. Alternative 1D falls short of meeting the needs of the timber industry and projects the loss of 423 jobs. Elements of Alternatives 1D and 1F should be incorporated into a final preferred alternative.

RESPONSE: This alternative stresses minimum market opportunities and minimizes man's influence in managing the forest. But it fails to meet historical conifer sawtimber harvest levels and provides little commercial aspen. Alternative 1D is economically inefficient due to selection harvest in spruce/fir where no increased water production and related values are recognized.

24-E. Agree with proposed amendment, Alternative 1E [and] disagree with proposed amendment, Alternative 1E. It is unlikely to be the final preferred Alternative. It is unlikely existing purchasers will buy the conifer POL, and it is negative in both PNV and timber net revenue. It comes close to meeting current demand (90% aspen, 100% conifer with OAC). Ponderosa pine mills will be forced to convert to other species. If OAC component cannot be triggered, conifer dependent mills may face a shortage of timber. The Alternative seems to be driven by financial, not economic efficiency. Disagree with the final ASQ (Allowable Sale Quantity)

RESPONSE: Alternative 1E requires entry into scenic and visually sensitive areas such as Mount Sneffels, Kebler Pass and most unroaded areas, which is not acceptable to the public. It has the lowest PNV and loses the most money.

24-F. Alternative 1F should be considered for implementation. It is financially efficient in terms of timber, and it retains sensitive roadless areas. The Forest failed to consider an alternative that is truly financially efficient.

RESPONSE: Using the current minimum rates, this alternative is unfeasible. Alternative F was designed to show positive cash flows for the timber sale program, which it could not attain. In the FSEIS, alternative 1F was not considered in detail because there were no financially efficient acres.

24-G. The required reasonable range of alternatives is lacking. Even the amenity alternative favors timber exploitation, it merely does not favor Louisiana-Pacific. I/we question the range of alternatives. No alternative meets the increased demand for wilderness designation. None of the alternatives prioritize timber sales around the needs of a healthy forest or biological diversity. None of the alternatives have a harvest level lower than the current harvest level.

RESPONSE: The final SEIS provides an adequate basis for identifying the alternative that maximizes net public benefits and responds to public issues. There is no identified demand for increased wilderness on the GMUG. All of the alternatives were evaluated against the criteria of Planning Problem 8C which addresses the healthy forest concept. The effort to establish the suited land base on the forest identified a reduced base, one that directly addressed needs of a healthy forest and biological diversity. Alternative 1D has set an aspen harvest level lower than Alternative 1A.

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24-H. I/we prefer Alternative 4 of the Original 1983 FEIS.

RESPONSE. Alternative 1 of the Original 1983 FEIS was the selected alternative that now is the Forest Land and Resource Management Plan. It is the current guide for all natural resource management activities on the forest. None of the other alternatives from the original FEIS met the criteria used to develop alternatives in the Amendment.

25. A number of people disagree with each other on the effects of timber cutting on livestock grazing. [16 comments]

RESPONSE. Timber harvesting creates both advantages and problems for grazing. Harvesting changes natural barriers, opens gates, and temporarily denies access at some points. At the same time, however, timbering stimulates plant growth, improves access, and increases the variety of plants in the area. The key to resolving grazing concerns is the Forest Service's ability to closely monitor conflicts and trade-offs.

25-A. Proposed Standard and Guideline changes in Plan Amendment page III-34 (04) & page III-176 will have adverse impacts on the livestock industry. [NOTE. Page III-34 (04) calls for "economically efficient" and sound ecologically-based programs and projects in maintaining "satisfactory range conditions on all rangelands." Page III-176 requires protection of riparian areas and prevention of streambank and lakeside damage by maintaining proper livestock distribution.]

RESPONSE. The Forest Service has a strong mandate to protect riparian vegetation. As a result, grazing levels may have to be reduced in some places to meet management Standards and Guidelines. This may be to the disadvantage of some grazing permit holders.

25-B. Logging activities will adversely affect the ground used for grazing by reducing forage both temporarily and permanently. There is no way to use grazing permits during harvesting; it is unsafe for the permittee and cattle. Stocking reductions will occur as livestock concentrate on areas away from the timber sale and overgrazing occurs. Aspen trees which provide shade for grass to grow in the dry part of the summer will be lost. Road construction makes it difficult to distribute cattle effectively; road closures do not work because they are not enforced.

RESPONSE. To avoid safety hazards, the Forest Service routinely coordinates logging and accompanying road construction activities with grazing permit holders. No overgrazing or reduction in grazing levels are expected as a result of logging. There is no known case in recent history where a domestic livestock permit was reduced on National Forest lands in Colorado as a result of timber harvesting activities.

Experience has demonstrated that timber harvesting opens up the site which increases understory vegetative production and creates a temporary, desirable forage mix that is attractive to domestic livestock as well as to wildlife.

25-C. Ranchers want more acres to be cut because the openings give cattle more open grazing land and temporary increases in grazing can be provided. Cattle will not overgraze openings, but actually have to be pushed into them to graze. Slash left in openings reduces the amount of forage available to cattle.

RESPONSE: Logging stimulates plant growth that is usually temporary; hence, the increased forage is not considered for long term use when plans are drawn up that establish the amount of forage available for grazing allotments.

25-D. Timber sales should be planned in close coordination with affected livestock grazing permit holders because timber harvesting can increase a rancher's management costs.

RESPONSE To help ranchers hold down costs, and to improve safety, timber harvests will continue to be closely coordinated with permit holders.

25-E. Timber harvesting during drought years will force both cattle and big game onto private lands early in the winter.

RESPONSE The maximum timber harvest in a year is less than one percent of the entire National Forests. Given this small area, timbering's effect on plant stimulation is both minimal and temporary. For that reason, it seems unlikely that timber harvesting would have a serious impact on livestock or wildlife movement. Drought, being a natural occurrence, can effect livestock and wildlife movement with or without timber harvesting

26. Should timber be harvested in unroaded areas? In semi-primitive, non-motorized areas? (NOTE: The term "semi-primitive, non-motorized" describes areas that the Forest Service tries to set aside for the benefit of those who prefer to hike or camp in natural settings that are undisturbed by people.) [2 comments]

RESPONSE Most unroaded areas in the Grand Mesa, Uncompahgre, and Gunnison National Forests will not be harvested this decade. There were 53 classified "roadless areas" on the Forest; in alternative 1G, 20 are scheduled for entry but only 4,485 acres, or 47 percent of the roadless area on the Forest will be entered. The current legal guidance is that roadless areas released from wilderness designation and/or study are to be managed for multiple use purposes.

The term "semi-primitive, non-motorized" describes a type of recreation experience that the Forest Service tries to achieve as part of the optimum mix of goods and services provided by the plan.

27. Why weren't the specific Recreational Opportunity Spectrum (ROS) and Visual Quality Objectives (VQO's) shown in the Proposed Amendment? (NOTE: Recreational Opportunity Spectrum is the Forest Service method of defining the types of recreational settings available in National Forests. It includes such classifications as developed areas, unroaded natural areas, and semi-primitive areas. Forest Service standards for the appearance of a given forested area are contained in what are called Visual Quality Objectives.) [13 comments]

RESPONSE: Thorough ROS/VQO inventories and mapping were completed for the original Forest Plan, published in 1983, and are part of that planning record. Similar maps are being updated for use in the Forest Plan revision to be published in a few years. They were not published (in map form) as part of the amendment because they represent only the existing conditions (inventory) and not necessarily the managed objective which may vary from inventory. The purpose of the Amendment was to assess timber demand and supply potentials.

27-A. The Draft Supplemental Environmental Impact Statement did not include driving-for-pleasure as a recreation use -- the biggest contributor to enjoyment of the forests.

RESPONSE. Driving for pleasure is a major recreation in the National Forests. It was included in the original FEIS on pages III-27 through III-29. This document is still valid. It was left out of the Draft SEIS because driving-for-pleasure was not affected by changes proposed in the Amendment.

28. There was concern that areas might not be reforested after cutting. [17 comments]

RESPONSE The National Forest Management Act requires that cut-over areas must be reforested. Areas to be cut must be capable of being regenerated and must be so certified in site-specific documents. These regeneration surveys are done three and five years after the regeneration cut to monitor the results. If monitoring reveals site specific regeneration failures, appropriate actions will be taken including changing our management actions and manually reforesting the site if necessary.

The Plan Amendment, page III-46 now reflects this five year regeneration requirement for lodgepole pine also.

28-A. Can the aspen forest be rebuilt after harvesting? The harvesting requirements are not strict enough.

RESPONSE: Since the current aspen program began in 1984 in the Grand Mesa, Uncompahgre, and Gunnison National Forests, new aspen has been reproducing at a very prolific rate more than 95 percent of the time. Given this fact, there is little or no evidence to suggest that harvesting rules are too lax.

28-B. Neither the Forest Service administration or Forest Service research understands the reason for the 40 to 60 percent reforestation failure rate. Both refuse to look at soil productivity as a cause. Soil compaction on roads, skid trails, and landings contributes to regeneration failures. Regeneration failures affect Allowable Sale Quantity.

RESPONSE: Regeneration failures would affect long-term ASQ (Allowable Sale Quantity). However, current timber management practices are producing very low regeneration failure rates on the Grand Mesa, Uncompahgre, and Gunnison National Forests.

Input received during the draft comment period from the Soil Conservation Service regarding soil conditions was incorporated into the analysis (see page II-5, 6 of the FSEIS). The Forest is aware of this newer information and has already considered the possible effects of aspen clearcutting on albic soils. This awareness resulted in lower planned harvest levels in the first decade in certain areas on the Uncompahgre Plateau.

28-C. There is a need to discuss the benefits of soil scarification (breaking up and loosening the soil surface) to lodgepole pine and aspen regeneration.

RESPONSE: Soil scarification is important to the regeneration of lodgepole pine. Whether the goal is for natural or artificial regeneration, exposed mineral soil is best. Moist mineral soil makes the best seedbed.

The needs of aspen are different. Aspen regenerates primarily by sprouting from underground root systems -- hence, soil scarification is not necessary for aspen. (An exception might be made for establishing aspen stands from seeds, but this is rarely needed.)

28-D. Does the Draft Plan, page III-41 (01) make sense? It nearly doubles the desired level [of lodgepole pine regeneration] and will add expense to thinning costs. (NOTE: Page III-41 (01) requires reforestation of lodgepole pine and is followed by tables that outline desired density of trees planted per acre.)

RESPONSE: Tables depicting planting densities are designed to be flexible in order to afford the forest manager a range of options in meeting goals for each specific site.

29. There is public concern about the impact of timber harvest roads on areas where no roads now exist. [97 comments]

RESPONSE: Scheduled timber sales within roadless areas will have new road construction to access sale areas. Other than timber sale roads, no new road construction is planned that would be within areas that are currently unroaded. A current listing of all road construction planned for a two year period is updated annually and is available for public review at Forest Service offices. Included in the road list are acres of roadless areas accessed.

More than half of these three National Forests were inventoried as roadless in 1979. It was not the intent of Congress that the roadless areas released in 1980 for multiple use management be given special management emphasis. However, the semi-primitive nature of the roadless areas provides the opportunity

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and setting for some of the areas to be managed for semi-primitive motorized use or semi-primitive non-motorized recreation (i.e., hiking, horseback riding).

Planning and design for all timber harvest areas -- roaded or not -- include analysis of visual, biological diversity, and recreation opportunity concerns as well as economic viability. Public involvement and environmental analyses will be prepared for any future timber management activity or road construction planned in unroaded areas

The Roubideau, Tabeguache, and Kannah Creek roadless areas were specifically noted by the public as areas of concern. Please see FSEIS, IV-33, Table IV-10, for a display of how each alternative would affect these three areas

Please see FSEIS, Pages IV-32-33, for details on the environmental consequences of timber management and associated road construction on unroaded areas. A map of unroaded areas in the FEIS displays the current status of unroaded areas and areas scheduled for commercial timber in the next decade

29-A. The Draft Supplemental Environmental Impact Statement does not have a RARE II map overlaid with anticipated road construction, to show timber harvest road effects on roadless areas.

RESPONSE As requested, the Forest Service has completed such a map and included it with the SFEIS.

29-B. Comments indicate crisscrossing the West Elk Wilderness with new logging roads is a cause for much concern.

RESPONSE. The law does not allow logging, or construction of logging roads, in West Elk or any other area designated as Wilderness by Congress.

29-C. Middle Fork is one of the few roadless areas left. Why ruin it?

RESPONSE: Middle Fork roadless area is not scheduled for timber harvesting in the next decade. A sizable portion of this unroaded area is not included in the suited timber base

29-D. Let timber companies cut trees next to roads and close to towns instead of tearing up vegetation deep in the forest.

RESPONSE: Please see the response to 29-D, above.

30. There is concern about the impact logging trucks could have on existing roads. [100 comments]

RESPONSE: All road traffic affects the need for repair of existing roads. The number of vehicles and their weight are significant factors that affect wear and tear on roads.

Asphalt roads, if constructed with an adequate gravel base and quality control of the asphalt, should not incur road damage from commercial truck traffic,

Dusty, washboarded gravel roads are a result of light vehicle traffic as well as heavier log truck traffic. Susceptibility to washboarding is due to the gravel quality and grade of the road

Counties, unlike the Forest Service, are public road agencies and therefore receive road user taxes. Thus, commercial users pay for their share of road maintenance/construction costs through federal and state

road user taxes. In addition, counties receive 25 percent of National Forest gross receipts (from such things as timber sales, grazing permits, and ski area permits) to supplement county funds.

30-A. Kebler Pass and other roads already need improvements. The impact of logging trucks will make matters worse. A tremendous amount of money will have to be spent maintaining existing roads for logging trucks. Who will pay for it?

RESPONSE: County roads that serve as primary access to or through the National Forests are eligible for Forest Service highway funds for reconstruction and upgrading. (See FSEIS Page II-90 and Appendix O of the Amended Plan.) Kebler Pass Road is one such road. In 1991, three bridges will be replaced on Kebler Pass Road using Forest Service highway funds. Taylor Canyon Road and Kebler Pass Road are the Forests' two top priorities for Forest Highway projects. Except for the bridges, neither road is included in the seven year Forest Highway program of work because competition is great for the \$4 million that is available annually statewide.

30-B. The logging industry should not be singled out as a cause of road damage; mining, livestock, and tourism also damage roads.

RESPONSE: All traffic affects the repair and maintenance of roads. Significant factors include the number of vehicles, the weight of the vehicles, and the type of road.

31. There is wide concern about the number of new roads required by timber harvest levels in the Draft Amendment's preferred alternative (Alternative 1E). [483 comments]

RESPONSE: As a result of public concerns and an internal review, a new preferred alternative (Alternative 1G) is proposed. However, the miles of road per million board feet harvested has increased from the draft projections to more accurately reflect actual practices. The GMUG Forest still builds fewer miles per million board feet harvested than is the average.

Permanent roads are built or re-built under the terms of a timber contract only when the road will be needed in the future. Those roads are not obliterated after a timber harvest because it's too costly to rebuild them every time they're needed. However, most of these roads are closed to motor traffic after the harvest. Closing these roads reduces their maintenance costs and improves animal habitat as well as access by horse or by foot.

In summary, when a road is needed, the most reliable and least damaging to resources is a permanent road -- one built in accordance with plans and specifications, one operated and managed to meet resource needs and objectives. The temporary road that is later obliterated or rehabilitated is far less desirable.

31-A. The Forest Service continues to build hugely expensive gravel roads that are claimed as multiple-use roads but in fact are only for timber, oil, and gas operations. For example, the new road up Leroux Creek will be detrimental to the entire area. It will promote increased competition among users and will destroy wildlife summer range.

RESPONSE: The reconstructed gravel road up Leroux Creek is a collector road that serves as the primary access to the entire Leroux Creek drainage. The road serves many purposes: hunting, grazing, fishing, camping, timber, reservoir operations, and as a route to four-wheel drive roads as well as off-highway vehicle trails.

Before reconstruction, Leroux Creek Road was deeply rutted and had boulders scattered across the length of it. The road also lacked adequate drainage in some places and was eroding away in others --

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contributing to sedimentation in Leroux Creek. For these reasons, this road also was very difficult to maintain. Reconstruction has solved all of these problems.

While the improved road surface may mean more people will use the road, Leroux Creek drainage is far from being overcrowded. An increase in traffic may disperse some wildlife away from the road; however, there is no evidence or reason to believe that wildlife summer range will be destroyed by the road's existence.

The cost of Forest Service roads are controlled by standards needed to ensure public safety and protection of the National Forests.

Forest Service roads are designed to minimum standards needed for resource management and traffic safety. A primary objective in road design is to minimize ground disturbance, thereby minimizing impacts on natural resources. (See Forest Direction for Arterial and Collector Road Construction, Amended Plan, page II-78.) This is accomplished by placing the road so it follows the lay of the land (i.e., contours) and by building minimum-width, single-lane roads -- as was done with Leroux Creek Road.

31-B. Twenty-two miles of new road construction annually will be destructive. This will require additional road maintenance funding. Existing closed roads should not be reconstructed, but left closed. Twenty-two miles of road construction for 63 MMBF is low. The regional average ratio is between 0.8 and 1.2 miles/MMBF. The DSEIS calls for a density of 0.349 miles/MMBF.

RESPONSE: Please see response to Issue 31. Most new roads constructed will be closed to motorized traffic following timber management activities. During the road closure, only maintenance necessary to prevent resource damage is performed. This minimizes maintenance costs.

Existing closed roads, if managed as local intermittent roads, are planned for future use. Only minor reconstruction should be needed on most closed roads that are being reopened for resource management access. If they are managed as local short-term roads, they will be obliterated, rehabilitated, and removed from the transportation system inventory as funding is available. (See Forest Direction for Local Road Construction, Amended Plan, page III-79)

The density of 0.349 miles of road/MMBF used in the DSEIS was low. The road density in the FSEIS is 1.22 miles/MMBF. The major factor in a higher road density, is that a much larger portion of roads needed for access in the harvest of aspen is estimated to be low-standard, local-intermittent, permanent road instead of temporary road. The road mileage factor used in the FORPLAN computer model was derived by estimating, on USGS Quad maps, the road miles needed for the timber sales planned for in the first decade. (See Forest white paper entitled "Road Construction and Road Reconstruction Coefficients Associated with Timber Production" by Frank Robbins, 1990, which is available in the planning records.)

31-C. Logging roads disrupt long-term cattle movement patterns.

RESPONSE. Maintenance of allotment boundaries and livestock distribution patterns are included in design criteria the Forest Service uses for roads.

31.D. Need both the miles of roads to be built and the miles of roads to be closed displayed in the FEIS.

RESPONSE. The miles of road to be built is displayed on page III-8 and in Appendix E and O of the Amended Plan. Other than predicting that a majority of newly constructed road will be closed, the actual miles of road to be closed will not be known until analysis is done at the timber sale project planning level. The miles of newly constructed road to be closed will be based on the criteria on page III-76 of the Amended Plan.

31-E. What are the impacts of extensive road expansion on small populations of endemic composite, *Rudbeckia Montana*, whose distribution center is the Kebler-Horse Ranch Park corridor? Will roads destroy these plants found no where else in the world?

RESPONSE: No road construction is planned in the Horse Ranch Park area in this Forest Plan. *Rudbeckia occidentalis* var. *montana* is not listed as a threatened or endangered plant species. It grows outside of the Kebler-Horse Ranch Park corridor and outside the state of Colorado.

32. There is concern about the opening, closing, maintenance, and safety of roads. [254 comments]

RESPONSE. Public safety will not be compromised because of lack of maintenance funds. If funds are not available, a road may be closed to motor use or marked as hazardous with proper warning signs (Please see Amended Plan, page III-76 for transportation system management general direction, standards, and guidelines)

All newly-constructed roads will be closed to public motorized use unless documented analysis supports keeping the road open. Conversely, all existing roads will be kept open to public motorized use unless there are documented reasons for closing the roads. During timber harvesting operations, existing open-road mileage will be reduced whenever possible

All roads not needed for multi-resource management will be obliterated at the earliest opportunity The Forest has not recorded the miles of road obliterated in the past Existing roads to be obliterated also will be identified as part of any project analysis

Road maintenance is financed and accomplished in a variety of ways For example, direct financing comes from Congress, timber-purchaser deposits, surface rock replacement deposits, and road-use permit deposits In lieu of direct financing, maintenance may be accomplished by cooperative agreements with counties, by the road-use permit holder, by the timber purchaser, or by other cooperators. Where costs exceed available funding, it may be necessary to defer work, reduce maintenance frequencies, close roads, or allow roads to deteriorate However, public safety will not be compromised.

Regulatory and warning signs on all Forest roads must be in accordance with the national signing standard [i.e. the Manual of Uniform Traffic Control Devices (MUTCD)] Roads that are unsurfaced and primitive -- for which you would need high clearance or 4-wheel drive vehicles -- are in the category of roads not intended for public travel with a passenger car. These are excluded from MUTCD requirements, except for regulatory and warning signs.

Public/user safety on National Forest roads is a key consideration in road design, operation, and maintenance Some examples are

(1) *Road Design* The mix of traffic (log trucks and cars; cars and ATV's, etc), speed of traffic, volume of traffic, roadside conditions (i.e. steep mountainside), and the probability and severity of an accident occurring, are components the Forest Service weighs in choosing between a single lane or double lane road

(2) *Road Operations* Log hauling may be restricted to weekdays to avoid conflicts with high volumes of recreation traffic on weekends

(3) *Road Maintenance* Dust abatement in the form of watering, aggregate stabilization, or asphalt paving of surfaces may be required to reduce hazards created by dust and to improve the recreation enjoyment of all users.

32-A. Increased logging traffic will turn scenic byways into a scary driving experience. Miller Mesa Road is not fit for logging trucks; it's unsafe and responsible for many accidents.

RESPONSE. No timber sales are scheduled in this Forest Plan that would use Miller Mesa road. Sales after the year 2000 will be addressed in a revised Forest Plan to be prepared later in this decade.

32-B. Special emphasis should be placed on logging trucks. Communities such as Crested Butte do not want logging trucks passing through town. Logging truck activity near populated areas can create noise and dust problems, pose a safety hazard to children and pets, cause damage to personal vehicles, and make it difficult to enjoy the right to one's own home. Logging trucks should not be allowed on recreation road corridors because they are too visible to tourists.

RESPONSE. The number of logging trucks coming into Crested Butte using the Kebler Pass recreation corridor should be minimal since the new preferred alternative (1G) eliminates timber sales in the Kebler Pass area. Routing commercial truck traffic around and away from populated areas is within the authority of town and county governments.

Combining road management elements (such as design, operation, and maintenance) with public information and education programs on mountain driving enhances safe driving on forest roads. Still, the most basic requirement is that all drivers use caution and common sense

33. A number of people are opposed to either "any" or "heavy" timber cutting in certain areas. While there were many areas listed (several areas were only mentioned once), the most frequently mentioned ones were:

Kebler Pass, Horse Ranch Park, McClure Pass, Mt. Sneffels area, Silver Jack, Taylor Park, Owl Creek, Cimarron, Spring Creek, Lone Cone, Mount Axtell, Irwin-Lake, Hubbard Park, Black Mesa, Leon Peak, North Fork Valley, Uncompahgre Plateau, and Grand Mesa. [907 comments]

RESPONSE. The Forest seriously considered these comments and as a result underwent an extensive mapping effort to identify those lands that were considered especially important to the public in terms of scenic and recreational values. Most of these lands were removed from the suited-timber land base and therefore were not scheduled for timber harvest. In addition, they did not contribute towards long-term, sustained-yield calculations. The areas removed included most of the Kebler, McClure, and Owl Creek Passes, and the Mt. Sneffels area. In other areas, the acreage of suited lands and those scheduled for timber harvest in the first decade was reduced in the proposed Plan. The map accompanying the Forest Plan Amendment displays the suited lands and those scheduled for harvest in the first decade

34. Some people support increased timber cutting or increased timber cutting in specific areas. Some felt that timber harvesting is the best way to decrease insect and disease infestations and maintain a healthy forest. Others supported using lodgepole pine and beetle-killed ponderosa pine as a substitute for aspen in the production of waferboard. Others stated that timbering levels should be relatively high so that additional water would be available for down-stream uses. One person felt that timber harvesting, as proposed, was 30 miles away from major highways and should not be a visual concern, and that visual quality concerns were not valid concerns. [26 comments]

RESPONSE. Please refer to the response to Issues 22 and 33 Both lodgepole pine and beetle-killed ponderosa pine are available to industry. The Proposed Amendment calls for 22,400 MBF of lodgepole pine be available in the ASQ (Allowable Sale Quantity)-- most of which comes from the Gunnison area

Water augmentation was not a primary objective of the timber program on the GMUG. While additional water is produced for downstream users, water did not determine the levels of timber to be harvested

Planning Regulations that govern Forest Planning clearly identify visual resource management as an important criteria in the process (36 CFR 219.21(f)).

34-A. I support the goal of treating as large a percentage of an area in one entry as possible while complying with standards and guidelines. Question the need for aspen CMAI being as high as 90 years. Why limit DF clearcuts to 10 acres? Need to monitor criteria which define a created opening annually to see if it has an effect on ASQ. New standard prescriptions are sound silviculture. It is good that credit was given to timber management and TSPIRS in general direction 08.

RESPONSE. The culmination of mean annual increment (CMAI) for aspen was set at 90 years because timber-yield curves indicated that this was the forest average The Douglas-fir clearcut policy was changed on the Forest during the draft period to shelterwood and selection harvesting only. There is little Douglas-fir on the Forest that contributes towards the ASQ

34-B. The catastrophic fires in Northern California and Yellowstone are an example of what will happen if we don't manage our National Forests.

RESPONSE This perception is accurate Lodgepole pine and ponderosa pine types are especially vulnerable on this Forest. The maximum amount of treatment in these timber types, consistent with other goals and objectives of the Forest, has been scheduled

34-C. Place emphasis on timber sales with fiber production in mind using silviculturally-sound harvesting. Overmature stands should have the highest priority

RESPONSE This is the principle being followed in the Proposed Plan Overmature stands usually are those scheduled for harvest to maximize efficiency and reduce insect and disease infestations

35. Some people expressed mixed opinions on the determination of "suited" timber land. [26 comments]

RESPONSE. The FSEIS suited-timber land determination includes an additional step the DSEIS did not include. The additional step is a determination of "Not Appropriate" lands prior to the FORPLAN analysis (See FSEIS Appendix B page B-9) The not-appropriate lands were removed from Alternative 1G suited lands based on excessive road costs, steep slopes, avoiding sensitive recreation or scenic areas, low productivity sites, excessively rocky sites, and isolated tracts The not-appropriate land determination also identifies an additional 61,000 not-tentatively-suited acres which could experience irreversible soil damage if harvested

The original 1983 Forest Plan tentatively suited land base (1,089,208 acres) is less than either the DSEIS (1,314,900 acres) or FSEIS (1,253,541) This is due to a change between Forest Planning methods used in 1983 and now. Currently a productivity criterion is not sufficient reason to classify lands as not-tentatively-suited. In 1983 a 20 cubic-foot/acre/year was appropriate The determination of not-appropriate lands described in the paragraph above removed low productivity sites from the Preferred Alternative (Alternative 1G) suited land base Tentatively suited aspen timber lands decreased between the

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1983 Forest Plan and the FSEIS analysis when Ranger District managers identified additional aspen acres on poor sites and unstable soils.

The Preferred Alternative (1G) does include suited timber lands which are neither financially or economically efficient. Despite claims by some, neither the National Forest Management Act or the associated regulations (36 CFR 219) require timber lands to be financially or economically efficient

Alternative 1G's suited-timber base is not perfect. Minor errors may still exist, such as the possible inclusion of old clearcuts where reforestation efforts have failed. These imperfections will be addressed in the upcoming 1997 Forest Plan revision.

Timber demand was not a limiting factor in the Alternative 1G suited-timber base. Suited-timber lands are determined by the number of acres of trees needed to sustain a given timber production level indefinitely. If the timber production level happens to be timber demand, then timber demand is a determining factor of the suited-timber base.

36. Some people are opposed to all logging on the National Forests. [125 comments]

RESPONSE: Logging on the National Forests is one of many uses that Congress has designated for National Forests. Trees taken from the Forests help meet the nation's demand for wood products, including timber for homes, furniture to fill them and firewood to heat them. Environmental regulations in the United States are some of the strongest in the world

To ensure that National Forest timber will be renewed and available in centuries to come, the Forest Service takes many measures to protect and regenerate our National Forests. The Forest Land Management Plan sets the basic allocation of logging (and many other uses) and indicates, generally, where it will occur. Site-specific logging areas or timber sales, are then subjected to an environmental analysis process that further refines the manner in which the harvest will occur. Timber sale contracts are put out for bid by private industry who purchase and operate these sales in accordance with the timber sale contract.

Protection of other resources, such as wildlife, water, soil, cultural, and recreation is ensured by the environmental analysis process. Measures that protect the environment are included in timber sale contracts that reflect decisions made during the analysis process

36-A. The Plan Amendment does not address the destructiveness of logging equipment. Tracked or wheeled equipment should not be used on slopes greater than 60 percent as stated on page III-57 of the Plan Amendment. [NOTE: Page III-57 (2) prohibits logging on slopes steeper than 40 percent. The intent of the rest of III-57 is to prevent activities that might damage resources in the National Forests.]

RESPONSE: The Forest Plan and its Amendment are designed to minimize or eliminate the destructiveness of logging. Conventional logging equipment is restricted to slopes of 40 percent or less. (For further detail, please see Plan Amendment pages III-41 and 42.)

36-B. Timber operators cut down trees that are too small to haul, cut straight roads, and make a big mess.

RESPONSE: True, some small trees do get cut down during timber harvests; however, experience indicates that this is the exception and not the rule. Because small trees represent the forests of the future, monitoring takes place to ensure that an excessive number of small trees are not destroyed during harvest.

Roads are designed to fit the terrain, to offset slumping problems, and to limit the amount of intrusion into the forest. Although this means some roads are straight, the majority are not.

There is a certain amount of debris associated with logging activities. The Forest Service plans and monitors harvests in order to minimize this problem. However, much of what is seen as mess is actually made up of snags, foliage, and branches that help protect animal habitats and promote regeneration of the forest.

36-C. Don't cut down 30,000 acres of my wilderness in the next ten years.

RESPONSE: No trees will be harvested in any location designated by Congress as a Wilderness Area. Aspen harvest levels in the rest of the Forests have been reduced for the next decade significantly below the 30,000 acre figure.

36-D. Timber harvesting reduces ground water yields.

RESPONSE: Please see responses to Issues 10 and 45.

37. Several people are opposed to below-cost timber sales, sales that cost more to prepare than the Forest Service is paid for them. [279 comments]

RESPONSE: The Forest Service is required by law to manage National Forests for many uses. The Forest Service has no mandate to carry out "above cost" programs in any of the multiple-use programs it manages. Timber sales are not alone in the "below-cost category." Recreation, range, and other programs do not pay for what it costs the Forest Service to manage them.

The Forest Service continually monitors and challenges the cost of managing the Grand Mesa, Uncompahgre, and Gunnison National Forests. This is done to narrow the gap between costs and revenues.

Areas that were selected in the Final Amendment as being suited (timber) lands are those that also have the best economic viability. It also is anticipated that revenues for timber products will continue to increase along with market prices.

The new Preferred Alternative (1G) calls for a significant reduction in the amount of timber that will be harvested each year. In turn, that will contribute to efforts to reduce below cost sales.

37-A. The draft Supplemental Environmental Impact Statement did not mention the Forest Service has the power to raise aspen prices to cover the cost of planning, roading, and administering timber sales.

RESPONSE: The effects of rate increases are displayed in Chapter 2 of the SEIS. The decision process to change rates is beyond the scope of this Forest Plan Amendment.

38. Some people ask that the Forest Service limit timber harvest to the amount of timber the forest can grow. [7 comments]

RESPONSE: Alternative 1G proposes an average annual harvest of 38.4 million board feet which is substantially less than the three National Forests can grow. Yield projections indicate that some 103.0 million board feet per year could be harvested from the three Forests each year, forever, based on timber growth.

The Forest Plan will be revised within 7 years. At that time all of these figures will be recalculated to develop a new annual program, one that will continue to ensure long-term sustained yield.

39. Some people are concerned about provisions for an "Opportunity Availability Component" (OAC) that would have allowed increased timber harvesting without revising the Forest Plan. [6 comments]

RESPONSE: The opportunity availability component (OAC) was a level of timber volume (7 million board feet) proposed in the Draft Amendment which was in addition to the established ASQ (Allowable Sale Quantity) It was to be made available to industry if timber demand increased during the first decade, without additional analysis However, the final Forest Plan Amendment does not offer an OAC. The proposed ASQ is the average annual level of harvest the Forest believes is sustainable for the next decade in the preferred alternative Raising this level would mean entering scenic and visually sensitive areas and possibly violating standards and guidelines Therefore, no OAC was considered in any of the alternatives in the FSEIS

40. There was concern about the treatment and disposal of logging debris. [190 comments]

RESPONSE: Much of what is seen as logging debris is actually material that is intentionally left in harvested areas in order to improve animal habitat or to return nutrients to the soil.

The level of treatment in logging debris depends on many variables including the potential for fire hazards, the need to maintain scenic corridors, or to protect the soil. Other factors include access or movement by animals as well as the need for future management of the area

No single method of brush-and-debris control will suit all needs That's why the Forest Service considers disposal plans individually for each site Those plans are based on an analysis of the environment, management objectives, and silvicultural needs.

40-A. Logged areas do not have to be cleaned up; roads and other disturbances do not have to be restored to a natural appearance.

RESPONSE Please see the responses to Issue 32

40-B. I'm appalled at the cut timber and slash laying around for years. The proposed plan does not address reclamation after timber harvesting.

RESPONSE. Reclamation and brush-disposal plans are part of each timber sale planning process For that reason, they normally are not included in a Proposed Amendment.

40-C. Don't leave a bunch of decaying slash and stumps to spoil scenic beauty. Clearcutting done in Cimarron 30 years ago has not started to heal. Logging roads on West Dallas, above Box Factory, have devastated the forest. Piles of timber (several) stories high are still visible and will take hundreds of years to come back.

RESPONSE. Past logging and cleanup activities, especially those that occurred in the Fifties and Sixties are noted for their incomplete cleanup and poor road design and maintenance Today's timber sale activities are much stricter and must comply with Forest Plan Standards and Guidelines as well as with timber sale contract clauses. Transportation system planning, environmental analysis, and effective layout and administration will prevent these poor examples of forest management in the future

41. Many people are opposed to clearcutting. [240 comments]

RESPONSE. Clearcutting must be used in aspen and lodgepole pine trees because this is the only type of cutting that will stimulate natural regeneration. (Lodgepole pine stands that bear cones that open without heating (non-serotonous cones) may be partially cut and obtain regeneration)

Clearcutting in any other timber type would be an exception, and is done only to remove salvage or diseased trees. Clearcutting primarily has the effect of changing snow deposition patterns which, in turn, affect timing of runoff. There will be slight increases in total runoff, given the small clearcut openings prescribed in the Forest Plan Amendment. Clearcutting may sometimes raise the water-table in specific areas but should not lower it.

41-A. Clearcutting will destroy conifer trees in aspen stands and convert the entire stand to juvenile trash.

RESPONSE: Part of the reason for clearcutting mature aspen stands is to remove fir trees from the stand. Shade from fir trees impedes the growth of aspen trees which are quite intolerant of shade. Without shade, clearcut aspen stands grow vigorously at the rate of 8,000 to 30,000 trees per acre to reach a height of five feet within five years and full maturity within 80 to 100 years.

41-B. Clearcutting will reduce future job opportunities for loggers.

RESPONSE. Because of vigorous re-growth, aspen clearcutting may actually increase future logging jobs.

41-C. The area will be devastated by clearcutting. It will threaten tourism, ranching, and recreation. It will increase road construction, erosion, and siltation.

RESPONSE: Widespread devastation would result from massive clearcutting of entire mountains or valleys. However, such destruction is not possible in the Grand Mesa, Uncompahgre, and Gunnison National Forests, given the small scale on which clearcutting is done and the degree of planning that goes into each timber sale. [NOTE. Aspen clearcutting under the new preferred alternative (1G) would amount to 0.0046 percent of the three National Forests per year.]

Under the new preferred alternative, no significant increase in road construction will result. Erosion and siltation will be minimized through the planning and administration process.

41-D. Clearcutting takes a long time to come back. Stands will not be replaced in our lifetime. Satisfactory reclamation has not occurred on many previous logging sites, such as Mount Axtell and 1960s clearcuts in the Cimarron and Mount Sneffels areas. Visual impacts of clearcutting already have adversely affected vacation areas. Should not allow logging in southwest Colorado as the climate is too dry and the land too beautiful to scar.

RESPONSE: A few spruce-fir stands were clearcut 30 years ago and did not grow back as expected. For that reason, spruce-fir and ponderosa pine are no longer clearcut except in limited situations when needed to eliminate insects or disease. However, clearcutting is the preferred method of harvesting aspen. (Please see responses to Comments 41, 41A, and 41C, above.) Clearcut aspen stands begin resprouting within months after harvest -- sprouts that grow five feet in five years. Lodgepole pine begins regenerating within five years.

