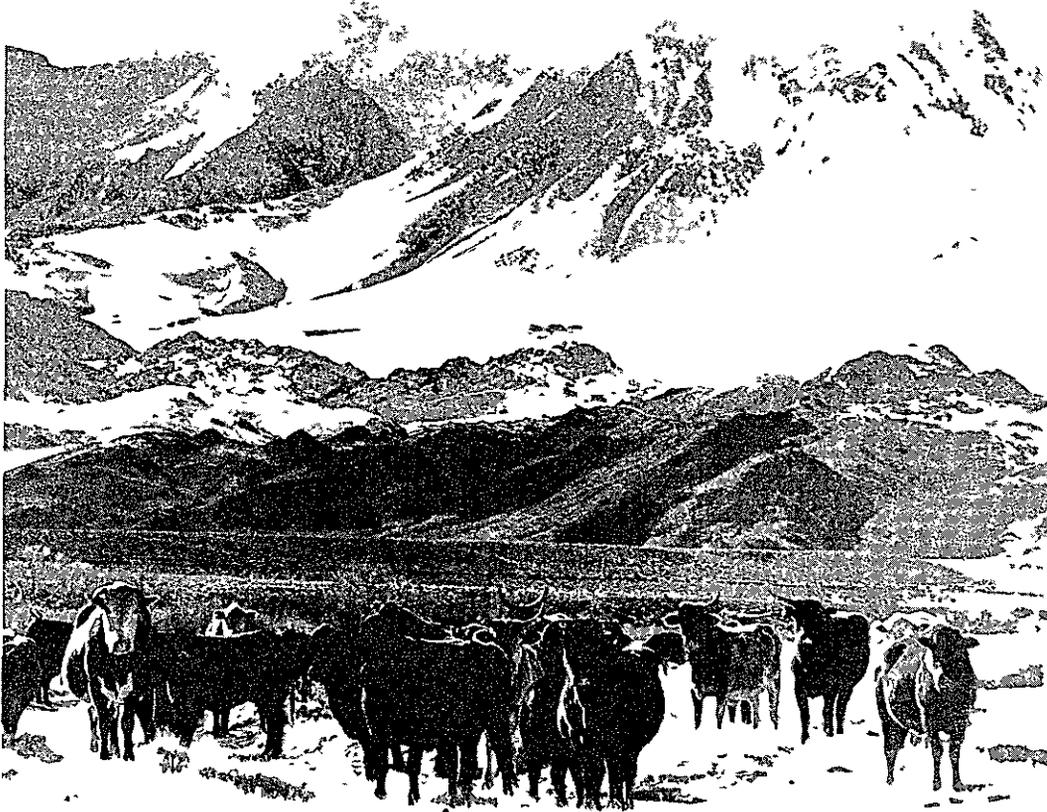


## CHAPTER III



*Gordon Wiltse*

# Summary Analysis of the Management Situation

---

## CHAPTER III. Summary of the Analysis of the Management Situation

### Introduction

This chapter is a summary of the Analysis of Management Situation (AMS) document. The complete AMS has not been reproduced in these planning documents, but is in the process records at the Forest Supervisor's office in Bishop. The AMS is the preliminary to the Draft Forest Plan. It reviews current management and its long-range implications, supply and demand projections, public issues and management concerns, and opportunities to establish or change direction. The Plan reflects these factors.

The chapter is divided into two sections: (1) Social and Economic Environments and (2) Resource Environment.

### Social and Economic Environments

This section provides a general overview of the social and economic factors that are relevant to Inyo National Forest management.

#### Sphere of Economic Influence

The Inyo National Forest contains 2,046,346 acres. 1,931,115 are in National Forest System ownership. These lands are located in seven counties. Five counties are in California, two in Nevada.

The primary zone of economic influence for the Inyo National Forest is in California's Inyo and Mono Counties. Nearly 85 percent of the Forest lies within those counties, and more than 95 percent of the Forest lies within the State of California. Ninety percent of Inyo County, the second largest county in the state, and more than 75 percent of Mono County are administered by the federal government. Currently, all timber harvesting conducted by the Inyo National Forest and more than 90 percent of recreational activity take place in these two counties. Recreational activities on the Forest are closely linked to the tourist economy of these counties.

In contrast, the Forest has a relatively limited economic impact on the California counties of Tulare, Madera, and Fresno and on the Nevada counties of Mineral and Esmeralda. This economic situation is not expected to change in the foreseeable future.

Residents of Southern California, primarily those from San Diego, Los Angeles, Orange, Ventura, Riverside, and San Bernardino Counties, make heavy use of the Forest's numerous recreational facilities and resources, such as alpine ski areas, campgrounds, and wilderness. The demand for recreational opportunities by Southern Californians has an economic impact on the Forest and on many of the communities near the Forest. The impact of the Inyo National Forest on Southern California is, however, negligible.

## Population

Population growth in Inyo and Mono Counties during the past two decades has been substantial. Mono County grew by more than 113 percent between 1970 and 1980. This ranked the county second among the fastest growing counties in the state. This rapid growth rate can be attributed to the recreational importance of the Mammoth Lakes area.

During the same decade, the Inyo County population grew 15 percent, lower than the state average of 18 percent. Most of this growth took place in and around the community of Bishop, which serves as a service center for the two-county area. Major employers in the area are local, state, and federal governments.

## Employment

The economy of the area reflects the importance of recreation, tourism, and the public sector. The three employment categories of services, retail sales, and government together accounted for nearly three quarters of the total wages and salary for workers in 1980. The employment base has grown by nearly 75 percent in the past decade. The services and retail sales categories have enjoyed healthy employment gains, while government employment levels have tapered off and recently recorded some declines.

The high unemployment rates commonly found in tourist-oriented economies are found in the Inyo-Mono area. Rapid population growth, a broadening of the work force, the lack of diversification in the rural economy, and the seasonal nature of the tourist industry have resulted in unemployment rates generally higher than the state average.

## Role of the Inyo National Forest

The Forest makes a direct contribution to the area economy through expenditures in the private sector, the generation of jobs, recreational opportunities, and payments into county revenues. Forest expenditures for payroll and procurements in Fiscal Year 1982 were \$8.55 million.

Payments into county revenues are from two sources: Payment in Lieu of Taxes and Receipts Act payments. Payment in Lieu of Taxes payments compensate counties for the loss of property tax revenues represented by nontaxable federal land within the county. In 1980, the total Payment in Lieu of Taxes payment to counties by the Inyo National Forest was \$165,180.

Receipts Act payments are based on fees collected for use of Forest lands and resources. Twenty-five percent of dollars received by the federal treasury from activities such as timber sales, special use permits, and campground fees are distributed through the Forest Service to the counties to offset school and road costs. Total Inyo National Forest Receipts Act payments for Fiscal Year 1980 amounted to \$385,003.

The Forest also provides indirect economic benefits to the public by supplying certain goods and services at prices below established or estimated

market values. Examples include outdoor recreation opportunities and Forest lands for the use of commercial enterprises such as livestock production, apiaries, mineral and energy exploration and development, and water production.

## Future Trends

Economic growth in the area is expected to continue much as it did in the 1970s, increasing overall. As economic growth continues, the resident population and the pressure for more services will increase. Larger communities such as June Lake and Lone Pine will be stimulated to consider incorporation. Furthermore, it is expected that an increased local population could stabilize the fluctuating tourism economy of the 1970s. However, unless the communities actively seek economic diversity by attracting manufacturing industries to the area, little change is foreseen.

The economic foundation of the area will remain closely tied to increased recreation use and tourism. An increased demand for all Forest resources and services, especially those related to recreation, can be expected. The greatest impacts on Forest management are likely to be found in the areas of landownership adjustments and land uses, scenic quality, and the Forest's role in providing a variety of recreational opportunities. The demand for energy production and water yield are also likely to increase with increases in population, both locally and elsewhere in California.

## Economics in Forest Planning

National Forest land is public land, and its value accrues to the public. The value of Forest land and resources is of two kinds: products with economic value and those that do not lend themselves to economic quantification, such as appreciation of the visual resource. The need to manage Forest lands and resources in a way that will provide the greatest net public benefit, taking both kinds of values into consideration, is both a public issue and a management concern.

Economic efficiency analysis determines the effects of different management strategies on the economic values of Forest resources, using the measure of Present Net Value (PNV). The benefit components of PNV are the commodity values of recreation (including wildlife and fish-related recreation), water, energy, timber, and grazing. The cost components of PNV include such factors as Forest management expenditures, resource losses, and the opportunity costs of producing non-priced benefits. Opportunity costs are those values that are lost by choosing one resource over another. PNV plus all non-priced benefits represent net public benefit.

