

FY 2000-2003
Monitoring and Evaluation Report
San Juan National Forest

Certification

The Monitoring and Evaluation Report for FY 2000-2003 is primarily an evaluation of the needs to change the Forest (Land and Resource Management) Plan for the San Juan National Forest. The Forest Plan was approved on September 29, 1983. It has been amended 21 times, including a significant amendment regarding timber management in 1992.

I have reviewed the annual Monitoring and Evaluation Report. I find that the decisions made in the Forest Plan are still valid but that it needs to be revised. The Forest had begun revision of the plan earlier but was delayed due to lack of funding and other high priorities, such as responding to the Missionary Ridge Fire and its aftermath. The San Juan is again working towards revising the Forest Plan, with a proposed Plan and DEIS expected late in 2005 and a Final Plan and FEIS late in 2006.

Mark W. Stiles
Forest Supervisor

Evaluation of Need for Change by Program Area

Recreation and Travel Management

Evaluation of Plan Implementation

The San Juan National Forest has experienced a steady increase in recreation use in the past few years. While budgets have not kept up with the estimated funding needed for the recreation program, other sources, such as the Capital Investment Program, have helped.

The increased Capital Investment funding over a three-year period was used to improve some facilities and develop additional sites on the San Juan Skyway. Many other sites (primarily campgrounds) need rehabilitation. Campgrounds and other developed sites that are 25-30 years old and in need of rehabilitation are scheduled for reconstruction.

The Forest's capacity for meeting the needs of present and expected future developed-recreation users appears to be adequate, with the exception of a few areas. Changes, however, are occurring in the types of recreation users that are using developed recreation sites. An increase in use by recreation vehicles (RVs) and an older clientele are pointing to the need for different facilities to meet these changing conditions. Therefore, the emphasis is, and should remain, on improving existing sites, not on increasing capacity.

Maintenance of existing facilities continues to be hampered by funding far below the estimated need. The Forest has strived to overcome this shortfall by operating all developed campground facilities with concessionaire operations. This has been a positive program that appears to be cost effective. Changes in legislation that allow the Forest Service to collect and keep fees locally, coupled with new wage requirements for concessionaires' employees, may result in the Forest Service's reducing its reliance on campground concessions in the future.

We have embarked on a program to rent out some Forest Service cabins and lookouts, to take advantage of these historic structures and to offer a unique opportunity to the public. This program has proved to be highly popular.

Through partnerships and the San Juan Mountains Association (SJMA), we have increased our capacity to provide interpretive programs and tours. The SJMA is conducting daily tours and an extensive field-

seminar program at the Chimney Rock Archaeological Area during the summer.

Trail use, particularly day hiking and interpretive trails, is also seeing a large increase, along with off-road vehicle (ORV) use. Mountain-bike use has greatly increased on the Forest within the past five years, and is fast becoming one of the primary uses on many trails throughout the Forest. Trail reconstruction and construction have decreased over the past few years, due to a dramatic decrease in budget. Budget allocations are far short of the Forest Plan levels. Progress has been made by providing barrier-free trails at the Animas Overlook, Big Al, Chimney Rock, and other interpretive-site locations. New trailhead improvements are planned at Junction Creek and Lower Hermosa Creek.

Downhill skiing opportunities on the Forest continue to meet the existing demand. In 1990, the Forest Service issued a permit to construct an additional downhill development on the Forest, the East Fork Ski Area, near Pagosa Springs. In 1995 the Forest terminated the permit for this area due to lack of progress by the proponent in meeting the special-use-permit requirements for development of the area. Purgatory Ski Area is developing a revised master development plan that will guide development of this area over the next 5-10 years.

Potential changes to the ski area management prescription boundary should be considered in the Forest Plan revision. The current boundary allows the consideration of expansion to the north but there is more potential for expansion to the west than to the north. Wolf Creek Ski Area, located on the east side of the Continental Divide (Rio Grande National Forest) has expressed interest in a future expansion onto the San Juan National Forest. This would allow visitors arriving from the west side to enter the ski area without having to drive over Wolf Creek Pass, as well as opening some new territory. This should also be examined in the Forest Plan revision.

Dispersed recreation continues to increase on the Forest; driving for pleasure is the most popular activity. The San Juan Skyway is now designated an "All American Road," one of only six in the nation. The Skyway is being developed to offer interpretive and other recreational options along the route. A particular area of concern for dispersed-recreation managers is whether the distribution of backcountry use is well balanced.

As recreation use continues to increase, the number of applications for commercial-use (outfitter-guide) permits has also risen. The Forest had placed a moratorium on the issuance of new permits until an allocation analysis was completed in 1998 and a determination made on the need

for additional commercial services. In 1998 a prospectus was issued for new outfitter-guide opportunities. Approximately 22 new permits were issued through this process.

Analysis of Need for Change

As part of the Forest Plan revision process, we formed a Travel And Recreation Working Group that began meeting in July 1997 to study recreation and travel management issues on the San Juan National Forest (SJNF).

In February 1998, the group began integrating recreation with travel planning. The aim was to highlight the range of members' perspectives and recommendations to consider in developing alternatives.

The group identified three important questions:

1. Is our future desired condition to accommodate more users? How can the SJNF better accommodate the current amount of users?
2. How can the forest minimize, direct, and contain user impacts?
3. What experiences do different Forest users desire? In other words, considering both the resources and the types of activities, what preferred uses can be achieved?

Based on the issue discussions, the following working-group Goal, Objectives, and Outcomes were derived.

Goal

Provide general management guidelines for minimizing resource impacts and offering quality recreation opportunities and adequate access for all users.

Objectives

- Provide natural-resource protection when planning and managing travel and recreation on the SJNF.
- Address people management, considering the experience desired by different user groups, resource impacts, and wildlife habitat.
- Address motorized-recreation and travel planning.
- Provide direction for minimizing and containing user impacts.

- Consider wildlife habitat with regard to recreation and travel access, especially winter recreation effects on winter range.

Outcomes

Mapping

Recreation User-Group Map

In the fall of 1997, working-group members, as well as other local residents who belong to specific user groups, met for special mapping meetings to mark trails, roads, and areas of particular interest. They also recorded areas of conflict and destination points, and provided other related information.

Each map was then compiled into winter and summer travel-inventory maps. The summer travel map was overlaid on existing SJNF roads, trails, and ROS areas. Separate transparent overlays were used for motorized and non-motorized modes of recreation.

The maps' purpose is to compare current and desired recreation routes with the current ROS and travel management direction. It identifies travel and recreation activity from a user's perspective, as well as desired use, trail improvements, and loop opportunities. Specifically, the map marks trails and roads that are:

- current and proposed bicycle routes,
- current horse routes,
- current and proposed ATV routes,
- current and proposed motorcycle routes,
- current and proposed 4X4 routes,
- preferred non-motorized trails (bicycles okay), and
- preferred non-motorized and non-mechanized trails.

Although there were a few areas of overlapping use and desired changes, the maps show that, overall, current travel and recreation management is working fairly well; diverse users are either separating themselves or sharing the trail with few conflicts. Members often have emphasized

multiple use and cooperation among recreation users. Some commented that, given the large number of users and range of current opportunities, conflicts are minimal. There simply is not enough Forest to separate uses, they assert.

Multiple use may be OK in the sense of shared access among current users. However, caution was expressed about the multiple-use philosophy that leads to the belief that all uses can be satisfied. Future recreation planning needs to acknowledge the point when the land cannot accommodate more uses.

Map of Management Concerns

For two meetings in February and March of 1999, SJNF Ranger District specialists brought a map showing suggested changes in travel management classifications for about 25 areas. They based their considerations on their field observations and asked working-group members to give their impressions of the suggested changes. They stressed that the proposals are not official, but are ideas for changes that managers wanted to discuss.

Proposals included changing a few motorized trails to non-motorized where the physical terrain is difficult and trails are little used. Many opportunities for linking old roads and upgrading trails to provide motorized trail loops were also identified.

Discussion of these two issues also led to much discussion about the SJNF travel policy. The Mancos-Dolores RD uses the "Open Unless Designated Closed" policy. In contrast, the Columbine and Pagosa RDs' policy is "Closed Unless Designated Open," which implies restricting access to designated roads and trails, prohibiting off-road and off-trail use. Given the high density of roads on the Mancos-Dolores RD, combined with resource-protection issues, members generally accepted making the policy for the entire Forest "Closed Unless Open."

Area-Specific Recommendations

In addition to responding to area-specific management concerns, members have made recommendations for other areas throughout the course of their regular meetings, particularly in relation to a desired Recreation Opportunity Spectrum for any given area. These area-specific comments have been compiled and are available to use in alternative formulation for the Forest Plan revision.

Themes And Strategies

The group's course of study reverberated with repeated calls for three values that must be sustained through planning and management: resource protection, multiple-use philosophy, and adequate access and travel opportunities that offer a full range of recreation experiences. The following are some strategies members suggested for achieving these keystone themes:

- Emphasize a multiple-use recreation-and-travel plan by encouraging responsible use and working out user conflicts, rather than imposing restrictions or segregating uses.
- Protect opportunities for solitude and more natural recreation experiences by designating some areas for non-motorized recreation activities - for example, cross-country skiing and hiking.
- Use the "Closed Unless Open" area and road policy across the SJNF to better protect the resource, especially given the current need for user education. A benefit would be a positive message in signage, e.g., "open to..." rather than "closed to..." (Disagreement exists over this theme, and discussion will continue as community members and the FS continue to develop a solution.)
- Manage primitive areas in large blocks, to:
 - protect and retain biological diversity;
 - reduce fragmentation, especially between high and low elevations; and
 - preserve a natural environment and refuge for animals and humans.
- Develop facilities along key points of the San Juan Skyway, to accommodate user needs and provide interpretive and general Forest information.
- Concentrate use and development along highways and urban corridors, to reduce resource impacts and protect other areas. Receiving special mention were:
 - protect wildlife habitat and corridors from fragmentation, and
 - preserve the natural character and solitude of other areas, especially backcountry.