41-E. A clearcutting buffer is needed around wilderness areas because clearcuts on the boundary can cause erosion and kill trees inside the wilderness.

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RESPONSE Buffer zones around wilderness are not Forest Service national policy because there is no record of clearcuts killing adjacent trees inside or outside of a wilderness

41-F. Forests should be selectively cut and managed on a sustained-yield basis. Clearcutting will leave unsightly areas, increase erosion, increase stream sedimentation, and adversely affect fish and wildlife. Clearcutting and shelterwood harvesting should not be considered.

RESPONSE The Grand Mesa, Uncompahgre, and Gunnison National Forests have been managed on a sustained-yield basis since the start of the Forest Service more than 80 years ago.

Selective cutting -- or uneven-aged management -- is an accepted and permitted method of harvest that is used in the Grand Mesa, Uncompahgre, and Gunnison National Forests for spruce-fir and ponderosa pine under the Forest Plan Amendment. However, constraints created by the need to reduce below-cost sales limit the degree to which this expensive harvesting method can be used on those species. (Please see Alternative 1D.) Instead, the shelterwood method of harvesting often is preferred -- a method that creates a series of partial cuts over two or three decades

Selective cutting is not well suited to harvesting aspen because it limits regrowth of cut aspen. The most vibrant regrowth takes place in aspen after it has been clearcut. Freshly clearcut areas may be unsightly but only temporarily so. Within a few months after a harvest, thousands of aspen shoots per acre spring forth from the old root system and grow about five feet tall in five years.

With the planning, harvesting, and monitoring methods outlined in the Final Amendment, no problems are anticipated with erosion or sedimentation due to clearcutting. No significant adverse effects on wildlife or fish have been recorded as a result of aspen clearcuts and none are expected.

41-G. Allowing clearcutting will encourage the area's economic dependence on commercial lumbering and increase pressure for more clearcutting.

RESPONSE The area has long been dependent on timbering for income and employment. No noticeable shift in these factors was noted when the practice of clearcutting spruce fir was abandoned -- and none is expected to result from the new Preferred Alternative (1G).

Increased demand for clearcutting will not create more clearcuts. The method of harvest -- and the amount of harvest -- are controlled by forest growth.

41-H. Replanting after clearcuts does not restore the ecosystem and animal habitat -- because the Forest Service only plants one kind of tree. Have not seen replanting on the Grand Mesa.

RESPONSE: The Forest Service has planted ponderosa pine, douglas fir, and englemann spruce trees on the Grand Mesa and elsewhere in these National Forests. A major replanting program is planned for the southern Uncompahgre National Forest where mountain pine beetles have killed large stands of Ponderosa Pine.

The above tree species normally are not clearcut during harvests. Aspen normally is harvested by the clearcut method, however, it regenerates well without replanting. By keeping aspen cuts relatively small -- and designing sales so that each aspen harvest is surrounded by uncut trees -- damage to animal habitat and the ecosystem is avoided.

41-J. Where is the analysis showing the pros and cons of the different harvest methods? It is clearly stated that clearcutting is the preferred alternative, which can only be for economic reasons -- not for the health of the forests. Differences in cost are not as great as the public imagines. Shelterwood is deliberately abused by defining it as two or three stage clearcuts. Where is the thumbnail sketch of target

tree silvics? There is no standard to make good use of good growers; instead, endemics are replaced by genetically superior exotics.

RESPONSE: Forest Service silvic methods are discussed and modeled in "Silvicultural Input for Forest Plan," (dated 8/31/87) by Arthur L. Haines -- a copy of which is available as part of the planning records.

Endemics are not replaced with exotics. Conifer trees are replanted with seedlings grown from cones that originated in the same seed zone that the seedlings are planted in.

Clearcutting is used only in aspen and lodgepole pine tree types and only when it is the optimum silvicultural method of harvesting.

41-K. There will always be newly-cut aspen patches to affront the visitor.

RESPONSE Freshly cut aspen harvests do not long remain without trees Rapid, vibrant regrowth begins within weeks and covers the clearcut from view within two to three years.

Given the size of the three National Forests (3,000,000 acres) and the Alternative 1G annual aspen harvest (1376Average, clearcuts should be widely spread As indicated in the Final Amendment, clearcuts will be relatively small, located outside of scenic corridors, and designed to blend into the natural contours of the land.

42. There are mutually contradictory opinions on when a stand of trees is ready to be harvested. [3 comments]

RESPONSE. The National Forest Management Act of 1976 directs the Forest Service to harvest timber when stands become mature The means directed to be used for determining rotation ages or rotation lengths is the Culmination of Mean Annual Increment (CMAI). CMAI is the age at which the average annual growth is greatest for a stand of trees. Please also refer to the glossary in the FSEIS.

42-A. Why does the Forest Service say 95 percent of culmination of mean annual increment growth when 36 CFR 219.16 clearly says 100 percent?

RESPONSE. 36 CFR 219.16, (a)(2)(iii) states "In accordance with the established standards, assure that all even-aged stands scheduled to be harvested during the planning period will *generally* have reached the culmination of mean annual increment [CMAI] of growth".

The Timber Resource Planning Handbook, FSH 2409.13, 32.1 states "In general, base minimum rotation age on the length of time required to achieve volume production equivalent to at least 95 percent of CMAI as expressed in cubic measure"

In the practical world, timber inventory is used to determine if stands have reached the point of CMAI These inventories occur up to ten years ahead of the harvest If CMAI is detected or a stand is close to culminating, then the stand has up to ten years additional growing time before harvesting occurs. This lag between inventory and harvest allows for a "cushion" The 95 percent rule takes this cushion into account

In normal timber sale planning, stands are prioritized for treatment. Those stands which are past CMAI are given a higher priority for regeneration harvests than younger stands. The younger stands are left because regenerating the entire forest in one entry is imprudent -- hence the prioritization Most stands scheduled to be harvested are clearly beyond CMAI.

42-B. CMAI ages in the Proposed Amendment, on page III-38, are too low for most Grand Mesa, Uncompahgre, and Gunnison National Forest timber stands -- which violates National Forest Management Act CMAI requirements.

RESPONSE. CMAI ages listed in the Forest Plan on Page III-43 are the results of growth and yield studies of average site conditions encountered on the forest. These figures are guidelines only. As part of the prioritization of stands for regeneration harvest treatments, actual growth is used. Each stand will differ to some degree as to when the culmination will occur. Management objectives, specific stand conditions, site quality, and desired product size all influence when CMAI is reached.

42-C. CMAI was incorrectly determined; RMYLD2 values are unreliable. CMAI should reflect a range of values and should be based on management objectives.

RESPONSE: In actual application, CMAI does indeed reflect a range of values which are based specifically on management objectives, site quality, and stand conditions. The values displayed in the Forest Plan are only intended as averages. As stated on Page III-43 in the Plan, "Variations from the Rotation Age table will be documented in the site specific silvicultural prescriptions"

The CMAI ages listed are the best estimates for the average site conditions found on the forest. RMYLD2 and GROW are simply tools which aid in estimation. The simulators are not perfect, but represent the best tools which were available at the time. Reliability of computerized growth and yield simulators is directly related to the skill level of the user. Since input stand conditions can vary greatly, the resulting projection will vary greatly. The user must be careful in entering data and interpreting the results.

43. Some people were concerned, or confused, by jargon, errors, or editorial oversights that appeared in the Plan Amendment. [17 comments]

RESPONSE. The Plan Amendment did not, in all cases, meet Forest Service quality standards due to staff size and the sheer volume of work. A concerted effort was made to minimize factual and typing errors -- as well as the use of jargon -- in this Final Environmental Impact Statement. Because this document must be able to withstand legal review in the courtroom, it was not possible to eliminate all jargon. However, the definitions for most such terms are included in the Glossary to the FSEIS, Appendix D. If errors or unexplained terms still exist, please contact your nearest Forest Service office for further details.

44. Many people feel clearcuts and other timber harvests are unsightly. [140 comments]

RESPONSE: Clearcutting and other forms of timber harvesting are unsightly to some people; others see them as short-term disruptions necessary to harvest wood products and employ people. The GMUG makes every effort to identify those areas where the visual qualities are especially important and to design timber sales that fit into the surrounding landscape, using the Visual Management System.

44-A. There should be a 200 foot buffer between existing roads and aspen harvesting. Would rather USFS lose money building more roads to hide logging.

RESPONSE: Universal restrictions such as a mandatory 200 foot buffer are not considered good forest management. It is better to examine each proposed timber sale in the environmental analysis and determine what will best meet the objectives of that area.

44-B. Aspens and fern undergrowth are beautiful but will be gone if the aspen overstory is cut. The thick regeneration will prevent the ferns from returning

RESPONSE. These ferns are beautiful and are usually associated with mature aspen stands. They will be eliminated during clearcutting but will return as the stand matures again. The Forest is proposing to clearcut only two-tenths of one percent (0.002%) percent of the Forest's aspen annually, so old growth aspen will still be abundant.

44-C. Logging should be small scale, using smaller trucks and equipment and operating in smaller patches. Logging road and timber sales should allow for substantial visual screening around existing trails, campgrounds, and viewpoints.

RESPONSE: The economics of smaller operations mandate timber sales and related equipment be of adequate size to turn a profit. Trails, campgrounds, and other recreation-related features are screened, protected, or sometimes even enhanced by timber management activities.

44-D. Clear cuts greater than 10 acres do horrible things to visual quality.

RESPONSE: Please see the response to Issue 44 (above).

44-E. The proposed Plan could cause irreparable damage to scenic western Colorado.

RESPONSE: The new Proposed Alternative (1G) has seriously considered the impact of aspen harvests in scenic areas and has eliminated most of them from the suited land base.

44-F. Wilderness users will be able to see clearcuts and roads outside of wilderness, which will threaten the integrity of wilderness acres and vistas.

RESPONSE: While it is true that some clearcuts and roads can and will be seen from wilderness areas, there is clear direction that buffers next to wilderness are not appropriate management of non-wilderness lands. Proposed timber management activities within view of wilderness areas can be planned and implemented to mitigate the visual effects.

44-G. Visual Quality Objective (VQO) standards may be met in the Plan, but they allow significant degradation of existing scenery. Alternatives 1B, 1C, and 1E have a relatively high number of acres with a "heavily altered" appearance, but the plan says there will be no effect to visuals. Logging will occur next to campgrounds and within one mile from existing roads. Recreation travelers will see the timber sales.

RESPONSE: Alternative 1B is no longer being considered in detail. Alternative 1C calls for no acres of clearcutting, and the effects of 1E, which are displayed in Chapter IV of the FSEIS, now reflect that significant visual disruptions would occur if this alternative were selected.

44-H. Clearcutting will spoil the view from the place we intend to build for commercial recreation purposes.

RESPONSE: If visible from your location, clearcutting effects will not be widespread or long term.

44-J. After timber harvesting, mature conifer cannot be replaced visually for many years, which will destroy lush stands of colorful spruce and aspen.

RESPONSE Please see the response to Issue 41-A

45. Some people feel that Forest Service has overstated water values (both in terms of dollars and volume) in order to justify timber sales. [114 comments]

RESPONSE Water values can not justify timber sales, nor are commercial timber sales primarily implemented to augment waterflows. Water yield increases were considered incidental to the objectives of timber harvests (See III-93, original Environmental Impact Statement). Generally accepted analysis procedures allow for the valuation of increased water yields where appropriate.

Extensive Forest and Range Experiment Station research has shown that harvesting timber in small openings (less than five times as wide as the height of surrounding trees) increases water yield. The size of harvested areas is critical because it is possible to decrease water yield by creating large openings. Recent research (Troendle 1987) also shows water yield increases for selective (partial) cutting.

Water yield increases do not directly add money to the Federal Treasury but do produce benefits for downstream users. Some of the water yield increases that occur because of early timber harvests are stored in downstream reservoirs until needed. These provide power generation, recreation, irrigation, and desalinization. It is important to note that the Forest Service claims no water rights for increased water flows.

46. People hold mixed views on timber harvesting effects on fish and wildlife. [154 comments]

RESPONSE Timber harvesting could help or harm fish and wildlife. The difference lies in the degree of consideration given to the needs of fish and wildlife before a timber sale is made. To ensure that fish and wildlife are fully protected, the Forest Service uses a vast array of biological considerations and scientific data, as well as Standards and Guidelines found in the Proposed Amendment, Chapter III. There is evidence of the success of this approach over the past 85 years. The Grand Mesa, Uncompahgre, and Gunnison National Forests has one of the nation's largest Bighorn Sheep herds, gold medal trout fishing, and plentiful deer and elk herds.

46-A. Clearcuts greater than .33 acres to 1.5 acres -- or 250 feet wide -- are unusable by most wildlife.

RESPONSE The size of an opening, created or natural, has an effect on wildlife but the effect varies with each species. The Forest Service uses Management Indicator Species to describe the effects on the different species. The size of a created opening is dependent upon many things, including, but not limited to Patton Edge Index, Edge Structure Contrast, vicinity of human disturbance, topography, and stand size, to insure regeneration and prevent blowdown. Openings of more than .33 to 1.5 acres will not adversely affect any of the Management Indicator Species or the species they represent.

The issue is much more complex than just the size of an opening. Planning for an acceptable level of habitat effectiveness and vertical and horizontal diversity will provide more benefits to a wide range of wildlife species than the size of openings.

Based upon numerous scientific findings, it has been concluded that for openings in the forest for big game, 26 acres is optimum for summer range (Thomas, 1979) and 10 to 40 acres is acceptable (Lyon 1976). In the majority of forest projects, units will not be over 30-35 acres. Based on Thomas (1979), for maximum use by elk and deer, forage areas should have no point farther than 183 meters (600 ft.) from the edge of cover. The Forest Service will stay within those limits.

46-B. Clearcutting aspen produces a thicket of regrowth which is very difficult to hike through, which decreases available livestock and wildlife forage, and which is too thick for big game to use as hiding cover.

RESPONSE (Please see page IV-41,42,43 of the Draft Supplemental Environmental Impact Statement for detailed information.)

There may be very heavy regrowth immediately following treatment. But within five years self pruning occurs and provides big game access for foraging. Once the stand reaches at least six feet in height, with a minimum of 1,000 stems per acre, it will provide hiding cover during the summer months. Big game access being limited by profuse regrowth is not a problem. In small areas where thick regrowth does deter movement, it is only short term.

Certainly, in some areas where regeneration is as high as 30,000-plus stems per acre, hiking can be difficult. But this will not pose a significant impact because aspen harvest areas are relatively small.

46-C. It is not true, as stated in the Draft Supplemental Environmental Impact Statement (DSEIS) page IV-41, that mature aspen without regeneration provides little forage and hiding cover.

RESPONSE: The above comment is correct. The discussion on page IV-41 of the DSEIS addresses the limited aspen suckers for browse, and does acknowledge the available grass and forb foraging available in these type of aspen stands. Mature aspen stands without regeneration do provide cover and abundant understory vegetation for big game on the National Forests. It is recognized that mature aspen communities are one of the most productive forage types on big game summer ranges for forbs and grasses. The discussion presented in this section of the DSEIS also presents the concept of the production and availability of aspen regeneration for big game browse on winter range. In general, young regenerating aspen stands produce prolific numbers of aspen suckers which can provide browse for big game. Older, mature aspen stands without regeneration do not provide this level of available browse in terms of aspen suckers. The availability of aspen suckers to big game can be important to habitat on winter ranges. Wherever mature aspen stands without regeneration occur on big game winter range, there will be fewer aspen suckers as browse. Vegetative treatments to regenerate these stands could result in more aspen suckers for big game browse.

46-D. It is difficult to accept the claim that the expanded logging program will not have a negative effect on fishing resources, including commercial fishing.

RESPONSE: No reference was made that "an expanded logging program will not have a negative effect on the fishing resources, including commercial fishing." The impacts to fisheries for the Draft Supplemental Environmental Impact Statement (DSEIS) page IV-45 were based on the relative differences in activities throughout the alternatives.

The Environmental Consequences section for Aquatic Resources does not state that "expanded logging will have no negative impacts" on aquatic resources. Instead, the degree of impacts were considered and based primarily on logging activities, road construction, culvert placement and associated activities. At this time, it can only be assumed that the impacts will vary according to the intensity of other activities associated with logging. The DSEIS only states which activities would have the least impact on aquatic resources and nowhere states that these activities would have no impacts.

46-E. I/we support/oppose the downgrade from 75 percent to 40 percent in the Proposed Amendment on page III-23 (01-a)

RESPONSE: In the final plan, the numbers will be changed from 40% to 60% for deer and elk cover near roads that have high human use.

46-F. The Keystone process did not cover the change in the Proposed Amendment [Page III-24 (01-b)]. Why are the increased restrictions needed and how has their effectiveness been proven?

RESPONSE The Keystone process was intended only to achieve consent between parties for a level of timber harvest. During the Amendment process, the Forest Service took the opportunity to change some things that simply were wrong, unfeasible, or could not be achieved. Forests throughout the Rocky Mountain Region attempted to implement the hiding cover standard in the current Plan and found they couldn't. Subsequently, a Regional task force was established and a new hiding cover standard, based on habitat effectiveness, was agreed upon. The new standard is implementable and will adequately provide a desired level of habitat effectiveness for wildlife, using elk as an indicator. This standard does not increase restrictions for hiding cover. It actually makes them less restrictive, but achievable. Please also see the response to Issue 18.

46-G. How does clearcutting affect habitat fragmentation?

An important objective of wildlife habitat management on National Forests is to maintain or enhance the diversity of habitats. Habitat diversity is dependent upon the relative abundance and arrangement of vegetative communities throughout the National Forests. The occurrence of vegetative communities is dependent upon the environmental tolerances of the communities themselves. The age and structural diversity of those vegetative communities are also dependent upon natural environmental factors but can also be managed through a variety of vegetative treatments and management strategies such as clearcutting, prescribed burning, or protection.

Management applied to maintain and/or enhance vegetative diversity can be effective in enhancing wildlife species richness by inducing a variety of age classes within the vegetation. In general this management strategy is beneficial to the greatest variety of wildlife species and species that are known as edge-dependent species. There also are wildlife species known as forest-interior species that require large blocks of a specific vegetation community or age classes of that community. Habitat fragmentation can result from clearcutting or any other management tool applied to large blocks of a continuous community type to enhance diversity. Wildlife species depending on the interior areas of the forest would have their carrying capacities reduced proportionally to the amount of fragmentation. Minimum habitat sizes have been determined for many of the wildlife species found on the National Forests. Habitat blocks of sufficient size are determined by a wildlife biologist during the evaluation and initial planning phases of a proposed vegetation treatment to provide for the needs of minimum viable populations.

46-H. What are the effects from increased summer browse on an exploding deer and elk population -- and winter range capacity?

RESPONSE Only an estimated 10 percent of the elk and deer that summer on the National Forests also winter on the National Forests -- due to average climates. The other 90 percent spend winter at lower elevations on public lands and adjacent private lands. Elk and deer populations are limited primarily by available winter range. During the past several years in Colorado winter conditions have been mild, enabling big game to use higher elevation transitional ranges during the winter months and experience higher survival and population growth.

Habitat improvement projects on the National Forests are not designed to create more browse or increase populations of big game, but to enhance the condition and availability of forage species on transitional range located between winter range and summer range. The intent is to create conditions favorable to big game use which will affect the duration and distribution of big game use. This will relieve grazing pressure on traditional winter ranges located on lower elevation public lands and adjacent private lands and improve the ability of big game to achieve their potential capabilities.

46-J. Decayed aspen provides homes to many birds, homes to mammals, and food for beaver.

RESPONSE The above comment is correct. Diversity and snag requirements in the Plan will provide adequate habitat for these species. (Please see Draft Supplemental Environmental Impact Statement page IV-38 and 39.)

46-K. Timber cutting will negatively effect deer, elk, and fishing. Wildlife is displaced during logging operations. Wildlife eat aspen and conifer regeneration and retard reforestation. Heavy truck and worker traffic increase mortality. Increased access to logged areas increases ORV use and hunted wildlife will suffer. Non-game wildlife surrenders habitat to logging operations and faces additional competition for habitat. Increased traffic will decrease habitat effectiveness.

RESPONSE Timber management and logging activities do effect wildlife and fish habitats. Wildlife is particularly affected by management activities such as logging. Timber harvesting can be, and is, used as a management tool to manipulate forested areas to enhance existing wildlife habitat. One of the main goals of habitat management on the National Forests is to maintain or enhance the diversity of existing vegetation and associated wildlife habitat. The diversity of available habitat is dependent upon the relative abundance and arrangement of potential vegetation throughout the National Forests. Management activities such as timber harvest can be used to induce age class and structural diversity within existing forested communities to create habitat conditions favorable to a variety of wildlife species. Those species most benefitted by this type of management are those referred to as edge-dependent species, species that utilize combinations of two or more vegetation types or age classes of a vegetation type. Many of these benefitting species are classified as non-game by the State of Colorado.

Logging activities and vehicular use of road systems and trails is known to affect the wildlife habitat effectiveness of an area as well. To mitigate this impact, timber sale contract clauses and "best management practices" are implemented to avoid logging adjacent areas simultaneously to provide security areas for displaced wildlife or to prevent disturbance during critical periods of an animal's life cycle, such as elk calving. Temporary and low standard timber access roads are used when possible to facilitate timber harvest and allow subsequent closure of the area to motorized vehicles, after logging. Following the timber sale, open road densities and vehicular use are managed to comply with the Forest Travel Plan and resource management direction for the area.

During the planning and evaluation phases of any proposed timber sale, a wildlife biologist is included as a member of the project interdisciplinary team. That person works with the team to evaluate the current and potential wildlife habitat capabilities of the area and recommends alternatives to the design of the overall timber sale to achieve habitat management goals for the area. That person also monitors the effects of implementing the selected management alternative upon the anticipated results to wildlife habitat.

46-L. What does 40 percent of elk habitat effectiveness mean and how does it affect timber production?

RESPONSE [Please see the discussion on habitat effectiveness in the Draft Supplemental Environmental Impact Statement (DSEIS) pages IV-41 and 42.] Habitat Effectiveness for elk is a function of roads, vegetative type and structural stages. Each combination of the number of miles of roads and acres in each vegetative structural stage has coefficients between 0 - 1.0. A value of 1.0 being the optimum habitat (5 will be half as effective habitat) in terms of cover, forage, and human disturbance based on road use. Different coefficients are used for primary, secondary and primitive roads based on ADT's (average daily traffic). Analyzing upon a diversity unit, usually a 4th order watershed or 5,000 to 20,000 acres, the type and miles of road and all vegetative types and their structural stages are entered into a model called HABCAP. This model will analyze all the coefficients for the roads and vegetation and provide a percentage of potential, with 100% being optimum. The standard referred to requires a minimum of 40 percent of potential. The model will tell us, within a diversity unit, the percent of potential the area can provide for elk. This is only used as a tool to give an relative indication of alternatives of timber harvesting and may not be an absolute value. The

VI RESPONSE TO PUBLIC COMMENT

degree to which it affects timber harvesting is dependent on the current vegetative makeup. Without considering roads, if the entire diversity area is forested the habitat effectiveness would be low and timber harvesting would be encouraged to provide foraging areas and improve the effectiveness. If the area had a substantially larger amount of openings that provided forage and lacked adequate cover, the effectiveness would be low, and timber harvesting would be deterred until such time as vegetative response provided adequate cover.

46-M. I/we are concerned about the loss of aspen on declining black bear populations. Clearcuts mean the loss of spring and summer seasonal ranges for bears, displacement of bears from human access, and an increase in bear poaching.

RESPONSE. Nowhere throughout their range in Colorado can black bears be considered numerous. They have evolved as long-lived species with exceptionally low reproductive rates and low natural mortality rates. Unlike elk and deer, the rate of increase for black bear populations is low. Harvest potential for black bear populations is likewise low.

Aspen communities on the National Forests are recognized as being important to black bear reproduction and survival. Aspen habitats are vital for recovery from hibernation and as summer habitats for cub-nursing females. Aspen communities and mixed gambel oak-aspen communities provide a diversity of succulent understory vegetation. The mature stands of aspen which are not invaded by conifers provide the greatest production of understory grasses and forbs within the aspen community type. Clearcutting or other vegetative treatments can and are being used to regenerate existing aspen communities to perpetuate stands that could be potentially lost to conifer invasion or lack of regeneration.

During the initial analysis phase of proposed aspen timber sales, existing stand conditions and habitat capabilities are estimated for a variety of wildlife species inhabiting the sale area. Aspen stands which are conifer-invaded or lack sufficient regeneration to perpetuate the stands are identified for potential treatment. Additional limiting factors to habitat effectiveness such as open-road densities and vehicular use of the area are also identified at this time. Opportunities to alleviate existing habitat limitations are then included as mitigation and enhancement measures in the project evaluation.

46-N. Elk avoid logged areas and move onto private lands. Local farmers and ranchers are already suffering severe losses from game damage. After logging and opening to public use, deer and elk will continue to stay on private land. The Final Environmental Impact Statement (FEIS) must quantify the estimated game damage to private land due to timber sales.

RESPONSE. Elk and deer movements and use patterns can be influenced by human activities. On the National Forests these effects can result from timber management activities or the amount of open roads available for motorized public use. As big game animals are displaced from areas of disturbance, they seek refuge in adjacent inaccessible or undisturbed areas. If these activities are of a large enough magnitude within a watershed, and adjacent watersheds do not provide adequate levels of habitat effectiveness, these animals may be displaced to private lands; provided those lands provide a lower level of disturbance and a higher level of habitat effectiveness.

Quantifying estimated game damage to private lands from timber sales and motorized public access is one of the most difficult to estimate, and although the Forest Service recognizes the issue, it cannot estimate the damage on a Forest-wide basis. At the project level, the Forest Service addresses management actions and off-site impacts which may occur -- and consults with the Colorado Division of Wildlife to look at alternative ways to minimize the impacts to private lands and assess the potential damages. This will continue. Alternatives presented in the Draft Supplemental Environmental Impact Statement (DSEIS) that treat more acres and build more roads have the most potential to displace big game to private lands. The opposite is also assumed to be true. Further discussion of this issue is presented on pages IV-43 and 44 of the Draft Supplemental EIS.

46-O. The Forest Service needs to list several wildlife indicator species for the aspen type and discuss how they reflect aspen wildlife habitat.

RESPONSE. Management indicator species are listed for each vegetative type as well as aspen. These can be found on pages III-19 and 20 of the Plan. In addition, because of the high degree of interest in the aspen program, additional species are selected by the Forest Service when analyzing any treatment in the aspen type. These are done on a project level basis and reflect all the structural stages of the aspen type, from early successional to late.

46-P. The Draft Supplemental Environmental Impact Statement (DSEIS) failed to assess the impacts to two state-listed endangered species: the wolverine and the lynx.

RESPONSE: The species are recognized within the DSEIS as having "doubtful existence on the Forest" (see Table IV-10 on page IV-38). Since there have been no confirmed sightings on this Forest for a significant amount of time, it is inappropriate to assess impacts to these species at the Forest Plan level. But it would be appropriate at the project level -- the point at which individual timber sales are evaluated.

The U.S. Fish and Wildlife Service requires consultation on all listed or candidate species on a project level basis, because "it is impossible through one consultation to render a 'may effect' and 'no effect' determination on all programs and activities that are identified in the DSEIS" (USFWS memo to R.E. Greffenius, August 23, 1989). Therefore, if at the project level, an issue arises on the possible occurrence of the wolverine or lynx, or it is found to be within the historical habitat, the possible impacts of the proposed activity will be addressed.

This decision is further influenced by the intense territoriality and very large (600 sq. mi.) home range of the wolverine, the status of this mammal in Colorado is uncertain at this time. It is known to use high elevation sub-alpine fir forests near timberline and alpine habitats and is categorized as a wilderness mammal.

Although the lynx may occasionally live in the upper reaches of the Douglas-fir ecosystem, it is generally confined to the sub-alpine fir ecosystem in Colorado, where its occurrence is rated extremely rare. Although formerly found throughout the mountainous portions of the State, it was probably never common. Its present distribution seems to be limited to portions of Clear Creek, Eagle, Grand, Lake, Pitkin, and Summit counties.

47. Some people are concerned about the effect of timber cutting on biodiversity. [5 comments]

RESPONSE: Biological diversity is the variety of life in an area, including the variety of genes, species, plant and animal communities, ecosystems, and processes through which individual organisms interact with one another and their environments. The biological diversity issue reflects increasing concerns over the rate of change in species extinctions, reductions in the genetic richness within species, simplification of ecological systems, and the environmental, social, and economic impacts those may have on current and future generations of people. It is quite evident that there are a variety of different components of biological diversity, and each component must be analyzed individually to properly address all of these components. However, the Forest Service does hold a position on biological diversity.

The Forest Service has a long history of managing forests and other wildland ecosystems to conserve major elements of biological diversity. This began with establishment of the National Forest System and has been augmented over the years with Renewable Natural Resources, State and Private Forestry, and International Forestry programs. Although biological diversity was not mentioned in early Forest Service

policies, those policies reflected concerns for forest health, a mixture of forest types, protection of special areas such as Research Natural Areas, and fish and wildlife conservation. The National Forest Management Act of 1976 now provides statutory direction for managing the National Forest System to "provide for diversity of plant and animal communities ..in order to meet overall multiple-use objectives". Other statutes and regulations guide Forest Service programs that address specific parts of "overall multiple-use objectives", such as threatened and endangered species, sensitive plants, fish, wildlife, productive forests, rangelands, wetlands, etc. These regulations emphasize the provision of biotic diversity that best meets overall multiple-use objectives rather than biological diversity for its own sake.

This Forest has not recently found, nor anticipates in the future, that timber harvesting activities has or will cause any significant loss of plant and animal species, any Management Indicator Species, or Threatened and Endangered Species. Displacement may occur locally; however, the loss of species diversity, numbers, or the individual organisms which interact with one another will not be negatively affected significantly through proposed timber harvesting activities. There exist a number of planning guides in the Forest Plan which address the different components of biological diversity, including standards for snag retention, riparian protection, edge standards, vertical and horizontal diversity standards, and habitat capability levels to ensure wildlife population levels well above minimum viable populations, to mention a few. These type of standards address particular components of biological diversity and are assessed in much more detail at the project level.

48. Some people feel the Proposed Amendment contains inadequate Standards and Guidelines or inadequate mitigation measures. [8 comments]

RESPONSE Standards and guidelines are developed as preventive measures. NEPA requires mitigation measures to cover the range of impacts of a proposal. We feel the standards and guidelines contained in the proposed Forest Plan are reasonable, implementable and cover the range of the Plan. The limits set forth in the Standards and Guidelines allow impacts to occur, but not to a point of significant damage.

49. Many people wrote to express their support for the Proposed Plan Amendment, aspen/forest management, or the Forest Service. The following comments -- offered without Forest Service response -- represent a consolidation of their letters and opinions. [68 comments]

Properly managed cutting adds to scenic beauty, makes better forage, better standing trees, and provides employment. I'm impressed with the multi-story harvest plan on Black Mesa, years back, which created a scenic, practical piece of real estate. Aspen harvest is appropriate if done with common sense, which it is, and allows for maximum benefit for aspen. It's good for recreation and tourism because it maintains a healthy stand.

The U.S. Forest Service is capable of knowing what is best in the way of timber management. If increased timber sales are called for, I'm for it.

Roads are necessary to timber harvesting and are okay as long as they do not interrupt natural drainage routes. Roads aid hikers, hunters, firefighters, and animals.

The Forest Service has been harvesting timber for over forty years and we still have a thriving recreation and tourism industry. The evidence suggests additional timber harvesting will not be harmful to the recreation and tourism industries.

Clearcuts need to be properly designed and laid out to be acceptable and to maintain visual quality. Cutting done from Park Cone to Slaughterhouse Gulch is visible from our cabin but is not objectionable and is revegetating in an attractive manner. Taylor Park is more attractive after recent selective cutting. Clearcutting sounds frightening but, if it is done in the manner described, we feel the end result will be beneficial.

The Standard and Guideline in the Proposed Plan, page III-4, for aspen diversity looks good as it will require some harvesting to meet the requirement.

General direction for fire planning and suppression looks reasonable.

Timber harvesting will reduce fire hazards in places like Taylor Park.

The effort to show the estimated costs of monitoring is very good.

The Amendment proposed satisfactory consideration of cultural resources and complies with the National Historic Preservation Act of 1986.

Alternative 1E comes close to Louisiana-Pacific's desired demand. The OAC volume will insure adequate volume as demand increases. Prefer Alternative 1E over alternatives with less volume.

A rotation of vigorous aspen regrowth will produce more oxygen than an unharvested stand of aspen.

People need products made from aspen.

BEN NIGHTHORSE CAMPBELL
3D DISTRICT COLORADO

LETTER # 1

COMMITTEES
AGRICULTURE
INTERIOR AND INSULAR AFFAIRS

Congress of the United States
House of Representatives
Washington, DC 20515

September 11, 1989

Mr. R.E. Greffenius
2250 Hwy 50
Dealt, Colorado 81416

Dear Mr. Greffenius:

Thank you for your concern regarding the Grand Mesa-
Uncompahgre-Gunnison (GMUG) National Forest. On July 25, 1989,
the Forest Service released a draft amendment to its
controversial 1983 forest plan. The amendment was the result of
numerous appeals and contemplates doubling timber cutting over
the next 10-years.

The GMUG Forest serves the communities of Delta, Montrose,
Gunnison, Crested Butte, Grand Junction, Telluride and Ouray,
Colorado. Each community values the forest for its multiple uses.
The original forest plan challenged these communities to decide
which forest values, timber, recreation, scenic or water
augmentation were most important.

The controversy was so intense that timber industry
representatives, environmentalists, state and local government
officials and the Forest Service were forced to engage the help
of a professional arbitrator to identify and work toward
resolving the differences each constituency had with the plan.

The release of the July amendment has renewed the prior
controversies.

Congress is in recess until September. I will be traveling
the Third Congressional District during the August recess, paying
close attention to my constituents concerns about the amendment.
Unfortunately, it will be impossible for me to respond
constructively to the draft plan by the end of the comment period
on August 25, 1989. Therefore, I have asked the chief of the
Forest Service to extend the comment period for an additional
thirty days.

1-1 This extension is also important as an acknowledgement of
the importance of this amendment to the many Western Slope
communities who are served by the forest, and a recognition of
intense controversy that has surrounded the forest since 1983.

Sincerely,



Ben Nighthorse Campbell
Member of Congress

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LETTER 1 RESPONSE

1-1

In response to public and Congressional requests, the Draft Supplemental EIS
comment period was extended for 30 days from 8/25/89 to 9/25/89

Congress of the United States
House of Representatives
Washington, DC 20515

September 25, 1989

Richard Greffenius, Supervisor
Grand Mesa, Uncompahgre and Gunnison
National Forest
2250 Highway 50
Delta, Colorado 81416

Dear Mr. Greffenius:

On July 25, 1989, the Grand Mesa-Uncompahgre-Gunnison (GMUG) National Forest released a draft amendment to its controversial 1983 forest plan. The amendment was the result of numerous appeals and contemplates doubling timber cutting over the next 10 years.

The GMUG Forest serves communities within Delta, Mesa, Garfield, Montrose, San Miguel, Ouray, Hinsdale, Saguache and Gunnison counties. Each county and these many communities value the forest for its multiple uses. The original forest plan challenged these communities to decide which forest values -- timber, grazing, recreation, scenic or water augmentation -- were most important.

2-1 The controversy was so intense that timber industry representatives, environmentalists, state and local government officials and the Forest Service were forced to engage the help of a professional arbitrator to identify and work toward resolving the differences each constituency had with the plan.

The release of the July amendment renewed the prior controversies.

During August and September, I travelled extensively throughout the forest, attending meetings and reviewing the extraordinary amount of mail my office received commenting on the forest plan amendment. Throughout the forest, citizens and local officials have become closely involved in this appeal process because they will all be affected by the decisions the Forest Service must make.

- PLEASE REFER TO
WASHINGTON OFFICE
1724 LONGWORTH BUILDING
WASHINGTON DC 20515
(202) 225 4781
- DISTRICT OFFICES
120 N MAIN ST
SUITE 400
PUEBLO CO 81003
(719) 643 9821
- 835 E SECOND AVE
SUITE 128
DURANGO CO 81301
(303) 247 9300
- 225 N 5TH STREET
SUITE 311
GRAND JUNCTION CO 81501
(903) 242 2400

2-1 The Forest, in conjunction with the Regional Office, recognized a need to bring industry and environmental groups together to discuss their differences and hopefully come up with a mutually agreeable preferred alternative. Although the Forest was capable of facilitating such a meeting, the Forest recognized the trust level would be higher if an independent facilitator was hired. As a result the Forest hired the Keystone Corporation to facilitate the meetings. Although the Keystone Corporation invited many interested organizations to participate, some declined (National Resource Defense Council) while some participated throughout the process (Western Colorado Congress & Intermountain Forest Industry Association). The facilitated meetings did allow the parties involved to identify the issues they could agree upon. The participants could not agree on a preferred alternative.