## Sphere of Social Influence

Inyo and Mono Counties comprise the primary zone of social influence for the Forest. The lifestyles, quality of life, and social values of the individuals in this area are to varying degrees dependent upon Forest resources and facilities.

Both Inyo and Mono Counties are rural and sparsely populated, ranking 57th and 55th respectively in population density among the 58 California counties. Population increases for these counties, in terms of total numbers, are insignificant when compared to state-wide totals. Nevertheless, Mono County ranked second in the state in percent population increase between 1970 and 1980. Over the past twenty years, population growth for the two counties averaged about 630 people per year with net in-migration making up more than 30 percent of the total population gains. This growth rate is expected to subside gradually and to level out by the year 2020.

The median age for the two-county area is about 34.5 years, well above the 30.8-year median age for the state. This fact is due, in part, to the area's recreational opportunities which attract retired senior citizens. Personal income averages about \$14,300. The area is over 90 percent White (of which 5.6 percent is of Hispanic background), and 7.3 percent American Indian, with Black, Asian, and other races together making up less than 3 percent of the total population of the area.

Paramount to the quality of life is the sense of open space, rugged terrain, scenic qualities, clean air and water, and the abundant recreational opportunities which the Forest provides. The natural resource attributes of the area are coupled with the social attributes of low population density, slow growth, simple lifestyles, small communities, limited services, and a prevailing feeling of self-sufficiency and individualism.

As the primary zone of Forest influence, the Inyo-Mono area is expected to receive direct, identifiable, and measurable benefits and impacts from the Forest's management and policies. The two counties have important ties to the Forest through landownership patterns, land uses, energy production, grazing, fuelwood supplies, fire protection, timber production, and recreational opportunities.

Southern California is a secondary zone of social influence for the Forest. Southern California's demand for recreation affects the Forest and many of the communities in the primary zone of influence. The social impact of the Forest on Southern California however, while it may be important, is lost in that area's large size, huge metropolitan population, and broadly diverse social structure.

## Social Groups

Management direction and resource outputs of the Inyo National Forest affect several local social groups, each of which places different demands and values on Forest resources. Six major social groups have been identified within the primary zone of influence. Those groups are: long-time residents, regional recreationists, seasonal employees, special use permittees, American Indians, and retirees.

Social groups are categories of people based on shared activities, interests, and concerns. They are not mutually exclusive, as an individual may belong to more than one group. However, the consequences of Forest management and policies are similar for individuals within a group and somewhat dissimilar between groups. Although not expected to describe all individuals within a

given group, the following group characteristics are expected to apply in general terms for the purpose of evaluating the social impacts of Forest decisions in the Forest planning process.

Long-time residents are a diverse group of people identified primarily as having lived in the area for ten years or longer. This large group is found working in every sector of the local economy including mining, retail sales, ranching, logging, recreation, and services.

The long-time resident tends to be strongly self-reliant, believes in the importance of hard work, holds to traditional values, and wants to live in a rural area. Because the Forest holds abundant opportunities for mining and prospecting, offers much grazing land, and provides over five million visitor days of recreation annually, Forest policies potentially affect many of the long-time residents in the primary zone of influence.

Regional recreationists are attracted to the area to enjoy a recreation-oriented lifestyle. This group includes second-home owners and those who enjoy the area for summer vacations and weekend winter skiing. The latter group is particularly important to the economy of the area.

Recreational visitors place great demands on the area and have high expectations for their recreational pursuits. These individuals fuel a major portion of the winter tourist economy and a substantial portion of the summer economy as well. While this social group is composed of many subgroups, its members have some common values. They want to enjoy themselves, and they value the broad range of recreational opportunities and the scenic attractions of the area.

Second-home owners doubled in number between 1970 and 1980. Increased speculation and real estate investments drove housing and rental costs up substantially during this time period. There has been a recent slowing in second-home investments; however, as interest rates decline, as additional skiing is developed, and as concern over potential volcanic activity subsides, expansion will probably resume.

Seasonal employees who reside in the area are typically young individuals with a primary goal of pursuing an outdoor lifestyle. Earning a living is often a secondary goal. If they are not able to obtain full-time employment, they are dependent upon the large seasonal employment market in the area.

There are currently 972 special use permits on the Inyo National Forest, governing land uses on 34,960 acres of Forest land. Special use permits are issued for a variety of purposes, including agricultural, industrial, recreational, research, transportation, and water uses. Special use permittees are especially important to communities such as Mammoth and June Lake, both of which have alpine ski areas on Forest land under special use permit. In 1980, the 546 recreation special use permits alone brought more than \$1.29 million to the federal treasury, 25 percent of which was returned to local county governments. The Forest ranks first in the nation in revenues received from recreation special use permits.

Nearly 2,000 Paiute-Shoshone Indians live on reservations in the Big Pine, Lone Pine, and Bishop areas of Inyo county. The Indian way of life, beliefs,

and values are interwoven with nature, the environment, and the mountains of the area. Many Indian religious sites, spiritual areas, and traditional food-gathering areas are located on National Forest land. The Indian usually favors protection of the Forest; however, because of their long history of residence in the area, they sometimes feel that their rights derived from traditional use should exempt them from certain regulations. Increased pressure on Forest resources will continue to bring about management limitations and potential conflicts with traditional American Indian uses.

Senior citizens, a segment of the population whose numbers are increasing, are attracted to the area because of its recreational opportunities, relaxed pace of life, and rural environment. Many retirees come to the area from Southern California.

As retirees come to the area because of its rural and natural appeal and recreational opportunities, this group supports protection of many of the recreational and visual resources. Many retirees do, however, want vehicle access to the Forest and are only selectively supportive of issues such as wilderness recommendations. They are also often concerned about policies such as length-of-stay limitations in developed campgrounds.

Because their income is not closely tied to market outputs, retirees are unlikely to have a strong interest in timber or grazing production unless recreational or visual resources are directly affected. One exception, however, is the availability of fuelwood, which is used by the majority of people in the area to defray high energy costs for home heating during the winter.

## Resource Environment

Each resource is discussed under the subheadings of current management and opportunities for change, supply and demand if appropriate, and Plan management emphasis. Current management and supply and demand are expressed in terms of 1982 as a base year unless otherwise indicated in the text.

### Air Quality

#### Current Direction and Opportunities for Change

Air quality on the Inyo National Forest is currently managed so that activities on National Forest land meet state air basin objectives. Dust from unpaved roads and smoke from prescribed burning or wildfire are the Forest activities that receive the most emphasis in terms of air quality considerations. There is no evident need for change in management. However, Air Quality Related Values and their indicators need to be determined for areas designated as Class I for monitoring purposes to assess the possible need for change in management. In addition, smoke management plans need to be developed in conjunction with Fire Management Action Plans and Environmental Assessments for prescribed burning.

## Supply and Demand

Air quality on Inyo National Forest lands meets or exceeds state air basin objectives more than 99 percent of the time. There are some days, however, on which air quality drops below objectives due to events on neighboring off-Forest lands. Windborne dust from dry lakes and agricultural lands and smoke from wood heating in local communities are the most common sources.

The demand for clean air as a recreational attraction on the Forest and throughout the Eastern Sierra is very high.

## Plan Management Emphasis

Current management direction will continue. In addition, Air Quality Related Values and their indicators will be developed for Class I areas, and smoke management plans will be developed in conjunction with fire management planning.

## Cultural Resources

### Current Direction and Opportunities for Change

Most cultural resource inventory and evaluation on the Forest occurs in preparation for actions that have the potential to affect cultural values. Non-project inventory has occurred primarily through the efforts of outside researchers. In the past, 95 percent of the inventory took place in timber compartments. The timber base is now approximately 90 percent inventoried and mandatory historic preservation compliance work undertaken in support of timber activities involves re-entry into areas that have received extensive surveys. As a consequence, much less actual inventory is being accomplished than in the past--approximately 1,000 new acres per year.

Compliance requirements for project implementation rely primarily on surveys to locate cultural resources and subsequent avoidance of impacts to those resources (protection). The State Historic Preservation Officers in California and Nevada, the Advisory Council on Historic Preservation and the Keeper of the National Register are consulted in accordance with 36 CFR 800. Other consulting parties as defined in 36 CFR 800, especially Native American groups, are consulted as appropriate. Formal site evaluation, including test excavations, and mitigation of adverse impacts where necessary are used to meet compliance requirements. Copies of all site and survey documentation are supplied to the State Archaeological Inventories.