- Minimize resource impacts from motorized-recreation use, by:
 - providing adequate motorized access and opportunities, restricted to designated roads and trails;
 - designating roads and trails in the current F (open) areas; and
 - developing ATV loop trails, to reduce off-trail violations, reduce environmental mischief, and spread the flow of traffic on the few existing motorized trails.

- Minimize wildlife disturbances and habitat impacts caused by travel and recreation, by:
 - restricting recreation access in low-elevation winter-range habit
 - concentrating uses, and
 - managing recreation access seasonally, depending on periods of wildlife use.

- Minimize hunting-season impacts, by:
 - making the SJNF Visitor Map and travel regulations more understandable,
 - posting better ground signs,
 - supporting registration programs that provide a contact point for educating users and funneling them into appropriate areas,
 - including more information in Colorado Division of Wildlife (DOW) pamphlets,
 - increasing FS personnel presence,
 - using more volunteers,
 - collaborating with DOW on enforcement,
 - generating revenue to fix the heavy-impact problems; and

- implementing a state conservation stamp to pay for monitoring and improving habitat.
- Establish partnerships with Forest users and community organizations, to:
 - provide voluntary maintenance and monitoring,
 - increase public contact and access to Forest Service information, and
 - create informational maps specific to each recreation activity or travel mode.

New Planning Approaches and Directions

As they progressed in discussions and learning, members identified new approaches and management opportunities for improving recreation and travel planning. Some of the following recommendations are fairly new planning directions for the SJNF, and could result in significant changes in use.

- Create a Non-mechanical And Non-motorized Trail designation, to provide solitude and natural recreation experiences outside designated Wilderness, especially more accessible lower-elevation opportunities.
- Establish guidelines and a review process for new travel modes, before allowing them access.
- Distinguish between motorized modes of travel when designating trail access.
- Include management flexibility in the Plan, in order to address future conflicts and allow seasonal management, because uses and needs change year to year.
- Encourage joint recreation and travel planning with the BLM in the Silverton area.
- Monitor both social and physical impacts in recreation and travel planning (approval of the Capacity Analysis).

Future Opportunities

The recent integration of recreation-user maps with the Forest Service ROS areas, roads, and trails has produced a number of issues for the group to address further. Below are listed some of the possible tasks still to be examined by the group.

- Develop a winter ROS map.
- Review the wildlife group's maps and recommendations, to better plan recreation access with regard to wildlife habitat.
- Continue to integrate summer and winter recreation desires with travel planning.
- Discuss the potential for establishing a consistent travel policy across the Forest, and possibly designate specific roads and trails for access routes within F areas on the Dolores RD.
- Integrate previous study-group concerns with the continuing travel management study.
- Work with the USFS to create a Desired Future ROS map. The ROS map being used now illustrates "current ROS distribution."
- Design a new visitor information map.

Travel Management Planning Status

The activities listed above will contribute to a travel management plan with which the Forest proposes to amend the current Forest Plan. A goal for the new travel management plan is to be consistent across the Forest and address known problems with the current Plan. The SJNF expects to develop alternatives by October 1998.

Wilderness

Evaluation of Plan Implementation

The SJNF manages almost 20% of its land area as Congressionally designated Wilderness. The 1993 Colorado Wilderness Act designated 59,840 acres of additions to existing Wilderness Area. The Act also designated 62,550 acres as the Piedra Area, which is to be managed to

maintain its existing wilderness character and potential for inclusion in the National Wilderness Preservation System.

In 1998, the Forest amended its current Forest Plan direction for Wilderness and included new standards and guidelines, management area prescriptions, and allocation of management areas. This new direction was implemented in the summer of 1999.

The new direction will make it easier to monitor effects on wilderness conditions, allow for new regulations to protect wilderness values, and establish group-size limits that are consistent across the Forest.

The Forest staff has completed land acquisition of over 600 acres in the wilderness. This accomplishment will allow for consistent management for wilderness values, by reducing the potential for evidence of human activities and development within the wilderness boundaries.

Over the last two years, we have begun to gather information on recreation use, including commercial and institutional as well as general-public use; visitor demographics; trip diaries to model visitor movements within the Wilderness; and surveys of visitor concerns and experience factors.

Information gathered so far indicates a trend toward increased use of the Wilderness resource, with associated effects on social and physical/biological values of Wilderness.

Analysis of Need for Change

Goals and Objectives

The Wilderness Forest Plan amendment primarily addressed recreational impacts on Wilderness conditions. The Forest will need to look at needed changes for other Wilderness resources, such as air and water quality and wildlife habitat.

Standards and Guidelines

The Region is currently working on adopting Region-wide standards and guidelines for Wilderness. Where feasible, these can be incorporated into the existing Standards And Guidelines that were recently developed for the San Juan and Rio Grande National Forests.

Indicators and standards should be reviewed for a variety of resources within wilderness. These include air quality standards; water quality indicators for high lakes and effects from mining operations;

recreational-stock grazing-utilization standards; wildlife habitat indicators - particularly for black bear, mountain goat, and indicator species such as boreal toad; noxious-weed and non-native-plant indicators and standards; riparian-area guidelines; and direction on management of National Register-eligible properties (historic surface architecture, in particular).

Management Area Prescriptions

Management areas for the Lizard Head Wilderness should be evaluated within the context of planning on the Grand Mesa, Uncompahgre and Gunnison National Forest Plan revision.

Monitoring and Evaluation System

Monitoring for the recently amended Standards And Guidelines should be implemented starting next year.

Wildlife

Evaluation of Plan Implementation

Management Area 5B

Management prescriptions for 5B (Big-Game Winter Range) areas have been applied as directed in the Forest Plan. The direction for this management area is used effectively in project planning. There is some concern about the capability to monitor the standards for "30% of the area in created openings," and maintaining the standards for cover across the prescription area. This may be facilitated as we implement the IRI Common Vegetation Unit and an activities layer in GIS, but is difficult to do currently over a large area.

We also have not been able to evaluate the standards for maintaining a certain percentage of habitat effectiveness and habitat capability. In addition, we are not tracking populations of big game to know whether we are contributing to meeting DOW population objectives. In most cases, the National Forest land within the DOW population units (i.e., Data Analysis Units) is relatively small. As such, tracking population data, other than to look at relative trends, may not be meaningful.

Another concern about the big-game winter range area is that it does not correspond to the DOW's delineation of significant or "critical" big-game winter habitat. Also, due to the unpredictable winters in southwest Colorado, there has been interest in delineating a "transition" range; i.e.,

areas significant to elk and deer in milder winters. The increased impacts from rural development adjacent to the Forest will further heighten the significance of big-game winter range on the National Forest.

In general, natural succession is occurring in much of the big-game winter range, resulting in type conversions that affect the habitat. This is primarily a result of fire suppression. For example, the piñon-juniper type is encroaching on the sagebrush-grassland type, which is important deer habitat. This may hamper our ability to meet certain habitat goals without increased emphasis on habitat improvement projects (e.g., prescribed fire).

Over the past three years, funding for big-game habitat improvement activities accomplished cooperatively with the DOW has declined. This is primarily due to the DOW's emphasis on accomplishing projects identified through their Habitat Partnership Program. This major planning effort includes all ownerships, and thus has spread DOW's funding across a larger land base. The HPP effort has been ongoing in the counties on the east side of the Forest and should begin in the western counties in 1996.

Accomplishment of big-game habitat improvement projects on the Forest has varied, due to weather that limited opportunities to burn. The spring and fall of 1993 were wet, which precluded extensive burning. In 1994, conditions were dry, but most personnel were involved in wildfire suppression and unavailable for prescribed fires.

With regard to road closures, we are unable to effectively manage and monitor many that are established. This is particularly true in winter range where flat topography limits our ability to use gates effectively. At present, we have not been able to fully evaluate the effectiveness of these projects.

Management Area 4B

Management Prescriptions for 4B (Management Indicator Species [MIS]) are not being applied consistently across the Forest. Much of the problem is due to the fact that specific MIS species were not identified to the management area. We may want to rethink the utility of a prescription of this type and consider switching to a management system that more generally provides for habitat needs.

Threatened and Endangered Species

With increased emphasis on T&E species Region-wide and the issuance of a Regional Sensitive Species list in 1993, the TES administration workload has increased dramatically. In particular, inventories to ascertain whether these species are present or whether there is suitable habitat have been emphasized. While many of the inventories have been negative, a significant find occurred in 1995, with the sighting of southwest willow flycatchers in two locations on the Forest. Additional inventory should be emphasized.

Watchable Wildlife

The Forest Service has instituted a program to provide opportunities to enhance the public's enjoyment of wildlife watching. Emphasis has been placed on interpretive signs, trails, and brochures. We expect that this program will increase in the future because of the excellent public service it offers. The Watchable Wildlife program, however, was not included in the direction or anticipated costs of the 1983 Forest Plan.