2-2 The Forest elected to not re-write the Draft Supplemental EIS (DSEIS) and Amendment, but instead analyzed the more than 2,500 public comments it received to develop the Final Supplemental EIS (FSEIS) and proposed Forest Plan. Forest Service experience indicates rewriting the DSEIS would not remove any of the existing controversy, would cost considerable tax dollars, would delay the process for a considerable length of time and would not significantly increase the readability of the DSEIS. Forest Plans and Significant Amendments are complex and lengthy due to the various laws which govern them (NFMA, NEPA, RPA, MUSYA, etc.) and the sophistication of public interest groups and their lawyers. Forest Plans and EIS's are understandable to the average individual, but only after one spends enough time and effort to thoroughly study them. In order to enhance the readability of the final decision, the Forest has produced a summary which is available to all interested parties.

2-3 The purpose of the DSEIS and Amendment was to discover how people felt about the decision being considered. Before the Draft was published the Forest could get little specific input from local governments. County land use plans do not identify areas where timber harvesting is not recommended, nor do they recommend a level of harvesting which should not be exceeded due to conflicts with other industries. The major concerns of Gunnison and San Miguel Counties were addressed on page iv-63 of the DSEIS. Now that the DSEIS has been published, the Forest has three letters of support for Alternative 1E from Delta, Montrose, and Hinsdale County Commissioners, and four letters of opposition to Alternative 1E from Gunnison, Mesa, Ouray, and San Miguel County Commissioners. The letters are specific and to the point and helped the Forest develop the FSEIS and proposed Forest Plan.

2-4 The FSEIS and proposed Forest Plan remove Mount Sneffels, Kebler Pass (except for previously cut over conifer stands to the south of Coal Creek and the Kebler Pass area itself), Tabeguache and the undeveloped portions of Kannah Creek from the suited timber base, Horse Mountain, lands surrounding but not adjacent to Bonham Reservoir, Bull Basin, lands surrounding Big Creek Reservoir except for the south side, and Taylor Park are included in the suited timber base. Taylor Park is a prime example where timber harvesting and tourism/recreation can coexist. The Forest has been harvesting timber in the Taylor Park area for over 40 years and

the Taylor Park area is still considered a prime recreation attraction. Please refer to the enclosed proposed Plan maps

2-5

The Forest will do its best insure timber remains available within the limits of the Forest Plan ASQ. It is entirely possible the level of timber harvesting in the proposed Forest Plan will not be enough to keep all of the saw mills in business as other sources of timber are either unavailable or in short supply.

Based on my prior knowledge of the forest and the input I received, I recommend that you completely rewrite the draft amendment. The language in the body of the amendment and the accompanying appendices must be made simple enough so that its impacts can be interpreted by people other than Forest Service mathematicians. Many people I have spoken to about the draft feel that understanding a complicated forest plan takes so long, that comment periods must always be extended, leading to even hotter tempers over inherently emotional issues.

2-2 Although the draft amendment addresses only timbering levels, all other forest values hinge on your timber harvesting recommendations. The new draft is the result of numerous appeals that made it impossible for the Forest Service to carry out its mission of managing the forests multiple resources. A well-prepared forest plan should, by its very nature, limit the number of appeals and therefore save tax dollars. This amendment does not meet that criteria. In fact, I believe the amendment was written as a bargaining tool rather than as a management tool.

2-3 In drafting the new amendment the Forest Service apparently made little attempt to incorporate county and municipal planning because seven of the nine counties that are within the forest oppose this document. When you rewrite the amendment, do not recommend large areas for harvest when community planners, who have gone to great lengths to begin diversifying their economies, feel strongly about the areas where the timber harvesting will take place. I also recommend that you take into account the costs to county taxpayers who are being asked to accommodate the intense impacts of timbering.

2-4 Several of the areas that need to be removed from consideration include: Mount Sneffels, Kebler Pass, Taylor Park, Tabeguache Research Natural Area and other areas of special interest. Mesa County in particular has recreational goals for Bonham Reservoir, Bull Basin, Big Creek, Horse Mountain and Kennah Creek. Timber cutting should be avoided in these areas.

2-5 The amendment must also be rewritten because the health of the timber industry in the area depends on it. The forest is fortunate to host 23 saw mills, employing hundreds of Coloradoans either directly or indirectly. If the Forest Service develops a plan that is practically beyond appeal, the local timber industry will be able to plan on future resource availability.

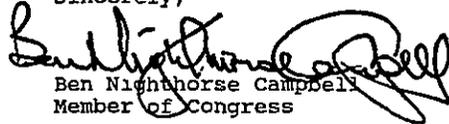
The Forest Service also should help ensure, however, that timber remains available, not only so the Forest Service achieves its own management goals, but also so area businesses achieve their own long-term financial goals. This could be done formally by helping facilitate the acquisition of private timber as the state of Colorado has suggested, or by openly encouraging a continuing dialogue between environmental groups, industry, and local governments.

A thoughtful plan that discourages appeal will help companies plan their financial futures just as the forest does -- in 10-year increments. This will allow even major timber companies that have often chosen not to bid smaller sales to properly plan for the future.

I realize that many issues will remain controversial. In fact, many of the issues the "Keystone Process" failed to resolve remain unresolved by Congress and the courts. I do think, however, that by addressing the public's basic concerns about the location and volume of timber to be cut in the GMUG forest over the next several years, you will quiet many local fears about watershed protection, biological diversity and timber sales in general.

I hope my comments have been helpful. All Coloradoans with an interest in forest management will be following your efforts to produce a workable amendment. I do not envy your task. You have inherited a terribly difficult situation and I appreciate the work you and your staff have done thus far to bring diverse interests together.

Sincerely,


Ben Nighthorse Campbell
Member of Congress

BNC/dm

cc.

F. Dale Robertson, Chief
U.S.D.A. Forest Service

Gary Cargill, Regional Supervisor
U.S.D.A. Forest Service

United States Senate

WASHINGTON, DC 20510

August 9, 1989

Mr. Gary Cargill
Regional Forester
United States Forest Service
11177 West 8th Avenue
Lakewood, Colorado 80225

Dear Gary:

3-1 I am writing today to request your assistance in extending the public comment period for the Forest Service's proposed amendment to the Grand Mesa, Uncompahgre, and Gunnison (GMUG) National Forest Management Plan. My understanding is that the public comment period is due to expire on Friday, August 25, 1989.

As you know, the Forest Service's proposal would nearly double the annual allowable sale quantity, requiring the construction of twenty-two new miles of road each year, and the clear-cutting of 3,000 acres annually. Moreover, a number of the timber cuts would be within roadless areas, or within sight of popular recreation areas and highways. And finally, I have been told that the Forest Service lacks vital baseline data on water quality and soil quality that are needed to evaluate both allowable sale quantity and specific timber harvests.

Not surprisingly, this proposal has generated a great deal of controversy. A number of Coloradans have called and written my office to express their strenuous objections to the proposal. Others have called to say that the proposal is simply too complex to fully evaluate by the end of next week.

For all of those reasons, I am writing today to urge that you extend the public comment period on this draft forest plan amendment for at least thirty (30) days. That extension of time will enable Coloradans across the western slope fully to evaluate and consider the impacts and costs of the draft amendment.

I am looking forward to working with you on this matter, and I appreciate your consideration of this request.

With best wishes,

Sincerely yours,


Timothy E. Wirth

3-1

In response to public and Congressional requests, the Draft Supplemental EIS comment period was extended for 30 days from 8/25/89 to 9/25/89

VI-60

United States Senate

WASHINGTON DC 20510

September 25, 1989

Mr. Richard Greffenius, Forest Supervisor
Grand Mesa, Uncompahgre and Gunnison Nation Forests
2256 Highway 50
Delta, Colorado 81416

Dear Mr Greffenius:

4-1 I am writing to express my strong opposition to the Draft Proposed Amendment to the Land and Resource Management Plan for the Grand Mesa, Uncompahgre and Gunnison (GMUG) National Forests. I believe that it is incumbent on the Forest Service to start over. Neither the 1983 proposed amendment -- which was rejected by the Department of Agriculture -- nor this proposal provide a sound balance for timber and the other uses for which these forests are required to be managed. Instead, I strongly urge the Forest Service to work with all affected interests in western Colorado to develop a management plan that attracts broad support rather than broad condemnation.

During the time that I have been a member of the United States Senate, few natural resources issues have aroused the depth and intensity of opposition as has this proposed amendment. Coloradans have called and written, and testified at a public hearing that I sponsored, to express their concern about the proposed timber harvest levels and the associated impacts on recreation, grazing, wildlife habitat, and water quality. Others wrote about how the increased timber harvests would damage local roads and increase traffic risks for themselves and their children. And finally, other Coloradans wrote of their strong opposition to the taxpayers' continued subsidy for below-cost timber sales.

Many of the Coloradans who called, wrote, and testified about the proposed amendment had one simple question for the Forest Service: does this make sense? I have concluded that it does not. The proposed amendment will radically increase the amount of timber that is available for harvest every year from these forests. However, the GMUG forests will continue to lose money in the bargain. Moreover, these increased timber harvest levels will come at the cost of other sectors of the local economy, especially the recreation industry and the region's ranchers. The number and visual impact of clearcuts will proliferate rapidly, while scenic vistas will be degraded,

4-1 The Forest did not start over with a new DSEIS, but did develop and select a new alternative (1G) which is the proposed Forest Plan. Alternative 1G has lower harvest levels than alternative 1E and excludes many sensitive areas such as Mount Sneffels from the suited land base. The original Forest Plan was not rejected by the Department, but rather was approved for implementation and remanded to the Forest for a better explanation of the rationale used to select the preferred alternative.

4-2 It is important to view this issue in its proper perspective. The Forest Service is required by law to manage National Forests for many uses. The Forest Service has no mandate to carry out "above cost" programs in any of the multiple-use programs it manages. Timber sales are not alone in the "below cost" category. Recreation, range and other programs do not pay for what it costs the Forest Service to manage them.

The Forest Service continually monitors and challenges the cost of managing the Grand Mesa, Uncompahgre and Gunnison National Forests. This is done to narrow the gap between costs and revenues.

Areas that were selected in the proposed Forest Plan and FSEIS as being suited timber lands are those that also have the best economic viability. It also is anticipated that Forest Services' revenues for timber products will continue to increase along with market prices.

4-3 The annual miles of road construction necessary to harvest timber ranges from 9 to 42, the proposed Plan would require 24 miles per year. The effects of building these roads are described in chapter IV of the FSEIS, "significant" erosion and stream sedimentation is not anticipated. The road mileages reflect roads which are designed and built as low-speed, narrow roads with minimal clearing and sufficient drainage to minimize environmental impacts. All new local roads would be closed to public use unless the environmental assessment for a specific project documents valid reasons for leaving the road open.

4-4 Alternative 1G has a timber harvest level which is about half the level of alternative 1E in the DSEIS. The lower proposed 1G harvest level will be more acceptable to the local recreation industry not only because fewer acres will be harvested, but because a number of sensitive areas (Kebler Pass, Mount Sneffels, Kannah Creek, Roubideau, & Tabeguache) have been excluded from timber harvesting.

Although the mix of timber species harvested in alternative 1G is different from the 1983 Forest Plan (alternative 1A), the total harvest levels are very similar. The local recreation industry has been doing very well under the 1983 Forest Plan timber harvest program.

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grazing range will be diminished, and erosion and stream sedimentation will be increased. In short, this proposed amendment does not make good economic sense, and it does not make good environmental sense.

The Grand Junction Daily Sentinel summarized the majority sentiment well:

Given the agency's past experience in these forests, the fact that timber sales often lose vast sums of money and that other forest uses -- particularly recreation and preservation of water quality and fisheries -- are vitally important to the local environment and economy, one could reasonably have expected that Forest Service officials would have taken a more moderate approach to increasing the harvest of the important natural resources entrusted to their care.

Set out below are my specific concerns about the proposed amendment. I want to emphasize that these issues were raised either in letters to my office, or in testimony at the public meeting held by my citizen's recreation task force (the Wirth Commission on Colorado Outdoors). I urge you to carefully consider these comments in deciding what actions the Forest Service will take next:

4-2 1. The proposed amendment calls for radical increases in timber harvests, but would continue to lose money.

It is important to remember that this planning controversy actually began in 1982, when the Forest Service proposed the first comprehensive management plan for the GMUG forests. In the decade prior to the adoption of that plan, timber harvests on the GMUG forests averaged 16.6 million board feet (MMBF) annually, although harvests in some years were significantly higher. Even at those harvest levels, the GMUG timber program lost money. In 1982, for example, the GMUG forests spent more than \$1 million more than it realized in timber sale revenues. At its best the timber sale program lost three times more than it earned. The American taxpayer made up the difference, of course.

The plan that was approved by the Regional Forester in 1983 contemplated that the annual harvest in the plan's first decade would increase to 35 MMBF, and would eventually increase to 41.1 MMBF. That timber harvest goal -- at the 35-41.1 MMBF levels -- would ultimately have cost the American taxpayer \$30 million over the planning horizon. Conversely, if the Forest Service had proposed to sell only that timber that could be harvested at a profit, the GMUG forests would have scheduled no more than 8.75

MMBF annually.

As I briefly mentioned above, that Secretary of Agriculture ultimately rejected the timber provisions of that 1983 plan. He did so because the Forest Service had failed to demonstrate a reasoned economic justification for the sweeping below-cost timber sales that it had proposed, especially since the below-cost timber sales would adversely affect other values for which the national forests are to be managed.

In light of that history, the current proposed amendment is particularly disturbing. The document proposes to offer 63.3 MMBF for harvest annually, a sum that is four times greater than the pre-1983 harvest levels, and nearly two times greater than the harvest levels called for in the 1983 plan, which the Agriculture Department rejected. And if the timber harvests disguised by the Forest Service as the "Opportunity/Availability Component" are included in these calculations, it appears that the Forest Service hopes to harvest 70.4 MMBF annually. (It is important to point out that while the 1983 plan called for the harvest of 6.6 MMBF annually of "products other than logs" (principally aspen), the proposed amendment envisions annual harvests of 32.4 MMBF of products other than logs -- all to benefit a single company, Louisiana Pacific Corporation.)

Equally disturbing as the dimensions of the timber harvests is the amount of land that would be logged under this proposal. The 1983 proposal, which was rejected by the Secretary of Agriculture, would have slated nearly 140,000 acres to be logged. The new amendment calls for logging on 355,000 acres within the GMUG forests.

Would the Forest Service make money from these dramatic increases in timber harvests? By no means. If this plan were adopted, in the first decade the timber program would lose \$189,000 each year. In the second decade of timber harvests, the forests would lose \$207,000 every year. And if fixed costs (the costs of preparing a sale and the costs of reforestation) are included in these calculations -- as they should be -- this timber program would lose more than \$880,000 each year in its first decade. In contrast, the total GMUG recreation budget in fiscal year 1989 -- for dispersed and developed recreation, and including the cost of trail construction as well as administration -- was \$1.8 million.

4-3 While the Forest Service would continue to lose money on timber sales on the GMUG forests, the proposed amendment calls for building 22 miles of new logging roads every year. Those roads would be added to the existing inventory of 3971 miles of road in the three forests. Over the entire fifty-year planning

4-3 period covered by the Forest Service documents, more than 1,000 miles of road are scheduled for construction in these three forests alone. By comparison, there are only 205 miles of primary county road in the whole of Gunnison County, and there are only 565 miles of county-maintained secondary roads -- and most of those secondary roads were constructed by the Forest Service.

These new roads may be needed to meet the Forest Service's timber harvest goals, but that does not mean the roads are needed. These roads would cause significant erosion and stream sedimentation, will disturb wildlife habitat, and will cost millions to construct. The Forest Service should dramatically scale back its plans for new roads when it reviews the timber harvest goals in the proposed amendment.

4-4 2. The proposed amendment does not adequately consider the timber program's impacts on the recreation industry.

There is no question that every job -- including jobs at the small mills spread across the western slope -- in Colorado is important. And as I have said many times, I am a strong advocate of the principles of multiple use and sustained yield. However, I do not believe that the Forest Service has given non-timber resources the parity of consideration that they deserve.

First of all, based upon the Forest Service's documents, it appears that 440 direct, indirect, and induced jobs can be attributed to logging jobs on the GMUG forests. Those jobs account for approximately 0.67 percent of the regional employment base.

Conversely, the Forest Service documents show that 70 percent of the jobs related to the GMUG forests are recreation-based, from skiing to hunting, picnicking, and scenic driving. And those jobs infuse into the local economies nearly \$100 million in employment and property income. Moreover, every projection I have seen shows that the recreation industry in this part of Colorado will continue to grow rapidly over the next decade.

Despite the clear and overwhelming importance of recreation to the region's economy, there is very little evidence that the Forest Service thoroughly and carefully evaluated the impacts of its timber harvest levels on this sector of the economy. There is even less evidence that the Forest Service tried to identify areas where logging could occur without adversely affecting the recreation economy, water quality, ranching, and other uses of these national forests. In fact, it appears that in the proposed

amendment to the GMUG plan, the Forest Service has allowed a single use -- and to a significant extent, a single company -- to take priority over all other uses, forsaking the balanced approach that multiple use management is supposed to foster.

4-5 3. Certain areas are simply too valuable for other purposes to permit their management for timber production.

Timbering should be excluded in the Tabeguache and Roubideau roadless areas. These roadless areas provide unique protection for plant and animal species that are highly sensitive to human activities. There is a growing awareness that roadless areas are the islands and corridors that preserve biological diversity in the forest. Even a small timber harvest in such areas can dramatically alter, and even completely destroy, these unique and pristine ecosystems.

4. There should be strict limitations on logging on Mount Sneffels, Kebler Pass, McClure Pass and Taylor Park.

These areas represent some of Colorado's most scenic lands. They provide year-round enjoyment to large numbers of Coloradans and visitors to our state. In particular, Gunnison and Ouray counties are dependent on a recreation-based economy. The proposed timber operations in this region will cause severe problems to these economies. In these areas, the timber industry employs a fraction of the work force that the tourist industry employs, and opening Gunnison and Ouray counties to expansive timber operations could result in unemployment and disruption of the recreation/tourist industry in this part of the state. Strict limitations should be placed on timber harvests in these areas because of their unique scenic, recreational and natural values, and because of these areas' dependence on the tourism/recreation industry.

4-6 5. Many residents of the communities that surround the GMUG forests have expressed concerns about the impacts to highway safety and highway conditions from repeated use by heavy logging trucks.

Many people who testified at the hearings that I sponsored in September expressed concern about how heavy logging trucks affect the safety of others who use the same roads or who live nearby roads that are heavily used by logging trucks. Logging trucks speeding through the forests and through adjacent communities have created dangerous situations for residents,

4-5 The Mount Sneffels and Kebler Pass areas (except for previously cut over conifer stands to the south of Coal Creek and the Kebler Pass area itself) have been withdrawn from timber production. McClure Pass has only limited timber harvests scheduled. Timber harvesting has occurred in the Taylor Park area for more than 40 years and many people still consider it a pristine area. Timber harvesting will continue in the Taylor Park area, as will the sensitivity to visual and recreation resources.

4-6. Logging truck traffic does cause increased impact to both people and roads themselves. The proposed Plan has reduced levels of timber and therefore less log truck traffic than that proposed in the DSEIS.

State and local laws apply equally to log truck operators as to any other licensed vehicle operator. On National Forest roads, 36 CFR 212 requires that traffic be subject to state traffic laws. As of June, 1990, all timber sale contracts must include the clause (CT 6.0) which requires compliance with state and local statutes and regulations. The enforcement of the traffic laws is by state, county, and municipal law enforcement authorities. The Forest Service has cooperative agreements with counties to enforce the state traffic laws on National Forest roads.

Forest Service research indicates that a loaded log truck weighing 82,000 lbs causes 20 times more loss of gravel than a typical passenger car. Commercial users are required to pay for gravel loss on Forest Service roads. In addition, the commercial user is required to pay or perform a commensurate share of maintenance, based on vehicle weight and traffic volume, on roads maintained by the Forest Service. The Forest Service is not considered a public road agency and thus does not receive funds from road user taxes. Road maintenance funds are appropriated by congress each year and are directed to fund maintenance for recreation and general public traffic.

Counties, unlike the Forest Service, are public road agencies and therefore receive road user taxes. Thus the commercial users, as with the recreation or general public users, pays for their commensurate share of road maintenance and/or construction through federal and state road user taxes. In addition, counties receive 25 percent of National Forest gross receipts (i.e. receipts from timber sales, grazing permits, ski area permits, etc.) to supplement county funds for roads and/or schools.

4-7. The proposed Forest Plan is reflective of public comments received during the comment period from affected resource users. A review period following the release of the proposed Plan and FSEIS should help drive the decision of selecting a Plan that fairly balances the needs of the resources on the Forest.

tourists, ranchers, children and livestock. The Forest Service must ensure that penalties (perhaps in the form of logging permit revocations) are sufficiently severe to prevent reckless and unsafe logging truck operations.

Road damage by logging trucks is another important concern that should be addressed in the GMUG plan amendment. One witness at the September hearings estimated that the impact of one logging truck on a county road is equivalent to the impact of 9,600 cars. If the Forest Service increases the presence of logging trucks in the region, the Forest Service should work with affected counties to mitigate this heavy impact -- which represents a serious drain on county resources.

It is a rare day when an issue unites groups as diverse as the Gunnison County Board of Realtors and the Sheep Mountain Alliance of Telluride, the San Miguel County Board of Commissioners and the Western Colorado Congress, the Mayor Protem of the Town of Crested Butte and the Colorado Mountain Club, and the Mesa County Commissioners and the Rocky Mountain Biological Laboratory. Yet each of these organizations has protested the Forest Service's planned timber harvests. Each has a different constituency and each has expressed itself in a different way, but the message is the same: the Forest Service needs to take a long, hard look at its plans for logging on the Grand Mesa, Uncompahgre, and Gunnison National Forests.

I agree with that sentiment. All Coloradans understand the need for balance in managing our public lands. And if I could underscore any single thing I have heard from Coloradans on the GMUG plan, it is that the national forests in our state represent a special resource, one that can accommodate many uses, including timber harvesting. But the Forest Service's proposal for logging on the GMUG falls far short of a balanced approach to management of our public lands.

In fact, the proposed amendment is fundamentally flawed. It threatens to radically increase timber harvest levels without explaining, or even analyzing, how that logging will affect the recreation and tourism industry, or local ranchers, or wildlife habitat. It simply assumes that the American taxpayer is willing to continue to subsidize timber harvests in the GMUG forests, despite the adverse impacts that would result from harvesting more than 70 million board feet of timber every year.

The Gunnison Country Times said it well: "The Forest Service -- the people who are hired as caretakers of our land -- should go back to the drawing board and come up with something everyone can live with, not a plan devised to please only two logging

Page Seven

companies."

4-7 I hope the Forest Service does just that. The proposed amendment should be taken off the table and the Forest Service should go back to the drawing boards to draft a new proposal. In preparing a new proposal, the agency should consult early and often with all of the affected resource users, and then hold public hearings. If the agency does that, I am confident it will emerge in a year or so with a proposal that fairly balances timber harvests with recreation, ranching, wildlife habitat, and water quality -- and which the people of Colorado will support.

Before closing, I would like to thank you, and the GMUG Forest Service staff for your cooperation and participation in the Gunnison public meeting. I also want to express my appreciation to the Forest Service for taking time to meet with my staff and for answering many of our questions. I hope we will have the chance to work together in drafting a forest plan amendment that all Coloradans can support.

With best wishes,

Sincerely yours,



Timothy E. Wirth

LETTER # 5

Mason, Margaret
9/5/89

LETTER 5 RESPONSE

State Representative
MARGARET MARGY MASSON
3798 Highway 92
Crawford Colorado 81415
Home 921 3621
Capitol 866 2939



COLORADO
HOUSE OF REPRESENTATIVES
STATE CAPITOL
DENVER
80203

Member
Agriculture Livestock
& Natural Resources
Committee
Local Government
Committee

August 31, 1989

Mr. Richard Griffenius
Forest Supervisor
GMUG National Forest
U.S. Forest Service
2250 Highway 50
Delta, Colorado 81416

Dear Griff:

I have read the DEIS proposed land and resource management plan concerning the Grand Mesa Uncompahgre in Gunnison National Forest. The purpose of my letter today is to express concern over some of the assumptions of the plan. The areas to be discussed are all within your boundaries of supervision. I am very pleased that the comment period was extended and that more time is now allowed for consideration of the plan alternative and the increasing need for reassessment of that proposal.

- 5-1 I truly support multiple use of public lands. I am also well aware of your charge as forest supervisor to utilize the public lands to their highest and best use. As this DEIS involves a huge area of the three national forests, I will try to address the issues generally. I may also request that the hearing schedules on this proposal be reestablished providing more time for citizens to respond. I have received copies of many letters sent to you which clearly point out deficiencies in the plan.
- 5-2 Let me begin by addressing the Multiple Use Act of 1960. Multiple use in Colorado's most scenic areas has been occurring for many years. Agricultural practices and tourism have really been working well and in harmony. Now, this DEIS plan will truly alter the scenic panorama of much of our forests. It will also alter the harmony which agricultural and recreational uses have come to establish.
- 5-3 The estimated amount of money in the plan to come from timbering is not close to that which is estimated to come by the recreational and viewing opportunity afforded through the scenic quality of the area. Local governments are already objecting to the impact caused by logging traffic on their roads. The economic value estimated from timbering seems very low compared to the damage done to the roads. Even the
- 5-4

5-1 In response to public and Congressional requests, the Draft Supplemental EIS comment period was extended for 30 days from 8/25/89 to 9/25/89. Additional hearings were not held as the 2,500 public comments received by 9/25/89 adequately covered the range of public concerns.

5-2 Management of the National Forests under the multiple-use policy established by Congress emphasizes that the Forests are established and administered for outdoor recreation, range, timber, watershed, and wildlife and fish purposes. The policy goes on to say that due consideration shall be given to the relative values of the various resources in particular areas. Not every acre of land can or should be managed to produce a full range of resource goods and services. By the same token, it is a rare instance when it is appropriate to manage extensive areas of Forest to the exclusion of a resource.

The process of Forest Planning, Plan Amendment, Plan Revision and the public involvement that must accompany these activities has been put in place so that we can more accurately establish those levels of resource management emphasis. The process is one of change and the decisions for change seldom will be perfect solutions. At best, the changes will be adjustments which bring us closer to the social and economic values of the day, while still meeting the legal mandates which direct Forest Service responsibilities.

5-3 See Response to Issue number 12

5-4 Research shows that commercial trucks do little damage to properly constructed asphalt roads - when the roads have been treated to prevent damage caused by weather and shrinking. All traffic has an impact on damaged asphalt roads.

Both heavy and light vehicles cause washboard-like surfaces to form on gravel roads. However, a loaded logging truck - weighing 82,000 pounds - causes 20 times more loss of gravel than a typical car.

It should be noted that commercial users pay for gravel loss as well as wear and tear on Forest Service roads. Counties receive road-user taxes paid by commercial trucks. Counties receive federal road maintenance funds as well as a 25 percent share of all income from the National Forests.

5-5 The numbers of big game animals displayed in Chapter II of the Plan are our best estimate of numbers supported on National Forest Lands, not all land ownerships in the area. The proposed timber management activities are projected to improve the summer range diversity and capabilities, not decrease it.

At the project level, the Forest Service addresses management actions and off-site impacts which may occur - and consults with the Colorado Division of

percentage of payment in lieu of taxes and the 25 percent return afforded the counties do not cover the dollars needed to maintain roads that are used by timbering vehicles. It does not seem sensible to threaten the loss of millions of dollars in recreational money to a timbering program which is not profitable at this time. I do not want to risk compromising western Colorado and the whole state of Colorado's future tourism and recreation to that of a marginal timbering industry. This timbering plan would also impact negatively the trails that are part of our recreational plan.

5-5 The figures on the wildlife numbers are a joke. The sustaining numbers we presently have far exceed those that are estimated in the plan. Diminished habitat only further impacts the ranchers in the area causing them loss of forage that is necessary to perpetuate their own ranching operations. The Division of Wildlife erred in its statement concerning how much habitable wildlife was available in the area and what the area can support.

Sportsmen and other recreational uses bring in more dollars annually than does that of the tourism industry and that dollar figure is continually increasing. The increase in recreational dollars far exceeds that of clearcut timbering. May I say now that I am not opposed to all timbering in the national forest. Timbering for purposes of good forest management to protect against disease is vitally necessary. Clearcutting in some areas has been a sound management practice, but not necessarily in this area and at this time.

5-6 However, destruction of the visual quality of the forest is unacceptable and not reasonable management as proposed by the GMUG plan. Grif, this plan points out that roads into the area would quadruple. You know that the National Forest Service does not have the money to maintain additional roads now and that funds are very difficult to come by to maintain what responsibilities are presently established within these boundaries. I could go on with many more points to be made on this issue. Possibly the best and most important thing that we need to note is that the possibility of timber harvesting according to your draft supplemental environmental impact statement could very severely impact the whole economy of western Colorado.

I ask you to do one thing--let us be sensible and return to the drawing board with this plan. I urge you and Gary Cargo to reconsider this draft and take time to hear objections and suggestions for the regional forest plan. I urge you in the time allowed to seek more information from those of us who have written to you concerning our objections to the plan.

Thank you for your consideration.

Sincerely,

Margaret Masson
Margaret "Margo" Masson

mm:i

cc: Senators Bishop, DeNier and Pastore
Representatives Dyer, Foster and Prinster
County Commissioners of Ouray, San Miguel, Delta and Montrose Counties
Western Colorado Congress
Wayne B. Wolff
Double RL Ranch
Herbert and Charmion Kaiser

VI-69

Wildlife to look at alternative ways to minimize the impacts to private lands and assess the potential damages This will continue Alternatives presented in the DSEIS that treat more acres and build more roads have the most potential to displace big game to private lands, and those that treat fewer acres and build more roads have the least potential to displace big game to private lands

5-6 See Response to Issue number 44

5-7 All newly constructed local roads will be closed to public use unless the environmental assessment states otherwise Local roads, once closed, are very inexpensive to maintain Refer to Issue 31



LETTER # 6

US Dept of HUD

6/23/1989

Department of Housing and Urban Development

Denver Regional Office Region VIII
Executive Tower
1405 Curtis Street
Denver Colorado 80202-2348

June 22, 1989

Mr. R. E. Greffenius
Forest Supervisor
Grand Mesa, Uncompahgre, and
Gunnison National Forests
2250 Highway 50
Delta, CO 81416

Dear Mr. Greffenius:

This is in response to your request for comments on the Draft Supplemental Environmental Impact Statement (DSEIS) for the Grand Mesa, Uncompahgre, and Gunnison National Forests.

No response necessary

Your DSEIS has been reviewed with consideration for the areas of responsibility assigned to the Department of Housing and Urban Development. This review considered the proposed action's impact on housing and community development and since there was no anticipated impact, we find this DSEIS adequate for our purposes.

If we may be of further assistance, please contact Mr. Howard Kutzer, Regional Environmental Officer, at FTS 564-3102.

Very sincerely yours,

Raymond D. McKinney
Director
Office of Operational Support



United States Department of the Interior

OFFICE OF ENVIRONMENTAL PROJECT REVIEW
DENVER FEDERAL CENTER BUILDING 56 ROOM 1018
P O BOX 25007
DENVER COLORADO 80225 0007

August 23, 1989



LETTER 7 RESPONSE

ER 89/473

Mr. R E Greffenius, Forest Supervisor
Grand Mesa, Uncompahgre, and Gunnison
National Forests
2250 Highway 50
Delta, Colorado 81416

Dear Mr Greffenius.

The Department of the Interior has reviewed the Draft Supplemental Environmental Impact Statement (DSEIS) and the Amendment of the Land and Resource Management Plan for Grand Mesa, Uncompahgre, and Gunnison National Forests, Colorado and has the following comments

Threatened and Endangered Species

Although the DSEIS identifies specific objectives, it is impossible through one consultation to render a "may affect" and "no effect" determination on all programs and activities that are identified in the DSEIS. Thus, consultation will be required on a case-by-case basis prior to implementation of each specific action that, at that time, the Forest Service (FS) determines "may affect" any threatened or endangered species. If the determination is "may affect" for listed species, a written request for formal consultation should be sent to the Colorado State Supervisor, Fish and Wildlife Enhancement, U S. Fish and Wildlife Service, 730 Simms Street, Suite 290, Golden, Colorado 80401. At such time, a copy of the biological assessment and/or any other relevant information that assisted you in reaching your conclusion should also be forwarded.

- 7-1 On April 6, 1989, the Fish and Wildlife Service provided Larry Hill with a list of Federally listed candidate species that may occur in each Forest. We believe the final Environmental Impact Statement (FEIS) should stipulate that completed Recovery Plans for Federally listed species will be aggressively implemented by the FS. For example, this would require FS to discourage land-use practices and development which may adversely alter or eliminate the character of Peregrine Falcon hunting habitat or prey base within 10 miles, and the immediate habitats within one mile of the nesting cliff (Task 1221, page 334 of the Peregrine Falcon Recovery Plan). Denying any applications for surface occupancy or disturbance within the 10-mile radius would be evidence of aggressive implementation by the FS. While we recognize that such actions may not be possible in every case, at a minimum we would ask that the FS closely evaluate all such disturbances within the 10-mile radius and appropriately justify the "may affect" or "no effect" determination as required by Section 7 of the Endangered Species Act.

7-1

We agree that one consultation is not enough to render a "may affect" and "no effect" determination on all programs and activities identified in the Final SEIS. In the FSEIS, we have stated that consultation will be required on a case-by-case basis prior to implementation of each specific action that the Forest Service determines "may affect" any threatened or endangered species. A written request for formal consultation will be sent to the Colorado State Supervisor of the U S Fish and Wildlife Service if the determination for a listed species is "may affect." We will also include a copy of the biological assessment and/or relevant information.

7-2

We agree that the FSEIS should stipulate that completed Recovery Plans for federally listed species will be aggressively implemented. The Forest Service will closely evaluate all land use practices and appropriately justify the "may affect" or "no effect" determination.

The FEIS and proposed Forest Plan include the 7A area near the National Park Service Ponderosa Campground and boat ramp. The Ponderosa Campground is actually on National Forest Land, but is being administered and managed by the National Park Service through a memorandum of understanding with the National Forest Service as part of the Curecanti Recreation Area. The timber management emphasis has not changed from the original 1983 Forest Plan. The intent of the Amendment is to leave intact the management emphasis allocation of the original 1983 Forest Plan, except to make corrections for several mapping errors.

Timber harvesting has been occurring up the Soap Creek Drainage for more than ten years with little effect on the Ponderosa Campground, or the two Forest Service campgrounds further up the drainage (Soap Creek & Commissary Campgrounds). Project level timber sales analysis will address site specific concerns.

7-3

The FSEIS addresses air quality and has been expanded to list the class I and class II air sheds in the planning area. The conclusion of the FSEIS is the same as the DSEIS - dust from logging trucks will not have a significant effect on air quality on the Forest or the planning area. Other timber harvesting activities do not affect air quality.

7-4

The area surrounding Silver Jack Reservoir has been withdrawn from timber production, Horse Mountain, lands surrounding but not adjacent to Bonham Reservoir, Bull Basin, lands surrounding Big Creek Reservoir except the south side, and Taylor Park are included in the suited timber base. Taylor Park is a prime example where timber harvesting and tourism/recreation can coexist. The Forest has been harvesting timber in the Taylor Park area for over 40 years and the Taylor Park area is still considered a prime recreation attraction. Please refer to the enclosed Forest Plan maps.

Visual/Air/Aesthetic/Quality

The National Park Service (NPS) is concerned with the designation of an area of forest land adjacent to Curecanti National Recreation Area as a "Management Area 7A" (emphasis on "Intensive Timber Management") The area is at the mouth of Soap Creek, T49N, R4W, Sec. 5, 6, and 8, and is adjacent to the

7-2 Ponderosa Campground. This campground is well known for its solitude and scenic beauty. Emphasizing intensive timber management could have adverse effects on the aesthetics and water quality of the area. These impacts should be identified and analyzed in the FEIS.

The statement (page IV-34) that landscapes, land features, and scenic quality would "be the same for all Alternatives" should be reconsidered. Alternative IF would only consider 379,000 acres for timber production; less than half of the acreage proposed under the preferred Alternative (IE). Also, over 2,000 acres more per year would be clearcut under IE than under IF. There would indeed appear to be significant differences in visual impacts between the Alternatives. The FEIS should recognize and analyze this point.

7-3 The DSEIS does not address the potential for impacts on the air quality of Black Canyon of the Gunnison National Monument under any of the Alternatives. At a minimum, the Class I air quality status of the designated wilderness area within the monument should be acknowledged in the FEIS.

7-4 Proposed timber sales shown on the "proposed plan" map indicated that much of the land around Silver Jack Reservoir in the Uncompagre National Forest is included in the 10-year harvest category. Harvest of this area should carefully consider impacts to aesthetics because of the recreational use at Silver Jack. Views from the reservoir and associated campgrounds are an important part of the recreational experience at Silver Jack. Thus, the FEIS should identify and analyze the impacts of timber harvests in the area on the recreation user's experience.

Extensive harvest also appears to be proposed around the Collbran Project Reservoirs in the Grand Mesa National Forest. These reservoirs are very important recreation sites, and impacts to aesthetics should be a primary consideration in any final timber harvest plans. Finally, impacts to recreation at Taylor Park Reservoir in the Gunnison National Forest should also be described and analyzed in the FEIS.