The Forest has taken steps to replace the traditional site-specific, project-specific approach to compliance requirements. Memoranda of Understanding (MOU) between the Forest and the California State Historic Preservation Officer regarding over-the-snow logging and "no effect" projects are now in effect. Formerly, compliance requirements entailed project by project consultation with the State Historic Preservation Officer and the Council. With these Memoranda of Understanding, compliance requirements on many projects are met with an annual report. Additionally, the Forest has concluded a programmatic agreement with the California State Historic Preservation Officer and the Council for the treatment of piagi procurement

sites. Again, mandatory consultation has been reduced from a project-by-project basis to a biennial report. This agreement also reduces the number of acres taken out of timber production for cultural resources protection.

Programmatic treatment plans are being developed on a Regional level for such site types as railroad logging sites, sparse lithic scatters, bedrock mortars, and historic dumps. The Forest is involved in the preparation of these treatment plans and will benefit from their implementation.

There is an opportunity to replace the current site-specific approach to compliance requirements (which is time-consuming and labor-intensive) with a more efficient type-of-site and type-of-undertaking compliance process involving programmatic Memoranda of Agreement with the appropriate state offices.

Cultural resource interpretation on the Forest is conducted at a rudimentary level under the interpretive services program. Protection and enhancement of historical and archaeological sites would benefit from increased public awareness of cultural resources and of the laws protecting them.

### Supply and Demand

Current research indicates that eastern California and western Nevada have been occupied for at least the past 10,000 years. The most recent prehistoric inhabitants include the Northern Paiute, Shoshone, Miwok, Washo, Kawaiisu, Tubatulabal, Koso, and Monache. The Euro-Americans who arrived in the early 1900s used the Forest primarily for timber harvest, mining, and ranching.

The density of cultural sites on the Inyo National Forest averages 1 per 59 acres (contrasted with 1 per 105 acres on the Angeles National Forest and 1 per 245 acres on the Tahoe). It is estimated that the Forest contains 35,000 or more sites.

As of October 1, 1983, 97,000 acres had been inventoried, most of that in the Jeffrey pine forest on the northern third of the Forest. Approximately 1,500 prehistoric and 200 historic sites had been identified. Of the sites identified, 45 had been formally evaluated for the National Register of Historic Places. Fourteen were determined eligible and/or actually nominated. These sites are listed below by state trinomial or by name:

- Mono County: Ca-Mno-11, -34, -446, -471 H, -529, -542, -823, -1644, -1645.
- Inyo County: CA-Iny-1308, -2285, Lon Chaney's Cabin, Tuttle Creek Ashram.

The remaining sites need to be evaluated in order to meet legal requirements. Evaluation of prehistoric sites will be based on the research needs proposed in the 1978 Prehistoric Overview and on subsequent work done in the region. The Overview and most regional research is guided by the theoretical paradigm of human cultural ecology. There is a recognized need to refine regional chronologies, establish settlement/subsistence models, and to pursue long-range research on questions such as the trans-Sierran trade,

the development of irrigation and food production in the Owens Valley, and the rise of complex social organization. Evaluation of historic sites will be greatly facilitated by completion of an Historic Overview.

National Register properties need to be maintained so that their integrity is preserved. This can be done through a program of "arrested decay" to prevent further natural deterioration as well as the prevention of vandalism. National Register properties provide good opportunities for interpretation. Approximately 1.9 million acres on the Forest need more intensive inventory. Details are displayed in the Forest Cultural Resource Management Atlas.

### Plan Management Emphasis

Programmatic treatment plans will continue to be developed at the Regional and Forest level. Compliance measures other than the traditional protection mode will be carried out in consultation with State Historic Preservation Officers and other appropriate entities as more land is needed for management activities. Cultural resources interpretation will be developed within the context of the total Forest recreation program. Enhancement opportunities will be pursued in association with both the interpretive program and the preservation of significant sites.

## Diversity

### Current Direction and Opportunities for Change

Vegetative diversity is currently affected by Forest Service management activities associated with timber and range production, wildlife habitat, watershed management, energy and mineral activities, recreation, and fire suppression.

The best opportunities on the Inyo to increase vegetative diversity without conflicting with other resources are in the shrub and pinyon-juniper vegetation types.

### Supply and Demand

Diversity is much more than the juxtaposition and types of vegetation communities. It is a combination of physical and biological phenomena that comprise habitats and the species that occupy these habitats: plant species, seral stages, crown closure, vegetation structure, snags, down logs, physiographic features and a myriad of other parameters.

During the last 150 years, the location and species composition of ecosystems on the Forest have changed little, although the seral stages, relative extent and condition of those ecosystems have changed considerably. Diversity appears to be slowly decreasing Forest-wide.

Vegetative diversity on the Inyo National Forest has been changed from natural levels primarily through water diversion, affecting the extent of riparian areas; past overgrazing, affecting the condition of riparian areas and wet meadows; fire suppression, reducing the seral stage diversity of brush and allowing woody vegetation to encroach on meadows by preventing

natural fire-caused rejuvenation; and commercial timber management, reducing the extent of older seral stages of coniferous forests.

The demand for diversity on the Forest focuses primarily on riparian areas for their visual, recreational, wildlife, fish, and grazing values; on the coniferous forest for its wildlife habitat benefits; and on diversity of brush seral stages for livestock and wildlife forage.

### Plan Management Emphasis

Vegetative diversity will be managed under specific direction in the Plan. Diversity of seral stages and the maintenance of key components, such as old growth, riparian areas, and snags will be managed to prescribed levels. The effects of fire suppression on seral stages of brush will be offset by a program of vegetation treatment for range and wildlife benefit. Prescribed fire and the suppression strategies of confinement and containment will be used where appropriate.

### Energy: Geothermal (SEE MINERALS: LEASABLE)

### Energy: Hydroelectric

#### Current Direction and Opportunities for Change

Small hydroelectric licenses are issued by the Federal Energy Regulatory Commission (FERC). Special use permits for small hydroelectric developments on National Forest land are issued by the Forest Service. Each special use permit application is handled individually. An environmental analysis is conducted to estimate environmental impacts, and mitigation of potential impacts is prescribed. It would be desirable to establish specific conditions that must be met when hydroelectric projects are developed. Direction of that sort would improve consistency of treatment and facilitate the evaluation of individual projects in light of the cumulative impacts represented by many projects.

#### Supply and Demand

The Inyo National Forest has a significant potential small hydroelectric resource, including the two major components necessary for hydro development: perennial water flow and rapid change in elevation. Six small hydroelectric projects are currently operating and fifteen additional applications have been submitted for fifteen streams on the Forest. Major hydroelectric projects affect four streams on the Forest.

The demand for energy has increased in recent years as a result of the national desire for energy self-sufficiency and the search for an inexpensive, nonpolluting energy source. There is, however, some question whether the demand for small hydroelectric projects as an energy source will prove cost-effective when all resources are considered.

### Plan Management Emphasis

The Plan establishes specific direction for the protection of riparian vegetation, water quality, fish and wildlife habitat, visual quality, and recreational opportunities. That direction collectively provides the conditions necessary for evaluating small hydroelectric applications.

### Energy: Wind Power

#### Current Direction and Opportunities for Change

Wind farms would also require both a license from the Federal Energy Regulatory Commission and a special use permit from the Forest Service. There is no specific direction governing wind farm evaluation, except the policy that energy production be considered a National Forest resource.

#### Supply and Demand

The suitability of Inyo National Forest land for wind power is not well known. A wind farm application has been received for a site in the Sherwin Grade area, and industry representatives estimate that the Forest could have the potential for two additional sites, probably at higher elevations in the White or Inyo Mountains. Preliminary studies indicate, however, that wind patterns on the Inyo may not be suitable for power generation.

The demand for energy is well established and expected to increase, but the demand for wind as an energy source is just beginning to emerge, and its cost-efficiency on the Forest is unknown. It is difficult to predict a future trend at this time.

### Plan Management Emphasis

The Plan acknowledges energy as a National Forest resource. Individual projects will be evaluated in terms of established Visual Quality Objectives, soil stability, other affected resource values, and the management direction for the lands on which the proposed site is located.

### Facilities

#### Current Direction and Opportunities for Change

Current direction for Forest administrative sites calls for eliminating maintenance backlogs, constructing additional facilities where needed, and considering the relocation of facilities where problems have been identified. Current direction is adequate and should be incorporated intact.

Airstrips on National Forest land are managed under special use permit. Although there are some problems with existing permits, current direction is adequate to handle them.

Dams on the Forest are either owned by the Forest Service or operated under special use permit. Dams are maintained regularly to ensure that they pose no safety threat. There is no need to establish or change direction.

Forest Highways are designated and maintained Forest roads under the jurisdiction of a public authority such as state or county. Current direction for their management is adequate.

Mass transit is considered an option where road capacity is limited or where concentrated vehicle use threatens to damage natural resources. Details are addressed on a case-by-case basis. There is no need for change in this direction.