Environmental Education

The public demand for environmental education has increased dramatically in recent years. While most of the emphasis has been in reaching school children, other adult- and family-centered programs have been implemented. The San Juan Mountains Association has been an integral part of this education effort. As with the Watchable Wildlife program, environmental education was not included in Forest direction, has no accomplishment reporting or budget associated with it, and is not reflected in the 1983 Forest Plan.

Analysis of Need for Change

Goals and Objectives

We need to consider increasing emphasis on funding inventory and protection of threatened, endangered, and sensitive species.

We should consider direction that adds a program focus on providing interpretive information to the public.

A current Forest Plan Goal is to "improve habitat diversity on 4 of the Forest" (Chapter III-3). This Goal needs to be reevaluated and a determination made on how to measure and/or monitor it.

We should examine landscape-level biodiversity Goals and/or management requirements to address current issues. This might include Goals and/or Standards for fragmentation, corridors, keystone species,

natural disturbance events, desired vegetation composition and structural diversity, wetlands, unique habitat areas, etc.

In general, natural succession is occurring in much of the big-game winter range, resulting in type conversions that affect the habitat. This is primarily a result of fire suppression. For example, the piñon-juniper type is encroaching on the sagebrush-grassland type, which is important deer habitat. This may hamper our ability to meet certain habitat Goals without increased emphasis on habitat improvement projects (e.g., prescribed fire).

Our big-game program should be an integral part of the Habitat Partnership Program implemented by DOW. We should take this opportunity to establish coordinated goals and objectives for big-game habitat and populations.

Prescribed natural fire will be more integral to our management. We need to establish Objectives for this program.

Standards and Guidelines

Wildlife and fisheries direction should be integrated more thoroughly with watershed, riparian, and recreation.

The Forest Plan should include management direction for the inventory and protection of habitat for threatened, endangered, and sensitive plant and wildlife species. This would include evaluating land acquisitions, standards for protecting each species, and ongoing monitoring. The anticipated costs of this work need to be reflected in the planning budget.

Neotropical migratory birds has surfaced as a major issue. Standards for managing and monitoring habitat for these species should be pursued.

Many of the standards and guidelines for individual species need to be revised. For example, the goshawk standards are inadequate to protect a nesting goshawk, according to the latest scientific literature. In addition, the Abert squirrel, road density, and wildlife-tree (snag) Standards are not effective.

Riparian-habitat Prescriptions are inadequate for the protection of riparian-dependent species. These Standards need to be reevaluated.

There continues to be conflict over allocating forage between big game and livestock. It is virtually impossible to separate utilization between the two.

The introduction and/or reintroduction of both native and non-native species needs to be addressed.

Management Area Prescriptions

The necessity of management Area 4B (Management Indicator Species, MIS) is in question. Management prescriptions for 4B are not being applied consistently across the Forest. Specific MIS species were not identified for the management area. Most wildlife professionals do not support the Management Indicator Species concept. A landscape-level approach (section level) for managing vegetation, based on conservation biology principles, could be pursued.

The 5B (Big-Game Winter Range) management area does not correspond to the DOW's delineation of significant or "critical" big-game winter habitat. Also, due to the unpredictable winters in southwest Colorado, there has been interest in delineating a "transition" range; i.e., areas significant to elk and deer in milder winters and/or a bull elk winter range.

Monitoring and Evaluation

There is some concern about the capability to monitor the standards for "30% of the area in created openings," and maintaining the standards for cover across the management area. This may be facilitated with increased use of GIS, but is difficult to do over a large area. We also have not been able to evaluate the standards for maintaining a certain percentage of habitat effectiveness and habitat capability. In most cases, the National Forest land within the DOW population units (i.e. Data Analysis Units) is relatively small. As such, tracking population data, other than to look at relative trends, may not be meaningful.

With regard to road closures, we are unable to effectively manage and monitor many that are established. This is particularly true in winter range where flat topography limits our ability to use gates effectively. At present, we have not been able to fully evaluate the effectiveness of these projects.

Neotropical Migratory Birds has surfaced as a major issue. Standards for managing and monitoring habitat for these species should be pursued.

Other Issues and Concerns

There is a potential issue with maintenance of the aspen type. Much of it is mature. However, there are some publics concerned about harvesting stands of mature, contiguous aspen, due to the potential resulting fragmentation, and the effect it may have on species such as goshawk. A land- scape-level approach to aspen management should be pursued.

The increased impacts from rural development adjacent to the Forest will further heighten the significance of managing big-game winter range on the National Forest.

The introduction and/or reintroduction of both native and non-native species needs to be addressed.

The Forest has completed an analysis to determine the impacts and environmental consequences of government-sponsored predator control (the APHIS program). A decision was made in March 1992 to allow the predator-control program to continue, with some restrictions. It does not appear that further Forest Plan amendment will be necessary.

Fisheries

Evaluation of Plan Implementation

Emphasis areas have included implementation of the Colorado River cutthroat trout conservation strategy, abandoned-mine-land reclamation, settlement of federal reserved water rights, and effectiveness monitoring of structural improvements. Other activities included NEPA support functions, biological assessments for water depletions, Regional Office tasks, and interagency coordination.

Program priorities have been clearly articulated and are being pursued within budgetary and personnel constraints.

Monitoring Activities

Implementation and effectiveness monitoring was completed for all structural improvements. A database was developed with the intent of identifying and tracking structural-maintenance needs. District Biologists are using this information to develop project work plans.

Validation and effectiveness monitoring was continued for purposes of abandoned-mine-land reclamation. A monitoring report is being developed that will help target remediation efforts.

Analysis of Need for Change

Goals and Objectives

The Forest Plan provides little direction for fisheries. It includes a single Goal: to "improve fish habitat on suitable streams and low-elevation ponds and lakes." The Plan defines Objectives in terms of recreation visitor days, with projections ranging from 135,000-255,000 RVDs/yr. Under General Direction within the Management Direction section, the Plan reiterates NFMA requirements for maintaining viable populations.

In addition, the current Regional Goals and Objectives for Plan revisions contain little in the way of fisheries direction, and the Regional Watershed Conservation Practices Handbook only generally addresses the biological components of aquatic management.

The Plan Revision should contain Goals and Objectives that address aquatic-habitat maintenance and improvement, population viability, aquatic-SES management, aquatic biodiversity, riparian-fisheries interaction, user opportunities, etc. Emphasis needs to be placed on a more holistic approach to aquatic-ecosystem management.

Other Issues and Concerns

Significant issues that may need to be addressed in the Plan Revision include:

- TES management,
- wilderness stocking,
- wild fish management,
- whirling disease,
- water quantity issues,
- water quality issues,
- user-group conflicts,
- fishing outfitter-guide allocations and distribution, and
- aquatic biodiversity.

Range

Evaluation of Plan Implementation

Of the 881,000 acres of Suitable rangelands, about 61,000 acres has been classified as "Low Ecological Condition." Low ecological range is generally found in areas where vegetation-production potential is minimal (for example, steep, rocky, or exposed soils such as Mancos shale-derived slopes).

There are 136 grazing allotments on the Forest. Of these, 111 are cattle, 23 are sheep, and two are recreation livestock allotments. Thirteen of these allotments are vacant. Districts have consolidated some allotments through the allotment-planning process. This has resulted in fewer grazing allotments, which has improved the efficiency of administering permits and increased the number of allotment management plans that are in compliance with the Forest Plan.

The 1995 Rescission Act (PL 104-19) was signed into law on July 27, 1995. Section 504 of this law requires that National Forests establish and adhere to a schedule for the completion of National Environmental Policy Act analysis and decisions on all allotments within the National Forest System unit for which NEPA analysis is needed. The San Juan National Forest has developed this schedule, and will follow it in our short- and long-range-planning processes.

Since 1993, we have completed 29 additional allotment management plans, bringing the total to 104 allotments that are verified as operating in full compliance with the Forest Plan.

Both the sheep and cattle industries are experiencing a depressed market. The sheep market continues on what has been several years of low market prices for mutton. In addition, federal government wool incentives have been eliminated, making it more difficult for permittees dependent on their income from sheep to remain solvent. A drop in the prices cattle producers are receiving at the sale barn has continued for over a year and is undoubtedly having an effect on Forest permittees. No significant change or effect on the Forest range program has been noted as a result of these economic factors.

Although management prescriptions are being applied in making land management decisions, we continue to have trouble applying the 9A (Riparian) and 4B (Wildlife) Prescriptions consistently. One reason may be that more specific direction on utilization levels and other measurement factors is needed to better determine when desired levels of use are being reached.

In an attempt to fill this need for more specific direction and guidance in riparian-area and upland-site management, the Forest is seeking to

develop clear, measurable, and acceptable standards. Our goal is to develop a guide or package that will clarify and simplify the existing utilization Standards so that permittees, the general public, and Forest specialists can all easily recognize prescribed-use levels.

Analysis of Need for Change

Goals and Objectives

The two goal statements listed under range are unrealistic and create expectations from some of our users, namely grazing permittees, that we may not be able to meet. The statement, "Provide for grazing of livestock at moderately increased levels" implies that we will increase permitted-livestock numbers on the Forest. The fact is that since the implementation of the Plan, we have experienced a decrease in total permitted numbers, due in part to the depression in the sheep market.