Water Quality and Quantity

7-5 The effect of logging roads and timber harvest on sediment entry into streams and reservoirs should be analyzed. The impacts to water quality which would result from soil erosion due to road construction and the removal of trees should be fully described in the FEIS. Mitigation measures such as effective road closures and road reclamation should also be identified.

The water augmentation benefits which would result from timber harvest appear high. We recommend that this analysis be reconsidered.

7-5 Page IV-5 of the DSEIS describes the effects of timber management activities on soils. Pages III-73-75 of the proposed Forest Plan identifies mitigation measures for soils, and page III-76-80 of the proposed Forest Plan identifies mitigation measures for transportation system management. Project level analysis will further define soil and road closure related mitigation. Soil analysis and mitigation have been carried over to the Final SEIS and proposed Forest Plan.

7-6 Elk and deer movements and use patterns can be influenced by human activities. On the National Forests these effects can result from timber management activities or the amount of open roads available for motorized public use. At the project level, the Forest Service addresses management actions and off-site impacts which may occur – and consults with the Division of Wildlife to look at alternative ways to minimize the impacts to private lands and assess the potential damages.

The annual miles of road construction necessary to harvest timber in Alternative 1G is 24 miles per year. The effects of building these roads are described in Chapter IV of the FSEIS, "significant" erosion and stream sedimentation is not anticipated. The road mileages reflect roads which are designed and built as low-speed, narrow roads with minimal clearing and sufficient drainage to minimize environmental impacts. All new local roads would be closed to public use unless the environmental assessment for a specific project documents valid reasons for leaving the road open.

7-7 It is not the intent of the Forest Service to compete with private land owners undercut prices, or set prices. With diminished timber supplies from the National Forests and the potential for increased Forest Service rates for aspen and conifer, local private land owners will have significant opportunities to meet future timber demand.

The National Forest Management Act (NFMA) requires that cut-over areas must be reforested. Areas to be cut must be capable of being regenerated and must be so certified in site-specific documents. These regeneration surveys are done three to five years after the regeneration cut to monitor the results. If monitoring reveals site specific regeneration failures, appropriate actions will be taken including changing our management actions and manually reforesting the site if necessary. Current timber management practices on the GMUG are producing very low regeneration failure rates (less than one percent for aspen).

Cumulative impacts are addressed in the final portion of Chapter IV of the FSEIS, including cumulative effects of the alternatives, past, present and future action and their effects, and expected cumulative effects.

7-8 Soil and water protection was a major consideration in reducing timber harvests in the new preferred alternative, 1-G. Soil and water resources are heavily protected with a number of Forest Service measures.

Wildlife Habitat

7-6 The DSEIS does not recognize the decrease in wildlife habitat which will occur as a result of the timber cutting, road building, additional human use and occupation, and development-related decreases in forage, air, and water quality. The DSEIS appears to have devalued wildlife habitat considerations which may result from timber harvesting

Forest Resources

7-7 We suggest that the FEIS should reconsider the private foresters role in meeting the perceived increasing demand for forest products. In addition, the FEIS should specify whether regeneration will match the long-term increase in harvest and describe the cumulative impacts that will result from harvesting on Federal and private lands throughout the Gunnison Basin.

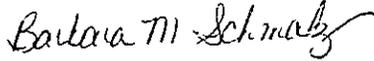
Table S-4 in the DSEIS (Page S-10) indicates that upon reanalysis, the proportion of suitable lands for timber production goes from 37 to 44. The FEIS should explain this increase in land areas now considered suitable for harvest (i.e., what has changed to make this additional acreage suitable)

Soils

7-8 The effects of logging on soil stability should be analyzed in the FEIS. In particular, the effects of timber harvest on landslide movement in the vicinity of Silver Jack Dam and spillway should be described and analyzed

We appreciate the opportunity to provide these comments and hope they will be useful to you in the preparation of the FEIS.

Sincerely,


for Robert F Stewart
Regional Environmental Officer

- The "Forest Direction" segment of the Forest Plan provides basic protection for soil and water in all three National Forests
- The "Management Area Direction" in the Forest Plan protects soil and water by land characteristics, such as geology, vegetation and hydrology.
- Sensitive soil and water areas -- such as wetlands -- have received additional protection in the Final Amendment's Standards and Guidelines as well as in Management Direction
- Analysis and evaluation are part of each timber harvest project. Long before a timber sale is made, the potential impact to soil and water resources is considered. Possible damage to either one is cause for project changes or cancellation. Cumulative effects on soil and water also must be evaluated before a project begins
- Budgets and staffing are being increased to ensure soil and water protection on these three National Forests, throughout the Rocky Mountain Region, and across the nation
- The "Monitoring and Evaluation" section (Chapter IV, Final Amendment) specifies further action to protect water and soil. Ground-disturbing activities that could impact these resources must be checked and evaluated -- especially in wetland areas
- The same chapter also requires checking of water yield, soil productivity, wetlands conditions, and sediment run-off. All monitoring and evaluation under this chapter must lead to corrective action when harm to soils and water is detected

The area surrounding Silver Jack Reservoir has been withdrawn from timber production



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
999 18th STREET - SUITE 500
DENVER, COLORADO 80202-2405

ew

Ref: 8WM-EAB

OCT 6 - 1989

Mr. R.E. Greffenius, Forest Supervisor
Grand Mesa, Uncompahgre,
and Gunnison National Forests
2250 Highway 50
Delta, Colorado 81416

Dear Mr. Greffenius:

In accordance with our responsibilities under the National Environmental Policy Act (NEPA), and Section 309 of the Clean Air Act, Region VIII of the Environmental Protection Agency (EPA) has completed its review of the Draft Supplemental Environmental Impact Statement (DSEIS) for Grand Mesa, Uncompahgre and Gunnison National Forests, and the proposed amendment to the Land and Resources Management Plan (LRMP) for the same forests.

This document was generated in response to a number of serious concerns and objections elicited by the Final Environmental Impact Statement (FEIS), and in order to address a number of recent wood-product market changes which limit the utility of the FEIS as a planning document. The Forest Service (Service) has accomplished a formidable task in addressing those concerns and in adjusting this document to incorporate current information. The Supplement appears to be consistent with the goals, priorities and responsibilities of the Forest Service, and all of the alternatives presented are well considered and comprehensive.

The EPA does have some reservations about this document. In general, these documents need to reflect greater consideration of the impacts which might occur to the forest under various climate change scenarios. FMPs and related documents should include an identification of the areas of forest management and use which are most likely to be noticeably or critically impacted by environmental changes. How would Plans be adjusted to react to these changes? How does the Forest Service plan to monitor forest impacts, and how will actions be coordinated and information made available to those responsible for forest management? Are current forest managements mechanisms adequate to meet these challenges?

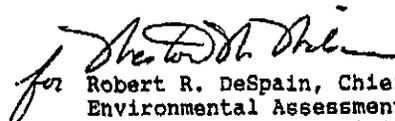
Secondly, there are issues related to specific aspects of this document, which requires Forest Service consideration. Water related issues need to be developed more fully in the light of environmental change. Is it reasonable to conceptualize run-off associated with current management plans as water "yield"? The Forest Service needs to address water needs by the forest. What are the minimum water requirements for sound forest growth now, with reduced precipitation and other environmental variations?

EPA Region VIII rates these documents EC-1. This rating reflects environmental concerns relating to actions proposed in these documents, and that more information and perhaps changes in basic policies and implementation plans need to be considered for these concerns to be adequately addressed. While the EPA feels strongly about the issues which we have raised in this review, we feel that a more severe rating is not justified for this document which is limited in scope. We have raised them out of a sense of concern that the plans and analyses which land and forest resource agencies undertake incorporate the issue which we have raised. Detailed comments follow.

The EPA commends and supports the Forest Service in its stewardship of our National Forests. Aside from raising particular questions concerning the document currently under review, the EPA is interested to know what plans the Service has to meet its already complex responsibilities during this period of growing environmental change, and whether some of that thinking is reflected in this Plan.

If the Forest Service has any question regarding this review, please feel free to contact either myself, or Gene Kersey, Project Review Officer, at commercial 303-294-7117, or FTS 564-7117.

Sincerely;


for Robert R. DeSpain, Chief
Environmental Assessment Branch
Water Management Division

VI-75

COMMENTS

At the recent Council on Environmental Quality (CEQ) NEPA conference in Washington, the CEQ identified three key areas it would like to see Federal agencies address in the NEPA process.

These were:

- 1) activities which may contribute to or mitigate the impacts of the dynamics driving Global Climate Change;
- 2) biodiversity; and
- 3) cumulative environmental impacts

These are issues which EPA Region VIII has begun to address within its NEPA review responsibilities. These are areas of particular relevance in reviewing the evaluation and planning activities of Federal land management agencies. The Forest Service being one of these key Federal agencies, these concerns need to be more thoroughly addressed in this document, or where addressed, expanded and more clearly focused.

The documents produced for this project are already very complex, reflecting an equally complex task. The EPA is keenly aware that it would be counter-productive for NEPA analyses to become so comprehensive, global and, consequently, expensive and time consuming in nature that they become prohibitive to conduct. This is not our desire.

However, our Government is encouraging other governments and industries to accept the responsibility for and cost of implementing better pollution control technologies and to adopt policies and programs to reduce insults to the environment to help preserve the health of the world's biosphere. At a time when we are encouraging policies aimed at preserving the world's rainforest which continues to cleanse our common atmosphere of pollutants some of which this country is responsible for producing, we need to reflect the same awareness and concern for the preservation of our own forest resource.

To this end, the EPA urges the Forest Service to consider not only the cumulative environmental impacts which may be associated with policies adopted within a particular Forest Management Plan (FMP) or LRMP, but to consider the aggregate and cumulative environmental impacts of individual forest plans and policies as they together form our overall national forest policy.

The general questions raised here reflect the desire of the EPA to better understand the current thinking of the Forest Service in a number of areas, and to attempt to get a sense of the flexibility and power of the analytical tools which the Service is using in its planning process, as well as a better understanding of the process itself.

We support the Forest Service in its forest management and economic development efforts. A vigorous forest is better able to remove atmospheric CO₂, as well as to perform all of its other vital ecological functions. The harvesting of mature forest makes room for vigorous new tree and habitat growth. Maturing forests have a greater capacity to bind and therefore remove atmospheric carbon than does a mature forest. Of course, each forest has differing growth and environmental factors against which any broad policy objectives must be balanced. No one policy goal will apply or be obtainable in the same manner from one forest to another.

8-1 Has the Forest Service performed an analysis of the CO₂ absorption capacity of the this planning area? Is such an analysis being considered? This capacity will be diminished through various Plan activities. Does the Service know by how much? What is the expected rate of reforestation envisioned for areas being harvested in this plan, and when will the lost capacity be recovered?

The Forest Service needs to address impacts associated with scenarios embracing but not limited to variations in precipitation, including increased amounts occurring over a shorter period of time, increased average temperature, changes in types and quality of precipitation, etc..

8-2 Climate change, however it manifests, will place the forest, as well as other ecosystems, under stress. Will the parameters identified as acceptable using analysis of the historical record be adequate to support the well-being of the forest under conditions likely to prevail under future scenarios? How will/has the Forest Service determine this?

While the specter of Global Climate Change is in itself reason for concern, it is the projected rate of that change and the occurrence of associated biological stresses which cause some alarm. Is this an area of concern to the Forest Service? How will the Service respond under its current Plans?

8-1 The Forest has not conducted and does not anticipate conducting a CO₂ absorption capacity analysis of the planning area. The Forest is required to reforest all timber sales five years after final harvest, and makes every effort to do so. Stands which are not capable of being reforested within five years are not harvested. The wood harvested goes into homes and other construction projects where the carbon in the wood remains locked up. The regenerated stands will absorb CO₂ at a greater rate than the original stand, as thrifty young stands fix carbon at a faster rate than do mature stands which have passed CMAI (Culmination of Mean Annual Increment - the age at which the average growth rate of a stand starts to decline). Ninety-Five percent of CMAI is the minimum age at which timber stands will be harvested.

8-2 Current stands of timber on the Forest have sustained periodic droughts in the past and they still thrive. With global warming, we are talking about a long term change over 10 to 20 years. Forest Plans are reviewed every five years. Currently reforestation is not a problem on the Forest, and therefore no action needs to be taken at this time. The effect of a long term decrease in rainfall from global warming would be a significant decrease in reforestation success which would be identified in the five year Forest Plan review. If the Forest cannot assure reforestation within five years of final harvest, it must cease timber harvesting activities.

8-3 Increases in water yield due to timber harvesting will be small, approximately 0.8%. Increases of this magnitude should have no impact on stream channels and irrigation ditches. The paper, "Marginal Economic Value of Runoff From the Grand Mesa, Uncompahgre, and Gunnison National Forests" by Brown, Harding and Payton provides a thorough discussion of monetary values of runoff increases from forest management on the Forest.

Unless compaction occurs as a result of timber harvesting, any decrease in water retention capacity will only last until vegetative cover is restored on the site to decrease evaporation from the soil surface. Increase in water yield occurs as a result of decreased evapo-transpiration from trees following timber harvest. Infiltration on harvest sites is maintained since tree roots that have penetrated the soil are left on harvested sites. These residual roots provide a path for water to follow into the soil (infiltration) and also provide a path for water to follow to deeper depths in the soil (percolation). As new trees are restored on the site (regeneration) new root systems are established to replace deteriorating residual roots.

Recovery or re-growth was addressed by decreasing water yield increases over time. The water yield increase coefficient was decreased for each succeeding decade after harvest (Water Yield Documentation, Meshew).

Monitoring and evaluation of soil productivity is specified in the Monitoring and Evaluation Plan in Table IV-II, Effectiveness Monitoring, of the proposed Forest Plan

As stated in paragraph two of this section (8-3), barring compaction, soil moisture retention capacity is not expected to change except on roads, landings and skid trails

8-4. There is currently no data supporting the theory that a "spring acid run off pulse" occurs on this Forest. Wilderness lake pH sampling is currently being conducted in the West Elk Wilderness

8-2 The Service has a number of guidelines which would conceivably be useful in responding in this general area. For instance, a timber parcel is considered unsuitable if there is no reasonable likelihood of being able to support reforestation. Would this guideline apply in the event that natural conditions in the forest changed such that a previously acceptable parcel was deemed to fall into this category?

The EPA needs to see a more thorough discussion of the dynamics and consequences to the forest of the water diversion from the forest into increased surface stream flows which occurs as a result of LRMP alternatives. The Forest Service accounts for these increases as water "produced", and a market value benefit calculated. A decreased forest water retention capacity resulting in increased water run-off into streams seems a mixed blessing.

8-3 Aside from increased siltation rates due to increased soil erosion, nutrients are also being removed from the forest ecosystem and transported elsewhere. As new vegetative growth establishes itself in previously cleared areas, the lost water retention capacity would be recovered, and the water reclaimed by the forest ecosystem. Although appearing to be a temporary situation, the nutrients are not recovered. Whether this water is bound up in or by new growth, cycled into ground water or both, increased surface flows for most management areas would seem short-lived.

While the Forest Service has supplied the estimated run-off associated with the various Plan options, there is no clear analysis of what, if anything, the removal of this resource from the forest cycle might mean to the forest. While these dynamics occur naturally in the ecosystem, what makes a certain amount of soil loss or loss of moisture retention capacity "acceptable" to that system? What factors influencing this will likely change over time, and are these factors included in those which the Forest Service will monitor in tracking the effects of its management plans?

8-4 If the forest begins to receive more acidic precipitation, a lower rate of moisture retention might be better for tree growth. However, this would tend to exacerbate any "spring acid run-off pulse", a phenomenon occurring in some eastern North American forests. This would load surface streams with a sudden acidic run-off detrimental to many aquatic species, while additionally contributing to the likelihood of leaching, and the lowering of water quality.

This is not to say that we assume all LRMP alternatives related consequences to have negative impacts upon the forest, or upon the larger ecosystem. The benefits to the forest associated with the proposed Plan and its amendment are here well documented. There are, however, a number of possible environmental scenarios which could shape the nature the impacts of actions taken under the LRMP, quite possibly beyond or in opposition to those intended, and these need to be anticipated and analyzed.

LETTER # 9

US Soil Conservation Service, Gunnison
4/15/89

LETTER 9 RESPONSE

UNITED STATES
DEPARTMENT OF
AGRICULTURE

Soil
Conservation
Service

216 N. Colorado
Gunnison, CO 81230
303-641-0494

9-1

The proposed Plan calls for managing up to 1,370 acres per year of aspen through a commercial timber sale program. It is our view that this alternative best meets all the issues and concerns.

September 13, 1989

R.E. Greffenius, Forest Supervisor
Gunnison National Forest
2250 Highway 50
Delta, CO 81416

Dear Mr. Greffenius,

I support your Amendment to the Forest Plan. Like any agency or company, US Forest Service personnel were hired to do their job and your job is to manage US Forest Service lands in a way that they will be sustained for future generations to utilize and enjoy.

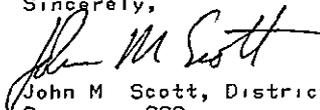
I have been keeping up with the criticism and the support you have been receiving in the local paper and feel like much of the criticism is coming from shortsighted people with no education in the management of natural resources. It is too bad that the critics seem to outnumber the supporters in print, I just hope that does not keep you from making the right decision for the natural resources.

9-1 In 50 years children of the parents that are now criticizing this amendment will be wondering why the aspen were not managed so that they could enjoy their beauty.

The other big consideration is the benefit to wildlife, mainly deer and elk. The elk numbers are getting awfully high and by creating more habitat for the elk some of the conflicts that are occurring with livestock grazing will be relieved.

It has got to be hard to be in your position to try and do what you believe is best for the environment and receive so much public criticism. I do not envy your position with this upcoming decision, I do feel you would not have gotten to your present position without being qualified to make these decisions and trust you will make the right decision.

Sincerely,



John M. Scott, District Conservationist
Gunnison SCS

Colorado, State of
9/26/89

STATE OF COLORADO

EXECUTIVE CHAMBERS
136 State Capitol
Denver, Colorado 80203 1792
Phone (303) 866 2471Roy Romer
Governor

September 25, 1989

Richard Greffenius
Forest Supervisor
Grand Mesa, Uncompahgre
and Gunnison National Forests
2250 Highway 50
Delta, CO 81416

Dear Mr. Greffenius:

Colorado appreciates the opportunity to comment on the proposed "Amendment of the Land and Resources Management Plan for the Grand Mesa, Uncompahgre and Gunnison (GMUG) National Forests." Included with this letter is a compromise which I believe balances the timber and recreational interests of these forests, both of which are important to the economy of western Colorado.

The issue facing all of the affected parties in the debate is whether they support a timber level that maintains current employment or a level that allows the industry to expand. Colorado believes it is essential to discuss constraints which terrain, ecological balance, economics and other uses of the forests may place on timbering levels. We believe the current level of timber-related jobs can be maintained without threatening existing recreation and tourism jobs which depend on the national forests. We are proposing a timbering level of 2,000 acres per year. We believe that the current level of timber-related jobs is consistent with the strong recreation and tourist economy. However, a sizable expansion of the timber harvest industry, such as that in the preferred alternative, could result in significant conflicts.

10-1

Colorado has been involved with the GMUG forest issues for several years. In 1983, the state appealed the forest plan because of apparent conflicts between lodging and recreational uses. In 1985, we agreed to settle that appeal based on the establishment of the "Guidelines for Managing Aspen," developed by the state and other parties interested in the management of national forests. In 1987, at the request of local governments, the state clarified its principles related to timber management in light of the reconsideration of the GMUG Forest Plan. In 1988, the state was a principal player in the Keystone agreement designed to resolve many of the conflicts in that plan.

Central to those discussions was the state's conviction that wood fiber production should not be the primary objective of aspen management. Forest management plans must balance the recreational, tourism and timbering uses of the forests and must reflect the concept of multiple use of the forests.

10-2

VI-81

10-1

We agree. The balance between timber oriented jobs and recreation and tourism jobs is a difficult one to properly achieve, and we believe that the conflicts now anticipated to occur with alternative 1E would be detrimental to the overall economy and the management of the natural resources on the Forest. Alternative 1G calls for 21,000 MBF in the conifer sawtimber program which equals the historic harvest levels and would therefore maintain the existing jobs in that portion of the industry. The aspen program in 1G calls for 1,370 acres per year which we believe is a reasonable balance between fiber production for existing industry and the concerns expressed by the majority of the commenting public.

10-2

The governing regulations that we operate under state that the timber resources on lands considered suited for timber production can and should be managed for wood fiber production. Aspen trees offer a wood fiber base to the American public and should be managed for fiber production along with other management objectives such as scenic qualities, forage and cover for wildlife, and recreational opportunities. We believe the 1,370 acre proposal is a reasonable balance.

10-3

We concur. Further analysis between the Draft and Final indicates that Alternative 1E timber outputs cannot be achieved on the lands selected as suited for timber production without violating the standards and guidelines. The Forest was able to better understand the effects of implementing the standards and guidelines during the draft comment period through field layout of proposed timber sales. What we learned helped us to better understand and interpret those standards and guidelines into long term timber management planning efforts, disclosed in the Final SEIS.

10-4

The Aspen Management Guidelines will be superseded by individual Forest Plans. The Aspen Guidelines were not developed in accordance with NEPA, and are becoming out-of-date as NEPA and Forest Plan implementation becomes more refined. The GMUG intends to allow for production of aspen wood fiber in accordance with NFMA planning regulations on lands suited for timber production. The "20 year" goal of partial restoration is not found in the Aspen Guidelines. The Forest Service uses the Recreation Opportunity Spectrum (ROS), Visual Quality Objective (VQO), and Landscape Management Systems which will govern the objectives for visual resource management.

10-5

The Counties and all affected and interested parties will have the opportunity to review and comment on timber sales and other projects through the NEPA process. While concurrence is always desirable, the Forest Service has legal responsibility for and will make the final decisions for actions on National Forest System lands.

10-6

Water quality monitoring will be incorporated and carried out as part of the Forest Plan Monitoring Plan.

10-7

The Forest will continue to inventory forest resources in accordance with Service-wide and Regional standards to the extent that funding is available.

Under the previous forest plan, up to 1,008 acres of aspen were to be made available for timbering on an annual basis. The timbering industry, including Louisiana-Pacific Corporation, indicated that approximately 3,000 acres of aspen from public lands would be required annually to sustain their current processing efforts. During the Keystone process in 1988, all parties agreed that federal forest lands should not provide 100 percent of the industry's need because of the implications to the other multiple uses of the forest and visual quality. The participants in that process hoped that the 50 percent increase in aspen prices would make more private timber available. As a result, the parties agreed to an interim level of 2,500 acres in 1989 and 1990. The intent was to determine if a higher timber cut would be compatible with the other uses of the forests.

10-3 Several recent circumstances suggest that future timber sale levels may not be as high as envisioned in the current interim supply agreement. First, the standards and guidelines for timber harvest that have been developed have resulted in lower timber sale volumes. Second, the industry and the forest service differ on what constitutes marketable and commercial timber. Finally, the region is split on the amount of timber necessary to support those counties dependant upon the timber industry while not harming those counties which are recreation-based. If indicative of future trends, these circumstances could reduce the long-term timber supply levels.

The state recognizes the value of the timber industry in Region 10. The timber processing, transport and removal industries have a payroll of \$14.3 million, accounting for approximately 950 jobs, or 4.1 percent of the workforce. By comparison, tourism totals nearly \$15 million in payroll, nearly 1,800 jobs and 7 percent of the workforce. Clearly, we cannot ignore the value and size of the tourist industry in this region, in identifying those areas suitable for timber management.

For these reasons, the state proposes an allowable sale quantity of 2,000 acres per year under a rather stringent set of environmental considerations. This proposal could double the amount of aspen available under the previous plan, thus supplying roughly one-half to two-thirds of Louisiana-Pacific's needs from public lands.

The state supports this level of harvest with the following conditions:

10-4 1 Inclusion of all the principles of the 1995 Aspen Management Guidelines, including a goal of partial restoration of the visual quality of harvested areas within 20 years;

- 10-5** 2. Consultation and concurrence with the affected counties before final areas are designated for timber cuts to protect visual, recreational and real estate values.
- 10-6** 3 Establishment of a water quality monitoring program by memorandum of agreement with the state health department to evaluate pre- and post-timbering conditions;
- 10-7** 4. Development of an inventory over time of baseline data, including water quality, old growth, understory conditions and tree species diversity, for forest areas affected by timbering,
- 10-8** 5 Extreme limitations on timbering on Mount Sneffels, Kebler Pass and Taylor Park, exclusion of timbering in the Tabeguache Research Natural Area and other special interest or proposed research/special interest areas; and possible prescription changes to limit timbering in areas such as Stevens Gulch,
- 10-9** 6. Establishment of baseline areas for research and monitoring to identify the direct and indirect effects of timbering in the forest and provide valuable information to on-the-ground managers,
- 10-10** 7. Suitability analysis to focus timber cuts in those areas that would not affect recreation and reasonable visual quality, while also identifying those areas where cuts will add to the visual quality and recreation potential;
- 10-11** 8. Timely obligation of roads and identification of roadless areas that would not be developed;
- 10-12** 9. Establishment of a cooperative agreement with a local university, such as Western State College, to assist in the monitoring of forest conditions and the effects of timber cuts;
- 10-13** 10. An agreement between the timber industry and the counties to share the financial costs of the impacts of the timber-related traffic on county roads;
- 10-14** 11. Consideration of the impacts of specific timber cuts on existing agricultural activities; and
- 10-15** 12. Review of new and existing access points to state highways for possible safety regulation.
- 10-8** In the proposed Plan lands have been designated "not suited for timber production" in the Mount Sneffels, Kebler Pass, Taylor Park, Tabeguache, and other identified scenic areas as displayed on the maps attached to the Plan. Some timber sales are planned in the Taylor Park area. Timber management activities will proceed in the Stevens Gulch area in accordance with the approved EIS and subsequent approvals of it by the Regional Forester and Chief. In order to achieve a 2,000 acre annual aspen program, some of these sensitive areas would have to be considered suited and would have to be scheduled for entry in the first decade in order that standards and guidelines are not exceeded on other areas.
- 10-9** The Research Needs section of the Plan is being revised and updated based on public comment and internal re-assessment of the need for scientific information to support Forest Plan implementation.
- 10-10** The extensive mapping effort between draft and final clearly identified these areas, they are no longer considered as suited lands in the proposed Plan.
- 10-11** Management Area direction and the standards and guidelines in the Plan address these issues.
- Roadless areas and their relationship to the timber sales scheduled for the next ten years are shown in the accompanying Roadless Area map.
- 10-12** Needs for such cooperative arrangements will be considered in planning and execution of the Forest Monitoring Plan.
- 10-13** This is outside the jurisdiction of the Forest Service. We have, and will continue to support communications and assistance with transportation system development through the Forest Highway program and individual timber sale planning procedures.
- 10-14.** Project level environmental analysis and identification of impacts is completed during the NEPA review process.
- 10-15.** These problems would be considered in the project level NEPA analysis for timber sales and related transportation facilities.
- 10-16** This is outside the control of the Forest Service.
- 10-17** Implementation of the Forest Plan is a function of funding levels appropriated by Congress.
- 10-18** This will be a part of our normal monitoring and timber management activities on the Forest. The timber output levels in the proposed Plan may not meet the demands of the wood fiber industry, especially that of Louisiana-Pacific's waterwood plant. The levels meet demand to the extent that they are in concert with all other multiple use goals and objectives of National Forest management.
- 10-19** None of the alternatives now propose an OAC component.

September 25, 1989
Page Four

- Paramount to the success of this proposal, or any alternative, are several additional conditions. First, the GMUG forests must be fully funded by Congress to implement the monitoring and other conditions proposed in the plan and in this alternative. Second, the forest service must be prepared to deliver on the final harvest level. Third, the performance of the plan should be monitored and evaluated periodically to determine if the aspen level is adequate to meet demand and to allow for adjustments in timbering levels where appropriate. Finally, the opportunity available component should not be used as a device to avoid public review or comment on an increased timber level
- 10-16
10-17
10-18
10-19

The amount of timbering that the forest reasonably can support is based on technical, economic and political considerations. A tripling of the timber harvests in these forests, as proposed in the preferred alternative, is unrealistic. It creates the expectation that this amount of timber could actually be made available through the forest service planning process, despite recent experience which suggests this is not possible. It also ignores the effects that a substantial growth in timbering in these areas might have on other important uses of the forest. Finally, it assumes that the higher timbering level would not be appealed by other interest groups.

We believe that a level of 2,000 acres, with the possibility for change in the future, based on economic and environmental evaluations, is a more reasonable approach.

The specific comments of the Colorado departments of health and highways, the Colorado Natural Areas Program, and formal comments of the Colorado Department of Natural Resources are enclosed.

We thank the Delta office for its interest in our concerns with this issue. In particular, we appreciate the information and cooperation of Nick Greer and Dennis Hovel. We continue to be available to discuss these issues in the future.

Sincerely,



Roy Romer
Governor

RR:wb

Enclosures

DIVISION OF WILDLIFE

AN EQUAL OPPORTUNITY EMPLOYER

Perry D. Olson, Director
6060 Broadway
Denver, Colorado 80216
Telephone (303) 297-1192



2300 S. Townsend
Montrose, CO 81401
September 26, 1989

Mr. R.E. Greffenus, Forest Supervisor
U.S. Forest Service
2250 Highway 50
Delta, CO 81416

Dear Mr. Greffenus:

The Division of Wildlife has reviewed the GMUG National Forest Draft Supplemental E.I.S. and Amendment of the Land and Resource Management Plan. We offer the following comments for consideration in developing the final decision document.

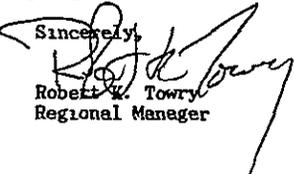
- A. The amendment is very well written and answers many wildlife issues not addressed in the Forest Plan. The sections on wildlife monitoring are particularly outstanding. We are pleased to see the emphasis placed on wildlife and environmental monitoring.
- 11-1 B. We are concerned about the transportation system analysis. New roads constructed for timber harvest continue to be the Division's number one concern on most sales. Past experience has shown that road management and closure enforcement on public lands is difficult. The amendment does not adequately address a long-term road management plan. This is critical before consideration or additional timber harvest occurs. It is apparent that the timber program will drive many of the other multiple-use programs simply because of access. This is particularly true on the Uncompahgre Plateau, where a multi-agency transportation plan is needed. Road management must be given high priority in the Final EIS.
- 11-2 C. The Forest Service's financial and manpower capabilities to design, mark, manage and monitor three times the current aspen harvest appears weak. While strongly supporting the monitoring plan, from the experience based on current sales, current staffing, and funding, it is not apparent that the preferred alternative can be effectively implemented. The Antelope Timber Sale near Gunnison was to be designed, managed and monitored as "The Prototype" timber sale in Colorado for Managing Forested Lands for Wildlife. To date there has been little coordination or monitoring since the sale was let. It will be difficult to manage expanded future sales such as Antelope Creek. Making it more difficult is the fact that there have been little wildlife K-V funds available to rehabilitate or enhance the timber harvests on the GMUG forests.
- 11-3 D. It appears questionable whether allowable sale quantity levels can be met with sustained yields or if young trees will be harvested to meet target goals.
- 11-4 E. It is recommended that aspen and conifer harvest management coincide to minimize human activity time and reduce wildlife impacts. This option needs further analysis in the Final EIS.

- 11-1 (Please see proposed Forest Plan, pg III-76-78 for transportation system management general direction, standards, and guidelines)
- All newly-constructed roads will be closed to public motorized use unless documented analysis supports keeping the road open. Conversely, all existing roads will be kept open to public motorized use unless there are documented reasons for closing the roads. During timber harvesting operations, existing open road mileage will be reduced whenever possible.
- All roads not needed for multi-resource management will be obliterated at the earliest opportunity. The Forest has recorded the miles of road obliterated in the past. Existing roads to be obliterated in the future will be identified as part of the analysis required under the National Environmental Protection Act.
- 11-2 True, the Forest budget grows or shrinks each year according to Congress' priorities. Yearly, the Forest Service adjusts its level of operations as budgets shift. Although one annual budget may restrict timber sales to an 80 percent level, that restriction would have no effect on funds for monitoring. The money needed for monitoring and mitigating damage to vegetation, soil, and water is set aside -- regardless of reductions in overall budgets or timber sales.
- The budget increase, if any, will be greatly minimized by the reduction in aspen harvests scheduled in alternative 1G, the proposed Forest Plan. The degree of change is not calculable at this time.
- 11-3 Alternative 1G recommends an annual harvest of 37 MMBF -- substantially less than the GMUG National Forests can grow.
- Long-term sustained yield for this alternative is 61 million board feet per year that could be harvested from the forests each year.
- The Forest Plan will be revised within 10 years. At that time, these figures will be recalculated to develop a new annual program, one that will continue to ensure long-term sustained yield.
- 11-4 We concur with minimizing the number of disturbances in a given geographical area over time, see page III-42, General Direction 02 of the proposed Forest Plan.
- 11-5 Elk and deer movements and use patterns can be influenced by human activities. On the National Forests these effects can result from timber management activities or the amount of open roads available for motorized public use. At the project level, the Forest Service addresses management actions and off-site impacts which may occur -- and consults with your agency to look at alternative

- F. Many of the proposed sales are located on small strips of public lands adjacent to private lands or heavily used public lands. These areas need special wildlife consideration to prevent animal displacement, agricultural damage, and loss of wildlife habitat. Examples include proposed sales areas east and west of Cimarron Ridge and High Park and south of Mt. Sneffels.
- 11-5 G. Timberline areas are particularly important as summer range for big game species. We encourage special emphasis be placed on managing and buffering these areas which are proposed for harvest.
- H. Reclamation of disturbed areas should include using grasses, forbs, shrubs and trees in big game transitional and winter range areas. Maintenance and enhancement of vertical vegetative diversity is important for wildlife habitat.
- 11-6 I. Wildlife prescription areas such as Cow Creek, near Ridgway, should receive wildlife emphasis prior to any timber sale consideration. Many areas fall within this designation.
- J. The Dexter/Cutler Creek areas have received considerable attention due to the cooperative big game habitat projects accomplished during the past two years. We recommend this area be given a wildlife winter-range prescription.
- 11-7 K. Timing of timber harvests is important and should be coordinated with wildlife utilization and migration periods. Many areas, such as South Crystal Creek, near Crawford, should be harvested during winter months.
- 11-8 L. Many aspen forests are found in steep, highly unstable, erodable, and deep soil types. Development of roads into these areas could have adverse impacts on slumping, soil erosion, water quality, and the ability to stabilize and maintain vegetation while providing high water quality for fisheries. Areas need to be examined, such as the Dyer Creek, Kebler Pass and Muddy Creek drainages, very carefully in the Final EIS. Many of these are outstanding hunting and recreation areas which could be adversely impacted by road building.
- 11-9 M. Access to public lands in critical areas should be considered during road lay-out design on sale areas.
- 11-10 In conclusion, the Division recommends a scaled down harvest program over the preferred action. We are concerned that the Forest Service resources are not adequate to manage the preferred alternative. The adoption of a scaled down alternative will allow sound road and resource management while successfully meeting the standards and guidelines of U.S. Forest Service policy and following the procedures developed in Managing Forested Lands for Wildlife.

Thank you for the opportunity to review and comment on this document. Please call if you have any questions on these comments.

Sincerely,


Robert W. Towry
Regional Manager

cc: Clark
Goodman
Stone
Young

to look at alternative ways to minimize the impacts to private lands and assess the potential damages. This will continue. Further discussion of this issue is presented in Chapter IV of the Final SEIS. As for proposed sales areas in the Mt Sneffels area, the area has been removed from the suited land base and no sales are proposed in the next decade.

The National Forest Management Act requires that cut over areas must be reforested. Areas to be cut must be capable of being regenerated and must be so certified in site-specific documents required by the National Environmental Protection Act. Those documents also must describe the means the Forest Service will use to ensure regeneration. Those means must be the most effective procedures possible which may include re-seeding grasses, forbs, shrubs and trees in big game transitional and winter range areas.

11-6 Wildlife emphasis areas do receive wildlife emphasis prior to timber sale consideration. The intent of the Amendment is to leave intact the management emphasis allocation of the original 1983 Forest Plan, except to make corrections for several mapping errors. The Dexter/Cutler Creek areas were designated big game winter range in the 1983 Forest Plan and remain so.

11-7 Appropriate timing of timber sales will be considered during the project level analysis.

11-8 Refer to response in 11-1 for transportation system analysis information. Some timber harvesting is scheduled for the Muddy Creek and Dyer Creek areas and the Standards and Guidelines mentioned in 11-1 will be applied in these areas. The Kebler Pass drainage to the west of the Pass has been removed from the suited timber base so no harvesting will occur in this area.

11-9 Access is considered, refer to the transportation standards and guidelines beginning on page III-76 of the proposed Forest Plan.

11-10 The Forest developed a new alternative (1G) which is the proposed Forest Plan Alternative 1G has a harvest level which is about one-half as large as the harvest level as the preferred alternative in the DSEIS, alternative 1E.