Roads on the Forest are operated and maintained either by the Forest Service or by the state or county in agreement with the Forest Service. Although those agreements need to be reviewed regularly and adjusted in individual cases, the overall direction for doing so is adequate. Forest roads are maintained to assigned maintenance levels and reconstructed on a programmed basis.

The Forest trail system currently emphasizes wilderness trails, which are managed under direction in individual wilderness management plans. Trails are maintained to assigned levels and reconstructed on a programmed basis. There is, however, a need for more emphasis on non-wilderness day-use trails, including hiking, equestrian, angler access, bicycle, interpretive, and nordic ski trails.

The Pacific Crest Trail and two National Recreation Trails (Whitney Portal and Methuselah) cross the Forest. They are managed under individual management plans.

The subject of borrow sites is addressed under the heading of Minerals: Mineral Materials.

### Supply and Demand

The Forest has eighty-six buildings at seven administrative locations. Of these, all but one are federally owned (the Forest Supervisor's office in Bishop is leased from a private party). Fifty of these buildings are in good condition, twenty-three are rated fair, and thirteen are rated poor. There is a minor need for additional capacity at existing sites and the need to build a Visitor Center for the recently established Mono Basin National Forest Scenic Area. Once those needs are satisfied, demand is expected to stabilize.

The existing airstrips in the area are adequate to meet current and projected demand.

There are eighteen dams on Forest land. Three are owned by the Forest Service; fifteen by utility companies. Although one of the proposed small hydroelectric projects could include a small dam, most would divert water rather than impounding it. No new sites for major dams have been identified on the Forest.

There are thirteen Forest roads that are designated Forest Highways. They are located throughout the Forest.

There is one major mass transit system on the Forest and several smaller ones. The demand for additional systems could increase with increasing recreation use of the Forest, as established routes approach capacity and resource damage is threatened in heavily used areas.

The Inyo National Forest has 32 miles of arterial roads, 201 miles of collector roads, 741 miles of local roads, and an estimated 300 miles of uninventoried roads. These roads are used primarily for public recreation access, administration, fire protection, and commercial timber transport. Recreation use on the Forest is expected to increase; however, the current arterial/collector road system should meet the recreational demand for the next ten to fifteen years because most of the projected recreational facilities will be built adjacent or close to these roads.

No new construction is anticipated in support of the Forest timber management program. Arterial/collector/local road construction that could be needed to support approved geothermal development will be constructed by the developer to Forest Service standards. An estimated twelve miles of road will be constructed if geothermal facilities develop in Lease Blocks I and II. There is no reasonable estimate of the location or mileage of mining roads that could be built. The existing program of bringing roads up to appropriate standards for the reduction of soil loss will be completed within the planning period.

The Forest has 1,236 miles of hiker and equestrian trails, of which approximately 705 miles are in wilderness. The demand for trails will increase with increasing recreation use, primarily in concentrated recreation areas and recommended wilderness. The demand for off-highway vehicle (OHV) and nordic ski trails will also increase. Increased demand for trails in designated wilderness is limited by the trailhead quota system.

### Plan Management Emphasis

Current direction continues unchanged for most aspects of facility management. However, the non-wilderness trail system receives additional emphasis because of projected increases in use at existing concentrated recreation areas, expansion of winter recreation opportunities, wilderness recommendations, and increased interest in semi-primitive motorized recreation.

## Fish

### Current Direction and Opportunities for Change

Fish habitat management on the Forest currently emphasizes the protection of fish habitat quality through application of Best Management Practices for water quality protection, the restoration of golden trout habitat on the Kern Plateau, and the recovery of threatened Paiute and Lahontan cutthroat trout.

Potential conflicts between fish habitat needs and other activities arise wherever water quality or the amount of instream flow is reduced. Water quality on the Inyo is most susceptible to sedimentation from livestock grazing, concentrated recreation use, ski area development, and other facility development. The activities most likely to affect instream flow are hydroelectric development and consumptive water uses such as geothermal energy development and municipal use.

The Management Indicator Species (MIS) concept is currently being adopted on the Forest. Management indicator species represent other species with similar habitat needs. Virtually all resident trout on the Forest are considered management indicator species. The most sensitive reproducing species in a given reach of stream is considered the management indicator species for that reach.

### Supply and Demand

Inyo National Forest fish habitat includes about 1,100 miles of stream and several hundred lakes. Habitat condition in most streams is rated medium to high. Streams rated medium or low either lack fish habitat due to physical characteristics such as steep gradients, or they have been damaged by past livestock grazing, heavy recreation use, and/or water diversion. Lake fish habitat quality is generally high. More than 90 percent of resident fish on the Forest are found in lakes. The remainder inhabit streams.

Waters on National Forest land contain rainbow trout, brook trout, brown trout, Colorado cutthroat trout, Lahontan cutthroat trout, Paiute cutthroat trout, golden trout, western sucker, and Owens sucker. The golden trout, western and Owens suckers and rainbow trout in the Kern River are the only native species known to reside on the Forest. Reproducing brown, brook, and rainbow trout are common. Golden trout and the suckers are limited in distribution, but common where found. A few other native species inhabit neighboring Bureau of Land Management land and private land within the Forest boundary.

The demand for trout fishing on the Forest is high. Fishing represented 340,000 Wildlife and Fish User Days in 1982. This demand is expected to increase. Resident trout habitat enhancement alone is not capable of increasing fish production to meet that demand. Much of the existing fishing load is borne by hatchery-stocked fisheries.

### Plan Management Emphasis

The Plan carries forward the current fish habitat management emphasis. The Plan also directs that fisheries in concentrated recreation areas be maintained or enhanced to provide more fishing opportunities and that selected stream reaches be rewatered as part of negotiations associated with the hydroelectric relicensing process.

## Further Planning Areas

### Current Direction and Opportunities for Change

Further Planning Areas are unroaded lands with identified wilderness potential. Current direction is to evaluate these areas as part of the planning process and to make recommendations in the Plan for their future management as wilderness or non-wilderness.

The Forest needs to establish a management emphasis, either wilderness or non-wilderness, for all Further Planning Areas. No lands on the Forest are to remain in Further Planning status after the Plan is approved.

The Forest has the opportunity to recommend additional acreage for wilderness designation. These recommendations are preliminary administrative recommendations that will receive further review and possible modification by the Chief of the Forest Service, the Secretary of Agriculture, and the President of the United States. Final decisions on wilderness designation are the purview of Congress.

### Supply and Demand

The Inyo National Forest has 1,008,282 acres of land that were inventoried as roadless by the Roadless Area Review and Evaluation (RARE II) study. Of those acres, 46,146 acres were designated wilderness by the California Wilderness Act; 338,319 acres released by that Act for non-wilderness management; and 576,517 acres remained in the Further Planning category. In addition, there are 47,300 acres of inventoried roadless areas in Nevada.

Most Further Planning Areas on the Forest are substantially lower in user capacity and recreational attractions than existing wilderness. The supply of wilderness recreation opportunities on the areas is therefore low relative to the acreage available.

The demand for wilderness recreation on the Forest is very high. Existing wildernesses are managed under a trailhead quota system, so that use does not exceed established capacity and the quality of the wilderness experience is maintained. Quotas are essentially full during the summer peak use season. The demand for wilderness designation on the Inyo as a means of protecting unique and sensitive ecosystems is also present. That demand focuses on the desirability of wilderness in the White and Inyo Mountains.

There is also a demand for non-wilderness uses in Further Planning Areas. Some of the existing and potential uses that would conflict with wilderness designation are: dispersed vehicle-based recreation, road access for mineral exploration and development, and vegetative manipulation for livestock range or wildlife habitat improvement.

### Plan Management Emphasis

The Plan recommends approximately 172,600 acres (28 percent) of Further Planning lands for wilderness designation and prescribes non-wilderness uses on the remaining 451,217 acres.

## Geology

### Current Direction and Opportunities for Change

Geology involves both resources (groundwater, mineral materials, outstanding geologic features) and risks associated with geologic processes. The Forest has no current direction guiding risk assessment, groundwater management, or geologic feature management. National and regional planning requirements call for the Forests to establish such direction. The subject of mineral materials is discussed under the heading of Minerals.

### Supply and Demand

Geologic processes that are active on lands within the Forest include slope instability (such as landslides), seismic activity (earthquakes), and volcanic activity. Occupation of lands involved in or affected by these processes involve some risk to Forest personnel, facilities, and projects. In some cases risks are high enough to preclude occupation or use of these lands. Both the public and private landholders within the National Forest boundary occupy lands subject to the effects of these processes.