This statement could be viewed as leading the permittees and industry on, and giving them false hope of raising their permit numbers. The basis for this statement does not exist. We would need site-specific information to determine if the possibility of increasing permitted numbers exists. Since the Forest Plan is intended to be a broad-level planning step, the issue of permitted numbers and changes of them should not be a product.

The goal is too narrowly focused to gain support outside the minority directly benefiting from this activity. To gain wider support, we need to have a goal that talks more to the ecological health of the rangeland resources and focuses on the management of those resources, rather than on the benefactor or user of those resources. By doing this, we begin to show that we are managing with an ecosystem concept, rather than managing for livestock.

The second goal statement of "Providing for intensive livestock management on approximately 60 percent of the Forest" may be difficult to accomplish on some Districts, such as Pagosa, due to the large amount of designated wilderness. Although the AMPs and Annual Operating Instructions incorporated details of how grazing will occur within these areas, the limitation of what can be done to remain in compliance with the law makes it difficult to develop an intensive-management system for livestock grazing.

Perhaps a clear definition of the term "intensive management" is needed to distinguish level of intensity. Is it necessary to attach an expected level of accomplishment (60%), and if so, how was 60% arrived at? A

clear statement defining "intensive," and describing what is acceptable and what is not, would be more appropriate.

The specific objective of grazing use displayed in Table III-1, Projected Average Annual Outputs, Expenditures, Costs, and Returns, is unrealistic and not supported by sound resource-inventory data. The table indicates that the permitted Animal Unit Months (AUM) level will increase by 38,000 AUM between the years 1985 and 2030. If we use a four-month grazing season, this equates to an approximate increase of 9,500 animal units. That is substantial, considering the issues and reasons discussed earlier.

Also in regard to Table III-1 and the concern of AUM level displayed, if this is an output measure rather than an availability measure, then it needs to be made clear that this is not intended stocking or permitted numbers. In other words, distinguish between available and permitted or intended stocking. In some cases, we may have AUMs that no one has interest in using.

As mentioned in previous comments, the usefulness of the goal and Directives can be improved by incorporating a sense of ecosystem or rangeland health, while maintaining grazing as an available use of the Forest resource. If a projection of AUM levels is mandatory over the life of the revised plan, then let's try to agree on a defensible basis for making the projection, i.e., current level with anticipated changes as per 15 AMP Schedule. Another possibility is to offer the AUMs that are not currently permitted but that can be used on allotments where we intend to continue to graze, if a qualified applicant exists.

The plan goal of increasing grazing is no longer valid. The goal of intensive livestock management on 60% of the Forest may not be valid.

Many sheep allotments are vacant and not suitable for conversion to cattle.

Rest-rotation systems were designed for several allotments in the Mancos area, but were not fully implemented for a variety of reasons. Less intensive management strategies may be more appropriate for many areas of the Forest, due to terrain, the amount of forage available or reasonably available, and the current infrastructure.

The goals should be expressed in terms of desired pattern of vegetation or ecological condition and community sustainability. Livestock grazing would be one means to achieve these desired conditions, and not an end in itself. Goals should be developed for upland and riparian areas.

Standards and Guidelines

We need to develop clear, understandable utilization guides for riparian and upland sites. This may require listing allowable use by species and for specific rotation systems.

We also need to consider eliminating certain grazing practices or philosophy, such as season-long or continuous-grazing systems. This type of practice may not qualify as intensive management.

General Direction states, "Remove livestock for the remainder of the grazing season from allotments managed under a continuous-grazing system when further utilization of key areas will exceed allowable-use criteria for the season." This direction should apply regardless of the grazing system in place. Do not identify continuous-grazing systems as the only ones where this is applied.

Again with regard to continuous-grazing systems, we need to look closely at whether they should be used at all. In the opinion of some of the Forest Range Conservationists, continuous grazing is a contradiction of intensive-grazing management. If considered an acceptable system, then clearly define how this system is intended to work. It may be a usable or desired system in special-uses pastures, but may not be used as a feasible strategy in grazing allotments where more intensive management is needed or desired - and certainly not on 4B, 5B, and 6B management areas. Also, distinguish the difference between continuous-grazing systems and season-long grazing systems, if there is one.

Under General Direction for Range Resource Management - Standards and Guidelines a. 1. a., under Rest Rotation System, it talks about allow 50-60% on heavy-use pastures and up to 45% on light-use pastures. This statement is confusing, since it is not clear what "heavy-use" and "light-use" pastures mean. We need to clarify intent.

S&Gs a.1. a., maximum allowable use on bluegrass of 80% is too high. Use at this level will not allow for improvement on that site. Where we want to move to a higher seral stage, grazing bluegrass sites at this intensity will not get us there. For other plant associations, it would be helpful to have the Plan describe allowable use level by plant association, if we have sound data/research to support us.

We need to incorporate our clearly defined riparian standards into the S&Gs. Also with regard to riparian standards, keep in mind in crafting new riparian standards and guidelines that it may not be desirable to manage all riparian areas to achieve high seral stage. Allow the management area description and the specific AMP analysis and mitigation measures to determine the seral stage desired, based on the

Rx activity. To clarify, we cannot expect to manage all riparian areas for a high seral stage, and also graze livestock in that same area. One is exclusive of the other. We can manage for healthy riparian areas that are not in high seral stage, and also have managed livestock grazing.

Allowable-use levels developed should be applied regardless of type of resource use. For example, allowable use for a given management area will apply to permitted-livestock grazing as well as recreational-livestock grazing. We have areas on the Forest where heavy recreational-livestock use occurs with no apparent regard for the proper grazing use or level. We must strive to be consistent regardless of activity.

Generally, the S&Gs are effective in meeting their intended resource management/protection purpose. However, there are opportunities to improve and clarify by being more specific. By being more specific at this level of how we will do things, we will be more successful at the site-specific level of analysis (AMP), making effective changes where needed. Cases where they are not effective, such with bluegrass mentioned above, modifications have been made when developing mitigation measures at the AMP level.

Many of the current standards and guidelines are not measurable, either qualitatively or quantitatively. Some, like the water quality standards one, do not really help guide or evaluate our actions. Others, like managing all riparian ecosystems in at least upper mid-seral stage, do not fit with any concept of dynamic systems.

Although there is a guideline that references ground-cover standards, we had little to help us interpret our estimates: Is 50% OK, is 30% too little, and, if so, under what circumstances?

How do we interpret an assortment of compliance and not? Are some standards and guidelines more critical/important than others? And, if so, whose prejudices win out?

Utilization standards should focus on desired plant communities and less on bluegrass.

Direction in some prescriptions to use extensive, season-long grazing systems is contrary to good livestock management practices, and is almost impossible given the utilization standards in the Plan.

Standards focusing on desired plant communities and attainable goals should be developed, instead of range condition and trend.

We need to be able to manage for a variety of seral stages. We need to develop utilization standards for desired plant communities and/or individual species that are easily used by a variety of users.

Tangible and measurable standards and guidelines that can be evaluated should be developed. We need to move goal statements out of the standards and guidelines and develop measurable standards and guidelines that can be used to develop management requirements and mitigation measures, and to measure our success in management.

We need to develop sets of standards and guidelines, management requirements and mitigation measures that can be used by permittees for self-monitoring.

Management Area Prescriptions

Language describing allowable-use standards needs to be clarified similar to what is used in the 8A Rx - Wilderness Area Management.

To some degree there is a conflict between the goal of managing range resources in an intensive-management system and Management Area 3A – semiprimitive non-motorized recreation in roaded or unroaded areas. There are also some conflicts in managing timber in 6B areas. The limitations imposed in the general direction and S&Gs in this prescription have an effect on how intensively allotments can be managed.

Forest-wide, 90% of the time, on-the-ground management is occurring according to the management area direction. In the cases where it is not, it is due to reasons such as erratic permittee management or acts of God, such as drought, requiring a change.

Given that the original goals are no longer realistic and that much of the Forest, including areas that are not 6B, is in allotments and grazed, there should be a better way to blend commodity and non-commodity uses. The focus should be more on vegetative pattern, a variety of seral stages, and desired plant communities; then livestock management and timber harvest plus prescribed fire would be means, rather than ends. Goals and objectives would be a mosaic of vegetation, and outputs would be tracked separately.

Timber harvest activities do not always benefit livestock management in 6B areas.

In some areas, 6B has been assigned to unsuitable range.

Standards for big-game winter range could be more flexible, depending on when livestock are using a specific unit.

We should consider whether we will still need utilization standards by prescription if the focus is shifted to desired plant communities.

If management area prescriptions are to be assigned to specific areas, we should "ground-truth" to ensure that livestock grazing is not assigned to unsuitable areas and/or areas with little to no forage production.

Monitoring and Evaluation

While tracking of outputs is appropriate, monitoring should also include some measures of our relative achievement of desired conditions.

Outputs (animal months) is the only monitoring requirement in the Forest Plan and is tracked via Management Attainment Reports (MAR). Some measure of output or financial return is appropriate (animal months grazed, number of active allotments, dollars paid in grazing fees, etc.).

Projected outputs may need to distinguish between cattle and sheep.

In addition to tracking outputs, we should monitor/track acres meeting specific plant condition/community goals.