LETTER # 12

COLORADO RIVER COMMISSION
OF NEVADA 9-1-89

LETTER 12 RESPONSE

BOB MILLER Acting Governor
ROBERT L. CROWELL, Chairman
JACK L. STONEHÖCKER Director

STATE OF NEVADA

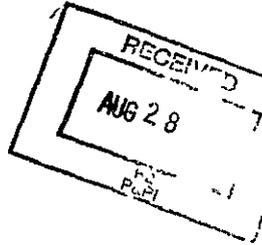


COLORADO RIVER COMMISSION
OF NEVADA

1515 E Tropicana, Suite 400
Las Vegas, Nevada 89158
(702) 496-7060

August 22, 1989

RICHARD SEGERBLOM Member
ROBERT C. BROADBENT Member
THOMAS A. COWARD Member
JOHN T. MORAN JR. Member



Mr. Gary E. Cargill
Regional Forester
11177 West Eighth Avenue
Post Office Box 25127
Lakewood, CO 80225-0127

Dear Mr. Cargill:

We appreciate the opportunity to review and comment on the Draft Supplemental Environmental Impact Statement (DSEIS) for the Proposed Amendment of the Land and Resource Management Plan, Grand Mesa, Uncompahgre and Gunnison National Forests.

12-1 Table IV-3 of the DSEIS indicates that alternative 1B has the potential to create the most additional water in the forest--35,566 acre-feet per year. Even though this quantity of water is less than two percent of the existing baseline yield of the forest, it is over ten percent of Nevada's Colorado River water allocation. The 35,566 acre-feet per year, along with additional water runoff from other forests, would significantly augment existing water supplies to help meet current allocations and accommodate increasing demands on this vital resource. Therefore, we strongly encourage the selection of alternative 1B which would maximize water yield from timber harvesting.

12-2 Table B-IV-4 on page B-52 shows the values for Upper and Lower Colorado Basin consumptive use water to be \$0.01/acre-foot and \$1.15/acre-foot, respectively. It appears from these low values that no consideration was given to the cost of municipal and industrial (M&I) water. Consideration of M&I costs would increase the values for consumptive use water, and thereby increase the potential for maximizing the production of water on forest land. It is our hope that increased water production from forest land in the Colorado River Basin will postpone future water shortages that will inevitably occur within the Colorado River Basin due to increasing demands.

12-1

Due to public concerns and a limited sustainable timber resource, the Forest developed alternative 1G as the proposed Forest Plan. Alternative 1G has as estimated annual first decade incremental (additional) water yield of 11,100 thousand acre feet as a result of timber management activities.

12-2.

Water values can not justify timber sales, nor are commercial timber sales used to augment waterflows. Water yield increases were considered incidental to the objectives of timber harvests (See III-93, DSEIS). However, it is more precise to claim the economic benefits when and where they occur.

Extensive Forest and Range Experiment Station research has shown that harvesting timber in small openings (less than five times as wide as the height of surrounding trees) increases water yield. The size of harvested areas is critical because it is possible to decrease water yield by creating large openings. Recent research (Troendle 1967) also shows water yield increases for selective (partial) cutting.

Water yield increases do not directly add money to the Federal Treasury but do produce benefits for downstream users. Some of the water yield increases that occur because of timber harvests are stored in downstream reservoirs until needed. These provide power generation, recreation, irrigation, or desalinization. It is important to note that the Forest Service claims no water rights for increased water flows.

Mr. Gary E. Cargill
Regional Forester

August 22, 1989
Page 2

12-2

In Nevada, Colorado River water is used solely for M&I purposes. In the near future Nevada's demand for Colorado River water will exceed its apportionment and we ultimately will be forced to find another supply. Potential supply sources which our agency investigated have been estimated at a minimum cost of \$1,000/acre-foot. Table B-IV-4 indicates that the total forest water benefit value in 1982 dollars is \$34.14/acre-foot. This value is substantially understated when compared with the cost of new water resource development for M&I uses.

We recommend that if the total forest water benefit value does not include M&I water costs, the Forest Service should consider these costs in its determination of the total forest water benefit value.

Sincerely,


Jack L. Stonehocker
Director

Delta Co., Bd of Commissioners
9/27/89

BOARD OF COMMISSIONERS
DELTA COUNTY, COLORADO

District No 1 J V "Jim" Coan
District No 2, Robert "Bob" Watson 13-1
District No 3, Ted H Hayden

Due to public concerns and a limited sustainable timber resource, the Forest developed alternative 1G as the proposed Forest Plan. Alternative 1G has an estimated annual first decade aspen harvest of 1,370 acres a year. Louisiana-Pacific may choose to close its Olathe plant with the resulting loss of 300-400 local jobs and \$7.5 million dollars (current dollars) in salaries.

September 27, 1989

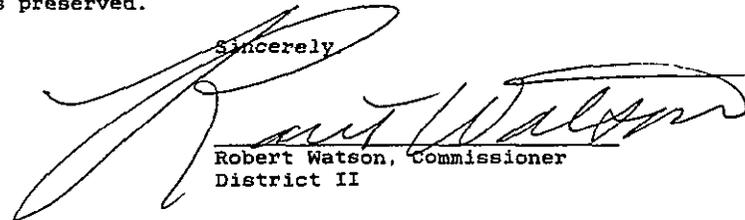
Richard Greffenius
U S Forest Service
2250 Highway 50
Delta, CO 81416

Dear Mr Greffenius:

Thank you for taking us on a "tour" to see the lumbering on California Mesa. That part of the mesa I had never seen before and I really appreciated the trip.

13-1 Please forgive me for not putting in my input regarding the lumbering plan sooner, but hopefully you know that I'm against giving Louisiana Pacific totally what they want. I feel they must take the "bad" with the "good". I myself want to preserve the forest for their beauty and effect they have on our visitors to Colorado.

I do not envy your job and I know you will see to it that our Colorado beauty is preserved.

Sincerely

Robert Watson, Commissioner
District II

RW gb

Gunnison County, Colorado

Board of
COUNTY COMMISSIONERS

303 • 641-0248
GUNNISON COLORADO 81230

September 21, 1989

Mr. R.E. Greffenius, Supervisor
Grand Mesa, Uncompahgre and Gunnison
National Forests
2250 Highway 50
Delta, Colorado 81416

Dear Mr. Greffenius:

Enclosed herein are the official comments from the Gunnison County Board of Commissioners regarding the Draft Supplemental Environmental Impact Statement prepared for the Proposed Amendment of the Land and Resource Plan for the Grand Mesa, Uncompahgre and Gunnison National Forests.

The comments reflect extensive public input received by the Board of County Commissioners. The analysis of the DSEIS which was prepared by the Gunnison County Planning Commission was reviewed and approved by the Board and should be considered as part of the County's submittal.

In submitting our comments, we add that the timbering plan has created more public comment to the Board of Commissioners than any other issue in recent history.

It is obvious that the concerns of the community are broadly based and serious. We are hopeful that you decide to explore other alternatives and we pledge our support in identifying a plan that more fairly represents the community's interests.

Sincerely,

GUNNISON COUNTY BOARD OF COMMISSIONERS



David Leinsdorf
Chairman

Fred Field
Vice Chairman

Mario Petri
Commissioner

/jbg

VI-90



Gunnison County, Colorado

Board of
COUNTY COMMISSIONERS

303 • 641-0248
GUNNISON COLORADO 81230

September 21, 1989

Mr. R.E. Greffenius, Supervisor
Grand Mesa, Uncompahgre and Gunnison
National Forests
2250 Highway 50
Delta, Colorado 81416

Dear Mr. Greffenius:

The following comments are submitted by the Gunnison County Board of Commissioners as its official response to the proposed Amendment of the Land and Resources Management Plan for the Grand Mesa, Uncompahgre and Gunnison National Forests. Because almost 80% of the land in Gunnison County is federally owned, most of it managed by the Forest Service, federal land management policies and decisions significantly impact our County and its citizens.

The Gunnison County Commission supports the multiple use concept to federal land management. Timbering is an important element in the national and regional economy and has played an important role in the historic and present day economy of Gunnison County. We support resource development programs that are prudent and attempt to balance resource development in order to achieve economic diversity and environmental sensitivity. We support a continuation of the existing level of timbering in Gunnison County.

- 14-1** With this understood, the Gunnison County Board of Commissioners must oppose the proposed Amendment's preferred alternative for allowable sales quantity (ASQ) on the basis that it does not further the objective of prudent and balanced resource development. The preferred alternative is clearly based on the resource demands of a single company without regard to impacts on other important economies throughout the region.

In public meetings with USFS representatives, we are told that the areas identified in the DSEIS indicate sites that are proposed as suitable for harvest and that the issues of concern to Gunnison County are best addressed at the individual sale level. We are assured that the areas proposed as suitable do not represent the actual areas that will be harvested, but are only a

VI-91

- 14-1 Due to public concerns and a limited sustainable timber resource, the Forest developed alternative 1G as the proposed Forest Plan. Alternative 1G has an estimated annual first decade aspen harvest of 1,370 acres a year.
- 14-2 The Forest is limited to harvesting, at a maximum level, the ASQ levels shown on page III-7 of the proposed Plan. Nothing in this Plan addresses or necessarily guides what will happen in decade two, as a Forest Plan revision is necessary to provide direction for that time period.
- 14-3 Page II-38 of the DSEIS states timber jobs make up approximately 1 1% of local employment. The State of Colorado (See 9/25/89 letter from Governor Roy Romer page 2) indicates the timber industry and the tourism industry in Colorado Region 10 are roughly equal in importance when compared by the salaries each industry provides, although the timber industry provides about one-half the jobs (higher salaries, fewer workers) the tourism industry provides. Neither industry is unimportant. The Forest has been harvesting timber for over 40 years, yet the local tourism industry has thrived during that period, which seems to indicate the two industries would continue to coexist even at the levels higher than alternative 1G.
- Management of the National Forests under the multiple-use policy established by Congress emphasizes that the Forests are established and administered for outdoor recreation, range, timber, watershed, and wildlife and fish purposes. The policy goes on to say that due consideration shall be given to the relative values of the various resources in particular areas. Not every acre of land can or should be managed to produce a full range of resource goods and services. By the same token, it is a rare instance when it is appropriate to manage extensive areas of Forest to the exclusion of a resource.
- The process of Forest Planning, Plan Amendment, Plan Revision and the public involvement that must accompany these activities has been put in place so that we can more accurately establish those levels of resource management emphasis. The process is one of change and the decisions for change seldom will be perfect solutions. At best the changes will be adjustments which bring us closer to the social and economic values of the day while still meeting the legal mandates which direct Forest Service responsibilities.
- 14-4 The proposed Forest Plan will not change the permitted livestock levels identified in the 1983 Forest Plan. Range demand estimates in the DSEIS and Draft Plan Amendment were based on actual use, versus what people say they would do. (See also the response to Issue #3)
- 14-5 The Forest has been harvesting timber from the Taylor Park area for over 40 years and has been doing and will continue to do an excellent job in maintain-

gross identification of sites within which smaller sales will be offered.

- 14-2** However, from the County's standpoint, we must address our comments based on a worst case scenario, i.e. everything identified as suitable will, over two decades, be harvested. This approach, though not probable from the USFS point of view, must be taken in that the DSEIS does not address plans that would indicate management practices, demand scenarios or specific data that allow us to comment from any other point of view.

Gunnison County's concerns lie with the quantity of cuts proposed, the location of the areas identified as suitable for harvest and the duration of the timbering activity. We are extremely concerned that these factors will have a serious impact on Gunnison's recreation, tourism and ranching economies and will result in direct costs to County taxpayers resulting from damage that will occur on County and Forest Service roads currently maintained by Gunnison County under Schedule A agreements.

- 14-3** The DSEIS neither fairly nor adequately evaluates the economic impact of the various proposals. It emphasizes the economic importance of the Louisiana Pacific plant to the Montrose/Delta area, but does not address the importance of recreation, tourism, ranching etc. throughout the forest region. The report does not state that, throughout the region, timbering and timber product processing account for less than 2% of total employment. In Gunnison County, .5% of the total work force is involved in timbering. On the other hand, the Region 10 Overall Economic Development Plan recognizes tourism as a \$31 million dollar industry in Gunnison County. This does not include the ski industry. In the six county region, tourism accounts for \$73.3 million and nearly 2,000 jobs. Without exception, every county in the Forest region looks to tourism and recreation as the critical element in future economic development plans.

- 14-4** The DSEIS underestimates the future demand for grazing and forage on the three forests. The Forest Service projects a decrease in AUM demand; however, the local livestock growers document increases in livestock production since 1983. The current Forest Service position contrasts sharply with the 1983 final EIS which projects that demand for grazing will remain high.

Ranching continues to be a very important part of the Gunnison County economy. In addition to its primary economic benefit, it also directly enhances recreation and tourism. Any action that hurts ranching will ultimately hurt the entire county.

The areas proposed for timbering during the next two decades will

14-5 occur in the most scenic and highly utilized recreation areas in Gunnison County. These include the Taylor Reservoir area where the entire backdrop of the valley is proposed as suitable for harvesting; Kebler Pass, where large aspen cuts are proposed in an area that is an important scenic route into the Crested Butte area and is a popular recreation area in itself; and Silver Jack Reservoir, which is one of the most popular camping and summer home sites in the County.

14-6 The proposal does not address in detail the impacts of long term harvesting of timber on tourism and recreation in these and other areas. It is unclear what the visual impacts will be during and after the cut periods. In addition, noise pollution, transportation conflicts, water quality and big game impacts are not adequately addressed.

14-7 The Forest Service assures us that care will be taken to harvest timber in a manner that maintains the visual quality of the area. We do not doubt that in a reasonable production scenario, this is possible. However, given the magnitude of harvesting proposed, we recommend that decisions involving visual quality be addressed now. It is possible to model the visual impact of various resource development activities and we recommend that this be accomplished in highly used recreation areas (i.e. Kebler, Taylor, Silver Jack) before a timber production target is approved.

Hunting and fishing are two of the most popular activities in the Gunnison Country. The Colorado Division of Wildlife estimates that these activities account for \$47.24 million directly and indirectly into the local economy. The draft EIS does not adequately address the impact of timbering and road construction on big game and fisheries.

14-6 Roads and timbering can have a negative effect on big game and their ranges. The USFS and the Colorado Division of Wildlife are currently faced with serious problems associated with elk and deer migration patterns and range use. Increased pressure from development of any kind can cause big game herds to change their patterns of range use. Building roads and increasing timbering activity in critical habitat areas will only exacerbate this problem.

Water quality is also a concern not adequately addressed in the plan. The construction of roads and clear cuts can increase erosion and sedimentation in flowing waters and lakes. Increased sedimentation will negatively impact fish population in small mountain streams and eventually in the larger reservoirs.

ing visual quality The first timber harvesting in the Taylor Park area actually dates back to 1875 The Taylor Park area will remain in the suited timber base, although a number of stands adjacent to the reservoir have been removed from the suited land base

The Kebler Pass area, except for previously cut over conifer stands to the south of Coal Creek and the Kebler Pass area itself, has also been removed from the suited land base No timber sales are scheduled in this area for the first decade

Portions of the Silver Jack Reservoir areas have been removed from the suited land base

Please also refer to the response to Issue #33.

14-6 See response to 14-3 for a discussion of timber/tourism effects Water, visual, transportation, and big game impacts are adequately described in Chapters II and IV of the DSEIS and FSEIS Project specific analysis will supplement the analysis conducted in the FSEIS

14-7 Alternative 1G, the proposed Forest Plan, has an ASQ approximately half the level proposed in alternative 1E of the Draft. See response to 14-5 for a description of timber harvesting in the Taylor Park area

14-8 Public safety will not be compromised Public and user safety on Forest roads is a key consideration in road design, operation, and maintenance

The number of logging trucks coming into Crested Butte – using Kebler Pass recreation corridor – should be minimal since the proposed Forest Plan (1-G) eliminates timber sales in the Kebler Pass area.

Routing commercial trucks traffic around and away from populated areas is within the power of town and county governments

All traffic affects the repair and maintenance of roads Significant factors include the number of vehicles, the weight of the vehicles, and the type of road

Both heavy and light vehicles cause washboard-like surfaces to form on gravel roads. However, a loaded logging truck – weighing 82,000 pounds – causes 20 times more loss of gravel than a typical car

It should be noted that commercial users pay for gravel loss as well as wear and tear on Forest Service roads Counties receive road-user taxes paid by commercial trucks as well as federal road maintenance funds including a 25 percent share of all income from the National Forests.

Additional highway maintenance on Kebler Pass Road has top priority within the Grand Mesa, Uncompahgre, and Gunnison National Forests However, that

When one lists the assets of the Gunnison Country, the natural beauty of the area and the opportunity for an unstructured outdoor experience rank very high. It is imperative that great care be taken when proposing any new or increased activity that might change this. The resulting impacts on the region's economy and on the environment could be disastrous.

Another and more specific area of concern is the impact of the timbering proposal on the roads owned and maintained by Gunnison County including roads maintained by agreement with the Forest Service.

Though transportation routes are not clearly identified, it appears that most of the harvested timber will be transported over County roads. Yet in the DSEIS there is no mention of increased traffic volume, truck type or impact on road surface and safety. Potential haul routes include the Taylor River Road,

Kebler Pass, Quartz Creek, Spring Creek and Little and Big Cimarron Roads, all of which have portions that are County owned and the remainder maintained by the County under Schedule A agreements.

We are concerned with the impact of the logging trucks on the surface of the roads and with the safety of local residents and tourists. The American Association of State Highway and Transportation Officials (AASHTO) estimate that one loaded truck is equal to ninety-six hundred passenger cars in its impact on a road surface.

- 14-8** Gunnison County is currently involved with permitting a mining operation that proposes to haul ten trips daily on a paved County road. The County and the company are negotiating a \$1 million mitigation plan to deal with road surface and safety issues.

The impacts associated with logging trucks on County and Forest Service roads are not dissimilar to those cited in the example above. Using current hauling estimates provided by the USFS, the County road below Spring Creek Road will carry 10 to 14 round-trips daily. The aspen cuts along Kebler will add 8 to 12 trips daily.

Though we are advised that the volume of truck traffic associated with conifer logging will not increase substantially, the existing traffic volume has already caused deterioration to County and Forest Service road surfaces. For example, the County continually deals with complaints from residents and loggers about the condition of Spring Creek Road. This road is primarily Forest Service, and under our Schedule A agreement is required to

Proposed Timber Plan
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be bladed once each year. Gunnison County blades the road four times each year and it is still in bad shape. This road currently needs major improvement in terms of gravel and drainage, yet the Forest Service cannot provide the funds to do the work. Spring Creek is an example of what we believe the current conditions to be on most of the roads that will serve as primary haul routes. The impact on County and Forest Service roads cannot be mitigated without significant resources.

- 14-8 The proposed aspen cuts on Kebler Pass and the related road impacts are also of great concern to Gunnison County. The USFS estimates 8 to 12 round trips daily on a highly used scenic road that currently has minimal if any large truck traffic. It is our opinion, based on the resources the County currently commits to the Kebler Pass road, that logging truck traffic on Kebler is dangerous and will cause significant damage to the surface of the road. We base this conclusion on our own experience of hauling material over the road and the damage our own trucks cause and repairs required.

In addition to road surface damage, we have serious concerns with the safety of the road. Kebler is a narrow, winding mountain road with several serious alignment and sight problems. These will be magnified by the addition of large truck traffic. The Forest Service has prevented the County from widening and realigning sections of the road based on their interpretation that it is a scenic road to be used primarily for recreation purposes. We have not been permitted to remove trees outside our right of way to improve the safety of the road. We find it ironic that our need to remove a few trees is not acceptable, but that a plan to remove major portions of the aspen on Kebler is acceptable.

- 14-9 Gunnison County taxpayers should not and will not be asked to pay for road construction and maintenance costs necessitated by timber trucks on County roads.

Gunnison County perceives a tendency exhibited by advocates of the timbering plan to group all opposition as "environmentalist." We want it clearly understood that our concerns originate from the same position as that of other local government entities that might favor the plan. We are concerned with our economy and the jobs associated with recreation and tourism. We are also concerned with the direct cost of the plan to County taxpayers in road construction and maintenance.

We urge the United States Forest Service to address these issues more clearly and carefully in the DSEIS rather than waiting until individual sales are advertised. We find that once an area is

VI-95

road's statewide priority is subject to broad competition for the \$4 million available for this work each year in Colorado.

- 14-9. Forest timber operators do pay for the maintenance of Forest Service roads used for log hauling. These are fees either paid by loggers, or the loggers may actually do the maintenance work themselves. Counties receive road-user taxes paid by commercial trucks and also federal road maintenance funds including a 25 percent share of all income from the National Forests. If the Kebler Pass road were to be used for log hauling, it would be reconstructed and maintained by timber operators to a higher standard than it is now. The Forest does not have jurisdiction for log truck hauling over non-Forest Service roads, but is willing to work with local governments in resolving specific problems. A good example is the cooperative effort between Delta County and the Forest in obtaining funds to replace the Delta-Nucula road bridge which crosses Roubideau Creek.

A review by county planners of the timber sale action plan in Appendix E of the proposed Forest Plan will enable county planners to identify problem county roads in advance of timber harvesting.

- 14-10. While the Forest does have a number of closed timber sale roads, they are not heavily eroded. Closed timber sale roads are maintained at level 1 which includes installing a number of water bars and other drainage structures before the road is closed and periodic inspection to see the drainage structures continue working. While the Forest has been harvesting timber for over 40 years in Gunnison County, the County still has one of the better fisheries in the state, which is a tribute to Gunnison County, the Colorado Division of Wildlife, and the Forest Service road maintenance program.

- 14-11. Water values can not justify timber sales, nor are commercial timber sales used to augment waterflows. Water yield increases were considered incidental to the objectives of timber harvests (See III-93, original Environmental Impact Statement). However, it is more precise to claim the economic benefits when and where they occur.

Extensive Forest and Range Experiment Station research has shown that harvesting timber in small openings (less than five times as wide as the height of surrounding trees) increases water yield. The size of harvested areas is critical because it is possible to decrease water yield by creating large openings. Recent research (Troendle 1987) also shows water yield increases for selective (partial) cutting. Water yield increases do not directly add money to the Federal Treasury but do produce benefits for downstream users. Some of the water yield increases that occur because of early timber harvests are stored in downstream reservoirs until needed. These provide power generation, recreation, irrigation, or desalinization. It is important to note that the Forest Service claims no water rights for increased water flows.

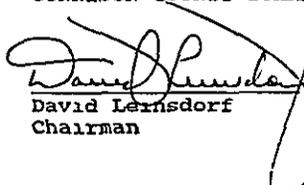
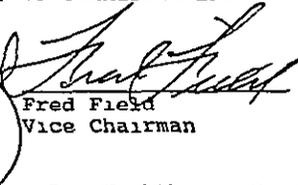
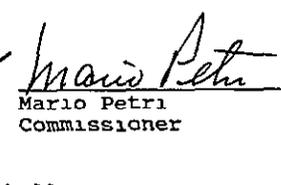
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Page 6

declared suitable and a demand exists for the product, it is very difficult to reach agreements on our concerns.

The Gunnison County Board of Commissioners appreciates the opportunity to comment on this important issue. We value our public lands and support programs that promote the careful utilization of this resource. Likewise, we value the excellent working relationship we have developed with local Forest Service representatives. Though we have serious concerns with the proposal in question, we pledge our full support and cooperation in seeking alternate solutions.

Sincerely,

GUNNISON COUNTY BOARD OF COMMISSIONERS

		
David Leinsdorf Chairman	Fred Field Vice Chairman	Mario Petri Commissioner

cc: U.S. Representative Ben Nighthorse Campbell
U.S. Senator Timothy Wirth
U.S. Senator William Armstrong

Gunnison County, Colorado

Departments of
PLANNING, BUILDING & SANITATION

200 E. VIRGINIA
GUNNISON, COLORADO 81230

TO: Board of Gunnison County Commissioners
FROM: Gunnison County Planning Commission
RE: Comments on amended U.S Forest Service GMUG plan/DSEIS
DATE: August 4, 1989

The Gunnison County Land Use Resolution, in both its Purposes and Policies, clearly states Gunnison County's goals and intentions concerning land use management in the county. The system and process of allowing most development to occur so long as conflicts are mitigated has stood both the test of time and legal scrutiny. It is on that basis that the Planning Commission's review of the proposed Draft Supplemental Environmental Impact Statement and the Proposed Forest Plan Amendment to the Land and Resources Management Plan of the Grand Mesa, Uncompahgre, and Gunnison National Forests has been conducted. The same standards and consideration of potential mitigation as apply to private land development proposals have, therefore, been applied in evaluating this plan.

While publicly-owned lands may be viewed as unique, activity which is allowed to occur on them has as great, if not greater effect on the surrounding areas and community as that conducted on private property. This is particularly true in a community such as Gunnison County, in which a large percentage of the land is publicly-owned, and in which economic well-being is dependent upon economic diversity and wise application of the multiple-use land management concept.

Our comments tend more to the generic than the site-specific, given our assessment that information provided in the plan amendment is inadequate to accurately determine impacts; on that basis, we have not recommended one alternative over another. Issues requiring critical technical evaluation have not been addressed; it is assumed they will be by groups whose expertise is in those areas.

Two areas which are referenced in the plan as issues which either are being studied, or are planned for future study are recreational use of the Forest, and the visual management system. Both are key issues to Gunnison County's economic base, and

indeed, much of the continued health of its recreational economic sector is dependent upon protection of the visual aesthetics provided by the Forest. Neither of these areas has been adequately evaluated, and without that information, a credible assessment of the proposed timber management alternatives cannot be made.

Clearly, the plan reflects an overemphasis on timbering. Just as overemphasis on recreational uses could result in undue adverse impacts on grazing permittees, the proposed focus on timber harvesting as the guidepost around which other uses must be managed, is inappropriate. Timber harvesting has historically been, and should continue to be, a consistent, if not major player in the Gunnison area economy. It must, however, be done in a manner not detrimental to other, more high-profile sectors of the economy. The plan should recognize not only what has been, but also those current and diverse land use demands which are intensifying.

The locations of proposed timber cuts detailed in the plan, the manner in which they are proposed to be managed, and potential mitigation for their impacts are our chief concerns.

Heavily used travel corridors, popularly recognized for their "recreational drive-through" value; established wilderness areas whose values lie in their providing solitude and visual serenity; lakes and stretches of stream known for quality fishing experiences, as well as campgrounds and hunting areas are now threatened by timbering activity proposed immediately adjacent to them. (Of particular concern are Kebler Pass, Silverjack Reservoir, Black Mesa, Rainbow Lake, Taylor Park and Tincup, Lake Irwin, the West Elk and Raggeds Wilderness areas, and the area around the Town of Pitkin.)

The roads which serve these areas, whether County-owned, or Forest Service-owned/County-maintained, are subject to increased traffic and damage. County taxpayers are subject to greater costs without any additional federal assistance; The Forest Service has indicated that the same formula for determining reimbursement will be used, independent of board feet trucked out. Altercations between recreationists and timber haulers on County-maintained Forest Service roads have not been uncommon. When these roads were constructed, design didn't consider the now-frequent meeting of haulage truck and recreational vehicle.

The greatest impact on the Forest and its multiple users is, in fact, the cumulative effect of these abandoned road networks. The 40-acre "patchwork" concept of harvesting, which allows the long-term existence of these single-purpose accesses (all roads proposed in the plan are to be closed; no value other than timber removal is intended in their design), threatens both aesthetic quality and the integrity of the ecosystem.

14-10 The DSEIS doesn't analyze the effects or costs of increased sedimentation on streams, reservoirs or fisheries which results from closed, heavily-eroded road networks. It should. The decision to allow more clear cuts and fewer selective cuts because of a shortage of staff to mark trees, and more roads to reduce the haul cost, cannot be intelligently made without assessing costs which are less easily defined, but in the long run potentially devastating.

14-11 Considering as a capital improvement the construction of a road whose intended purpose is solely timber haulout, is specious; so are other qualifiers which are used to argue the economic efficiency of timber cuts. The placing of economic value on increased water yields resulting from timber harvesting must be countered by the potential for erosion damage generated by unmanageable water yields during flood years.

14-12 These determinants, when evaluated without at least equal weighting of other crucial considerations (the previously cited increased expenditure of public funds for road repair and maintenance, increased traffic hazards, detracting from the beauty of the landscape, cumulative effects of siltation/erosion) create an artificial cost efficiency argument, and sets an artificial pricing of the timber market.

14-13 This situation may be mitigable by allowing the market itself to set the pricing via a quota or ratio system. Currently the Forest Service has identified 300,000 acres as suitable for timbering on Forest Service land; 100,000 acres of aspen exist on similar slopes and areas of privately-held land. It is inappropriate for the federal government to supply all or nearly all of the demand for a resource (as is presently proposed) to

14-14 the extent it potentially shuts down sales by private landowners. (The Forest Service has stated that Louisiana Pacific has indicated it will continue to operate so long as the Forest Service provides more than 50 percent of its timber supply.)

14-15 Gunnison County was a party to an appeal by the State of Colorado to the 1983 Forest Plan because of perceived conflicts between logging and recreation. One of the considerations in the settlement of that appeal was the adoption by the Regional Forester of "Guidelines for Managing Aspen," created by representatives of interested parties. In those Guidelines, a key mitigation measure for reducing the conflict between logging and recreation was the requirement for meeting a visual quality objective (VQO) of "partial retention" within 20 years after logging.

Gunnison County is deeply disturbed by the failure of the Forest Service to carry forward this important visual quality consideration into the proposed plan. The Draft Supplemental

14-12. The proposed Plan and FSEIS make it clear that the timber program does not achieve financial efficiency. Timber is being offered, in accordance with several laws and policies, to meet some of the local demand and help support local dependant industries. We believe the level proposed in 1G strikes an equitable balance between timber related jobs, other jobs, and environmental issues.

14-13. The proposed Forest Plan reduces the ASQ to approximately 50% of the ASQ from Alternative 1E in the Draft.

14-14. This is a misquote and simplification of a statement found on page IV-52 of the DSEIS. The Forest did not consult with Louisiana-Pacific in making the assumption that if less than 50% of Louisiana-Pacific's wood fiber needs were supplied by the Forest the plant would close. This is an assumption made by the Forest to aid in displaying the effects of the alternatives.

14-15. The mitigation measure to achieve partial retention within 20 years of logging never was a part of the Guidelines For Managing Aspen. The Forest will instead use the existing Visual Quality Objective (VQO) management system which is linked to the Recreation Opportunity Spectrum (ROS) to manage visual quality on the Forest. The 20 year partial retention mitigation measure was first proposed by local environmental groups and later mistakenly attributed to the Guidelines For Managing Aspen.

Thorough ROS/VQO inventories and mapping were completed for the original Forest Plan, published in 1983, and are part of that planning record. Similiar maps are being updated for use in the next Forest Plan to be published in a few years.

ROS is valuable as an indicator of public interests in certain National Forest areas. It is used as a guideline for land management decisions – but ROS is not a land management decision in itself.

14-16. The Forest has included all of the Guidelines for Managing Aspen in the Standards and Guidelines except that woodfiber will be allowed as a primary objective for managing aspen (on lands suited for timber production) in the Proposed Forest Plan. Please also see the response to Issue #9.

14-17. We concur. See General Direction statement #2 page III-42 of the Proposed Forest Plan.

14-18. The need for buffer zones are best assessed on a sight specific basis.

14-19. All newly-constructed roads will be closed to public motorized use unless documented analysis supports keeping the road open. Conversely, all existing

Environmental Impact Statement has no discussion to suggest that the previous agreement is unduly onerous or that it fails to achieve its intended objective or that any circumstances related to the agreement have changed significantly. In fact, a very desirable precedent is set by the requirement for a "partial retention" VQO in the proposed new standards and guidelines for the riparian management emphasis (9a).

14-16 Gunnison County therefore requests that the provision of the previous appeal settlement as contained in the "Guidelines for Managing Aspen," be carried forward into the proposed Forest Plan Amendment, and that consideration be given to extending the Guidelines to all logging where appropriate.

Other potential mitigation measures, and or additional analysis should be considered in the redrafting of this plan amendment.

14-17 Exploring new timber cutting patterns, including more rapid cutting of contiguous areas could prove beneficial. Operational cost to the timber contractor might be less than that required when timber is removed from sporadic, non-contiguous areas. Resulting regrowth would appear more natural to most of its viewers. Visual and environmental damage by roadcuts could be lessened.

Logically contiguous areas, serviced by single access routes, if completely timbered and reclaimed by "cells," could lessen both visual and traffic safety impacts (via the more limited numbers of roads and access points).

14-18 Buffer "zones" between timber harvesting areas and campgrounds, and designated wilderness boundaries, though not required by law, is a common sense mitigation for predictable conflicts between these diverse users.

14-19 Road signage, additional patrolling, and speed recorders on contracted haulage trucks are mitigation measures which Gunnison County has determined to be fair, reasonable, and operative methods for mitigating potential hazards created by industrial users of private land. Limitation of hauling times, a requirement of some County land use change permittees, is also a successful mitigation of conflicts between industrial and other users.

The Forest Service already has the authority to place such limits on contract haulers, and should consider prohibiting haulage on recognized holidays, or other seasonal times when conflicting recreational use may exist. Summer homeowners, many of whom spend only a short time in the area and whose homes abut timber cut areas, should be notified of potential cuts.

roads will be kept open to public motorized use unless there are documented reasons for closing the roads. During timber harvesting operations, existing open road mileage will be reduced whenever possible

Regulatory and warning signs on all Forest roads must be in accordance with the national signing standard [i.e the Manual of Uniform Traffic Control Devices (MUTCD)] Roads that are unsurfaced and primitive – for which you would need high clearance or 4-wheel drive vehicles – are in the category of roads not intended for public travel with a passenger car These are excluded from MUTCD requirements with the exception of regulatory and warning signs

Public/user safety on Forest roads is a key consideration in road design, operation, and maintenance. Some examples are

1) *Road Design* The mix of traffic (log trucks and cars, cars and ATV's, etc), speed of traffic, volume of traffic, roadside conditions (i.e steep mountainside), along with the probability and severity of an accident occurring are components the Forest Service weighs in choosing between a single lane or double lane road

(2) *Road Operations* Log hauling may be restricted to weekdays to avoid conflicts with high volumes of recreation traffic on weekends.

(3) *Road Maintenance* Dust abatement in the form of watering, aggregate stabilization, or asphalt paving of surfaces may be required to reduce hazards created by dust as well as to improve the recreation experience of all users.

14-20 Project level analysis will identify the need for special timber practices near sensitive recreation areas.

14-21 Visual quality will be managed by the visual management system. See standards and guidelines beginning on page iii-12 of the proposed Forest Plan

14-22 The proposed Forest Plan does not make changes to management areas except to correct errors made in the original 1983 Forest Plan

The Forest Service's mandate to allow timber harvests in National Forests will mean that some roads must be built in areas where no roads now exist. However, great care will be taken in planning and designing those roads in such a way as to protect recreation, visual, and biological values Too, most of these roads will be erased, destroyed, or closed after harvesting is completed

Although once studied at the request of Congress, there is no national policy that authorizes special management treatment for unroaded areas – such as is the case for wilderness areas. However, the semi-primitive (largely undeveloped) nature of unroaded areas provides the Forest Service the opportunity and setting necessary for some of the areas to be managed for recreation that

- 14-20** Some recreation areas in which values are too great to allow logging by standard practices should be identified.
- 14-21** Throughout the Forest, logged areas should be reclaimed so that human activity does not dominate the foreground and middleground.
- 14-22** Areas should be identified which are suitable for return to roadless status after logging, in order to benefit future generations.
- 14-23** There is need for 1) additional analysis of impact on the recreational economy, 2) a traffic impact analysis on County and City roads and streets which will service haulage trucks, and 3) a visual management systems analysis.
- 14-24** An analysis should be conducted on the actual quantity of logging required to simply maintain the health of the Forest.
- 14-25** And finally, increased enforcement and monitoring of contract conditions should be required, and supported by adequate funding.

is semi-primitive motorized or semi-primitive non-motorized (i.e., hiking, horse-back riding)

Certain unroaded areas have been designated (under management prescription 2A and 3A) as areas in which semi-primitive recreation is emphasized. Most other Management Areas also can be managed for semi-primitive recreation opportunities.

14-23 City, County, & State Roads are outside the Forest's jurisdiction, but the Forest will provide whatever information it has to local governments so they may assess the impacts of logging on non-Forest roads.

14-24 The Forest has stopped using the term "healthy forest" because it could not be adequately defined.

The Forest has reaffirmed timber production as one of the purposes of a National Forest. Managing lands for timber production serves this purpose as long as timber production is balanced with the other goals of National Forest management. The controversy of the entire Forest Plan Amendment is where does the balance lie? Please also see the response to Issue #8.

14-25. We concur and are trying to increase our funding levels, training, and performance of contract administration.