The existing Forest-wide geologic resource inventory classifies land in terms of high, medium or low risk of impacts from geologic processes. Approximately 453,600 acres on the Forest are classified at high risk from landslides; 37,600 acres at high risk during an earthquake from ground shaking; 48,000 acres at high risk during an earthquake from surface rupture; 373,000 acres at high risk during a volcanic eruption from lava flows; and 631,400 acres at high risk during a volcanic eruption from airborne material. Slope instability processes (including those triggered by earthquakes) are the most important geologic events on the Forest in terms of risk, primarily because of their relative frequency. Volcanic events are the least important due to their low frequency, despite the size of their potential impacts.

The extent and quality of groundwater on the Forest are not known. Small-scale wells have been developed to serve campgrounds, administrative sites, fire suppression units, and livestock and wildlife needs. Those uses currently total 43 acre-feet. Additional groundwater, amounting to 300 acre-feet, is used to supply Mammoth Mountain Ski Area. There is no current community use of groundwater from on-Forest sources.

The demand for groundwater to supply Forest Service facilities (including existing uses, the replacement of existing surface water sources, and the development of sources for new developed recreation sites) is estimated at 247 acre-feet over the next twenty years. The demand for water to supply ski areas (including existing use, new supplies to meet existing needs, and supplies for expanded ski areas) is estimated at 1,200 acre-feet over the next 25 years. The demand for groundwater to serve community needs in Mammoth Lakes is expected to reach approximately 6,000 acre-feet over a 25-year period. It is also likely that groundwater would be needed to supply geothermal power plants in Lease Blocks I and II. That development, if it occurs, is unlikely to occur before 1995. The amount of groundwater needed could be negligible, or it could be as great as 18,600 acre-feet, depending on the size and design of power plants.

The Forest has many outstanding geologic features deserving recognition and/or protection, some of which could qualify for Special Interest Area or Research Natural Area designation. The demand for protection of geologic features can be inferred from the fact that "textbook examples" of volcanic, metamorphic, and glacial geology attract large numbers of students and scientists to the area.

### Plan Management Emphasis

The Plan calls for considering the risk to Forest projects posed by seismic, volcanic, and slope stability processes in planning for and locating facilities and management activities. The Plan also raises the need to inventory groundwater resources and to evaluate geologic Special Interest Area candidates within the next five to ten years. Geologic Research Natural Areas will be evaluated as a part of the Regional RNA program.

## Lands

### Current Direction and Opportunities for Change

The Forest lands program handles such activities as administrative boundary adjustments with the Bureau of Land Management; landline surveys and unauthorized occupancy; transportation and utility easements, corridors, and rights-of-way; withdrawals; landownership adjustments; and non-recreational special use permits.

The California Wilderness Act of 1984 transferred the administration of approximately 23,000 acres of land within the newly designated Mono Basin National Forest Scenic Area from the Bureau of Land Management to the Inyo National Forest. The Forest Service and the Bureau of Land Management are also currently engaged in an administrative interchange of federal lands. The Plan does not, however, address the implications of the land transfer or the interchange at this time.

Landline surveys and unauthorized occupancy are handled on a case-by-case basis where needed to resolve occupancies or to resolve conflicts with other landowners or land uses.

Rights-of-way for utility lines are consolidated wherever feasible with other linear land uses, such as roads, to limit the impacts of such lines on other resources.

Power and mineral withdrawals that limit options on withdrawn lands are available as a management tool. Withdrawals on the Forest are currently being reviewed as part of a national program to determine whether existing withdrawals should be extended, modified, or revoked.

The aspects of current policy receiving the most emphasis relate to landownership adjustment and special use permits. Present direction is to reduce the existing and potential impacts of private land uses on National Forest lands by working closely with local government entities to develop land exchange priorities. Land is made available under special use permit if the proposed use is compatible with the established multiple-use objectives

of the affected area and if no suitable private land is reasonably available for the use. Public uses have priority over semi-public uses, which are, in turn, considered before uses that benefit individuals. The Forest has the opportunity to establish priorities for landownership adjustment and to develop criteria for considering special use permit applications.

### Supply and Demand

There are approximately 1,181 miles of property lines on the Forest, of which thirty-one have been surveyed and posted to standard. The current target is to survey and post six miles of landline per year.

The Forest currently resolves an average of five occupancy trespass cases per year. There are an estimated fifty unresolved occupancies Forest-wide. Many of these situations are long-standing and can be handled administratively by special use permit or resolved via the Small Tracts Act.

Approximately 1,911 miles of utility, transportation, and water transmission lines cross the Forest under special use permit. However, no utility corridors have been designated to date. The route paralleling the major interstate right-of-way for the Pacific DC Intertie transmission line has the highest potential for future designation as a utility corridor.

Withdrawals on the Inyo National Forest total 758,876 acres, representing actions initiated by the Forest Service, by Congress, or by other federal agencies. Approximately 565,100 of these acres are in wilderness. The Forest Service is currently reviewing the withdrawals it has initiated. If the needed objectives can be met by a less restrictive management option than withdrawal, some withdrawals may be modified or revoked.

The Inyo National Forest boundary includes 2,046,346 acres, of which 116,591 are in non-federal ownership. In Inyo and Mono Counties, which contain most of the Forest land, only seven percent of land within the Forest boundary is in other ownership (more than half of that belongs to the State of California or the City of Los Angeles and lies within the recently legislated Mono Basin National Forest Scenic Area).

The major source of demand for Inyo National Forest land is the rapid expansion of communities associated with alpine skiing, several of which are within or adjacent to the Forest boundary. These communities are interested both in land exchange so that more private land is available for development and in land uses under permit to accommodate community service facilities.

Since 1960 approximately 1,000 acres of Inyo National Forest land have entered the private sector and 16,360 acres of private land have entered the National Forest. There are currently 977 non-recreational special use permits covering 34,960 acres and 1,911 miles.

### Plan Management Emphasis

The Plan emphasizes the need for cooperative planning with local government entities when developing a land exchange program, establishes broad priorities for landownership adjustment and criteria for special uses, and sets standards and guidelines for other lands activities. In most cases,

direction has not changed but has been restated for emphasis. Wilderness recommendations would represent the withdrawal of approximately 172,600 additional acres from new mining claims.

## **Minerals: Leasable (Geothermal Energy)**

### **Current Direction and Opportunities for Change**

Potential geothermal resources on the Inyo National Forest are currently being explored. A number of leases have been issued within the Mono-Long Valley Known Geothermal Resource Area (KGRA).

Pre-lease exploration activities are administered by the Forest Service. The Forest Service completes environmental documents in conjunction with the Bureau of Land Management which address the potential effects of geothermal leasing. The Bureau of Land Management issues the geothermal leases. All post-lease activities are authorized by the Bureau of Land Management with input and concurrence from the Forest Service. Environmental documents are completed by the Bureau of Land Management and the Forest Service which address the impacts of all post-lease activities. Mitigation measures are applied as appropriate to lessen the identified impacts.

### **Supply and Demand**

Geothermal energy is a resource found on the Inyo National Forest. Approximately 260,000 acres of the 460,000 acre Mono-Long Valley Known Geothermal Resource Area are on National Forest land. Approximately 38,900 acres are currently under lease by six separate entities. Although shallow sub-surface testing has occurred and four to five deep exploratory wells have been drilled, additional work is needed to better define the extent and quality of the resource.

### **Plan Management Emphasis**

The demand for geothermal energy is related to the national search for clean, non-polluting energy sources and national self-sufficiency. Changes in the cost of imported fuels will influence the amount of geothermal activity on the Forest. Management direction for the affected management areas would influence any proposed geothermal activity.

## **Minerals: Locatable**

### **Current Direction and Opportunities for Change**

The Forest Service manages surface resources associated with locatable mineral activity through the development and approval of plans of operation. New mining claims cannot be located in wilderness, but valid existing rights may be exercised. Existing direction is adequate to manage surface resources associated with locatable mineral activity.

## Supply and Demand

The Inyo National Forest has a long, active history of mining. The Bureau of Mines lists twenty commodities in 513 mineral prospects on the Forest. More than 3,000 mining, mill site, and tunnel site claims are recorded for Forest lands. There are approximately eleven mines currently in production on the Forest. The most significant of these are the Umetco Pine Creek Mine in Pine Creek and the U.S. Pumice Mine in the Mono Craters. The latter produces more than 10,000 tons of block pumice each year.

The mineral potential of non-wilderness lands on the Forest has been estimated on the basis of geologic formations and past mining activity. The approximately 565,100 acres of designated wilderness has not been rated for mineral potential. A mineral potential rating of "high" has been applied to 133,860 non-wilderness acres on the Forest, and a rating of "medium" has been applied to 209,021 acres. The remaining 1,021,732 acres have been rated "low". The largest acreage in the high and medium categories is located in the Inyo Mountains and the lower elevations of the White Mountains.