Other Issues and Concerns

Objectives for grazing use (AUMs) need to be more realistic, in light of issues that have an effect on determining grazing use, such as continuing budget reductions, difficulty in implementing "the law" due to opposing interpretations, need for extensive supporting data to avoid or prevail in litigation or appeal cases, and changing social needs and expectations.

We need to examine the effects of aspen harvest on livestock forage production and maintenance of allotment capacity. We also need to examine the effects of timber harvest in 6B areas that adversely affect livestock management. We should investigate how to offset loss of forage in 7E areas following timber harvest.

Several questions have been raised about range direction in the existing Plan. The first is what type of standard are we to use in writing and monitoring the effectiveness of allotment management plans? As our analysis has changed from traditional range condition and trend to an

ecologically based approach, how do we describe the management goal for an area, and how do we measure our success in achieving that goal?

The second question is related to the effect of grazing on riparian areas. Are current riparian standards and guidelines adequate to protect the resource? This is listed under rRange because that is where the question is frequently raised; however, this is an issue that applies to all riparian uses, and will overlap particularly recreation and wildlife.

Timber

Analysis of Need for Change

As we transition to Forest Plan revision, we will need to build on our timber trend information to account for significant timber program changes over the past five years. Areas of greatest program change have included:

- the reduction in budget and timber supply from that projected by the 1992 amended Forest Plan;
- increased stumpage prices and increased administrative costs;
- changes in industry infrastructure, particularly in the Pagosa Springs area as a result of Lance Industries' closure; and
- changes in the types, size, and location of tree species offered for sale since 1992.

Goals and Objectives

In general, the goals and objectives appear valid, though, if possible, they should be expressed in ecosystem-management terms. For example, vegetation management goals (and resulting objectives), should reflect broad-scale ecological needs and should be described in terms of the hierarchical system, established primarily at the Physiographic Zone, and area levels.

Projects like the Pine Zone Project and the baseline ecological research in the ponderosa pine type should help define our vegetative management goals and objectives for the major tree-cover types. The analysis that leads to goal and objective establishment should include a comparative analysis of reference and current conditions, and should describe significant deviations between the two, including suggested courses of action (goals and objectives) to remedy wholesale differences.

Standards and Guidelines

The range-of-natural-variability studies and examination of current vegetation condition suggest a significant shift in our approach to ponderosa pine and mixed-conifer cover-type management. Findings from the aspen study will be available during the revision. These studies suggest a significant shift in management direction and resulting Standards and Guidelines for these major cover types.

The Standards and Guidelines in the 1983 Forest Plan emphasized even-aged silviculture. The 1992 Amended Plan changed management emphasis to uneven-aged silviculture. The standards and guidelines would benefit from further direction regarding "q" values, reentry cycles, and max-tree-size goals.

What constitutes an intermediate-cover landscape needs further definition. The concepts of closed-canopy, open-canopy, and intermediate landscapes may be of limited value from the standpoint of developing timber project-specific silvicultural treatments.

Utilization standards need to be revisited in light of changing vegetation management goals. An example is that successful implementation of vegetation management goals may require increased emphasis on thinning small-diameter materials.

Management Area Prescriptions

Region 2 has adapted a new set of Regionally standard management area prescriptions that are slightly different than the prescriptions the San Juan used in 1983 and 1992. We will have to adapt this new menu of prescriptions, or some variant thereof, during Plan revision. As a minimum, we may have to make some changes in the management area allocation to fit the new system to the management intent of the existing Plan, especially in the case of the old 4b, since there is no longer an equivalent to this prescription.

In implementing the current Plan, we've had instances where we've had to adjust the suitable timber base on the basis of site-specific findings. We will continue to make those adjustments as on-the-ground knowledge suggests that such changes are warranted. During the revision, we will need to revisit the timberland-suitability question as a matter of legal requirement.

Another concern is whether we're managing the land according to prescriptive direction; we've had a tendency to manage timber-emphasis areas much differently than we do other prescriptions outside roadless

areas. Generally, various standards and guidelines come to bear and limit what we would do if we were really going to maximize or optimize wood fiber production.

Monitoring and Evaluation System

We should examine changing the current Monitoring And Evaluation Plan to emphasize progress toward achieving desired conditions. Basically, under such a system we would examine what the geographic area looked like ten years ago, what we said it should look like and should produce, and what it looks like now and has produced. Key questions would be: Did we reverse the trend? Did we move it toward desired conditions? Possibly a graphical (GIS) representation might also be good.

We should examine implementing monitoring based on ecosystem-management elements such as seral-stage distribution, patch size, risk of catastrophic fire, risk of insect and disease epidemic, and watershed health. These measurements should be coarse-filter-type measurements and should be done in addition to fine-filter measurements such as used for T&E species and cultural resources.

For the Forest Plan revision, we should identify important elements to track progress toward meeting desired conditions, for example, percentage in given successional stage by species, or risk of stand replacement fire, or watershed health, patch size, acres of high-risk stands for mountain pine beetle attack, etc.

Other Issues and Concerns

There is a need to define relative levels of risk of things like wildfire and forest health that we would be managing toward or willing to accept.

Roadless-area management and its relation to the current ASQ continue to remain controversial issues. The 1992 Amended Forest Plan attempted to resolve management direction for roadless areas that were then part of the suitable timber base. As a result of the 1992 Amendment, the Forest reduced suitable roadless areas from about 180,000 acres to 95,000 acres. Planning and implementation of timber sales continue to be highly controversial, however, despite the 1992 decision that appeared to resolve the roadless-area timber management issue. Roadless areas are key to fulfilling the current ASQ objective. To fully implement the current ASQ of 24 MMBF/yr. would require obtaining approximately 35-40 percent of the ASQ volume from roadless areas.

There are a number of vegetation-management issues that we should address programmatically in the Plan revision. Questions that consistently arise at the project level include habitat fragmentation, wildlife corridors, patch size, and habitat connectivity. They all require "big picture" assessments to establish the proper context for project-level analyses.

Also, given the old-growth controversy that we experience on a case-by-case basis on every project decision, we should map, quantify, and provide for comprehensive old-growth management at the Forest-Plan level. Though the 1992 Amended Plan quantifies old growth, additional data have been collected during the past four years that should be considered in developing old-growth management direction in the context of landscape-level standards and guidelines for vegetation management. The S&Gs should implement vegetative desired conditions that are developed in full consideration of range of natural variability.

We may need to separate the unroaded, unmanaged old growth from the roaded, managed old growth, since they are two different issues. Again, if we can handle this at the Forest Plan level, it could save us a lot of headaches at the project level.

The urban/forest interface presents a management challenge. As a result of an increase in residential construction and other development in the wildland/urban-interface areas of the Forest, and a lack of vegetative disturbance from fire or silvicultural treatment, many small parcels of National Forest System land that are intermingled with private ownership are at a high level of risk for attack by insects and diseases, and for catastrophic wildfire events.

A combined hazard-and-risk analysis of insects, disease, and catastrophic wildfire should therefore be conducted as a part of the Forest Plan revision. A geographical representation of relative risk would be very useful in the prioritizing of hazard-reduction treatments. Hazard reduction in these areas will generally require a combination of silvicultural treatment and reintroduction of low-intensity fire.

The validity of our timber-growth and -yield projections may be in question. We will need to reassess predicted yields from the suitable base as we revise the Forest Plan. We will also need to reexamine the appropriate ASQ, based on cost efficiency, community needs, and sustainable ecosystems. Modifications of the timber direction and level of ASQ should be a result of landscape analysis from an ecosystem perspective of all suitable acres, previously entered or not.

Planning Questions from the 1992 Monitoring Issues Paper

- How should we manage roadless areas not recommended for Wilderness designation?
- What areas are suitable for timber harvest?
- What volume of timber can be provided from these lands to local markets?
- What is the local demand for timber from the San Juan NF, and what is the appropriate level of timber supply?
- Is the Forest's commercial timber program financially efficient?

Water, Soils, And Air

Evaluation of Plan Implementation

The average annual water yield from the SJNF is about 2.5 million acre-feet. Within the Forest, it is used non-consumptively by aquatic and terrestrial ecosystems and consumptively to meet Forest Service purposes and those of other users. Some water is diverted and used off-Forest.

The downstream demand for water continues to grow, and there will certainly be conflicts among those interested in protecting and maintaining instream flows, those interested in developing water supplies to meet local and regional needs in the Upper Colorado River Basin, and those interested in meeting Lower Colorado River Basin needs or needs outside the Colorado River Basin. The Forest is negotiating with the Southwestern Water Conservation District and other involved parties to find a settlement to water rights litigation affecting instream flows, other reserved rights, and consumptive uses by the Forest.

The 1983 Forest Plan emphasized enhancement of water yield through vegetation management, primarily timber harvest; because of this emphasis, total annual water yield is one of the outputs tracked in these monitoring reports. The water-yield management area prescription included in the 1983 Plan has not been implemented, due to environmental and visual constraints, and is not included in the 1992 Amended Forest Plan. Over the past ten years, the emphasis in watershed management for the San Juan national Forest has shifted from increasing water yield to maintenance or improvement of aquatic and hydrologic integrity.

The 1983 Forest Plan did not include any air-related activities in the monitoring plan.

Evaluation of earth gully plugs constructed in the 1960s and '70s throughout several areas of the Forest revealed both design and maintenance problems. These structures are being progressively reconstructed as funding permits. The reconstructed structures are monitored to identify any continuing maintenance needs.