LETTER # 16

Hinsdale Co, Bd of Comm

~~Handwritten~~
5/19/1989

HINSDALE COUNTY GOVERNMENT
PO BOX 277
LAKE CITY, COLORADO 81235
(303) 944-2225

May 15, 1989

Richard E Greffenus
GMUG Forest Supervisor
2250 Highway 50
Delta, CO 81416

Dear Mr Greffenus

The Board of County Commissioners of Hinsdale County wish to go on record in their support of multiple uses of the National Forests in Hinsdale County

Refer to response for 15-1 on the preceding page

16-1 It is our belief that the forests can be best managed for a combination of recreation, timber, grazing, mineral and energy production, and wilderness values and that to exclude some uses to the exclusive benefit of others is a mistake and wrong

Hinsdale County's economy and well being relies on a mix of uses of the forests. The County is 98.5% public lands. Presently approximately 46% of the County is in wilderness areas. Recreation is a major component of our economy, but there are ranching, timbering, and mineral and energy exploration which provide a part of the economy and provide revenues for the operation of the County.

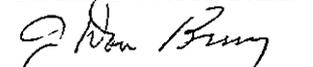
We ask that you in the Forest Service work to achieve a balanced mix of a variety of uses, keeping in mind the fragile nature of this small community and the economy which keeps it alive.

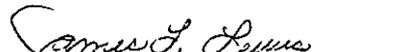
We are committed to working with you and pledge our involvement as appropriate in your planning and review processes.

Please feel free to call upon us at any time.

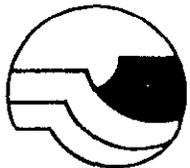
Sincerely,

HINSDALE COUNTY BOARD OF COMMISSIONERS


Don Berry, Chairman


James L. Lewis, Commissioner


Hubert A. Laird, Commissioner



**BOARD OF
Mesa County
Commissioners**

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September 12, 1989

THE PLAN
Grand Mesa, Uncompahgre and
Gunnison National Forests
2250 Highway 50
Delta, CO 81416

Attn R E. Greffenius, Forest Supervisor

Dear Mr Greffenius

On behalf of the Mesa Board of County Commissioners, I would like to thank your staff for the recent presentation before us on the Draft Supplemental Environmental Impact Statement (DEIS) on the GMUG Plan Both Mr Gene Grossman and Mr Dennis Hovel were courteous and thorough

Please accept the following comments on the proposed amendments as adopted by a majority of the County Commissioners.

17-1

1) We have serious concerns with the emphasis of the DEIS which proposes a nine-fold increase in aspen timber harvesting based on increased demand from the Louisiana-Pacific Company. We fail to see the benefits such an increase will accrue to Mesa County. In fact, we believe the impacts to our county will be primarily negative if the plan is amended as proposed.

17-2

2) The potential negative impacts on Mesa County roads from significant increases in timber harvesting is a major concern. We believe the large scale timber sales should be responsible for improvements to and maintenance of County roads used as haul routes. Presently, Mesa County does not require a permitting process for timber harvesting operations, however, we are considering adoption of a special use permit regulation for such projects similar to the current permit requirements for oil and gas wells in the County.

17-3

Mesa County has an intergovernmental agreement with the Bureau of Land Management which recognizes the validity of the County's permitting requirements on BLM land. We hope the Forest Service would be conducive to entering a similar agreement with Mesa County

17-1

Alternative 1A is more accurately reflected in the FSEIS as harvesting 310 acres of aspen annually The FSEIS proposed alternative, alternative 1G, shows an increase of approximately 1060 acres annually to 1370 acres of aspen harvesting a year In practical application, when considering the aspen harvest which occurred on lands both suited and not suited for timber production during the past few years, Alternative 1G represents about a 32% increase in harvest level

17-2

Forest timber operators do pay for the maintenance of Forest Service maintained roads used for log hauling Loggers also pay for rock replacement on County maintained Forest Service roads These are fees either paid by loggers, or the loggers may actually do the maintenance work themselves Counties receive road-user taxes paid by commercial trucks as well as federal road maintenance funds including a 25 percent share of all income from the National Forests

The Forest does not have jurisdiction for log truck hauling over non-Forest Service roads, but is willing to work with local governments in resolving specific problems A good example is the cooperative effort between Delta County and the Forest in obtaining funds to replace the Delta-Nucla road bridge which crosses Roubideau Creek

A review of the timber sale action plan in appendix E of the proposed Forest Plan will enable county planners to identify problem county roads in advance of timber harvesting Additional site specific information can be obtained from the appropriate Ranger Districts

17-3

The Forest Service currently does not recognize a County's permitting requirements on National Forest System lands as superceding National Forest decision making However, we do recognize your interests and issues and attempt to make our two policies work together to meet the needs of the American public

17-4

The balance between timber oriented jobs and recreation and tourism jobs is a difficult one to properly achieve, and we believe that the conflicts now anticipated to occur with alternative 1E would be detrimental to the overall economy and the management of the natural resources on the Forest. Alternative 1G calls for 21,000 MBF in the conifer sawtimber program which equals the historic harvest levels and would therefore maintain the existing jobs in that portion of the industry The aspen program in 1G calls for 1,370 acres per year which we believe is a reasonable balance between fiber production for existing industry and the concerns expressed by the majority of the commenting public.

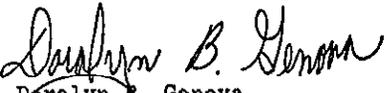
17-4 4) Recreation and tourism are two of Western Colorado's growth industries, and we believe the federal land should be protected and planned for accordingly. Specifically, timber sales should not be allowed in the following areas anticipated for commercial operation in the DEIS: Bonham Reservoir, Bull Basin, Big Creek, Horse Mountain, and Kannah Creek. These areas are currently heavily used for cross-country skiing, hiking, camping, fishing, hunting and snowmobiling.

17-5 The DEIS does not address impacts on recreation related employment and income. Does the Forest Service believe the only jobs to be affected will be in the timber and government industries?

Thank you for the opportunity to submit our concerns and comments. We look forward to continued cooperation with the Forest Service.

Sincerely,


John M. Leane
Mesa County Commissioner


Doralyn B. Genova
Mesa County Commissioner

ld/kbf/JML/DBG

cc: File
Gene Grossman, Collbran District
Senator Timothy Wirth
Senator William Armstrong
Congressman Ben Nighthorse-Campbell
Governor Roy Romer
State Senator Tillman Bishop
State Representative Tim Foster
State Representative Dan Prinster

The FSEIS and proposed Forest Plan removed the undeveloped portion of Kannah Creek from the suited timber base. The following areas remain in the suited timber base:

Horse Mountain
Bull Basin
lands surrounding but not adjacent to Bonham Reservoir
lands surrounding Big Creek Reservoir except for the south side

17-5 The reduced harvest levels in the proposed Forest Plan and FSEIS may not be enough to keep all 23 mills in the Forest's market area in business since other sources of timber may be unavailable or in short supply. Please also see the response to issue #12.

9/12/89

No. 37 - 89

18-1

RESOLUTION

OF

THE BOARD OF MONTROSE COUNTY COMMISSIONERS

CONCERNING Support of Louisiana Pacific Waferboard Plant and the Forest Service Land and Resource Management Plan Amendment

18-1

WHEREAS, Louisiana Pacific's wafer board plant located near Olathe, Colorado contributes significantly to the area's economy in the amount of \$12,000,000 annually, and

WHEREAS, Louisiana Pacific provides employment to many area residents, 110 jobs at their Olathe plant, and 250 jobs in the forest; and

WHEREAS, it is important to the area economy that Louisiana Pacific remain at its present location and continue its operation, and

WHEREAS, in order to continue its present operations, according to company representatives Louisiana Pacific requires a minimum timber cutting volume of 2,900 acres of aspen per year,

NOW, THEREFORE BE IT RESOLVED by the Board of Montrose County Commissioners to support Louisiana Pacific's wafer board plant operation and its need for adequate aspen resources to continue plant operations,

BE IT FURTHER RESOLVED to support the preferred alternative of the amendment of the land and resource management plan for the Grand Mesa, Uncompahgre and Gunnison National Forests as proposed.

APPROVED AND ADOPTED this 11th day of September, 1989.

BOARD OF COUNTY COMMISSIONERS
MONTROSE COUNTY, COLORADO

Arthur J. Schmalz
Arthur J. Schmalz, Chairman

Cindy K. Bower
Cindy K. Bower, Vice Chairperson

Melvin W. Staats
Melvin W. Staats, Member

VI-106

Due to public comments, congressional comments, and a limited sustainable timber resource, the Forest developed alternative 1G as the proposed Forest Plan Alternative 1G has an estimated annual first decade aspen harvest of 1,370 acres a year, and an annual first decade conifer harvest of 21 MMBF as compared to the alternative 1E proposed harvest level of 2,900 acres of aspen and 35 MMBF of conifer

Louisiana Pacific's stated minimum needs have varied over the years and the latest stated need is 1,700 acres per year

There is a risk the level of timber harvesting in Alternative 1G will not be enough to keep all 23 saw mills in the Forest's market area in business as other sources of timber are either unavailable or in short supply



ROBERT A. LARSON
HOWARD E. WILLIAMS
DON A. DADDY

LETTER # 19

BOARD OF COUNTY COMMISSIONERS

OURAY COUNTY
P O BOX C
OURAY, COLORADO 81427

August 10, 1989

*Ouray County,
Boulder Co.*

5/14/89

LETTER 19 RESPONSE

Mr. Richard Greffenius
GMUG National Forests
2250 Highway 50
Delta, Colorado 81416

Dear Sir:

The following are comments from the Ouray County Commissioners in regard to the Proposed Land and Resource Management Plan of the United States Forest Service.

Ouray County considers the Multiple-Use Concept to be of utmost importance in all activities on Federal Lands and it is strongly felt that Recreation, Tourism, Grazing, Timbering and Mining must all be considered and evaluated in such plans.

19-1 It is felt that the timbering which is being proposed conflicts with this Multiple-Use Concept. Selective cutting in certain areas of Ouray County may be appropriate, but clear-cutting and/or shelterwood cutting should not be considered. The National Scenic Byway and associated visual qualities, erosion within the watershed, and grazing interference are but a few of the conflicts which are apparent.

19-2 An additional concern regards the increased costs and maintenance of the county road system. The litigation between San Miguel County and Louisiana-Pacific does not promote a desire to become partners in a similar venture. Impact fees with reimbursement to the county must be a consideration for future activities and must be addressed prior to any contracts which affect the county.

19-1

Clearcutting is only proposed in the aspen and lodgepole pine types and it is the accepted silvicultural method to regenerate these species

Widespread devastation could result from massive clearcutting of entire mountains or valleys. However, such destruction is not possible in the Grand Mesa, Uncompahgre, and Gunnison National Forests, given the small scale on which clearcutting is done and the degree of planning that goes into each timber sale

[NOTE: Aspen clearcutting under the new proposed alternative (1G) would amount to 1370/2,953,186ths -- or 00046 percent -- of the three National Forests per year]

Selective cutting -- or uneven-aged management -- is an accepted and permitted method of harvest that is used on the Grand Mesa, Uncompahgre, and Gunnison National Forests for spruce-fir and ponderosa pine under the proposed Forest Plan. However, constraints created by the need to reduce below-cost sales limit the degree to which this expensive harvesting method can be used on those species (Please see alternative 1D). Instead, the shelterwood method of harvesting often is preferred -- a method that creates a series of partial cuts over two or three decades

Selective cutting is not well suited to harvesting aspen because it limits regrowth of cut aspen. The most vibrant regrowth takes place in aspen after it has been clearcut. Freshly clearcut areas may be unsightly but that is temporary. Within a few months after a harvest, thousands of aspen shoots per acre spring forth from the old root system and grow about five feet tall in five years

19-2

Forest timber operators do pay for the maintenance of Forest Service maintained roads used for log hauling. Timber operators pay for rock replacement on County maintained Forest Service roads. These are fees either paid by loggers, or the loggers may actually do the maintenance work themselves. Counties receive road-user taxes paid by commercial trucks as well as a 25 percent share of all income from the National Forests. The Forest does not have jurisdiction for log truck hauling over non-Forest Service roads, but is willing to work with local governments in resolving specific problems. A good example is the cooperative effort between Delta County and the Forest in obtaining funds to replace the Delta-Nucla road bridge which crosses Roubideau Creek

A review of the timber sale action plan in appendix E of the proposed Forest Plan will enable county planners to identify problem county roads in advance of timber harvesting. Additional site specific information can be obtained from the appropriate Ranger Districts

19-3.

Due to public comments, congressional comments, and a limited sustainable timber resource, the Forest developed alternative 1G as the proposed Forest Plan. Alternative 1G has an estimated annual first decade aspen harvest of

ROBERT A. LARSON
HOWARD B. WILLIAMS
DON A. CADDY

BOARD OF COUNTY COMMISSIONERS

OURAY COUNTY
P O BOX 2
OURAY COLORADO 81427

PHONE
(303) 328-4961

1,370 acres a year, and an annual first decade conifer harvest of 21 MMBF as compared to the alternative 1E proposed harvest level of 2,900 acres of aspen and 35 MMBF of conifer.

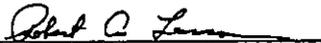
There is a risk the level of timber harvesting in Alternative 1G will not be enough to keep all 23 saw mills in the Forest's market area in business as other sources of timber are either unavailable or in short supply

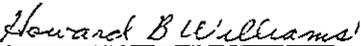
Mr. Richard Greffenius
Page 2
August 10, 1989

19-3 Ouray County requests that the timbering plan as outlined in your proposal be revised and the concerns expressed by us and our residents be addressed. Please inform us as to your decisions on this matter as soon as possible.

Sincerely,

BOARD OF COUNTY COMMISSIONERS


Robert A. Larson, Chairman


Howard B. Williams, Commissioner


Don A. Caddy, Commissioner

RAL/as

SAN MIGUEL COUNTY

BOARD OF COMMISSIONERS

JIM BEDFORD RANDY HIGGASON CARMEN LAWRENCE

LETTER 20 RESPONSE

20-1

The proposed Forest Plan, Alternative 1G, has been developed in response to public input and calls for an aspen harvest level of 1,370 acres per year. The Forest Service is not required by law to "make money" on its timber sales program (or any other resource program). Timber is offered to help sustain the local dependent industry to the extent that good land management principles are met and other Forest goals can be achieved.

August 23, 1989

Richard Greffenius, Supervisor
Grand Mesa, Uncompahgre, and Gunnison (GMUG) National Forests
2250 Highway 50
Delta, CO 81416

Re: San Miguel County Board of Commissioners' comments on GMUG plan

Dear Sir:

To qualify our remarks, we must note that timber cutting is an important element in the economy of Colorado and San Miguel County. Both traditionally and at present, a number of county and regional residents derive their income from logging and its support industries. We hope this will remain so, but we feel that it is time the industry and the Forest Service changes how it does business to reflect changing times and attitudes.

Over the past twenty years, San Miguel County and much of the region has changed its basic economy from the extractive industries to recreation and tourism. Almost 90% of the assessed valuation of San Miguel County lies in the Telluride R-1 School District, where little ranching, mining, or logging takes place. People do not visit our area and spend their money to see logging cuts and mining operations.

The Forest Service, Region 9 and 10, and many local governments have spent hundreds of thousands of dollars to create the "San Juan Skyway" to encourage people to visit and take in the beauties and recreational opportunities of the area. No studies have been done to quantify the impacts of logging on recreation and tourism.

20-1 We also have grave concerns about the way logging gets indirect subsidies from federal, state and local governments. The federal government gets much less for the timber it sells than it is worth, and even less than timber sales cost to administer. State and local governments (through taxes its citizens pay) must subsidize logging by providing and maintaining roads in order that timber be moved off federal lands (see enclosed 7-24-89 letter to Forest Ranger Dick Cook). Logging certainly costs San Miguel County residents more than it provides in taxes and fees.

We do not oppose logging in principle, all of us use lumber. But we feel the present plan favors narrow economic special interests and overlooks major impacts that have not been studied or even addressed. We ask that as we look forward to the 21st Century that the Forest Service take the lead by making natural resource use proposals that pay for themselves, take into consideration changing attitudes and economies, and benefit all Americans, present and future.

VI-109

Research shows that commercial trucks do little damage to properly constructed asphalt roads – when the roads have been treated to prevent damage caused by weather and shrinking. All traffic has an impact on damaged asphalt roads.

Both heavy and light vehicles cause washboard-like surfaces to form on gravel roads. However, a loaded logging truck – weighing 82,000 pounds – causes 20 times more loss of gravel than a typical car.

It should be noted that commercial users pay for gravel loss as well as wear and tear on Forest Service roads. Counties receive road-user taxes paid by commercial trucks as well as a 25 percent share of all income from the National Forests.

SAN MIGUEL COUNTY
BOARD OF COMMISSIONERS

JIM BEDFORD RANDY HIGGASON CARMEN LAWRENCE

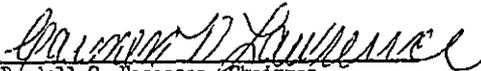
August 23, 1989
b:gmug-ltr.mss
page 2

We know that we are not alone in our concerns. We believe that the Forest Service must rethink its policies and attitudes towards extractive resources. These resources belong to all of us, not just a few giant corporations. Managing them should not mean giving them away.

Thank you for your consideration.

Sincerely,

SAN MIGUEL COUNTY BOARD OF COMMISSIONERS

By: 
Randall C. Higgason, Chairman

JB:jj
b:gmug-ltr.mss

Enclosures: Elk Meadows letter
Jack Anderson article
Letter to Cook
San Juan Skyway letter

pc: Senator Tim Wirth
Representative Ben Campbell
Forest Service Chief Dale Robertson
Norwood Ranger Dick Cook
Town of Telluride
Town of Norwood
County Planning Director

VI-110

Town of Crested Butte

P.O. Box 39
Crested Butte, Colorado 81224

—A National Historic District—

Phone: (303)349-5338

September 19, 1989

THE PLAN
c/o R. E. Greffenius, Forest Supervisor
Grand Mesa, Uncompahgre and Gunnison
National Forest
2250 Highway 50
Delta, Colorado 81416

Dear Mr. Greffenius:

The Town of Crested Butte would like to submit the following comments on the proposed amendment to the Land and Resource Management Plan for the Grand Mesa, Uncompahgre and Gunnison National Forest.

As you know, the economic base of the Town of Crested Butte is based upon the recreation and tourism industry. In the past, the Town and its citizens have expended considerable time and money in the development and promotion of this industry. The quality of the product we provide to our recreational and tourist clientele is intimately related to the National Forest System lands which surround our municipality.

21-1 The Crested Butte Town Council is opposed to the proposed plan because of the increased impacts of the timber harvesting on the recreation industry in the vicinity of Crested Butte. In particular, the Kebler Pass corridor is a vital gateway and recreational area for our many tourists. As such, the Town is opposed to the plan to offer large tracts along this corridor for the timber harvesting industry. In addition, timber harvesting activities proposed within the Cement Creek and Taylor Park drainages will have a similar negative effect upon the economy of the Town of Crested Butte. Our specific concerns are as follows.

21-2 The Kebler Pass corridor is used heavily by tourists as a scenic byway as well as for destination recreational activities. Clearcutting trees along this corridor will have a negative impact upon the visual quality of this area, since certain areas will always suffer an impact from year to year. The long-term visual quality of these clearcut

LETTER 21 RESPONSE

21-1. The Kebler Pass corridor has been removed from the suited land base in the proposed Forest Plan, except for previously cut over conifer stands to the south of Coal Creek and the Kebler Pass area itself. No timber sales are scheduled for the first decade.

A majority of Cement Creek has been removed from the suited timber base except for portions of the ridgetop between Cement Creek, Deadman Gulch, and Bear Creek.

Taylor Park is in the suited timber base. Taylor Park is a prime example of how timber management and recreation/tourism can be highly compatible. The Forest has been harvesting timber in the Taylor Park area for over 40 years and the Taylor Park area is still considered a prime recreation attraction.

21-2. A number of small clearcuts have been made along Kebler Pass to enhance visual quality by providing vistas into the adjacent wilderness. Channel 7 news filmed these clearcuts and found them to be acceptable additions to the Kebler Pass scenic corridor. Except for the possible creation of an occasional vista with a 1-5 acre clearcut, aspen timber harvesting will not occur in the Kebler Pass area.

21-3. The Forest does not have any jurisdiction over the Kebler Pass road because it is a county road, and not a Forest road. While the Forest believes timber harvesting and recreation are compatible as the Taylor Park example indicates, very little timber harvesting or logging truck hauling is expected to occur in the Kebler Pass vicinity under Alternative 1G in the proposed Forest Plan.

21-4. Very little, if any, logging truck traffic is expected over the Kebler Pass road under the proposed Forest Plan. Kebler Pass road will not have to be upgraded to handle increased logging traffic.

21-5. Coal Creek flows along side the Kebler Pass Road up to Kebler Pass. In the proposed Forest Plan, aspen along the Kebler Pass road has been removed from the suited timber base. Coniferous stands to the south of Kebler Pass and in the vicinity of Kebler Pass itself will remain in the suited timber base. These stands have been logged in the past, particularly those in the vicinity of Kebler Pass. No timber sales are proposed for the first decade in Coal Creek.

The Final Amendment will not consider changes in management prescriptions other than those needed to correct mapping or other errors. Changes in management area designations such as you suggest will be considered during Plan revision, scheduled for 1997.

21-2 areas may or may not be improved, however, the short-term impact within the areas most recently cut will certainly be negative. Since the plan contemplates continuous clearcutting from year to year, a continuous negative visual impact will exist.

21-3 Timber harvesting is an industrial activity which the town believes is incompatible with and destructive of recreational values. Logging truck traffic on the Kebler Pass Road will deter from its use as a scenic byway as tourists are exposed to the inherent danger, inconvenience, noise and dust posed by such traffic on the narrow and winding road. Further, such impact will be compounded on those many parts of the road which are steep. Aside from logging trucks, the timber harvesting activities themselves will generate noise and dust which will detract from the use of the area by campers, hikers, hunters or others who value such areas for their serene and pristine qualities. In fact, it is the serene and pristine nature of this area, adjacent to vast expanses of designated Wilderness, which provide a unique unspoiled quality desirable to tourists.

21-4 The proposed use of the Kebler Pass Road by logging trucks would require spending hundreds of thousands of dollars for the realignment and total change of major road sections. The work to redesign, realign, rebuild the road base and resurface the road would cause a severe drain on County government coffers. The heavy use proposed would substantially increase annual road damage as well. To require the local taxpayers to pay for these impacts would force an unreasonable public subsidy of this timber industry. Such road damage will further detract from this route as a scenic byway.

21-5 The Town is also concerned about the impact of timber harvesting and logging traffic within the Coal Creek Municipal Watershed. The Town believes that such activity will result in deterioration of water quality causing increased demands upon the Town's already taxed water treatment facilities. As regards this watershed, the specifics of our request for designating the area a 10E prescription are set forth at the end of these comments.

21-6 The proposed amendment, in the view of the Town, will result in a general deterioration of water and air quality in those areas to be harvested. In particular, the impact of dust generation from logging activities is a concern.

21-7 We also doubt those calculations and rationale which suggest that increased water yield will be a positive economic benefit of the plan.

21-6 Timber harvesting by itself has little potential to harm air or water quality. Temporary changes in water quality may occur from road construction. Dust may occur as a result of log hauling, but is also created by recreation traffic, such as is now occurring just outside Crested Butte on the Kebler Pass road. Where needed, dust can be practically eliminated by using one of the dust abatement techniques such as mixing Calcium-Chloride with the gravel. This technique has been used with great success on the opposite side of Kebler Pass near the Paonia Reservoir.

21-7 Water values can not justify timber sales, nor are commercial timber sales used to augment waterflows. Water yield increases were considered incidental to the objectives of timber harvests (See III-93, original Environmental Impact Statement). However, it is more precise to claim the economic benefits when and where they occur.

Extensive Forest and Range Experiment Station research has shown that harvesting timber in small openings (less than five times as wide as the height of surrounding trees) increases water yield. The size of harvested areas is critical because it is possible to decrease water yield by creating large openings. Recent research (Troendle 1987) also shows water yield increases for selective (partial) cutting.

Water yield increases do not directly add money to the Federal Treasury but do produce benefits for downstream users. Some of the water yield increases that occur because of early timber harvests are stored in downstream reservoirs until needed. These provide power generation, recreation, irrigation, or desalinization. It is important to note that the Forest Service claims no water rights for increased water flows.

21-8 The Forest currently has a good working relationship with the Rocky Mountain Biological Laboratory (RMBL). The proposed Forest Plan will not threaten the research being conducted out of the RMBL.

21-8 The viability of certain research activities conducted by the Rocky Mountain Biological Laboratory and other scientists in harvest areas will be threatened by the proposed plan. The RMBL is an important and integral part of our local economy and any negative impacts upon its activities will result in a negative impact upon our economy, not to mention the ecological importance of this research.

The Town Council believes that the above identified concerns have not been adequately addressed in the plan and its Draft Supplemental Environmental Impact Statement.

21-5 Finally, the Town of Crested Butte wishes to formally request, as evidenced by the attached Resolution No. 10, Series 1989, that the Forest Service redesignate the Crested Butte Municipal Watershed a 10E management prescription area as part of the current plan review. The Town has long pursued its own management and policies within this area to promote the objective of non-degradation for its raw water sources. Further, the Town has, in the past, engaged in dialogue and programs with the Forest Service designed to meet this non-degradation management goal. We would also hope that the general directions, standards, and guidelines reflected in the plan for management activities within the 10E prescription could be reviewed to determine their consistency with a non-degradation water quality standard for the Town's watershed.

Thank you for your time and consideration of this matter.

Sincerely,



Michael Cooper
Mayor

MC/kf

Enclosures

RESOLUTION NO. 10
SERIES 1989

A RESOLUTION REQUESTING THAT THE FOREST SERVICE DESIGNATE THE CRESTED BUTTE MUNICIPAL WATERSHED AREA AS A 10E, MUNICIPAL WATERSHED, MANAGEMENT AREA AS PART OF THE ONGOING MANAGEMENT PLAN AMENDMENT PROCESS.

WHEREAS, the Town of Crested Butte obtains its raw water supply from sources within the Gunnison National Forest, and

WHEREAS, the Town of Crested Butte, by ordinance, has previously designated a "W Watershed" area which encompasses the area from which the Town's raw water sources are generated, and

WHEREAS, the U.S. Forest Service Management Planning Process recognizes a 10E "Municipal Watershed" management area direction, and

WHEREAS, the quality of water within the Town's Municipal Watershed area directly affects the health, safety, and welfare of the citizens and visitors of Crested Butte,

WHEREAS, the Town's raw water quality will directly affect the future needs for capital expenditures relative to collection and treatment facilities, and

WHEREAS, Forest Service management decisions within the Watershed can directly impact raw water quality.

NOW, THEREFORE, BE IT RESOLVED BY THE TOWN COUNCIL OF THE TOWN OF CRESTED BUTTE, COLORADO:

Section 1. The Town Council of the Town of Crested Butte hereby requests that the U.S. Forest Service designate the area within the Crested Butte Municipal Watershed as a "10E Municipal Watershed Management Area Direction" as part of the current Forest Plan amendment process.

Section 2. The Mayor and Town Staff are hereby directed to take any and all steps necessary to promote and pursue such 10E designation for the Town's Watershed area.

third INTRODUCED, READ AND ADOPTED UPON FIRST READING THIS
DAY OF July, 1989.
TOWN OF CRESTED BUTTE, COLORADO

(SEAL)

By Michael Cooper
Michael Cooper, Mayor

ATTEST:

Kerry Folger
Kerry Folger, Town Clerk

Delta, City of
9/15/89

22-1

Due to public concerns and a limited sustainable timber resource, the Forest developed alternative 1G as the proposed Forest Plan. Alternative 1G has as estimated annual first decade aspen harvest of 1,370 acres a year. The 1,370 acre harvest level may force Louisiana-Pacific to close its Olathe plant with the resulting loss of 300-400 local jobs and \$7.5 million dollars (current dollars) in salaries.

RECORD OF PROCEEDINGS

100 Leaves

FORM NO. C. F. MOCCEL B B & L. CO.

Resolution #15, 1989

A RESOLUTION OF THE CITY OF DELTA RECOMMENDING THAT THE REGIONAL FORESTER AND THE CHIEF OF THE U.S. FOREST SERVICE ACCEPT THE ENVIRONMENTAL IMPACT STATEMENT PREPARED BY THE U.S. FOREST SERVICE AND IMPLEMENT THE FOREST PLAN

22-1 Whereas, the forest product industry has been a historical component of the Uncompahgre Valley economy for over 100 years, and

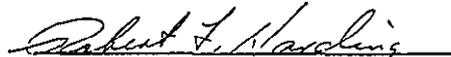
Whereas, any loss of the forest product industry would have an adverse economic effect on this area, and

Whereas, the U.S. Forest Service is recognized as the professional management agency for the Grand Mesa, Uncompahgre and Gunnison National Forest, and

Whereas, this agency has prepared a draft environmental impact statement including the forest products industry needs for future raw material to sustain the forest product industry at a stable level.

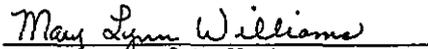
Now, Therefore, Be It Resolved that the City Council of the City of Delta is in agreement with the preferred alternative contained in the environmental impact statement and implement the forest plan as soon as possible

September 11, 1989.



Mayor

ATTEST:



City Clerk

Low

Grand Jct, City of 8-21-89



City of Grand Junction, Colorado
81501-2668
250 North Fifth Street

August 18, 1989

THE PLAN

Grand Mesa, Uncompahgre and Gunnison National Forest
2250 Highway 50
Delta, CO 81416

Attention: Gary E. Cargill:

SUBJECT: Environmental Impact Study for Grand Mesa National Forest. Proposed Amendment of the Land and Resource Management Plan.

The study for timber cutting in the Grand Mesa National Forest does not provide for adequate protection of the City of Grand Junction water supplies. Outlined below are the five major management areas included in our watershed, none of which encompass prescriptions for municipal watersheds (Class 10E).

2A - Provide for a semi-primitive motorized recreation experience. Management emphasis is for semi-primitive motorized recreation opportunities such as snowmobiling, four wheel driving and motor cycling.

4A - Optimize habitat capability for all management indicator species. Management emphasis is on the habitat needs of one or more management indicator species (deer, elk, fish).

5A - Optimize habitat capability for big game on nonforested winter range. Management emphasis is on winter range deer, elk, pronghorns, big horn sheep and mountain goats.

6B - Maintain soil and vegetation condition and provide forage for livestock production. Management emphasis is for livestock production.

7A - Provide for even aged sawtimber production on slopes less than 40%. Management emphasis is on wood-fiber production.

The management prescription for the City's watershed area should be classified as 10E which provides for municipal and watershed and

municipal water supply watersheds. Management emphasis for a Class 10E is to protect or improve the quality of municipal water supplies. Management practices vary with the primary objective of meeting water quality standards established for the individual watershed. A secondary objective is to manage the watershed to improve the yield and timing of water flows.

Attached are two maps outlining the City of Grand Junction watershed area.

Management activities for Class 10E are outlined on pages III-195 through 199, of the Amendment of Land and Resource Management Plan.

The City of Grand Junction's principal source of water is generated from surface flows from the Kannah Creek and North Fork of Kannah Creek drainages encompassing nearly 60 square miles on the west end of the Grand Mesa.

23-1 The City holds the Paramount Decree on Kannah Creek as well as numerous senior direct flow absolute decrees. In addition, the City owns or owns in part all of the storage reservoirs on the west end of Grand Mesa.

The protection of the watershed is of paramount importance to the City. We have worked closely with the United States Forest Service to insure that the municipal watershed values are in harmony with other values, such as recreation, and we think these values, under proper management, are compatible.

23-2 We wish to be of record by stating that this area be officially recognized as a Class 10E area and that the management prescriptions be designated as such.

Sincerely,

Gregory O. Trainor
Utility Manager

GT/rs

Attachment

cc: Ben Nighthorse Campbell, U. S. Representative
Dan Prinster, State Representative
Tim Foster, State Representative
Tilman Bishop, State Senator
Roy Romer, Governor
William L. Armstrong, U.S. Senator
Tim Wirth, U.S. Senator
Hank Brown, U. S. Representative

FILE:GT:WP:ENVIS

23-1 A majority of the Kannah Creek watershed has been removed from the suited timber base in the proposed FSEIS Alternative 1G, except for conifer timber stands on the south-east side of the watershed including an approximate area from Chambers Reservoir to Basin Reservoir #1. The Basin timber sale, a 2 MMBF shelterwood spruce-fir timber sale with 2.3 miles of road construction, is scheduled for harvest in 1991.

23-2. The proposed Forest Plan does not consider changes in management prescriptions other than those needed to correct mapping or other errors. Changes in management area designations, such as you suggest, will be considered during Plan revision, scheduled for 1997.

Montrose, City of
9/25/89

CITY OF MONTROSE

RESOLUTION 1989-6

WHEREAS, the forest product industry has been a historical component of the Uncompahgre Valley economy for over 100 years, and

WHEREAS, any loss of the forest product industry would have an adverse effect on this area; and

WHEREAS, the U.S. Forest Service is recognized as the professional management agency for the Grand Mesa, Uncompahgre, and Gunnison National Forest; and

24-1 WHEREAS, this agency has prepared a draft environmental impact statement including the forest products industry needs for future raw material to sustain the forest product industry at a stable level.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF MONTROSE, COLORADO, is in agreement with the preferred alternative contained in the environmental impact statement with the following minor amendments: 1. The clear cut provisions be limited to less than 40 acres; and 2. view sheds be protected in the Silverjack Reservoir area, the north face slopes of Mt. Sneffles, and the Keebler Pass area; and that the Chief of the U.S. Forest Service accept the finding of the environmental impact statement with these minor amendments and implement the forest plan as soon as possible.

ADOPTED THIS 21st DAY OF Sept, 1989.


Mayor

ATTEST:


City Clerk

24-1

Due to public concerns and a limited sustainable timber resource, the Forest developed alternative 1G as the proposed Forest Plan Alternative 1G has as estimated annual first decade aspen harvest of 1,370 acres a year. Areas on Mt. Sneffels, Keebler Pass, and in the Silverjack Reservoir area were removed from the suited land base.

VI-119

8-18-89



Mt. Crested Butte

P O DRAWER D MT CRESTED BUTTE, COLORADO 81225

PHONE (303) 349-6632

August 16, 1989

Mr. R.E. Greffenius
 Forest Supervisor
 Grand Mesa, Uncompahgre and Gunnison National Forest
 2250 Highway 50
 Delta, CO 81416

Dear Mr. Greffenius,

The Town of Mt. Crested Butte wishes to comment on some of their concerns relating to the proposed increased timber cut in the Mt. Crested Butte area of Gunnison County, specifically on Kebler Pass and Taylor Park.

The Town Council certainly understands the concerns of the Forest Service in wanting to keep the forests healthy and in wanting to thin the older and more densely populated areas so that new, healthy growth can occur. Up to this point the Council feels the Forest Service has done a satisfactory job in keeping our forest recreation oriented and maintaining an adequate logging industry within the forests while still providing the peace and serenity that is associated with these areas. However, as Mt. Crested Butte is a resort community with tourism our main industry, a proposal to cut timber in this area at a rate eight times the present rate seems unfounded.

25-1 If this ambitious plan should be approved in its entirety, the Council feels the impact on the areas roads would be very detrimental. Given the present economic conditions of Gunnison County, the Council questions this sort of proposed increased traffic into the back country and wonders where the money and manpower will come from to keep the roads properly maintained. Gunnison County taxpayers should not have to absorb the burden of upgrading and maintaining roads used by the logging industry.

Another concern is the preservation of the natural beauty and the undisturbed nature of the area. Visitors to the National Forest should be allowed the experience of entering areas that are virtually uninhabited. Visitors should be permitted the pleasure of enjoying the wild creatures that inhabit the surroundings, the natural vegetation as it exists, and the pristine and delicate beauty of the land as it was first experienced.

25-1 Due to public concerns and a limited sustainable timber resource, the Forest developed alternative 1G as the proposed Forest Plan. Alternative 1G has an estimated annual first decade aspen harvest of 1,370 acres a year.

The Kebler Pass corridor has been removed from the suited land base in the proposed Forest Plan, except for previously cut over conifer stands to the south of Coal Creek and the Kebler Pass area itself. No timber sales are scheduled for the first decade.

Timber sales are planned and prepared in a manner that meets the Standards and Guidelines found in Chapter III of the Forest Plan. They are developed to minimize the impacts of timber sales on other forest uses including visual and recreational pursuits.

25-2 The Forest currently has a good working relationship with the Rocky Mountain Biological Laboratory (RMBL). The proposed Forest Plan will not threaten the research being conducted out of the RMBL.

Mr R. E. Greffenius

Page 2

25-2 The next concern is the scientific studies that have been done by botanists associated with the Town of Gothic's Rocky Mountain Biological Laboratory as well as by independent researchers. The Kebler Pass area has been a natural botanical research ground for a number of years and continues to be so today. We do not want to destroy that which has such an esteemed reputation for continuing research in the field of botany.

25-1 The last comment on the timber cut proposal is the visual impact on the proposed areas designated for increased logging. A forest fire is a natural tragedy, but to purposely clear cut entire sections of the forest near or within sight of roads seems an unthinkable act that would impact tourism extensively. The scenario of a family having a picnic by a mountain stream as logging trucks roar by does not seem to be a compatible use of the area. People should be afforded the peace and tranquility they are seeking. We do not want to deprive them of this unique experience.