## Plan Management Emphasis

The Plan acknowledges the potential importance of locatable minerals on the Inyo. Wilderness recommendations were made considering the mineral potential of the land. The degree to which mineral impacts need to be mitigated is defined by the Forest-wide Standards and Guidelines and Management Direction for specific Management Prescriptions and Management Areas. Mineral withdrawals are addressed under the heading of Lands.

## Minerals: Mineral Materials

### Current Direction and Opportunities for Change

Mineral materials are used by counties, private parties, and the Forest Service for construction projects. Materials sources on National Forest land are managed either by the Forest Service or by other parties under special use permit. Off-Forest sources are available for Forest Service use under use agreements with the appropriate land manager. The major need is the development of a minerals management and development plan.

### Supply and Demand

Of the fifty material sources inventoried in the area, twenty-eight are on National Forest lands. Current Forest Service demand, based on road construction and reconstruction, averages 40,000 tons per year. Estimated amounts of material in known reserves would be sufficient to provide for projected road construction and reconstruction for approximately thirty-four years.

The need for materials to support other types of construction (e.g., recreation sites, ski areas, geothermal developments, community development) would be added to the amount needed for roads. The projected demand for these other uses would reduce the supply by approximately eleven years.

### Plan Management Emphasis

The Plan continues current direction for the management of mineral materials and calls for a mineral materials management and development plan.

## Mono Basin National Forest Scenic Area

### Current Direction and Opportunities for Change

The Mono Basin National Forest Scenic Area was established by Congress in September 1984. The enabling legislation for the Scenic Area called for development of a comprehensive management plan. The Forest has managed the area under an interim management plan pending completion of the comprehensive plan. This plan is being developed in a separate planning process.

### Supply and Demand

The Mono Basin National Forest Scenic Area encompasses approximately 116,000 acres, of which 45,832 are National Forest land. The remaining acres include the lake surface itself and relicted lands (lakeshore created by the lowering of the lake level during forty years of water diversion) owned by the state, and additional City of Los Angeles and privately-owned lands.

Public interest in the area led to its establishment by Congress. The Scenic Area is valued by the public primarily for its scenic, ecological, and geologic features.

### Plan Management Emphasis

When approved, the Scenic Area Comprehensive Management Plan will be tiered to the Forest Plan.

## Pest Management

### Current Direction and Opportunities for Change

The Forest Service uses the Integrated Pest Management (IPM) approach to pest management. The Integrated Pest Management approach calls for the integration of pest management activities (prevention, surveillance, detection, evaluation, suppression, and monitoring) into resource planning and decision making. Pest information will be considered, for example, in the development and implementation of silvicultural prescriptions.

The goal of Integrated Pest Management is to prevent and/or reduce pest-related damage considered unacceptable due to its impact on human activities or resource management objectives. In the selection of appropriate pest management methods, all techniques, including biological, mechanical, manual, and cultural are considered on a case-by-case, project-level basis. The preferred methods are selected on the basis of site-specific analyses of biological effectiveness, costs, and effects on human health and the environment.

Specific pest management activities commonly utilized on this Forest include monitoring pest-related damage, treating fresh stumps with borax to prevent annosus root disease, and removing hazard trees in recreation areas. In addition, timber management prevents or reduces pest-related damage on managed lands by creating stands of healthy, vigorous trees that are resistant to insects and disease.

The Pacific Southwest Region is currently preparing an Environmental Impact Statement (EIS) on the subject of vegetation management in reforestation. The Preferred Alternative of that EIS calls for continued use of site-specific analyses to make decisions about methods of vegetation control, and the consideration of all available methods when making those decisions.

Herbicides will be selected on the Inyo only if their use is essential to meeting management objectives. Herbicide use has historically been minor on this Forest, as the arid climate limits the abundant and rapid growth of vegetation that would compete with tree seedlings in plantations. No herbicides have been used on the Forest in the past five years. Before that, less than three hundred acres per year were treated. Aerial application of herbicides is unlikely to occur on the Inyo.

#### Supply and Demand

The most important pest organisms on the Forest are:

Diseases: Annosus root disease, dwarf mistletoes, and wood decays.

Insects: Jeffrey pine beetle, mountain pine beetle, California flatheaded borer, pine engraver beetle, pandora moth, and tent caterpillar.

Vertebrates: Ground squirrel, pocket gopher, porcupine, and deer.

Vegetation: Grasses and shrubs in tree plantations.

Pest proliferation on the Forest is not a serious concern. Pest problems are typically localized and fall within acceptable levels.

#### Plan Management Emphasis

The Plan continues to utilize the Integrated Pest Management approach to pest management, including the guidance provided by the Regional Environmental Impact Statement on Vegetation Management in Reforestation. The projected high levels of recreation use and new recreation site development and proposed timber harvest volumes will provide increased opportunities to implement Integrated Pest Management on the Forest.

### Protection (Fire Management)

#### Current Direction and Opportunities for Change

Fire management on the Forest includes the elements of planning, prevention, detection, suppression, fuels management, and coordination with the management of other resources, including the use of prescribed fire.

There is a need to establish a cost-effective fire suppression organization consistent with overall resource management objectives.

The Forest also has a need to determine the appropriate fire suppression strategy for application on specific forest acres. The Interim Inyo Fire Management Plan provides for the use of containment or confinement where these strategies are more appropriate than control. Many additional lands on the Inyo are well suited to confinement or containment strategies. Confinement limits fire spread by the use of natural barriers; containment utilizes limited fire lines; control employs an extensive firefighting effort.

The Forest Service fire mission is wildland fire protection. The Forest will respond to a structure fire only in an emergency situation upon the request of local fire agencies. When local firefighters have arrived in sufficient force, Forest Service units will withdraw from the structure fire and focus on protection of adjacent wildlands.

As a member of the Owens Valley Interagency Command Center, Inyo National Forest firefighters respond to wildland fires off National Forest lands. They respond first if they are the appropriate firefighting unit closest to the fire; they support other agency units when needed.

#### Supply and Demand

From 1972 to 1982, the Inyo National Forest had 491 man-caused fires, (burning a total of 5,616 acres) and 715 lightning-caused fires (burning 2,496 acres). The Inyo is typical of many Forests in California, having many small fires and an occasional large, damaging fire.

The risk of wildland fire ignition on the Inyo is rising due to increasing development of intermingled and neighboring private lands. This growth is especially significant around June Lake, Mammoth Lakes, and Crowley Lake. If energy (especially geothermal) sources are developed, the risk of operational fires will increase in proportion to the size of facilities and amount of activity.

The demand for emergency responses to structure fires and the value of property at risk from fires originating on National Forest land are increasing with community expansion. In addition, the importance of protecting timber plantations from wildfire will increase as more acres are cut and regenerated.

Prescribed fire has been used on the Inyo National Forest for the past several years, primarily for timber site preparation. There are additional opportunities for prescribed burning to benefit wildlife habitat and domestic livestock range. Prescribed fire has not been used to reduce fuels for fire management purposes on the Inyo. However, it could be utilized in identified high hazard areas.

#### Plan Management Emphasis

The Plan identifies the fire suppression strategies that would be appropriate under each management prescription. Specific guidelines for the application

of those strategies will be developed as part of the Fire Management Action Plan.

## Range

### Current Direction and Opportunities for Change

The domestic livestock grazing program is presently managed at a moderate level of intensity. Most range allotments have improvements, but they are not sufficient to maximize forage utilization by livestock. Range management needs are documented in Allotment Management Plans and Annual Operating Plans. The range permittee is usually responsible for the annual maintenance of structural improvements, while the Forest provides materials for new construction. Most vegetation treatment is handled by the Forest Service.

Range management includes the management of wild horses and burros. Approved territory management plans for the White Mountain Wild Horse Territory and the Saline Valley and Lee Flat Burro Territory are adequate for the planning period. There is a need to develop a management plan for the Montgomery Pass Wild Horse Territory.

### Supply and Demand

The current grazing program supplies 41,400 Animal Unit Months (AUMs) per year of forage for domestic livestock and wild horses and burros, and an unknown amount for wildlife. It is estimated that, managed under single resource emphasis with unlimited capital investment, a maximum of 75,900 Animal Unit Months could be produced on the Forest by the end of five decades.

Increases in forage would come primarily from type conversion and rejuvenation of range species, and secondarily from structural improvements such as water developments and fencing. The costs of increasing forage production and the need for multiple-resource management limit the degree to which production will actually be maximized. The degree to which range outputs can be increased is ultimately limited by precipitation, the length of the growing season, water availability for livestock, and, in some cases, wilderness designation. There are about 150 miles of fence, 39 miles of waterline, 145 water sources, and 50 miscellaneous structures (cattle guards, gates, and corrals) on the Forest.