Recent soil- and water-improvement projects have included road rehabilitation and wetland restoration. The Forest has rebuilt and/or upgraded water and sewage systems at campgrounds and administrative sites as part of the Federal Facilities Compliance Program.

Soil resource inventory information is being updated through the Integrated Resource Inventory (IRI) project and NRIS Terra.

Monitoring Activities: Ongoing and Current

Precipitation chemistry, the chemistry of airborne particulates, and visibility are monitored under the auspices of the national NADP and IMPROVE programs. The chemistry of selected lakes in the Weminuche Wilderness is also monitored by the USGS as part of the Forest's air program.

Field reviews and implementation monitoring supporting the revision of allotment management plans have highlighted the difficulty of meeting forage-utilization standards in areas where cattle congregate, without aggressive actions on the part of permittees and Forest Service personnel administering the permits.

Field reviews and implementation monitoring associated with some projects have demonstrated the difficulty of getting compliance with best management practices without cooperation from the individual company.

Analysis of Need for Change

Goals and Objectives

The goals in the 1983 Forest Plan for soils and water are:

- Protect soils and water productivity so that neither will be significantly or permanently impaired;

- Protect streams, lakes, riparian areas, and other bodies of water through management activities;
- Improve water quality by allowing those watersheds presently below water quality Standards to recover;
- Increase water yield through land treatment measures consistent with other resource objectives and water quality Standards.

The first goal, to protect soil and water productivity, should be rearticulated to clarify the extent to which we are allowing ourselves to screw things up. First, we should manage our activities to prevent any impairment of water quality or soil productivity; second, any impairment that might occur must be limited in extent and intensity, and of short duration.

The second and third goals are still valid.

The fourth goal, to increase water yield, was eliminated in the 1992 Amendment. The objectives (1992 Amendment) project a decline in water yield and approximately 170 acres of watershed improvements per year.

The linkage between goals, objectives, and outputs should be updated and should include the revised MAR objectives and outputs.

Standards and Guidelines

Achieving Resource Management/Protection

In general, we do seem to be doing things right, primarily because the Forest has enough of a collective knowledge base to figure out appropriate practices, management requirements, and mitigation measures, and to know when not doing something is the right answer. While the general direction in the Plan reflects laudable intentions for watershed management, the standards and guidelines (including those for soil resource management) reference obsolete inventory and analysis techniques, or are too vague to serve as management requirements and mitigation measures for specific activities.

Watershed conservation practices (WCPs) and other requirements and stipulations are applied. However, they are often not tracked from conception through implementation, nor are they systematically evaluated for effectiveness.

Many of the activities taking place on the Forest are supervised or administered by Forest Service personnel. WCPs and other management requirements and mitigation measures are included in contract, occupancy, or special-use stipulations, and are usually enforced by the individual responsible for administration of the activity. In some cases, the available enforcement tools are not effective in the face of concerted non-compliance.

Recommended Changes

- Revise the Standards and Guidelines. Develop better linkages between the Standards and Guidelines, the Watershed Conservation Practices Handbook, and the Clean Water Act.
- Emphasize systematic implementation monitoring for water, soils, and air resources. Monitor six to eight activities per District, per year. Participate in interagency audits of the implementation and effectiveness of selected projects. Develop a process which:
 - ensures that the people responsible for administering Forest activities are aware of all WCPs and other management requirements included in project EAs or EISs;
 - provides a process to document periodic inspections during a project and after its completion; and
 - provides at least a qualitative evaluation of the success or effectiveness of the management requirements.

Such a process would assure the transfer of management requirements from EAs and EISs to contracts, special-use permits, and other documents authorizing occupancy of National Forest System lands and their implementation and relative effectiveness.

- Continue effectiveness monitoring of selected projects.

Monitor the effectiveness of management requirements and the effects of Forest activities for two to four projects Forestwide. Emphasize integrated monitoring of stream health.

There are qualitative and quantitative techniques suitable for project monitoring, including photo points, channel cross-sections and profiles, macro-invertebrates or aquatic-habitat inventories, and intensive samplings of water quality parameters and fish populations. The combination of techniques and the location of

the monitoring will vary from project to project, depending on the objectives and the nature of the activity to be monitored.

- Develop consequences and penalties for non-compliance with WCPs.

Management Area Prescriptions

The 9A Management Area Prescription as Currently Written Is Limited to Perennial Streams

The implicit limitation of the 9A Prescription to perennial streams and lakes is not appropriate, given our current understanding of the biological and hydrologic importance of intermittent streams as a part of the drainage network. It is not consistent with our current practices in watershed management.

General Direction and Standards & Guidelines

The Standards and Guidelines about maintaining these ecosystems in upper-mid-seral condition are contradictory to the dynamic nature of the processes affecting the system. Better to have management objectives that are site specific.

Limitation of instream-flow management to fisheries is no longer appropriate.

Reference is made to ground-cover standards, but there are no quantitative or qualitative factors.

Obsolete techniques are referenced, including HYSED and channel-stability ratings.

Recommended Changes

- Reevaluate general direction for timber in 9A areas.
- Although there is a statement that timber will be available on a low-yield basis, following statements include maintaining growing-stock-level Standards, utilizing firewood by both commercial and noncommercial methods, establishing satisfactory stands within a five-year period, and cutting stumps at ground level in the 100-year floodplain. Enquiring minds wonder if timber should be available at all from riparian areas, and what are we doing making stumps in a floodplain?

- Revise the General Direction and Standards and Guidelines.

Monitoring and Evaluation

“Quantity Of Water Meeting Quality Standards” Is Not a Good Measure of the Quality or Quantity of the Forest'S Soil and Water Activities or Stewardship

Note that increased water yield as an objective and monitoring requirement was eliminated in the 1992 Amendment.

“Water meeting quality standards (acre-feet per year)” is a Plan output and is currently tracked in the monitoring report on a Forest-wide basis. This quantity is an estimate derived by subtracting the water yielded from areas such as the Upper Animas and other historic mining districts from the estimated Forest-wide yield. While important as part of the existing condition, this focus on mined areas and chemical standards is only part of the water quality and stream health issue.

Recommended Changes

- Do not continue to estimate Forestwide Water Yield Meeting Quality Standards/Goals.

The estimates of water yield and the “quantity meeting quality” Standards are not accurate enough to be sensitive measures of the Forest's activities from year to year, nor do they reflect the current management emphasis on the maintenance of aquatic and hydrologic integrity, rather than water yield.

- Develop and implement integrated, holistic inventory and monitoring techniques to assess stream health.

A combination of biological and physical characteristics is a better basis for assessing stream health and the effects of management activities.

- The current Monitoring Requirements for Soils need additional criteria and requirements, so that the implementation of Plan direction and Standards and Guidelines can be better evaluated.
- For Soils and Riparian Areas, time constraints and budgets make the Soils S&Gs hard to monitor.

- We need to be able to measure, map, and monitor the distribution of seral stages to see if we have met our S&Gs.

The Forest Is Not Monitoring the Effects of Forest Activities on Air Resources

The Forest is collecting baseline information about precipitation chemistry and sensitive resources potentially affected by changes in air quality. However, no implementation or project monitoring is being done.

Recommended Change

- Monitor the effects of Forest activities on air quality and/or sensitive receptors.

Lands

Evaluation of Plan Implementation

Land Line Location

The Forest, working with the BLM, has managed to conduct a dependent resurvey of one township a year. The Forest needs a maintenance program in order to protect our posting-and-marking investment, but is not currently funded for that activity.

Rights-of-Way Acquisition

The current funding is adequate for the amount of Forest target assigned by the Regional Office. There is no need to change the methods of monitoring implementation of this program. Although we have been able to achieve more than we anticipated in the Forest Plan, uncertain funding will not permit us to predict continued achievement at this level.

In 1991, we purchased 2,195 acres in the Piedra Valley and 654 acres within the boundaries of the Weminuche Wilderness.

In 1992, with a great deal of community support and assistance, we were able to purchase 530 acres in the Hidden Valley area, north of Durango. This acquisition will allow us to plan with residents for the interpretation and protection of an archaeological site, and provide additional recreational opportunities.

The program remains under-funded to accomplish the targets identified in the Forest Plan. Because of the complexity of these projects, an appropriate level to exchange would be 80 acres, rather than the 500 in the Forest Plan. We need to continue to pursue opportunities to work with partners, including local open-space groups.

Small Tracts Act cases would be appropriate to include in the Forest Plan as a monitoring item when the Forest Plan is revised. This program should be a priority for the service it provides the public, as we are able to work with people to resolve encroachments.

If we maintain an acquisition program we can continue to acquire "easier" rights-of-way; however, funding opportunities that we have used may decrease. Other negotiated rights of way are likely to be more expensive and time consuming.

Infrastructure

The road development program on the SJNF has historically been accomplished through two sources: in conjunction with the timber sale program, and through appropriated funding in the Regional Capital Investment Program. Yearly fluctuations in this program reflect the fact that it is funded through the direct-appropriations process and is not necessarily linked to other Forest-wide program and needs, and is subject to annual increases or decreases in Congressional budgeting for National Forest System roads. In addition, funding for this type of road development work is obtained on a competitive basis through the Regional Office.

Evaluation of Plan Implementation

We have begun to focus on reconstruction and gravel replacement to try to maintain roads as directed in the Forest Plan. We are also replacing bridges that are unsafe. The Forest has made good progress with bridge reconstruction and replacement, but still has significant needs.