In summary, the Town Council feels the sheer magnitude of the plan as it has been presented, to be too ambitious and requests that you scale down the plan to something more appropriate for the area, particularly in the Kebler Pass and Taylor Park areas. More thought and planning needs to go into your long range objectives taking into consideration the existing environment and the fact that tourism is the area's main industry.

Thank you for your time and attention.

Sincerely,



Joseph W. Fitzpatrick, Jr
Mayor

jcp

Ouray, City of
8-21-89

City of Ouray

OURAY COLORADO 81427

August 8, 1989

Supervisor R. E. Greffenius
U. S. Forest Service
Grand Mesa Uncompahgre Gunnison Natl Forests
2250 Highway 50
Delta, CO 81416

Dear Sir:

The City of Ouray wants to express deep concerns about certain elements of the recently released Proposed Amendment of the Land and Resource Management Plan and its accompanying Draft Supplemental Environmental Impact Statement (DEIS)

While we are not categorically opposed to timbering as part of the multiple use concept and do support the selective harvesting of trees in carefully considered areas, you must be aware the City of Ouray and the economic base in the surrounding community is heavily dependent upon tourism and recreation visitation. The attractions in our area that bring visitors here are the mountains, forests, rivers, valleys and wildlife they picture as pristine and unspoiled. While those of us who live and work here know that man's imprint is far heavier than most perceive, still the appearance is "un-spoiled"

26-1 If the cutting of the National Forests as proposed in Alternative 1C and for that matter several of the other alternatives - namely #1B and 1C - is carried out, we believe that the visual impact on our scenic vistas will be catastrophic. Alternatives 1A, 1D and 1F offer a better compromise if we knew more about the locations and types of cutting planned, especially for aspen. We recall with some trepidation the disastrous results of the clearcutting in spruce some years ago which the Forest Service endorsed only to have many acres still understocked or unstocked today. Cutting of 40 acre blocks in aspen on the very visible hillsides of our scenic San Juans gives us concerns after the results of this failed spruce management of just a few years ago. The areas of major concern to us are the north face of Mt Sneffels, Owl Creek and the Cimarron drainages, especially the Silver Jack area.

26-2 State figures from the Department of Travel and Tourism show income from hunting, fishing, recreation travel, camping and tourism in general far exceed that from timber harvest. It is difficult for us to understand how - especially considering that you have not evaluated the recreation resource for the area as you have the timber- you can ask people to accept the trade-offs that must come with the doubling of the timber harvest. We believe the Visual Management System (VMS) analysis for this area needs to be completed concurrently with any timber proposal.

26-1 Due to public concerns and a limited sustainable timber resource, the Forest developed alternative 1G as the proposed Forest Plan. Alternative 1G has an estimated annual first decade aspen harvest of 1,370 acres a year.

The FSEIS and proposed Forest Plan removed Mount Sneffels and the Silver Jack Reservoir areas from the suited timber base and also removed some suited lands in the Owl Creek and Cimarron drainages.

26-2 Page II-38 of the DSEIS states that timber jobs make up approximately 1.1% of local employment. The State of Colorado (See 9/25/89 letter from Governor Roy Romer page 2) indicates the timber industry and the tourism industry in Colorado Region 10 are roughly equal in importance when comparing the salaries each industry provides, although the timber industry provides about one-half the jobs the tourism industry provides. The point is, neither industry is unimportant. The Forest has been harvesting timber for over 40 years, yet the local tourism industry has thrived during that period, indicating the two industries would continue to coexist even at the levels in alternative 1E.

Thorough ROS/VQO inventories and mapping were completed for the original Forest Plan, published in 1983, and are part of that planning record. Similar maps are being updated for use in the Forest Plan revision scheduled for 1997.

ROS is valuable as an indicator of public interests in certain National Forest areas. It is used as a guideline for land management decisions - but ROS is not a land management decision in itself.

26-3. The National Forest Management Act requires that cut over areas must be reforested. Areas to be cut must be capable of being regenerated - and must be so certified in site-specific documents required by the National Environmental Protection Act. Those documents also must describe the means the Forest Service will use to ensure regeneration. Those means must be the most effective procedures possible.

Regeneration failures would affect long-term ASQ. However, current timber management practices are producing very low regeneration failure rates (less than one percent for aspen) on the Grand Mesa, Uncompahgre, and Gunnison National Forests. The Plan amendment does not prescribe clearcutting in spruce/fir forests as a standard practice.

Recognizing the importance of soil, the Forest Service is looking into the effects of soil factors in a cooperative study into the relatively infrequent causes of regeneration failure in aspen.

26-4

Public safety will not be compromised (Please see Amended Plan, beginning on page III-76 for transportation system management general direction, standards, and guidelines)

In addition, we are concerned about the following other factors contained in or proposed by the Plan, which do not seem to be substantiated by adequate data or research. In fact, in some cases recognized authorities dispute the beneficial assumptions (aspen reproduction and water yield manipulation*) assembled to support this plan. In light of the failure of the forest

26-3

service to get either natural or hand planted seedlings to establish themselves on many sites, we have strong reservations about the newest proposals that will more than double cutting on these forests

26-4

- Logging truck traffic on inadequately maintained roads, especially when Louisiana Pacific Corporation (L.P.) of Olathe have refused to contribute to road maintenance, creates a hazard to our visitors

26-5

- Below cost timber sales conducted by the Forest Service over a number of years demonstrate that the public is essentially subsidizing the very actions and policy that could possibly have very negative effects on the scenic values so important to tourism

26-6

- We are aware that many members of our community have just in recent days become aware of the potential impact of the proposed Plan. This has occurred because other interest groups have informed them, not the Forest Service. The several volume Plan and DEIS is difficult for most to digest. We request that you extend the comment period and provide better and more intelligible formats for your public informing process

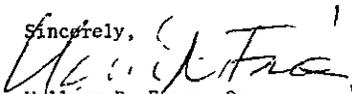
26-7

From all appearances, this Plan seems to be driven by the need to supply aspen to the Louisiana Pacific plant in Olathe, one which has not been a good neighbor for our western slope, polluting our air and suing local counties over road maintenance requirements.

26-8

We feel the ASQ (allowable sale quantity) has not been adequately integrated with the other values most important to the economic and social well-being of our community. We can find no alternative in the Plan which sufficiently addresses our concerns so we request that in your final Plan and DEIS, the visual values and recreation resources so important to our community be recognized and given the stature appropriate to their essential place in our economy.

Sincerely,



William D. Fries, Sr.
Mayor
City of Ouray

WDF/cb

* 7/89 Engineering Analysis of Potential Water Yield by James R. Guadagno, P.E. - Colorado Professional Engineers License No. 13854

7/18/88 Discussion paper by Dr. Rick Lavin, Colorado State University on aspen silviculture.

26-5

It is important to view this issue in its proper perspective. The Forest Service is required by law to manage National Forests for many uses. The Forest Service has no mandate to carry out "above cost" programs in any of the multiple-use programs it manages. Timber sales are not alone in the "below cost category." Recreation, range, and other programs do not pay for what it costs the Forest Service to manage them.

The Forest Service continually monitors and challenges the cost of managing the Grand Mesa, Uncompahgre, and Gunnison National Forests. This is done to narrow the gap between costs and revenues.

Areas that were selected in the proposed Forest Plan as being suited (timber) lands are those that also have the best economic viability. It is also anticipated that Forest Service's revenues for timber products will continue to increase along with market prices.

26-6

The comment period was extended for 30 days from August 25, 1989 to September 25, 1989. The Forest has an extensive public involvement program. For the DSEIS the Forest sent out notices to over 300 people on our Forest Plan mailing list and local newspapers. The Forest held open houses at Grand Junction, Denver, Montrose, Gunnison, Norwood, and Paonia. In addition, the Forest Supervisor and the District Rangers on the Forest each personally

contacted key individuals concerning the DSEIS. If the Forest did not make primary contacts with people because they either were not on the mailing list or missed the notices in the local newspapers, the Forest did make secondary contacts through interest groups. The fact the Forest received over 2500 written comments indicates the Forest's public involvement program was a success.

26-7

One of the objectives of Alternative 1E was to provide for waterwood industry demand to the extent the Forest could sustain the annual harvest level over time (see page B-140-141 DSEIS), without affecting the local recreation industry.

The reason for changing to Alternative 1G in the proposed Forest Plan is because the Forest reassessed the acres available for harvest using a more accurate method, and found Alternative 1E overestimated the total acres appropriate for timber harvesting.

26-8

Please see the response to Issue #14.

LETTER # 27
Town of Ridgway
Post Office Box 10
Ridgway, Colorado 81432

Ridgway, Town of
9/2
OFFICE DELTA
DELTA 9/22/89
DELTA

LETTER 27 RESPONSE

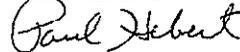
SEP 26 '89

Richard Greffenius
GMUG National Forests
2250 highway 50
Delta, CO 81416

Dear Mr. Greffenius,

- 27-1** The Town of Ridgway recently voted to oppose the proposed amendment to the GMUG forest plan. We feel the plan goes against the principals of multiple as use set down by law. We also feel that the amedment serves the interests of a specific corporation (Louisiana Pacific) while ignoring the interests of Western Slope communities. Tourism and recreation are the fastest growing economic forces in our area. To sacrifice long term opportunity in these areas for short term gain in the timber industry is extremely short sighted at best. With the fall colors at their peak, it is hard to imagine vast tracts denuded to feed the wafer board plant in Dlathe. But, sadly that is what we will see in future years.
- 27-2** Already, the road across the Uncompahgre Plateau is showing the effects of excessive timbering. We feel the original plan met the needs of the local timber industry, and amending it at the taxpayers expense is irresponsible. Our local economy is more important to us than LP corporate profits. Thank you for your consideration.
- 27-3**

Paul Hebert



Trustee

- 27-1** Due to public concerns and a limited sustainable timber resource, the Forest developed alternative 1G as the proposed Forest Plan. Alternative 1G has an estimated annual first decade aspen harvest of 1,370 acres a year.
- 27-2** Page II-38 of the DSEIS states that timber jobs make up approximately 11% of local employment. The State of Colorado (See 9/25/89 letter from Governor Roy Romer page 2) indicates the timber industry and the tourism industry in Colorado Region 10 are roughly equal in importance when compared by the salaries each industry provides, although the timber industry provides about one-half the jobs the tourism industry provides. The point is that neither industry is unimportant. The Forest has been harvesting timber for over 40 years, yet the local tourism industry has thrived during that period.
- 27-3** Research shows that commercial trucks do little damage to properly constructed asphalt roads - when the roads have been treated to prevent damage caused by weather and shnknking. All traffic has an impact on damaged asphalt roads.
- Both heavy and light vehicles cause washboard-like surfaces to form on gravel roads. However, a loaded logging truck - weighing 82,000 pounds - causes 20 times more loss of gravel than a typical car.
- It should be noted that commercial users pay for gravel loss as well as wear and tear on Forest Service roads. Counties receive road-user taxes paid by commercial trucks, as well as a 25 percent share of all income from the National Forests.
- The proposed Forest Plan call for a significant reduction in the amount of timber that will be harvested each year. In turn, that will contribute to reduced road use from timbering activities.



TO: Forest Supervisor Richard Greffenius
GMUG National Forests
2250 Hwy 50
Delta, Co. 81416

FROM: Town of Telluride

Dear Sir:

We wish to express our concern and dismay with the proposed 50 year plan for the GMUG National Forests.

28-1 Specifically we oppose the proposed doubling of timber harvest in the GMUG because it does not reflect the potential negative economic and esthetic impacts to our primary economy - tourism.

28-2 We demand that the Forest Service completely reconsider its methods of managing the GMUG National Forests to comply with the spirit and intent of our nations environmental and land management laws, especially the 1960 Multiple Use - Sustained Yield Act.

28-3 We further request that timbering justifications such as "increased water yield" and short term jobs for the logging industry be eliminated from future cutting decisions until equal economic consideration can be given to: visual considerations and the loss of recreation based jobs due to degradation of scenic corridors (especially in the Sneffels Range and Kebler Pass areas); displacement of big game wildlife and its impact to the region's game hunting economy; siltation of streams and reduction of fish habitat and impact on fishing and other stream and river uses; costs to local governments for road and drinking water supply degradation; and the economic cost of the permanent loss of trees to the ecosystem.

The Town of Telluride and the economy of the State of Colorado depend on preservation of our National Forests.

We encourage a fundamentally shift of emphasis from short-term short sighted exploitation of Forest resources to long-term permanent preservation of forests.

Sincerely,


Mark Worth
Town Mayor

28-1

Due to public concerns and a limited sustainable timber resource, the Forest developed alternative 1G as the proposed Forest Plan Alternative 1G has an estimated annual first decade harvest of 1,370 acres of aspen and 21 MMBF of conifer a year.

28-2

Management of the National Forests under the multiple-use policy established by Congress emphasizes that the Forests are established and administered for outdoor recreation, range, timber, watershed, and wildlife and fish purposes. The policy goes on to say that due consideration shall be given to the relative values of the various resources in particular areas. Not every acre of land can or should be managed to produce a full range of resource goods and services. By the same token, it is a rare instance when it is inappropriate to manage extensive areas of Forest to the exclusion of a resource

28-3

Water values can not justify timber sales, nor are commercial timber sales used to augment waterflows. Water yield increases were considered incidental to the objectives of timber harvests (See III-93, original Environmental Impact Statement). However, it is more precise to claim the economic benefits when and where they occur.

Water yield increases do not directly add money to the Federal Treasury but do produce benefits for downstream users. Some of the water yield increases that occur because of timber harvests are stored in downstream reservoirs until needed. These provide power generation, recreation, irrigation, or desalinization. It is important to note that the Forest Service claims no water rights for increased water flows. Please also see the response to Issues #8 and #12.

LIST OF RESPONDENTS
(WITH CORRESPONDING ISSUE NUMBERS BELOW NAME)

Amber	22, 31	Richard T Anderson	Seth Bagan
36, 46	Dianne Adams	7	22, 31
Arra	22, 31.	T C. Anderson	Jack Bagley
36, 46	Karen F Adams	7	7
Becky	29, 33, 37, 45	Trent & Linda Anderson	Larry Bahr
36, 46	Keith Adams	22, 32, 40.	12, 22
Blinda	22, 32, 40	Noel E Address	Joe Baramonte
2, 4, 12, 14, 22, 24, 31, 33	Lynn Levidy Adams	12, 14	33
Brian	29, 33, 37, 41	Katherine Andrews	Beverly Bailey
36	Seth Adams	22, 31	22
Chris	1, 2, 41	Robert J Angel	Buck Bailey
22, 31	Stan Adams	41.	7, 22, 43, 49.
David	1, 2, 7	Carlie E Apadaca	C.S Bailey
36.	Susan Adams	41	8, 12, 22
Dean	33	Alan and Virginia Apt	Dale Bailey
36	Aru Ae Akelsen	12, 22, 29, 33, 44	22
Dennis	7	Kirt Apt	Sam Bailey
12, 33, 46	Catherine Alelyvnas	7, 8, 12, 22	22
Elizabeth	22, 31	Betty Archuletta	Alfred Baker
22, 36	Mary Alexander	4, 22	22
J K.	33	Bob Armstrong	Karen Baker
2, 32, 44	Paul B Alexander	22, 31	33
Jeff	33	Jay H Armstrong	Laurie M Baker
36	Jim Allard	22, 31	7
Joe	8, 22, 29, 30, 33, 37	John B Armstrong	Linda Baker
36, 46	Doris Allen	10, 12, 33.	2, 7.
Jordan	33	Mrs Grace K Arnott	William Baker
46	George D Allen	22, 32, 40.	22, 35
Kyle	7, 12, 22, 33, 44, 45	Aspen Wilderness Workshop	Ian A Bald
36	Karen Allen	12, 22, 29, 33, 37, 24	2, 8, 22, 31
Loni	12, 44, 45	Cliff Atherton	John R Baldus
36	Matt Allen	30, 44, 46.	22, 31, 45.
Melanie	44	Roger Athey	Marv Ballantyne
46	R Allen	7, 33	33
Michael	22	Teresa Audesirk	Edward Bank
36, 46	R M Allen	2, 37	1, 33
Nathan	22	Steve Autry	H.L Barbe
33, 46	Susan Allen	10, 37, 46	22, 31
Ryan	22, 32, 40	George Avahian	Jill V Barber
7	Jeff Allred	33	22, 31
Tyler	12, 32	Carolyn Avery	Virginia Bargsten
36	Abby Altshules	22, 31, 32, 33, 40	22, 32, 40
1st State Bank of Hotchkiss	22	Josephine R. Axt	Roger Baril
7.	Connie Ambrose	22, 32, 40	7, 22, 29
Jared A	22, 31	Tim Ayer	Carl Barks
33	Selly Amos	7	49.
AARP	22, 31	Phyllis Babish	Jim Barmann
7	Dale & Sue Amstutz	7.	22, 31
Fay Abbott	33	Don Bachman	Paul & Donna Barnett
2, 12	Allen Anderson	12, 14, 15, 22, 25, 32, 33, 44,	1, 10, 15, 22, 30, 46.
Kellie Abel	22	45, 46.	Russ Barr
2, 4, 12, 14, 22, 24, 31, 33	Bill Anderson	Paolo Bacigalupi	22, 31
Don & Connie Abshear	22, 33, 36	33, 36, 44, 46.	John Barrere
12, 29, 33, 37	Glen Anderson	Nina Backett	22, 31
David M Ackerman	22, 31	7	Barbara G Bartholomew
8, 22, 30, 34, 49	Kent Anderson	Jan M Badgley	22, 41
Albert J Adams	7	22, 31	Ildi Bartlett
22, 31	Laura Anderson	Ricky & Austin Baer	22, 41
Bill Adams	7, 12, 16, 22, 33, 45	22	S J Basinger

VI RESPONSE TO PUBLIC COMMENT

22, 30.
 Albert Batik
 2, 22.
 Albert (Mrs.) Batik
 22, 37, 41, 44.
 Bruce Batting
 7, 37.
 David M. Batura
 7.
 Gary Baughn
 22, 32, 40.
 Paul E. Baumann
 7.
 Ron J. Baumgarbier
 22.
 Doug Baus
 33.
 Richard & Andrea Beall
 22, 37.
 Robert B. Beattie
 22, 31.
 Janet Beatty & Eckherdt
 7, 12, 22, 33, 37.
 Dale A. Bech
 22.
 Linda Beck
 22, 32, 40.
 Allen Beck, 22, 32, 40.
 Carol Beesley
 33, 36.
 Doug Beimer
 22.
 B.L. Beinhardt
 7, 12.
 Chris A. Bell
 22, 33.
 Janet Bell
 22, 31.
 Tom Bell
 7.
 Bernard Bench
 22, 32, 40.
 Marie J. Bench
 22, 32, 40.
 Diane & William Bender
 37.
 Vivian Bengel
 22, 32, 40.
 John B. Benjamin
 15, 31, 36.
 E.J. Bennett
 7.
 John Bennett
 22.
 Pat Bennett
 7.
 Sean Bennett
 2, 7.
 Bruce Berger
 2, 7, 29, 33.
 Stuart D. Berkowitz
 22, 32, 40.
 Elise Berlin
 36.
 Lauren Berman
 22, 32, 40.
 Mary Lou Berndt
 22, 31.
 Fred Berry
 12, 33, 36, 44.
 Keith C. Berryhill
 12, 16, 22, 33.
 Louise Russell Berryhill
 12, 22.
 Stuart R. Berryhill
 12, 31, 32, 33, 46.
 Henry L. Berryhill Jr.
 4.
 Wade Bibbee
 2, 4, 12, 14, 22, 24, 31, 33.
 Jeff Bier
 12, 33, 37, 43, 46.
 James, thryn Bignell
 22, 32, 40.
 Mrs. R.F. Bingham
 7, 22, 36.
 R. F. (Mrs.) Bingham
 36.
 Tad L. Bircher
 7, 37, 41.
 Freddie (Mrs.) Bird
 22, itner
 7.
 Alicia A. Bixby
 22, 31.
 James F. Black
 22, 32, 40.
 Virginia & Ross Blackstock
 2, 4, 10, 22, 28, 36.
 Vera Blaine
 7.
 Jimmy Blake
 36, 37.
 Linda J. Blake
 22, 31.
 Carrie Blanchard
 2, 22.
 Neil Bligh
 22, 31.
 Roger N. Blouch
 22.
 Mearl & Barbara Blough
 22, 32, 40.
 Patricia Blue
 37.
 Blue Mesa/Allied Forest
 Prod.
 2, 3, 5, 7, 10, 11, 15, 16, 18,
 20, 22, 23, 24, 25, 28, 29, 31,
 34, 38, 43, 45, 46.
 G. Bluestone
 30, 33, 37.
 John R. Bluff
 1, 30, 35, 41.
 Larry Boaz
 22, 31.
 Debra Bobl
 22, 32, 40.
 James G. Bock
 12, 47.
 Robert Boelter
 7.
 Sarah Bogner
 44.
 Betty Bohn
 49.
 Barbara S. Boland
 1, 2.
 Clay & Mary Boland
 7.
 Diane E.-Jay M.
 Bolte-Silverma
 22.
 Loretta Bonner
 22, 31.
 Luna Bontempi
 37.
 Eric Booton
 22, 37.
 Jody Borzilleri
 7, 22, 31.
 Edward & Jean Bosworth
 12, 14.
 Frank Bott
 22, 31.
 Mimi Boucher
 12, 37.
 Joanne Boudreaux
 37.
 Dana Bove
 7.
 Glen W. Bowers
 22, 49.
 Pauline Bowman
 2, 15, 16, 30, 37.
 Larry R. Boyd
 22.
 Brach's Enterprises
 32, 34.
 Alan Bradbury
 22, 31.
 J. Bradford
 7.
 Charles Bradley
 2, 12.
 Dana Bradley
 2, 3, 22, 33, 44, 45.
 Jerry & Darlene Bradley
 41.
 Martha W. Bradley
 7, 37.
 Wendy Brady
 22.
 Jean Brandenburg
 41.
 Natalie J. Brandt
 7, 16, 22, 49.
 Richard Branstiter
 24.
 Mary Brauer
 7.
 Robert D. Brazell
 22.
 Kristine A. Bredow
 7.
 Gary L. Brender
 22, 31.
 Mary Lou Brendt
 12.
 Robert Brennehan
 12, 22, 41.
 Elizabeth Bridges
 7, 12, 22, 32, 40, 41.
 Mary & Peter Bridges
 12, 34, 41, 44.
 David Briggs
 22, 31.
 Briggs Sawmill
 22.
 D. Brihenham
 22, 31.
 Lillian I. Brink
 12.
 Ron Brinkles
 22.
 Doug Bristol
 12, 22.
 Dave Briston
 22.
 Howard Britton
 33, 36, 41.
 Howard M. Brock
 44.
 Mary Brock
 1, 33, 41.
 Alison K. Brody
 12, 30, 33.
 H. Robert Brokering
 2, 44.
 Gayle Brooks
 49.
 John A. Brooks
 49.
 Theodore L. Brooks
 49.
 D. T. Broun, Jr.
 7.
 Angela Brown
 49.
 Bradley P. Brown
 49.
 Dennis L. Brown
 7, 31, 41, 44.
 Sam Brown
 12, 29, 33.
 Sandy Hammack Brown
 41, 44.
 Scott Brown
 2, 4, 12, 14, 22, 24, 31, 33.
 Susan Brown
 8, 12, 15, 22.
 Wayne & Roseanna Brown

2, 7, 33.
Lori & Robert Bruce
7, 44.
Elaine Brummett
7.
Michele Bruneau
1, 2, 12, 22, 30, 31, 44.
Jeanette Brunner
2, 12, 30, 31, 33, 37, 41, 46.
Jane Brunot
22.
Bill Brunworth
22, 32, 40.
H. David Brusman
22, 31.
David Bruton
22, 33.
David C. Bruton
22, 32, 40.
David L. Bryant
12, 33.
Ted Bryce
22.
Cliff & Carol Buchanan
1, 2, 7.
Julian Bucher
7.
Dee Buckstaff
1, 2, 7, 12, 31, 37, 45.
Sinclair Buckstaff, Jr.
3, 7, 31, 37, 41.
Helen Builder
22, 31.
Phil Burak
22, 31.
Leonard Burch
2, 7.
Chris Burdekin
12, 29, 33, 41.
Jan Burket
7.
Clyde & Elizabeth Burnett
12, 22.
Jennifer M. Burnham
2.
Kenton Burns
30, 33.
Leland Burr
22, 31.
Nancy Burr
22, 31.
Woody Burr
22.
Ramon L. Burrel
22, 32, 40.
T.A. Burst
22, 31.
Sally Bush
22, 31.
Richard Wordsworth
Business

7.
Milli Butterworth
1.
Anthony Buxton
7.
Frank Cada
37, 41.
Marcella Cafferty
22, 31.
Karen Cain
22, 31.
Dr. John Cairns, Jr.
22, 32, 40.
William A. Calder
1, 2, 37, 45, 46.
Nicole Caldwell
22, 31.
Edwin Callaway
12, 33, 41.
Mike Cammack
7, 12.
Robert C. Camp
12, 33, 41.
Clifford & Jacklin Campbell
33, 37.
Mike Campbell
7, 8, 12, 37.
Paul Campbell
22, 31.
Richard Cann
7, 10, 33, 41, 46.
Evan Cantor
12, 22.
Sharon Cantrell
12.
George Cappis
22, 49.
Jim Cardamone
33.
Robert G. Carey
22, 32, 40.
Gary Carlson
22.
Grace M. Carlson
34.
Laura J. Carlson
22.
Vicki Carlson
7.
Gayle E. Carlton
33.
Robert G. Carpenter
22, 31.
Michael E. Carr
22, 29, 31, 41, 44.
William Carrell
22, 49.
Martha Carroll
22, 31.
Steve Carroll
22.
Chase Carter
8, 41.

Gerald Carter
22, 31.
Robert Carter
10, 41.
Sheree Carter
22.
Jeff Carvallon
22.
Judy Casalena
22, 32, 40.
Lynne Casavan
22, 31.
Betty Cassidy
22, 31.
Frank E. Cassidy
22, 31.
Douglas A. Cattell
22, 31.
Laura Cattell
22, 31.
Joy M. Caudill
10, 12, 22, 30, 33.
Angela Cavins
12, 22, 31.
CB Open House
7, 12, 44.
Archie Celruhorn
22.
Cement Creek Ranch
12, 31, 33.
Alvin L. Cerise
22, 49.
Thomas Cerra
22, 31.
Roger Cesario
22, 33, 46.
Bill Chambliss
22, 31.
Dan Chancellor
22, 31.
Dr. Hazel Chapman
22, 31.
Gary A. Chapman
22, 31.
Judith A. Chapman
7, 37.
Mike Chapman
22, 31.
Doug Chard
1, 7, 12, 22, 37.
Steve & Jackie Chenoweth
37, 46.
Sue L. Chesler
36, 41.
Patricia Chew
12, 36.
Steve Chidester
22, 31.
Robert W. Child
12, 45.
Chimney Peak Ranch
4, 7, 37.
Howard C. Chisen

12, 46.
Connie Chism
22.
Capt. M.W. Chitty
7.
Bonnie Petito Chlipala
12.
Carole Chowen
12, 22, 31, 37, 45.
L.J. Choy
22, 33.
Andrea M. Christensen
22, 32, 40.
James Christensen
22.
Cindy Christian
22.
James C. Church
2, 4, 12, 14, 22, 24, 31, 33.
Jim Church
22, 32, 40.
Stan Church
33.
Tom Cioppa
7, 12, 22, 42.
Citizens Task Force
3, 27.
Nard Claar
22, 33, 41.
Daniel J. Clarin
22.
Denise Clark
22, 31.
John Clark
1, 37, 41.
Patricia A. Clark
22.
Ralph E. Clark III
7, 8, 10, 12, 22, 29, 40, 45.
James R. Clark
22, 33.
Mallory Clarke
7, 33, 37.
Rosanne Clarke
2, 33, 41.
Suzanne Clarke
15.
Liza/Bill Clarke/Ferguson
10, 12, 37, 45.
George Cleaver
33, 37.
Barry Clements
12, 33.
Mr. & Mrs. Chris Clingan
7, 12, 33.
Mrs. Harry Clingan
12, 33, 37.
David Allen Clinger
33.
Earl N. Clock
12.
John Clontur
22.

VI RESPONSE TO PUBLIC COMMENT

Fred J Clouse
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 Howard Cluff
 22, 49
 CO Assoc of 4WD Clubs Inc
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 CO Fed of Garden Clubs
 7, 37
 CO Historical Society
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 CO Timber Industry Assoc
 7, 18, 35
 K. Coble
 22
 Rebecca Cochran
 22
 Michael Cockrell
 8, 12, 22, 33, 45
 Susan Cockrell
 2, 12, 37
 Cynthia P. Coffin
 7, 12, 16, 44, 45
 Lou Coffin
 8, 12, 37, 44
 Jack Coffman
 22, 31
 Seth Cohen
 12, 37
 Sally J Cole
 2, 12
 Mike Coleman
 22
 Y Collier
 22, 31.
 Valene Collins
 12
 Colo Wildlife Federation
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 22, 23, 29, 32, 33, 35, 39, 43,
 45, 46
 Joan Colombo
 22, 31
 Colorado Environmental
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 43, 44, 45, 46, 48
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 Mtn Cl
 1, 3, 5, 7, 10, 11, 12, 14, 18,
 22, 27, 30, 32, 33, 39, 43, 44,
 45
 West Slope Group Colorado
 Mtn
 12, 22, 29, 33, 37, 44, 45
 Colorado Outfitters Assn
 7, 12, 14
 Colorado Rocky Mtn School
 7, 12, 14, 22, 33
 Richard C. Compton
 12, 35
 Jane Conlin
 12, 22, 31
 Michael Conlin
 22, 31
 Carl E & Bella A Conner
 12
 Pete Connick
 22, 31
 Marcy Conover
 22, 31
 Marcy S Conover
 10, 12, 31, 46
 William F Conrod
 8, 12, 29, 33
 Shirley E Conroy
 41
 Chuck Cook
 22
 Randall Cook
 22, 32, 40
 Hamilton B Cooper
 22, 32, 40
 Thomas H. Cooper
 22
 Virginia Cooper
 1.
 John & Marilyn Cope
 33, 35
 Helen Copenhaver
 44
 Philip Copenhaver
 10
 Marcia A Corbin
 12, 41
 Dave Cormohlem
 22
 Thelma Cornman
 2, 4, 12, 14, 22, 24, 31, 33
 R Correyaw
 22, 31
 Kathleen Corthes
 33
 Sandra Cortrier
 2, 4, 12, 14, 22, 24, 31, 33
 Chns Cosden
 22, 31
 John Coslett
 24
 John P Cossick
 12.
 Edwin L & Mary E Couch
 41
 Carole Courson
 41
 Michael Covington
 7
 Catherine W Cowles
 22, 31
 S. Macon Cowles
 8, 22
 David M. Cox
 2, 4, 12, 14, 22, 24, 31, 33
 Michele W Cox
 7, 12
 Wilbur K Cox
 22, 31.
 Randy Craft
 22, 31
 Leslie R Crane
 1, 37
 Leslie Ross Crane
 22, 31
 H Harlan Crank
 22, 31
 Bruce R Cranor
 22, 49
 Roy Cranor
 49
 Roy J Cranor
 49
 D.D Cray
 12, 22
 John Crawford
 36
 Mitch & Carol Crazan
 22, 32, 40
 Creative Restoration Inc
 1, 2, 3, 7, 12, 22, 38, 44
 Todd Cressl
 22, 31.
 Jeff Crimpston
 12
 Cathy Cripps
 22, 31
 Cristiana Guesthaus
 2, 7, 12, 37
 Jeff Cristol
 41
 J Michael Crockett
 12
 Jim Crouse
 22
 CH Crowe
 22, 32, 40
 Sally M Crum
 12
 Lee Crutcher
 22, 31
 Crystal River Inn B & B
 12, 8, 12, 33
 Lynn Cudlip
 3, 7, 8, 10, 12, 14, 17, 24, 29,
 33, 41, 43, 45
 Ray R. Cuisy
 7.
 Ewell Culbertson
 7, 12, 22, 33, 37, 45
 Duncan Cullman
 22, 31
 Gary A Cunningham
 12, 22.
 Gloria Cunningham
 22, 30, 37
 Kirk Cunningham
 2, 12, 15, 30, 33
 R Briggs Cunningham
 32, 33
 Byron Curfman
 2
 Elise C Cutler
 12
 Paul E Daemia
 41
 Pete Dahle
 22, 31
 Gretchen Daily
 22, 32, 40
 Taylor Dale
 12
 Daniel P Daly
 49
 Joe & Gwen Danni
 49
 Tony Daranyi
 7
 Eida Darien
 12, 33
 Trinity Datton
 7
 Rudy & Jan Daudert
 7, 8, 12, 33
 L V Davey
 7
 Roger Davidson
 7
 Charles L. Davidson
 22, 32, 40
 Elizabeth W Davis
 12, 41
 Merwyn C. Davis
 36
 Phyllis Davis
 41
 Taylor Davis
 2, 4, 12, 14, 22, 24, 31, 33
 Tom Davis
 7
 Davis Service Center
 22
 Amy Dean
 22, 31
 Keith H Dearth
 7
 John J DeBaggis
 2, 22, 31.
 Gordon DeBrian
 12, 22
 Don Deckard
 7, 22
 Dorothy Decker
 30, 33
 Steven L DeFeyter
 12, 36
 Chris DelGuercio
 22, 31
 A.L. Delimont
 8, 34
 Kenneth L. Demaio
 36
 Kathy Demerath

22
 Myrna DeMilt
 12, 37.
 Mark R Demist
 22, 31
 Shelley L Dennis
 4, 10, 12, 22
 Larry & Rebecca Derby &
 Wilson
 12, 22, 32, 40
 Joy Dernhin
 22
 Robert DeRode
 22
 Rick DeSelm
 12, 22, 37, 49
 Carla Detehun
 22, 31.
 Jeff Deutsch
 12, 14
 L D & Jill A Devenport
 12, 36
 Jerry Deverell
 22, 32, 40
 Suzanne M Devore
 7, 14, 37
 Lisa M Dewing
 2, 4, 12, 14, 22, 24, 31, 33
 Coen Dexter
 12
 Gina Diciaro
 22, 31
 Lee Dickelness
 2, 4, 12, 14, 22, 24, 31, 33
 Jeff & Priscilla Dickenson
 7, 12, 33
 Paul E & Meredith C
 Dickerson
 22
 Landa L Diddy
 22, 31
 Craig Dierksen
 44
 Fritz Diether
 12, 22, 32, 33, 40
 Charlene C Dills
 22, 32, 40
 Chen Dills
 2, 4, 12, 14, 22, 24, 31, 33
 Clif Dimon
 36
 Robin Dirlaigh
 22, 33, 41, 44, 46
 Richard Discoe
 7, 28, 41, 44
 Fran Distefano
 22, 31
 Donna Distel
 7
 Carol Dix
 22, 31.
 Carol McCord Dix
 7, 12

George E Dixon
 7, 36.
 Ms Tina Dixon
 12, 33, 36
 Arthur Dodd
 33, 36, 37, 45
 Dorine Doddy
 7, 44
 R C Dohrmann
 22, 31
 Russell C Dohrmann
 22, 31, 37, 41.
 Patricia Donahue
 22, 36, 44
 Bruce Donegan
 12
 Donita's Cantina
 12, 22, 32, 33, 36.
 Candace L Donka
 12, 37
 Charles Dooley
 7, 12, 22
 Bill & Mary Dorais
 36
 Karalyn Dorn
 22
 Mary Ann Dornfield
 14, 22, 37, 44, 46
 Double RL Ranch
 7, 14
 Kathleen Dougherty
 22, 32, 40
 Jill M Douglas
 7, 37
 Bruce C Driver
 7, 12
 Stan Dromeey
 12
 Jennifer Drybread
 1, 29, 33, 44
 Mike Duame
 22
 David F. DuBois
 12, 22, 37, 44
 Janice Dubrow
 12, 22, 31, 41
 Richard Dudding
 22, 32, 40
 Bob Dugas
 22
 Mark Dugas
 22
 Jane Dunbar
 12, 36
 Robert J Duncan
 22
 Scott W. Duncan
 7, 22.
 Dan Dunlap
 49
 Joi B Dunn
 36
 Mildred Dunsmoor

2
 Dr & Mrs E Frank Dunton
 2, 4, 12, 14, 22, 24, 31, 33
 Mike Dunton
 4, 33
 Grace DuPont
 22, 31
 Pat Durfman
 22, 31.
 Thomas L. Dutcher
 22
 Randy Dworshak
 1, 2
 Virginia Dyche
 33
 Robert Dycke
 8, 33
 Jason Eacher
 36
 Robert D Eakin
 22
 Marnie Easley
 22, 31
 Sonda Eastlack
 22, 32, 40
 Philip S Eastlund
 22, 31
 Edwina Eastman
 12, 14
 Judith Ebaugh
 22, 31
 Ed & Vicki Eberle
 2, 12, 33
 Vickie Eberle
 8, 10, 12, 29, 33
 Pat Ebresbery
 7
 Suzanne Echante
 22, 31
 Christine Eckstine
 7
 Mark S Edens
 7
 Lisa Edwards
 2, 4, 12, 14, 22, 24, 31, 33
 R S (Mr & Mrs) Efin
 22, 31
 Thomas B Egan
 40, 44
 John Eichhorn
 22, 31
 Basalt Elementary
 22
 Lisa Elertsch
 22
 Elk Meadows Estates
 10, 32, 33, 44
 Shaun Ellis
 22
 Jim Ellisor
 7
 Edgar J Ellyson
 22, 33, 37, 41