The demand for grazing on the Inyo is expected to continue at or above present levels, since National Forest summer range is essential for local ranch operations. The Forest assumes that if additional AUMs were made available, they would be utilized by present permittees.

The White Mountain Wild Horse Territory (70 horses) and the Saline Valley and Lee Flat Burro Territory (112 burros) populations are within established management levels. The Montgomery Pass Wild Horse Territory has more animals than the range can support in the long term. The public demand for wild horse and burro protection is considerable.

## Plan Management Emphasis

The Plan maintains the current level of forage production. Grazing on suitable timber land will continue at current levels for the next ten years, but will slowly decline as timber stocking densities eventually crowd out forage. Grazing on key deer winter range will continue at current levels. Any increase in forage will be allocated to wildlife. Range management practices that prevent cattle from affecting specific fawning areas will be encouraged. Grazing in riparian areas may be deferred or redirected where necessary to prevent or repair damage to riparian resources. Existing wild horse and burro plans will be incorporated intact, and a management plan for the Montgomery Pass Wild Horse Territory will be developed.

## Recreation: General

### Current Direction and Opportunities for Change

Recreation is the most significant resource on the Inyo National Forest, and is expected to continue in that role for the foreseeable future. The economic stability of all Eastern Sierra communities rests heavily on recreation-based income. Most of the major attractions that bring recreationists to the area are located on Inyo National Forest land. On lands with potential for both recreation and other resources, current practice usually emphasizes the recreational values.

Although there is no need to change direction, there is an opportunity to decide which areas will be managed for varying recreational opportunities, how those opportunities will be enhanced, and what types of resource management are consistent with a recreation emphasis.

### Supply and Demand

The demand for recreation on the Inyo National Forest is tied primarily to the population of Southern California. Demand is already high enough to exceed the existing capacity of many on-Forest recreational facilities, and is expected to increase during the planning period.

It is expected that the current emphasis on destination-oriented camping on the Forest will continue. Recreation use of lands in all Recreation Opportunity Spectrum (ROS) classes is expected to increase as a result of increasing demand. That use will be facilitated by the construction of new trails of various types, especially on lands in the Roded Natural and Semi-Primitive Motorized classes.

There are currently 870,600 acres in the Primitive ROS class; 392,600 in the Semi-Primitive Non-Motorized class; 189,200 acres in the Semi-Primitive Motorized class; 383,600 acres in the Roded Natural class; 35,100 acres in the Roded Modified class; 11,600 acres in the Rural class; and 2,000 acres in the Urban class in private ownership.

## Plan Management Emphasis

The Plan identifies both summer and winter existing and potential developed and dispersed recreational opportunities. It prescribes the enhancement of opportunities in some areas and the protection of potential sites for future development.

## Recreation: Developed

### Current Direction and Opportunities for Change

Developed recreation sites are currently managed with low-standard maintenance and rehabilitation of degraded sites. No new sites have been constructed in the past ten years. There is an opportunity to emphasize the need for standard maintenance and to consider the development of additional facilities to enhance recreational opportunities on the Forest. On the Inyo National Forest, dispersed recreation depends heavily on developed facilities. As the Forest is a day's drive away from the nearest cities, visitors need to spend the night on or near the Forest. Any increase in recreational use, therefore, depends on an increase in overnight capacity. With the limited amount of private land in the Eastern Sierra, most of that additional capacity will need to be developed on public land.

### Supply and Demand

The Inyo National Forest supplied 1,848,500 Recreation Visitor Days (RVDs) of developed recreation use in 1982. The current capacity of non-alpine developed sites is 25,479 Persons At One Time (PAOT). About 98 percent of recreational developments lie in concentrated recreation areas. These areas cover 47,529 acres (two percent of the Forest land base). Potential developed site capacity is estimated at 44,034 PAOT and 3,292,200 RVDs.

The demand for summer recreation, assuming that facilities are available, is projected to increase at a rate of two percent per year through the next ten years, and to continue at the same rate for the following forty years.

## Plan Management Emphasis

The Plan emphasizes an increase in developed recreation use. New facilities will include campgrounds, trails, and interpretive sites, primarily in existing concentrated recreation areas. Both privately and publicly operated sites will be considered.

## Recreation: Alpine Skiing

### Current Direction and Opportunities for Change

Alpine ski area development is currently managed in close coordination with local community planning. Ski area capacity projections for National Forest land are developed in conjunction with community projections of capacity to support the associated population of skiers and support services. The Mammoth and June Mountain Ski Area plans are to develop to capacity. There

is additional potential for ski area development in the Sherwin Bowl, Minaret Summit, Mammoth Knolls, San Joaquin Ridge, and White Wing areas.

Several of these potential ski areas are suitable for both timber harvesting and developed recreation opportunities. There is a need to establish a management emphasis for those lands.

In response to the Mono County/Town of Mammoth preferences stated in the Town of Mammoth Lakes General Plan, the Forest Service agreed to evaluate Sherwin Bowl first when considering the development of additional ski areas. It is currently being studied in a separate environmental analysis that is not a part of this planning process.

### Supply and Demand

The Inyo National Forest has two alpine ski areas with a combined capacity of 22,000 Skiers At One Time (SAOT). They provided 1.6 million skier visits during the 1981-82 season. Current planning will increase their capacity to approximately 29,000 to 31,000 SAOT. Other identified potential ski areas are: Sherwin Bowl, Mammoth Knolls, Minaret Summit, San Joaquin, and White Wing. The limiting factors on ski area development may be infrastructure factors such as water, sanitation, and snow removal capability rather than the availability of land suitable for skiing.

The demand of Southern Californians for alpine skiing appears to increase in direct proportion to lift capacity. Skier use on the Inyo has increased about twelve percent per year for the past ten years. Demand is expected to continue increasing until the Forest has been developed to capacity.

### Plan Management Emphasis

The Plan acknowledges the importance of the Inyo National Forest as a source of alpine skiing for Southern Californians. Provisions are made for the management of potential ski areas so that their ski development potential is retained.

## Recreation Dispersed

### Current Direction and Opportunities for Change

The majority of dispersed recreation on the Inyo National Forest represents day use in concentrated recreation areas by people who are staying overnight in Forest Service campgrounds. The emphasis on dispersed recreation is therefore related to the emphasis on developed sites. There is an opportunity to acknowledge that relationship and to identify those developments which would best enhance dispersed recreation opportunities on the Forest.

About twenty percent of dispersed recreation use is generated by overnight developments on private land and by local communities. This percentage could increase, especially in the Mammoth Lakes area.

## Supply and Demand

Dispersed recreation in 1982 amounted to a total of 1,935,000 Recreation Visitor Days (RVDs). Of this total, 540,000 RVDs represented wilderness use; 340,000 represented fishing, 25,200 represented deer hunting; and 25,800 represented other wildlife-related recreation. The remaining 1,004,000 RVDs represented such activities as driving for pleasure, hiking, riding, dispersed camping, and boating.

The demand for dispersed summer and winter recreation is expected to increase in relative proportion to the demand for developed summer and winter recreation.

## Plan Management Emphasis

The Plan recognizes the relationship of developed and dispersed recreation on the Inyo. Dispersed recreation opportunities will be enhanced by expanding campground capacity, constructing day-use trails in concentrated recreation areas, and developing (or encouraging private parties to develop) facilities that support nordic skiing. In addition, certain lands will be managed with an emphasis on off-highway vehicle (OHV) recreation. OHVs are those vehicles capable of traveling off two-wheel drive roads, including four-wheel drive and all terrain vehicles (ATVs) and motorbikes. There is specific direction for snowmobile use (over-snow vehicle or OSV).

## Research Natural Areas

### Current Direction and Opportunities for Change

The Forest currently manages established Research Natural Areas (RNAs) under Forest Service Manual direction. Candidate RNAs are managed so that their natural ecosystems are protected until the establishment process is completed. The Forest has the opportunity to recommend the establishment of candidate RNAs in the Plan.

The Forest is responsible for meeting RNA targets for eight vegetation types in two physiographic provinces. Once the two candidate RNAs are established, Forest RNA targets will have been met.

The current direction regarding potential geologic and aquatic RNAs is to defer consideration until Regional direction is finalized.

### Supply and Demand

The Inyo National Forest has five established and two candidate RNAs. Existing RNAs meet established targets for Jeffrey pine (Indiana Summit), lodgepole pine (Sentinel Meadow), foxtail pine (Last Chance Meadow), bristlecone pine (White Mountain), and unique ecosystems (Harvey Monroe Hall). Candidate RNAs meet the target for pinyon pine (Whippoorwill Flat) and alpine fellfields (McAfee Meadow). The target for limber pine is met by stands in the Sentinel and Whippoorwill areas.

There is public demand for RNAs, especially from the scientific community.