There has been some shifting of projects among the years that causes us to show differences between miles planned and accomplished.

Analysis of Need for Change

Goals and Objectives

We have found no difficulty in implementing Forest Plan standards and guidelines, but accomplishment schedules were optimistic.

It is appropriate to reassess our travel management policy and fully integrate that direction with other resource needs in the revision of the Plan.

Heritage Resources

Analysis of Need for Change

Goals and Objectives

The goals for heritage resources do not address values other than recreation and research. The goals are biased toward Western scientific values and recreation, while overlooking broader social values. Goals and objectives incorporating traditional cultural values, or multiple social values, should be considered. Heritage resource objectives that are independent of recreation goals and objectives should be developed to reflect other aspects or values of heritage resource management.

There are many different aspects of the heritage resources program on the Forest that either are not adequately identified in the goals and objectives, or do not have appropriate indicators and units of measure. In addition to the recreation support (public-education or interpretive programs), there are heritage resource inventory and evaluation, site stabilization and preservation, ecosystem analysis (paleo-environmental reconstruction and analysis of human effect on the natural environment), consultation, and curation. There is a need to measure these activities with appropriate Indicators and units of measure. These data are available and can be produced when agreement on indicators is achieved.

The management area direction and units of measure for monitoring the progress toward achieving heritage resource goals are not adequate to measure all of the goals identified for heritage resource management. The only indicators and units for evaluating progress toward heritage resource goals are recreation and dispersed-recreation user-day indicators. These are not adequate measurements of any of the heritage resource goals.

For example, the first goal for management of heritage resources states, "Locate, determine significance, and where appropriate, preserve historical and archaeological sites" The Indicators and units should include number of sites located and evaluated, number of sites eligible for the National Register of Historic Places, and number of sites where

preservation treatment and off-site or on-site interpretation have occurred.

The second and third goals also do not have appropriate Indicators. The second goal for management of heritage resources states, "Manage exceptional historical and archaeological sites for increased public use and visitation, while still protecting the values of the site." There are no Indicators or units demonstrating what site values are protected and how, or if, it was done. The third goal for management of heritage resources states, "Make historical and archaeological sites available for study by agencies involved in research." No research measurements are established.

Indicators and units of measure need to be established that are independent of recreation. They should also be defined in more detail than "Nonrecreation" (currently applied in the management area prescriptions) to reflect the diverse activity in heritage resource management. Although there is overlap with recreation goals, heritage resource management goals and objectives should appear organizationally independent from recreation in the Forest Plan document.

Standards and Guidelines

There are Department of Interior, National Park Service Standards and Guidelines used for preservation of historic and prehistoric sites, National Register evaluation, definitions of traditional cultural properties, artifact curation, and others, which are current and provide more detail than FSM 2300/2360. FSM 2360 is the only reference for Standards and Guidelines in the management of Heritage Resources.

Management Area Prescriptions

There are five National Register Districts on the Forest: Chimney Rock, Falls Creek, Spring Creek, Lost Canyon (Archaeological Areas), and the Anasazi Archaeological District. At present, Chimney Rock and Falls Creek have management prescription 10C designations. The other archaeological districts need to have prescription review, in particular the Anasazi Archaeological District surrounding McPhee Reservoir. This should be done at the landscape level, since the National Register district boundaries may coincide with landscape boundaries.

Other Issues and Concerns

Inventory of Heritage Resources on the SJNF since 1983 has revealed a concentration of some of the most exceptional and numerous sites on the

Colorado Plateau, and in Region 2. Heritage resources on the Forest share designation with other cultural sites and districts on the Colorado Plateau as one of the world's most important, and at the same time, threatened and endangered, cultural areas (National Trust for Historic Preservation 1995). The Four Corners region, including several historic and prehistoric sites on the Forest, has achieved international recognition. This Forest has become a heritage and ethnotourism destination, and the FS has become a major regional partner in providing these opportunities.

Significant legislative changes for managing Heritage Resources have occurred since 1992. These new mandates include 1992 amendments to the National Historic Preservation Act (NHPA) and enactment of the Native American Grave Protection and Repatriation Act, 1992 (NAGPRA). The most significant product from the amended NHPA and NAGPRA, which is not addressed in the

The Forest Plan needs more direction for Native American consultation regarding treatment of traditional cultural places (which may range from individual sites to landscape features, and may include tangible and intangible values), and treatment of sensitive collections (human remains and associated funerary objects, and objects of cultural patrimony).

In recent years, information collected from interviews with the public and with tribal governments has resulted in the introduction of the concept of Heritage Area management. Heritage Areas are significant social and cultural landscapes, including historic and archaeological districts listed on the National Register of Historic Places, that are managed to protect and enhance their unique and irreplaceable recreational, traditional cultural, and scientific values. This goal is achieved through land management practices incorporating a combination of conservation and preservation strategies. Other Forest land management activities are not necessarily excluded from these areas, but may be restricted to protect heritage resource values.

So far, nine potential Heritage Areas have been identified on the Forest. The nine are primarily defined by National Register districts where primarily dispersed recreation and livestock management, historically, and presently, threaten archaeological resources. Additional Heritage Areas may be defined following an inventory of traditional cultural properties and landscapes with the different cultural groups (Tribal Nations in particular) who consider the present-day Forest to be aboriginal territory. Heritage Area designation and management planning will promote heritage resource preservation and public-enjoyment goals.

To facilitate management planning for the proposed Heritage Areas, and to minimize the impact on heritage resources as well as the variety of management activities occurring within these locations, there is a need to systematically measure impact on a variety of heritage resource types from dispersed recreation - the use of off-highway vehicles (OHVs), in particular, and livestock grazing. These data need to be gathered through regular and systematic site monitoring and quantitative analysis. At present, there is no systematic monitoring program that specifically considers the effects of OHV use and livestock grazing on the sites within the proposed Heritage Areas.

The potential for conflict between the demand for increased opportunity and diversity of heritage tourism and educational experiences, and the demand for increased sensitivity in the treatment of traditional cultural places and collections, is imminent. The polarity of the conflict may not be eliminated, but can be mitigated by the Forest Service's electing to improve how we manage for multiple social values in general, and the treatment of Heritage Resources in particular.

The Forest Plan recognizes the economic and recreational value of heritage resources and measures this by user numbers, but does not recognize the increasing emphasis on managing for multiple values (i.e., traditional cultural). Additionally, sites or landscapes on the Forest that may not demonstrate recreational value may still have other values to emphasize, including traditional cultural ones, or research value. The Forest Plan is inadequate in addressing these concerns in the treatment of heritage resources.

Interpretation of sites is only one area of consideration where management of traditional cultural properties is a concern. In order to comply with 1992 revisions of the National Historic Preservation Act, consultation with Native Americans on the treatment of traditional cultural properties (places) is required for all undertakings.

Of particular note, the proposed 36 CFR, Part 800 regulations implementing the 1992 amendments provide direction for consultation on traditional cultural properties. Two of the most significant items are: talk to the tribes in a culturally appropriate manner (personalized), and talk to the tribes as a consulting agency in developing management alternatives prior to public scoping.

These directions are drastically different from our present approach to consultation at the public-scoping level (usually with no more than a single scoping letter), and may profoundly affect how Forest action alternatives are developed and selected.

Fire

Fire has always been part of the landscape. The presence of fire, or its absence, has a profound effect on the natural life systems and the surrounding associated ecotypes. There is evidence that fires have burned large acreages within the San Juan National Forest area throughout history.

Prior to the time of domestic livestock grazing and organized firefighting (early 1900s), most fires were of low intensity, creeping through the forested lands and fanning across open meadows. Large stand-replacement fires were not common except in the large mixed-conifer stands; the frequency was in the 150- to 300-year range.

Many plant communities were maintained in a seral stage by recurring natural disturbances, including fire. Until recently, land management agencies such as the Forest Service were expected to suppress all wildfires, to minimize acreage burned. Little consideration was given to a corresponding application of prescribed fire to maintain ecosystem health.

This has resulted in ecological changes in the Forest and surrounding rangelands. The buildup of fuels has changed the character of the wildland ecosystem and creates a threat to resources, life, and property. Recent insect activity or wind blowdown in some areas has changed the type and rate of fuel buildup, thus creating the potential for fires to be more intense and more costly to suppress. The long-term intent of an active prescribed-fire program is to reduce these effects and improve the overall Forest health.

The fire management program on the San Juan National Forest is a coordinated interagency effort involving federal, state, and local agencies. The overall fire management objective is to provide a cost-effective program that responds to land and resource management goals and objectives. This includes fire protection, suppression, and use.

In FY 99, the Forest implemented an expanded fire management program based on the NFMAS (National Fire Management Analysis System) analysis. With this process incorporated, the Fire programs on the Forest will be taking an active role in using fire to meet Forest ecosystem-management objectives. Along these lines, a Wildland Fire Management Plan was completed during the spring of '97 and operational during the '97 field season. This Plan sets long-term

direction to use prescribed and wildland fire to meet resource objectives and reduce hazardous fuels.

Analysis of Need for Change

Goals and Objectives

The Plan needs to be amended to disclose fully the ecological and societal risks of using and excluding fire. Current planning does not consider the risks, probabilities, and consequences of various management strategies, e.g., wildfire versus prescribed fire versus fire exclusion. Existing goals and objectives do not recognize fire as an essential ecological process and natural change agent. Ecosystem problems associated with fire exclusion are increasingly being recognized as having reached severe proportions, adversely affecting biological diversity and increasing the risk of conflagration events.