Mrs R L Elton, Jr
 10, 22, 30, 37, 46
 Julie Emerson
 7
 Leslie Emerson
 12, 33
 Robert Emerson
 7, 41
 Barton C Emmert
 8, 41
 Margaret Enderlein
 1, 8, 12, 20, 22, 33, 34, 44
 Roxann Engell
 22, 31
 Clement P Engle
 7, 22, 33, 44.
 Paul Englirring
 22, 31.
 Michelle English
 22, 32, 40
 Fran Enright
 12, 33
 Environmental Research
 Group
 2, 7, 8, 29, 33, 37
 Lois Epstein
 22
 Albert Erhard
 2, 32, 33
 Don & Carole Erickson
 7
 Eugene A Erickson
 22, 32, 40.
 Ruth Erickson
 22, 32, 40
 Bruce Erikson
 22, 31
 Diane Erier
 33, 41
 Bob E Ernest
 7, 22
 Joe Ernest
 24
 Al & Cecilia Erving
 22
 Dianne & Gary Eschman
 1, 33
 Scott Escott
 22, 31
 Mike Escovy
 12, 22
 Lane G Eskew
 7, 21, 29, 46
 Ruth Esserman
 7, 12, 33
 Penny Everett
 22, 31
 Richard L. Eversole
 8, 37
 Jared F
 46
 John Fago
 7, 12, 22, 31

VI RESPONSE TO PUBLIC COMMENT

Todd Fahising	7	Taryn Frame	2, 4, 12, 14, 22, 24, 31, 33
7, 12, 29	Rev Marcia Flagg	36	William Galloway
Tom Fannon	12, 22, 32, 40	Linda A Franks	7
7	R B Fleske	22, 32, 40	Kenneth Gamauf
Andy Farny	22, 32, 40	ED Frasier	7, 12, 33, 41, 45, 46
7	Sally Fletemier	7	John Gamble
Dave Farny	7, 12, 37	Bert Fraudsen	7, 22
41, 45	Lito Flores	22	Mia M Gamble
Marti Farr	12, 22, 31, 33	Daniel Fredericks	12, 41, 46
46	Dick Flugel	24	Linda Gambrell
Dorothea Farris	22	L. Fredrick	1, 41
22	Pat Foctr	2, 12	R Gardner
Isabelle Favre	2, 4, 12, 14, 22, 24, 31, 33	Charlotte Freeman	12, 33, 37, 46
33, 41.	Dylan Foglesong	12	George Gardrer
Diana D Fay	22, 31	Georgeanne Freeman	1, 36
7	David J Foley	22, 32, 40.	June Garfield
Charles Fazio	22, 49.	Neil Frick	22, 32, 40
7, 41	Kerry Folger	22, 32, 40	Ann N Garfinkle
Elizabeth T. Feazel	7, 22, 32, 33, 40	Arleen M Friedman	22, 31
7	William Folger	7, 22	Hai H Garper
Harlan Feder	22, 32, 40	Phil Friedman	22
2, 7, 12, 22, 44	Jonathan Foote	7, 12, 22, 37, 46	Judy Garrett
Sharon Feder	22, 31	Walter Friend	22, 32, 40
2, 29, 37, 41.	Walter L. Foote	22, 31	Larry & Gail Garrison
George H. Fentress	31, 46	Nama Frisnkez	22.
41	Jeanette Ford	22, 31	Julianne Garton
Tom Ferguson	12, 33, 41	Franz Froelicher	7
41	John & Patricia Ford	2, 12, 32, 37, 45, 46	D R Gately
Stuart and Jeanie Ferrell	7, 10, 12, 37, 41.	Linda Singer Froning	22, 31
22, 32, 40	Paul Foreman	7, 12, 22	DR & Bonnie L Gately
Rory Ferrer	2, 7, 12, 22	Jim Frost	7, 8, 22
36	Douglas W Foster	7, 12	Caleb Gates
Ilene M. Ferrer	7	Abby Frucht	7, 10, 11, 20, 21, 22, 33, 37,
2, 12	Edwin Foster	3, 7.	45
Penny Fick	2, 22, 32, 33, 40.	Hazel Frye	Jonathan Gates
22	Edwin L Foster	24	7, 12, 29, 37, 45, 46
Thomas M Fick	30, 32	Darren Fuller	Rickey Gates
22	Jeffrey BG Foster	7, 12, 29, 41.	36
Donald E Fick, Jr	7	Patricia Fuller	Sidney Gates
12, 22	Joseph Foster	7, 22.	7, 29, 33
Janet Fieder	22	Ted Fulton	Bob & Karen Gauvey
2, 7, 22, 33, 37	Jule Foster	22	22, 31.
John Fielder	22	Mr & Mrs Robert Fultz	Jim Gaw
12, 41	Keith C Foster	7, 41	1, 3, 7, 12, 37, 46
David Findley	7, 34	Kids Pro Fun Tour	Pauline Gebahart
12, 37.	Polly Foster	22, 28	12, 22, 30
Mary Peace Finley	2, 34	Wendell Funk	Pauline Gebhart
1, 41.	Tom Foster	12, 33, 41, 44	22, 32, 40
Paul Finley	22	Pam Gabel	Judy Gee
22, 31	Freeman Fowler	33	1, 7, 33
Wallace D. Finley	2, 4, 12, 14, 22, 24, 31, 33	Bruce Gabow	Mike C Geer
7.	David N Fox	29	7
Luise Firos	33.	Caroline Eve Gabriel	Robert K. Geidall
37	Ivan Fox	22, 32, 40	22
Betty Fischer	22, 31.	Barbara Gagliardi	J Geller
7, 22, 32, 33, 40, 46	Lyle G. Fox	7, 12	41
Wil Fischer	22	Tom Gagnon	Jacob Geller
22, 32, 40.	Lisa/Paul Foxwell/Finley	2, 7	41.
Harry E Fisher	1, 2, 7, 12, 14, 22, 45	Denny Gainer	Peter Gent
22	Richard Foy	7, 12, 33	7, 33, 46
John Fitzgerald	41	Paul Gallaber	Cynthia George
22, 31	Jed Frame	2, 4, 12, 14, 22, 24, 31, 33	22
Judith A Fitzpatrick	36, 46	Patricia A Gallagher	Kay George

22, 31.
 Jan Gerber
 30, 33, 41.
 Samantha Gerber
 33.
 Scott Gerber
 33.
 Chris Gerdts
 7, 8, 31, 37.
 Lori Worman Gerdts
 7, 8, 31, 37
 Vesper Gers
 1, 2, 12
 J Gery
 24
 David Gibans
 7, 12, 33, 37
 Henry Gibb
 29, 33, 37, 45
 Kenneth G. Gibbar
 12, 22, 33
 Mary Jo Gibbons
 22, 31
 Pat and Zane Gibbons
 22.
 Cheryl Gibson
 22, 31
 Craig A Giffen
 28, 41, 45
 Thomas Gifford/Jean
 LaTourette
 22, 32, 40
 Douglas Gill
 12, 41
 David & Karen Gillard
 12, 32
 Barbara Gillett
 33
 Sandra Gilner
 33, 36
 Irene Ginsberg
 22, 32, 40
 Helen E Girling
 2, 7
 Marcia Gladstone
 33, 41
 H W Glover
 2, 4, 12, 14, 22, 24, 31, 33
 Ron Godsey
 7.
 Liberty Godshall
 22, 31
 A Gofforth
 12
 Lydia Gofforth
 7
 Dave Goldstein
 22, 31
 Ron Goldman
 22, 31
 Winslow Golley
 7.
 George Gonzales
 7.
 Nathan Good
 12, 41.
 K. B. Goodhue
 22, 31.
 Mary Goodrich
 41.
 Autumn Goodwin
 22, 31
 Bruce S Gordon
 2
 Dan & Linda Gordon
 22
 Ginny Gordon
 7, 22
 Lillian Gordon
 7.
 Spencer Gordon
 7, 31.
 Deborah P Gore
 7, 22, 41
 Roy Gorin
 7
 Joan Gough
 22, 31
 Gerorge H Gould
 37
 Rose Anne Gould
 22, 31
 John Graber
 22
 Patty Grace
 33
 James & Linda Graeper
 2, 7, 12, 37
 Bill Graham
 22
 John Graham
 7, 12, 22, 46
 Stephen L. Graham
 7, 33, 37
 Jonathan Grange
 33, 41
 Mrs. William Grant
 33
 Jim & Nancy Gray
 7, 41
 Michael Grazier
 7, 12, 36, 45
 Carol Green
 22, 31.
 Robert F Green
 22, 31
 Jonathan Greenwald
 22, 31
 David Greenwood
 22
 Kim Greer-Pucher
 22, 31.
 Scott Grell
 22, 31.
 Lynn Grenda
 7
 Dan Gresham
 22
 Robert N Gribble
 33, 41.
 Richard Gribbon
 22, 31.
 Jayne Grigg
 22, 31
 Harvey P Grimes
 22, 31
 Ralph Groff
 7.
 John P Groome
 1, 2, 3, 7, 10, 12, 22, 37, 41,
 44, 45, 46
 Wilson Groome
 7, 31.
 Howard Gross
 7, 22, 29, 33, 41
 Stacey Grove
 7, 12, 33
 Joe W Gruber
 22
 Lawrence Grundy
 7, 12, 44
 Sue Gudawig
 22
 James K. Gunderson
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 7, 10, 12, 30, 32, 46
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 Gunn Gorge Anglers
 10, 22, 33, 44
 Mr & Mrs C R Gunter
 7, 12, 16, 29, 30, 33, 45
 Angela Gusa
 22, 31
 Terry L. Gutierrez
 7, 10, 12, 37, 44, 46
 Kai Haber
 22, 31.
 F F Haberlein
 7, 12, 22, 33
 Barbel Hacke
 1, 2, 7, 10, 12, 46
 Allen Hadley
 7, 10, 22, 24, 32, 41
 David L Hagedorn
 12, 34
 Lyn Hagen
 7
 P. Haggard
 22, 31.
 Robert Haggins
 22, 31
 H Lawson Hagler
 7, 33, 44
 Wilham S. Hagler
 7, 12.
 Al Hahn
 22.
 H.F. Haley
 22, 31, 32, 40.
 Joanie Haley
 22, 32, 40.
 Kevin J. Haley
 22, 31, 32, 40
 Meghan Haley
 22, 32, 40
 Ruth M Haley
 22, 32, 40
 Karen M. Halgren
 7, 12, 33, 41
 Bill Hall
 22, 41, 46
 Bonnie Hall
 22, 45, 46.
 Craig M Hall
 22, 30, 31, 32, 33, 40
 Denis B Hall
 2, 7, 12, 22, 30, 32, 40
 H. James Hall
 22
 Harris Hall
 22
 Jerry Hall
 22, 31
 Karen K. Hall
 22, 32, 40
 V P. Hall
 2, 7
 Scott & Jacqui Halladay
 12, 22
 Jacqui Hallady
 2, 7
 Gus Hallum
 12
 Ann C Halpin
 2, 22, 37, 44
 Gary Hamilton
 22
 Diane Hammond
 22
 Jack Hammonds
 7
 Stephen Hampel
 22, 31
 Keith Hampton
 22, 31.
 Bryan Handwork
 12, 33, 41
 Charlotte and Jim Hansen
 32, 33
 Christopher S Hansen
 8, 12, 15, 16
 Dana Hansen
 32.
 Jim and Charlotte Hansen
 1, 22, 32, 33, 40
 Mary Lee & Kenneth Hansen
 1, 7, 12
 Ronald K. Hansen
 22, 49.

VI RESPONSE TO PUBLIC COMMENT

Richard L Hanson	12, 33	7, 12, 30, 31, 32, 37, 46	Mr & Mrs Jack Horam
22.	Steve & Grace Herndon	J.W Hobson	1, 7, 12, 15, 46
Miki Harder	2, 7, 22, 31, 33, 37.	7, 33	King Horn
22, 32, 40	James Herzstock	Edward L. Hocker	22, 31
Robert Hardy	30, 32, 33	33, 45	Heidi Hinton Hornaday
22.	Lynne W Heutchy	Jean L. Hocker	2, 7, 12, 22, 33
Samantha Harrington	7, 12, 22, 32, 33	22, 32, 35	Clarence R & June Horton
36	F T Hiarts	Lamar Hocker	41, 44, 46
Tom Harrison	22	22, 33, 37, 44.	Jan Hose
22	William R Hiatt	Jean W Hodges	2, 33
Roger Harsila	2, 7, 14, 30, 45	1, 33	Ada Houck
22	Donna R Hicks	John H Hodges	7, 12, 22, 27, 30, 32, 37
Kenneth W Hart	12	7, 45	Anna Housey
22	Ethan E Hicks	Tracey J Hodges	22
June & Clarence Harton	12, 22, 32, 33, 37, 40.	12, 22	Roy Housey
41	Lee Hicks	Ronald R Hoefke	22
Susan Hatch	22, 32, 40	7	Susan J Housey
22	William Hicks	Karl Hoff	7
Bradford Hatcher	22, 32, 40	22, 33	Jim Houston
2, 3, 5, 8, 10, 11, 12, 14, 15,	Arline W Higgs	David Hoffman	7, 12
16, 21, 24, 28, 29, 32, 35, 38,	12, 31, 41	2, 7	Shondia Houtzer
39, 41, 45, 46, 48	High Country Citizens	John N Hoffman	7, 46
Lewis H. Haupt III	Alliance	2, 33, 41, 44.	Peter Hovanec
22, 32, 40	2, 3, 7, 8, 11, 12, 14, 15, 19,	Laura Hoffman	7, 12, 33
Sam Hawkins	22, 27, 29, 30, 31, 37, 43, 45,	7	John Hovori
22, 31	46	Sharon Hogan	22
Richard Lee Hawks	Carol Hight	22, 31	J T Hovis
22, 49	7, 37	Chris & Anne Hohenemser	46
Bonnie Haycraft	Kasia Hilberman	11, 22, 31, 33, 41, 49	David J Howard
22	28, 33	Kit Hoherd	2, 4, 12, 14, 22, 24, 31
Phil Hayden	Byron Hill	7, 33	Eugene R Howard
22, 31	2, 7, 12	Christine Holbrook	24
Tina Hayes	LeeAnn Hill	7, 22, 32, 37, 40	Mary C Howard
22	22, 31	Michelle Holcomb	12, 41, 44
Kristine Hazard	Rudy Hill	1, 7, 12	Robert L Howard
24	22, 30, 33, 41	Bob Holden	2, 4, 12, 14, 22, 24, 31, 33
Brandy Hebert	Tony Hill	22	Sarah Howard
22, 32, 40	22, 31	Mrs Mary Holder	2, 4, 12, 14, 22, 24, 31, 33
Don Hedges	Darus Hiliman	22, 32, 33, 40	Carol S Howe
22, 31	7.	Lisa Hollick	8, 10, 33, 37, 44, 46
Chester T Hedin	Steve Hinchman	22, 31	Ron & Mary Howe
22	1, 2, 22	J C Hollis	2, 12, 33, 44
Jim Hedrick	Carne Hinds	7	Cheli Howell
22	2, 29, 37, 41	Jim Hollis	22, 31
Hedstrom Lumber Co, Inc	Gary Hiner	12, 22, 31	Steven J Howle
22	7	John Hollrah	24
Michael Helland	Orpha Hinkley	22, 31	Bert Hoyer
22, 32, 40	7, 12, 22, 37	Jerry Holman	9
Don Hempel	Warren S Hinton	2, 9, 12, 30	Connie Hubbell
22, 32, 40	12, 33	Karl Holman	2, 7, 10, 22, 25, 31, 32, 41
K. B Hempel	Jeffrey J Hipkins	22, 31	Gary Hubbell
22, 31	12, 22	Greg Holt	2, 7, 12, 33, 44, 46
Leonard Hendzel	Donald R Hirsch	22, 31.	Debra Huckins
9, 24, 34, 49.	22, 31.	Helen Holt	22, 46
Roger E Henn	Barry Hirshfeld	12, 29, 41	Rick Hudson
7, 12, 30, 37	36	Jan Holt	22, 31
Martha Henry	Sue Hirshman	2, 12, 20, 22	Roy Huffstelter
24, 33	41	Tim Holvenstot	7, 12, 30, 33
Saul Herbert	Corey Hiseler	7	Ilyn C. Huggins
46	22, 31	Linda Honeycutt	22
J D & Rosie Herman	Corey L Hiseler	12, 37, 41	Verna & Raymond Hunt
49.	2, 7, 12, 37, 46.	Jim Hoppe	22, 31.
Jeffery Hermanson	Henry Hite	22	D L. Hunter

22, 31.
 Jessica Hunter
 22, 31
 Terry L & Pamela Hunter
 7.
 Tim & Kathy Hunter
 4, 10, 12, 22, 33, 41, 46
 Marion Huntington
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 Marion Huntzinger
 2, 12, 33
 J L Hurd
 22, 31.
 Vicky Hurst
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 Chris Hutchison
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 Virginia Ikeda
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 Robert J Illeman
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 J L. Ingham
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 Jacquelin Ingham
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 J Bar M Ranch
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 Bernice A Jackson
 22
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 Lila Jacobs
 7, 22, 41
 Allen R Jacobson
 7, 12, 22, 33, 46
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 Bee Jaeger
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 Jane Janaki
 22, 32, 40
 Martin Jance
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 Thomas Jancewicz
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 Shari Janger
 22
 Tim Jantz
 22, 31
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 Robert L Jayner
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Howard & Grace Jenkins
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 Robert H Jennings
 22, 36
 Rick Jensen
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 Ulli & John Jesse
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 Therese Johansson
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 Carole Johnson
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 Chris Johnson
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 David Johnson
 7, 12, 29, 33
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 Emil C Johnson
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 Eric Johnson
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 Erin Seth Johnson
 7, 23, 31
 Evelyn Johnson
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 John Johnson
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 Kenneth R Johnson
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 Michael Johnson
 22, 31
 Mike Johnson
 22, 32, 40
 Nina Johnson
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 Ray Johnson
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 Sarlord E Johnson
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 Sherry Johnson
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 Stephen B Johnson
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 Thane Johnson
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 Warren Johnson
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 Brenda Johnson-Cook
 22, 32, 40
 Linda Johnson-Evans

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 Tom Johnston
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 Edwin K. Jones
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 Justin Jones
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 Marjorie Jones
 14, 22
 O W (M D) Jones
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 Pauline Jones
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 Peter Jones
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 Gregg Jorgensen
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 Mary V. Joyce
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 Doris J Kearns
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 David Keegen
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 Maureen Keilty
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 Dorothy Kelleher
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 Patrick Kelley
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 James W Kirchner
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 Jan Burum Kirkpatrick
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 Becko Kisler
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 Louis L. Kissling
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 Jill Klahn
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 Robert L Klausmoier
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 Melissa Kleinman
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 Barbara Kline
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 Kar J Kness
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 Gary Knifflo
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 Lisa Knight
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 Larry D Knudson
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 Shirley Koenig
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 Charles W Koethe
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 Sheryl Kolojay
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 David & Betty Kolosta
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 Sean Koutsockis
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 Joan Kowalczyk
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 K. Kowalyk
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 Paul Krabacher
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 Tony and Bettie Kramer
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 J Stuart Krebs
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 D Abba Krieger
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 12, 22, 32, 40.
 Jean Krogh
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 Thelma M Krueger
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 Elroy Kuehl
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 Wallace H Kuehl
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 William Kuehl
 22
 Steve Kuehn
 22, 31
 Dan Kunde
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 David Kuntz
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 Nancy Kurtz
 2, 12, 22, 31
 Kim H. Kyle
 7
 Larry Lafeber
 22, 32, 40
 Cynthia & Kevin Lagace
 7, 22
 Debbie Laird
 22, 31.
 Ed Lain
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 Alex Laird
 22, 32, 40.
 Mary Jo Laird
 22, 32, 40
 Mary Jo & Alex Laird
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 Karen Laisore
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 James & Roberta Lake
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 George N Landrum
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 Lorraine Lane
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 Danni L. Langdon
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 Dale Latta
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 Stefan Laufer
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 Anne Laverly
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 Elmar Lawaczeck
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 Paula Lawley
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 Thomas Lawley
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 John Bryan Lawn
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 Lois Lawrance
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 Arthur Lazares
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 Robert Lazeres
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 Carole Leach
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 George LeClerq
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 Carol Lee
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 Terry Lee
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 Dwayne Lehnertz
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 Lawrence W Leinhart
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 Dona Leiper
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 David Lenberts
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 Nancy Leonard
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 Louise & Kory Levine
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 Robert H. Levy
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 G. Lewis
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 Mary Beth Light
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 Elizabeth Lilien
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 Charles R Lilly
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 Mary Lilly
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 Loren R Lind
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 Jerry Lindens
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 Dave M Lindergeron
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 Christopher P Lindner
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 Eva Lindsey
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Betty & Raymond Locke
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Robert R Locke
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Leslie Locklear
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Dorothy Lockwood
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Dan J Logan
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Jim Logterman
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Vela Merle Lollar
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Alfred London
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Marilyn C London
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Mike Loso
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Gail Lotunberg
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Jeffrey Louden
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Barbara Loughman
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Joseph M Lucero
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Corky Lucks
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Bill & Betty Luebbert
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Alex Lukeman
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Nate & KT Lund
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Michael & Carroll Lynch
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Sara Lynch
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Linda Lyon
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John W Lyons
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Roxie Lypps
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Mabee Macdonald
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MacDonald Resources
Engineer
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Bennett Machanic
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Barbara Machann
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John P Machann
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Marcie Machenberg
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Susan MacKelvie
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Chris MacWaters
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Greg Madeen
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P A Madsen
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Anne Maer
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Juan V Maestas
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Frank Magni
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Susan Magruder
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Marjorie P Maguire
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James and Diane Mahaffey
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Steve Mahan
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Martha A Maher
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Tom & Claudette Maixes
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Tony J Maldarella
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Angela Mallard
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Walter Manaker, Jr
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Mark J Maney
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Christina Mann
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Christopher L Mann
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Jeff Mann
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Mrs Charles Mann Jr
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Robert E Mannetin
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Paul Manning
22, 31

Marian March
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Carl Marcus
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Lisa Markalunas
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Kenny Marks
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Lan Marks
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Dorothy Marsh
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Virginia M Marsh
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Cheryl Marshall
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JoAnn Marshall
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John Marshall
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Betsy Marston
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Janet Martin
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Ken Martin
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Peter A Martin
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Kim Martinez
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Dowell and Mabel Martz
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Mabel & Dowell Martz
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Amiel Mason
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Barbara J Mason
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Billy Mason
22, 31

Mason & Morse
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Robert L Masters
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Becky (Mrs) Matchette
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Karen Matel
22, 33

John S Mateo
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J K. Matheney
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Chalseis Mathers
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Paul A Mathew
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Lori A Mattina
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John K. Maurus
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James O & Ruth M Mavis
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Matty Maxwell
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Sharon Maxwell
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Steve Maxwell
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Jeffrey A May
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Joan May
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Thomas May
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Kari McClanahan
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Lisa A McClanahan
12, 22

Robert McClanahan
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Sally A McClure
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Andrew McConkey
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Michael J McCormack
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John & Diane McCormick
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Karen McCouy
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Hugh McCoy
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Katherine & Michael McCoy
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Sharon and Hugh McCoy
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Shaun McCoy
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Eric McCracken
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Ivan E McDaniel
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Linda McDaniel
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Louise E McDaniel
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Monica McDaniel
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Jane McGany
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Bill and Judy McGill
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22	Michael C Meyenhott	Ralph & Jacqueline Mintener	22, 31, 33	Margaret & Jeff Morse	22, 33
David & Kelli McGuire	22, 31.	Fred F Mire	22, 32, 40	Virginia Morstein-Marx	12, 33
2, 4, 12, 14, 22, 24, 31, 33	Jerry O. Meyring	Randy & Karen Mitchell	22, 32, 40	Mountain Sun	4, 7, 12, 19
Marie E McHale	7	Mary Lou Moeller	22	Guy Moussalli	2, 7, 8, 22, 29, 33, 37, 45
7, 12	Sean Michael	Mark Mohnac	22, 31	Sue Mozian	1, 12, 33, 46
Susan Mchenden	36	Daniel Molbly	33.	Patrick Muckleroy	7, 10, 12, 22, 30, 32, 33, 37,
22, 31	Stacy Michaelley	Gerry Moll	1, 12, 22, 33	40, 44, 46	
Jim McHinnon	22	Carrie Ann Monaco	22, 29	Sylvia Mucklow	7, 12, 15
22	Rudy C Michels	Lisa Mondy	22, 31	Dorothy N Mueller	12, 22, 32, 35, 36
Dr & Mrs B B. McInteer	24	Erik K. Monge	7.	Peter Mueller	7, 22, 35.
22, 32, 40	Sherry Mieling	David Monroe	24	Barry Muirhead	22, 33, 36.
Mr. & Mrs. Harry McIntosh	1, 12, 22, 31, 33	Terilyn Monroe	24	Dan Muldoon	12, 22
7, 12, 33, 46	David A Miersch	Gayle Montelin	2, 4, 12, 14, 22, 24, 31, 33	O'Hare Mullady	2, 4, 12, 14, 22, 24, 31, 33
Linda McJunkin	22, 33	Montrose Chamber of	Commerce	Bill Mullen	2, 12
2, 10, 36, 37	Kimberly K Milensky	7, 22	Montrose Co Airport Auth	Caleb Mullen	2, 30
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Ken McKenna	22, 31.	Corp	7	Mickey Mullins	7
2, 37	Becky R Miller	Hillary Moon	12, 32	Karen Mulvahill	22, 31
T J McKenney	7, 24, 31, 44, 46	Carl R Moor	8, 12, 33	Lois Mumm	22
24, 38	Betty Miller	Clair Moore	7, 10, 12, 14, 30, 45	Ronald Mumm	22
David McKinnie	22.	Keith R Moore	12, 37, 41, 44	Sandy Mumm	22
12, 22, 37	Bryan Miller	Mitzi Moore	22	Paul Muonio	33
Katie McMordie	22, 31	Scott D Moore	7	Dirk Murphy	22, 31
7, 12, 33	Celeste Miller	Steve & Sandy Moore	22, 32, 40	Marcia Murphy	7, 22, 29, 33
Vivian J McMullen	12, 41.	Tom Moore	22, 31	Richard Murphy	2, 4, 12, 14, 22, 24, 31, 33
29, 33	Clay Miller	Amy Moorefield	22, 31	Sandrack Murphy	2, 4, 12, 14, 22, 24, 31, 33.
M J. McNally	12, 22.				
22, 31.	Eric D Miller				
Charlie McNamara	7				
7, 10, 22, 33, 44, 46	Glen A Miller				
Bonnie McNaughton	10, 14, 20, 41				
22, 31	J Miller				
Erin McVoy	22, 31				
8, 31.	J A Miller				
Diane Meade	22				
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Jackie Meade	7, 29, 33				
7	Kari Miller				
Steve Meade, Jr	22, 31				
7	Kenneth M Miller				
Benjamin Medina	22				
22	Linda Miller				
Marla J. Meehl	11, 22, 49				
7, 33	Margaret Miller				
Joe Melley	33, 44				
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Lita Mendel	7, 22, 33, 36.				
22, 31	Philip Miller				
Tim Menger	22, 31				
2, 22	R.A Miller				
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 Helen C Newell
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 Floyd D Newton
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 Marcellina Noth
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 Noreen B O'Connor
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 Bob O'Rourke
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 Meg O'Shaughnessy
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Debbie Percival 24	Richard & Joyce Plants 7, 41.	Scott Ramer 7	Matt Riggerbach 2, 4, 12, 14, 22, 24, 31,33
Joe A Percival 12, 22	Theresa L. Platt 22, 32, 41	Glenn & Mary Ramsay 33, 41	Lisa Rigney 3, 8, 12, 22, 32, 33, 40, 41, 46
Mrs Frank Percival 24	Bill Poehnert 28, 44	Karen Randol 7	Ken Riley 2, 10, 12, 16, 22, 32, 46
Mike Perez 24	Deborah Poirier 22, 49.	Daniel Randolph 2, 7, 12, 22, 30	Susan Rinaldi 22, 32, 40.
Helen J. Perkins 22, 32, 40.	Deborah J. Poirier 7, 12	Rick Rasmussen 7	Susan & Peter Rinaldi 1, 12, 22, 32
Richard Perry 22, 31	Kathlene Pokless 4, 7.	Stephen Rau 22, 32, 40	Jocelyn A Ritti 2, 4, 12, 14, 22, 24, 31, 32, 33, 40
Richard Perske 8, 12, 22, 32, 37	Lt Col Yale B. Pokless (Ret) 2, 44	Kim Rea 3, 12, 33, 37, 45	James M. Robb 9, 41
Paul Persons 4, 12, 45	Marlene Politzer 1, 2, 7, 22, 46.	Mark Reamann 12, 33	Lee and Patricia Robbins 12, 33, 41, 45, 46
Abbie Peters 7, 33.	Alexander & Dorothy Polowshi 22	Claudia Rector 2, 7, 8, 12, 15, 17, 22, 24, 29, 31, 37, 44, 45, 46	Carl L Roberts 2, 12, 16, 32, 36, 37, 46
Alan H. Peterson 7, 8, 29	Ed Polsley 5, 12, 23, 33, 44, 46	Katherine Redd 7, 12.	Celia Roberts 7, 31, 32, 33
Bryan Peterson 22	Barbara Poole 2, 7, 22	Stacy Redman 22	Dan Roberts 2, 7, 12, 41
Greg Peterson 16, 22, 37, 41.	Murray Pope 12, 33, 37	Redstone Inn 33.	David Roberts 24
Michelle Peterson 1, 7, 22	Roseanne Porter 7, 22	C Reed 22, 30	Jerry Roberts 7, 22
Peter & Penny Peterson 22, 32, 40.	Job Luning Prak 7, 12, 30, 33, 37	Charles T Reeder 3, 8, 12, 15, 22, 30, 32, 33, 37, 44	Kate Roberts 3, 12
Robert E. Peterson 22	Alan M. Pratt 12, 37, 44.	Kirsten Reese 22, 31	Kim Roberts 7.
Linda Jackson Petito 22, 32, 40	Jim & Pat Prendergast 32, 37, 45.	D V. (Mrs) Reeter 33	Nancy M Roberts 22, 32, 40.
Lynda Jackson Petito 2, 4, 12, 14, 22, 24, 31, 33	Leslie Prendergast 7, 12, 37	Miles & Roberta Reich 8, 12, 49.	Richard H Roberts 22, 32, 40
Julie Petot 41	Pete Prendergast 8, 22, 40	Donita R Rerfe 22, 30, 33	A Curtis Robinson 22
Felix Pfaeffle 12, 41	Leigh & David Preston 2, 4, 12, 14, 22, 24, 31, 33	Alex Reinhardt 12, 30, 33.	Cynthia Robinson 7, 22, 31, 41, 45
Bill Pfeiffer 22, 36, 41	Luke Price 1, 12	Gary Reitze 22, 31, 32, 40	Rita Robinson 22, 31
Lawrence E Phelps 22, 49	Mary V Price 22, 32, 40	Christine Renck 7, 12, 46.	George Robison 1, 7, 12, 22
John H Philip 29	Don A. Prince 12, 33	Lee Renfrow 12, 33	Rocky Mtn Biological Lab 12, 41, 46
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Randy Pierce 33	Lou Quiring 12, 22.	Ruthie Hilton Rhodes 1, 8, 22, 33	Craig Rogers 7, 12, 22, 31, 37, 46
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Donna Pisl 2, 4, 12, 14, 22, 24, 31, 33.	Jason R 36, 46	Patricia Joy Richmond 3, 22, 35, 41, 46	Bob L. Roper 2, 22, 49
Lynn Pitman	Tracy Raczeh		

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Jerrie Runice
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Fred S.
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Scott & Kathleen Saindige
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Susan Salafsky
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Teresa Salvadore D.C.
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Susan A. Samuelson
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Devon Sandidge
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N. Sandusky
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Ken Sauls
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Ken B. Sauls
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Ms. Harlin Savage
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Sawyer
22, 31

Andrew Sawyer
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Lee Sayre
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Joe Scalminini
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Jim Schaffer
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Tessa Scharf
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Corrine Scheman
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Bill Schiffbauer
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Susan I. Schilling
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Barbara Schluraff
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Lora Schmidlen
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Gailen Schmidt
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Karl Schmidt
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Doreen Schmitte
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Joan Schmitz
22, 31
John & Lana Schneider
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Rhonda Schneider
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Jeff Schnitss
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Elaine Schroedl
22, 31
Tom Schroedl
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Tom & Elaine Schroedl
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S.L. Schultz
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Richard A. Schwab
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Judson Neil Schwartz
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Peter Schwimmer
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Earl C. Scott
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Kay Scott
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Hal D. Sears
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Geraldine Sebring
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Troy Sebring
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Rudy & Emmy Sedmak
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Ernest Seeman
22, 32, 40

Barbara K. Seese-Breda
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Louise Seeton
22, 49.
Hans & Clara Sehmacher
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Ted Sehrffler
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Chris Seidman
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Steve Seikovich
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Terry Selby
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Daniel L. Semegen
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Steve Semegen
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Paul Senna
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Joyce Sexton
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Jerome L. Shain
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Peggy Sharp
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Peter Shelton
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Charles Shepard
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Roger D. Shipley
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David Shoultz
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Marga Shuhwerk
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Mark Sibley
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 Joe Siegel
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 Sam Siegel
 22, 31
 Steven Siegel
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 Ruth Siemer
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 Liza Jean Silva
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 1, 7, 22, 31, 36, 45
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 Faye C Simpson
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 John C Singer
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 Jolene Singer
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 Janice Siopali
 7, 37
 Mary Sjoberg
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 Beth Julian Skodje
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 Linda Slater
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 Pam Slater
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 Regina Sletvold
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 Susan B. Smander
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 Judy Smelser
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 Chris Smith
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 Cindy Smith
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 Dawn Smith
 22, 32, 40
 Debi Smith
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 Doug Smith
 12, 36, 37
 Ellen Smith
 12, 22.
 Howard Smith
 16, 22, 31, 37, 41
 J Smith
 12, 22
 James & Nellie Smith
 22, 32
 Jennifer R. Smith
 22, 31
 Jim Smith
 2, 12, 33, 37.
 Joy L. Smith
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 Ken Smith
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 Kimberly A Smith
 22, 31
 Knut Smith
 22, 29, 33
 Leigh Smith
 22, 31
 Michelle Smith
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 Orrin r. Smith
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 Rachel Smith
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 Susan Smith
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 Lila French Smoot
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 29, 37.
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 Susan M. Spohn
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 Thomas E Spooner
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 Pete T (JR) Spor
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 Micah Springer
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 Deana Jo Spruiel
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 Jim P. Spruill
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 Jran & Neil Stabenau
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 Mike Stabler
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 Rich Stafford
 1, 10, 16, 37, 41
 Jason Stahlheber
 22, 31.
 Don Stanfield
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 Laura W Stanger
 12, 30, 33
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 Jill M Starceovich
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 Jim Starr
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 James H Starr, Esq
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 Anne Starritt
 22, 49
 Sandy Stay
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 Stephen M Stay
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 Jodie A. Steblay
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 J. C Steele
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 Andy Stein
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 Cathy Steinberger
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 Lisa Steiner
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 Karen Stellhorn
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 Eleni Stelter
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 Sheri Lyn Stephens
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 Jeff Stern
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 Mark Steur
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 Barbara Stevenson
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 Betty A Stewart
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 Brenda Stewart
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 Jeanne C Stewart
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 Sam Stewart
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 Wade Stewart
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 John Stickney
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8, 33
 John W Stockemer
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 Franci Stogi
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 George A Stolze
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 Barbara Stone
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 Elana Blue Stone
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 Gordon Stonington
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 Joyce Storm
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 Margie R Storms
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 Francis E Stretton
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 Randy Sublett
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 Richard Suh
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 Lucinda Sullivan
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 Michael J Summer
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 Jim Summers
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 John B Sutherland
 7, 22
 Doris Sutton
 10, 12, 32, 37, 41, 46
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 John R. Swanson
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 Kent Swanson
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 Sheri L Swarmer
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 Aaron Swepston
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 Margaret Tange
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 Dixie P Tate
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 Laurel Taub
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 Dwayne Taylor
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 Walt Taylor
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 Doug Teet
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 Don Thompson
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 Hilary Thompson
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 Barbara Thomson
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 Barbara A Thomson
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 Dave Thomson
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 Robert S Tomassi
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Linde Waidhofer	Jo Wecker 22		David Wilson 12, 33
			Don Wilson