Existing goals and objectives do not adequately define the integration of multifunctional burn projects done for wildlife, range, timber, etc. Also, the treatment of activity fuels is not addressed as it relates to risk/hazard reduction and resource protection.

Also, the Plan needs to be amended to include the new Federal Wildland Fire Policy actions, and realistic targets and funding identified by the NFMAS planning process.

Standards and Guidelines

Existing standards and guidelines identify the need for prescribed-fire ignitions (planned and unplanned) as a management tool. This standard and guideline needs to be updated by the Wildland Fire Management Plan and Amendment. There are no standards and guidelines concerning the use of appropriate response under the federal Wildland Fire Management Policy.

As with both appropriate-response and prescribed-fire strategies, there is no direction on the role of fire on a landscape. Direction is needed to support the proper use of fire on differing landscapes; the susceptibility and resilience of a particular landscape to fire effects need to be considered in building useful Standards and Guidelines.

No direction exists on the role of fire within and adjoining the urban interface, which is rapidly increasing in areas susceptible to frequent fire occurrence. Standards and guidelines need to be devised for the treatment of activity-generated fuels from timber harvesting and mechanical hazard-reduction projects.

Management Area Direction

Current management area direction on the actions fire management can take to meet Forest-wide standards and guidelines is lacking.

Management area prescriptions that are attainable and specify fuel-modification and ignition methods need to be developed for management areas. Prescriptions need to reflect acceptable ecosystem and social Forest Plan direction.

Air quality and smoke management mitigation and monitoring need to be developed.

Monitoring and Evaluation

The monitoring aspect of prescribed and wildland fire activities needs to be included. This calls for a consistent, well-planned scientific assessment of pre-burn, burn, and post-burn conditions. Currently, the gathering of data is fragmented: fire folks gather data on wildfires and fuel management, timber folks on brush disposal, wildlife folks on wildlife-habitat burns, etc. Therefore we have no overall picture of the efficacy of the use of prescribed fire and wildland fire. The existing data do not help guide our planning or strategic thinking in the context of ecosystem management.

Some tools that assist in data collection and monitoring include Fire Protection Assessment (risks and values); NFMAS; air quality models; fire behavior models; fire statistical databases, historical fire atlases, and historical repeat photographs.

We also need to monitor the activity fuels generated; this would include Prescriptions for treatment, whether they are piles or broadcast, chipped or burned, etc.

Ecology/Biodiversity

Analysis of Need for Change

The current Forest Plan contains no specific goals, objectives, management requirements (management activities, general-direction statements, standards and guidelines), or monitoring plans for ecology and biological diversity. When this Forest Plan is revised, it will be important to develop these Plan components, since issues and management considerations associated with ecology and biological diversity will need to be addressed.

Goals and Objectives

There are no specific goals or objectives for ecology and biological diversity, but some of the goals listed under the headings of Vegetation, Wilderness, Wildlife, Timber, and Soils and Water apply to these topics. They are:

- Improve the health and vigor of all vegetation types,
- Manage Wilderness to preserve the wilderness character,
- Improve wildlife habitat diversity on approximately half of the Forest,
- Improve the Forest-wide age-class and species diversity to improve forest health and wildlife habitat,
- Perpetuate the aspen type,
- Protect soil and water productivity, and
- Protect streams, lakes, riparian areas, and other bodies of water through management activities.

These Goals are still valid, and are ecologically important because they provide direction to help protect the biological and physical components necessary to maintain and improve biological diversity. For Goals 1, 3, and 4, above, it is also important to maintain these things as well as improve them. Some additional clarification on what is meant by "health" and "forest health" for Goals 1 and 4 above would be helpful, as these terms mean different things to different people.

Standards and Guidelines

There are no specific management requirements (management activities, general direction statements, or standards and guidelines) or management areas for ecology and biological diversity. However, some of the general direction statements and standards and guidelines found in the forest direction and management area prescription sections listed under the management activities headings of Diversity on National Forests, Wildlife and Fish Resource Management, Wildlife Habitat Improvement and Maintenance, Range Resource Management, Silvicultural Prescriptions, Riparian Area Management, and Soil Resource Management, and Wilderness Management apply to these topics.

Most of the general direction statements and standards and guidelines are still good, but many of them need to be reviewed and reworked so they are clearer, more quantifiable, and more current.

- The Standards and Guidelines related to vertical diversity, horizontal diversity, and old growth that are associated with the General Direction statement to "Maintain structural diversity of vegetation on units of land 5000-20,000 acres in size or 4th order watersheds that are dominated by forested ecosystems" need to be reviewed and likely changed, because it is difficult to measure them, issues of scale need to be better clarified, a specific "unit" may need more or less of these components, and there is more current information in the literature and on the Forest to better identify standards and guidelines related to these issues.
- Range utilization standards need to be reviewed and likely changed to better reflect current range conditions and make the Standards more species specific and site specific. Over-utilization of rangelands, particularly grasslands, can have a major adverse affect on the abundance and distribution of native species, particularly grassland species.
- The standards and guidelines related to continuous-grazing systems need to be reviewed, since in most cases these systems have detrimental effects on the abundance and distribution of native species, particularly native forage grasses.
- General direction for silvicultural prescriptions should be updated to incorporate new research and information (Romme et al.- fire history and reference conditions) on ponderosa pine, mixed conifer, spruce fir, and aspen forests, so that timber harvest activities more closely resemble natural disturbances.
- The standard and guideline to "Maintain all riparian ecosystems in at least an upper mid-seral successional stage based upon the R2 Riparian Ecosystem Rating System" needs to be changed, since there no longer is an R2 Riparian Ecosystem Rating System. Also, we don't have good descriptions of what a mid-seral stage is for all the different riparian types we have, and there may be reasons why we would choose to manage a riparian site for a condition less than mid-seral.
- The standards and guidelines related to the general-direction statement to "Manage non-commercial forest and non-forest cover

types" need to be reviewed and likely changed, as we really don't actively manage these lands under rotation systems, and the consequences of implementing projects to meet these standards and guidelines may be detrimental to biodiversity.

- For riparian areas, more specific standards and guidelines need to be developed to clearly outline when timber harvest is allowed, and what mitigation measures are needed.
- For Research Natural Areas, the general-direction statement to "Restrict grazing by livestock to that essential for the maintenance of a specific vegetation type" needs to be changed, since livestock grazing in RNAs will not be allowed, in most cases.
- The Standard and Guideline to "Control wildfires occurring within the Narraguinnep RNA" needs to be reviewed; wildfire is a natural ecological process that should occur in an RNA.

Monitoring and Evaluation

There are no specific monitoring and evaluation plans for ecology or biodiversity.

Scenic Resources And Interpretation

Analysis of Need for Change

Goals and Objectives

For the most part, the goals and objectives appear valid. However, since these were established the Forest has reintroduced historical and environmental interpretation as an integral part of its management. In fact, in 1989-90, interpretation was one of the Forest's top three priorities. It should be considered as a viable program and merged into the Forest Plan.

It seemed that we received a generally favorable response when we queried the public regarding the current goals and objectives in 1994, during the "San Juan-Rio Grande Consolidated Management Experiment" effort.

Regarding the scenic resource, the single mention in the goals section is OK. No quantification in the objectives section, perhaps because of the

challenge to be measurable. Again, in the next effort we should look at including Interpretation in this section.

Standards and Guidelines

Management standards and/or guidelines should be completely redone, to be in accordance with the new scenery management system.

Management Area Prescriptions

There is some glaring problems with the VMS wording in the Prescriptions, i.e.:

- ``Do not exceed the VQO of Modification" was often misunderstood. Some then thought that the VQO was Modification, or that they could not go to a higher VQO, such as Partial Retention. It would have been better stated, ``The minimum VQO for the area is modification."
- The Prescription system took a very general direction for the VQOs, and constrained the application of the VMS to the variables of a Prescription Area. The new SMS must be applied to the future Plan Prescriptions.

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Monitoring and Evaluation

Compliance with Visual Quality Objectives should be a monitoring element. Monitoring techniques would be field and office reviews of projects, permits, roads, structures, EAs, and EISs. Frequency of measurements would be a 25% sampling annually of work plans, 10% of permits, 100% of all sites with high Retention VQO. Action would be initiated by any reduction in the approved VQO.

Other Issues and Concerns

A contemporary management issue affecting this program is the increased public visitation yearly to attractions on the Forest. For example, the San Juan Skyway has increased in popularity and use annually since its designation in 1988. This not only brings about the need to initiate more visitor-contact programs such as interpretation, but also brings up the importance of maintaining and enhancing the scenic quality along its viewsheds. The major reason the public visits Colorado National Forests is to view the scenery. And we receive more people participating in the ``driving for pleasure" recreation activity than in any other single use on National Forests.

This is mainly a national issue, with some regional influence.

Should this issue be a major focus of the Forest Plan revision? We should discuss the increased use and people-contact programs such as interpretation very closely. It should be part of the total picture, if in fact we are going to produce a Plan that is balanced for all resources.

Recreational use will continue to grow at a steady rate. Programs such as maintaining or enhancing the scenery will become increasingly important, as will visitor-contact programs, chief of which is Interpretation. We touch more people through interpretation than through all other contact programs combined.

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