## Plan Management Emphasis

The Plan recommends establishment of the Whippoorwill Flat and McAfee Meadow RNAs.

## Riparian Areas

### Current Direction and Opportunities for Change

Riparian areas are currently managed by implementing plans for watershed improvement and golden trout habitat restoration on the Kern Plateau and by applying Best Management Practices (BMPs) for water quality protection to all Forest activities.

There is an opportunity in the Plan to address the management of all riparian areas on the Forest and to coordinate riparian values with the management of other resources. Such direction is especially important because riparian areas on the Inyo are limited in extent and vulnerable to impacts from many kinds of activities. Heavy recreational use, grazing, accelerated erosion, water diversion, and the encroachment of woody vegetation on wet meadows all threaten the amount and condition of riparian areas. Both the maintenance of riparian condition and the restoration of damaged areas need to be addressed.

Although wet meadows on the Forest have been adequately inventoried, and the amount of streamside riparian vegetation on the Forest is generally known, a thorough Forest-wide inventory of the streamside riparian resource is needed. A complete and accurate picture of riparian habitat types, their extent and condition would contribute significantly to managing riparian values in concert with other potentially conflicting needs and demands.

### Supply and Demand

Riparian areas on the Inyo National Forest are in short supply and great demand.

There are approximately 37,000 acres of riparian vegetation (including wet meadows) on the Forest. That figure represents less than two percent of the total land base. The species composition of a given riparian area is determined by elevation, geomorphic characteristics, and the amount of water available. Approximately 80 percent of the Forest's riparian acreage is in wilderness.

The limited supply of dense and productive riparian vegetation and its contrast with arid surroundings make it especially important to wildlife for food and cover. Riparian vegetation is also an important component of fish habitat quality as overhanging vegetation keeps the water cool and roots hold soil in place preventing sedimentation. Cattle typically graze more heavily in riparian areas than on the surrounding dry range. Recreationists seek these areas for shade and water as a relief from the hot, dry surroundings. Finally, riparian vegetation provides scenic variety, as its lush green color contrasts with the surrounding grays and browns.

The demand for riparian area-dependent resources is expected to increase dramatically, especially as riparian values serve as a recreational attraction and are subject to the increasing demand for recreation.

### Plan Management Emphasis

The Plan establishes direction for riparian area management. Both the maintenance of existing values and the restoration of areas in poor condition are addressed. Resources dependent on riparian areas receive priority over other resources where they are in conflict. The need for an inventory of streamside riparian areas is identified.

## Sensitive Plants

### Current Direction and Opportunities for Change

Sensitive plants are presently protected by surveying project sites and granting a clearance before vegetation is disturbed. In most cases, project locations are moved as needed to avoid known populations. In a few cases, populations have been protected by fencing.

While existing direction is not in need of change, a program management plan is needed to set management priorities and to expand the scope of sensitive plant management beyond field survey and site avoidance on a case-by-case basis.

### Supply and Demand

There are twenty-two sensitive plant species on the Forest. Eight of these species are endemic to Inyo National Forest lands. None of these are federally listed as threatened or endangered; however, two plants are in Category 1 under the Federal Register which means the U.S. Fish and Wildlife Service has enough information to support a listing as threatened or endangered. Four sensitive plants on the Inyo are state-listed as rare. Although the condition of sensitive plant habitat varies by species and population, it is generally fair to excellent Forest-wide.

The demand for sensitive plant protection arises from public interest in maintaining viable populations of each species. The local chapter of the California Native Plant Society is especially concerned about the protection of all native plants on the Inyo.

### Plan Management Emphasis

The Plan emphasizes current policy and calls for the development and implementation of a Forest sensitive plant program management plan.

## Special Interest Areas and National Natural Landmarks

### Current Direction and Opportunities for Change

The only established Special Interest Area on the Forest is the Ancient Bristlecone Pine Forest Botanical Area. There are also eight candidate geologic Special Interest Areas. There is no need for change in management of the Botanical Area. The candidate areas need to be evaluated during implementation of the Plan and recommendations made to the Regional Forester.

The Park Service has developed a preliminary list of twenty-two possible National Natural Landmarks on the Forest. See Chapter III of the EIS for the list. National Natural Landmark designation does not affect management of the area, or who the responsible agency is. If any are designated, the Forest Service will continue to manage them according to existing management plans or the Prescriptions and Management Area Direction specified in this Plan.

### Supply and Demand

The Ancient Bristlecone Pine Forest encompasses 28,887 acres in the White Mountains. The primary attraction of the area is a stand of exceptionally old bristlecone pine trees, including the world's oldest known living tree. The Botanical Area is internationally known, and has been the site of significant dendrochronological (tree-ring dating) research.

The following candidate geological interest areas were selected from a list of sixty interesting geologic features on or near the Forest: the Papoose Flat granitic intrusion; granitic domes in the Buttermilk area and Egypt Creek; Hot Creek; Starkweather Lake glacial polish; Tioga Tarns; the Inyo Craters area (including Inyo Craters, Deadman glass flow, Obsidian Dome, and Devils Punchbowl); Earthquake Fault; and Convict Lake/lower Convict Creek, including the moraines.

There is a demand for Special Interest Areas on the Forest. The scientific community in particular has identified a number of geological phenomena that they consider deserving of special management. In most cases, the demand is for protection of those phenomena, rather than for interpreting them to the public. It is, therefore, important to choose carefully among the special management designations available.

### Plan Management Emphasis

Current management direction will continue in the Bristlecone Pine Forest. Geologic candidates will be evaluated and selected areas recommended to the Regional Forester. Until the evaluation process is complete, candidates will be protected from any activities that would damage or destroy their potential as Special Interest Areas.

## Timber

### Current Direction and Opportunities for Change

Current timber management emphasizes the regeneration of Jeffrey pine, applying the silvicultural system of even-aged management. There is, however, an opportunity to experiment with uneven-aged management. Most Jeffrey pine stands on the Forest are understocked, as past practices relied heavily on intermediate harvest and natural regeneration. Most red fir stands on the Forest have not yet been entered for timber harvest. Red fir has not been in high demand on the wood products market, and there has been some question about the possibility of regenerating that species. As both the market and regeneration success have improved, red fir harvest has become more desirable.

The commercial timber base in the current timber management plan for the north half of the Forest is 91,500 acres; the annual yield on those acres is projected at 11.5 million board feet (MMBF). The estimated commercial timber base on the south end of the Forest is 10,500 acres with an estimated yield of 1.5 MMBF.

There is an opportunity in the Plan to determine which lands will be managed with a primary emphasis on timber outputs. Lands with existing grazing use, high recreational values, wildlife habitat values, and scenic values need to be considered in terms of their availability for intensive timber management. When the size of the timber base is established, appropriate silvicultural methods can be applied and the long-term sustained yield level of the Forest can be realistically assessed.

Current timber management in concentrated recreation areas consists primarily of removing hazard trees. There is an opportunity to prescribe silvicultural methods for those areas that would enhance the health and vigor of the forest without detracting from aesthetic and recreational values.

Pinyon-juniper woodlands on the Forest are currently used for grazing, dispersed recreation, and public wood gathering. It is desirable to learn more about management possibilities on those lands and to consider additional management options, if appropriate, in the future.

### Supply and Demand

The current timber harvest on the Forest is approximately 10.5 MMBF (million board feet) per year. The demand for sawtimber for the Forest cannot be predicted from historical sales trends. Since all the timber offered for sale on the Forest during the past decade has been sold, it can be assumed that supply has not exceeded demand. In addition, there is relatively little uncut volume under contract (less than two years sell volume), and no sales have been turned back. Recently, bid prices for timber have been three to four times greater than advertised rates. All these indicators lead to the conclusion that sawtimber from the Inyo is in high demand relative to other National Forests in California. Sawmills in Gardnerville, Nevada and Loyalton, California depend upon logs from the Inyo National Forest. The sawmill at Inyokern, California, on the south end of the Forest recently

closed. There are no local sawmills or communities that rely on Forest timber outputs for economic stability.

Local communities are almost entirely dependent on the Forest as a source of commercial and personal-use fuelwood. The Inyo currently sells approximately 4,000 cords of fuelwood per year to commercial operators and 6,000 cords per year to the public. The demand for fuelwood correlates directly with the local population. That demand is therefore projected to grow with community expansion. The supply of wood from logging slash is expected to remain at current levels over the planning period.

### Plan Management Emphasis

The Plan emphasizes using uneven-aged management techniques for all species west of U.S. 395 and even-aged management techniques east of U.S. 395. Pure stands of red fir west of U.S. 395 will not be entered during this planning period and the Monache area is excluded from harvest. The size of the commercial timber base has been defined through coordinated planning for all Forest resources. Lands on which other resource values are higher than timber values have been removed from the suitable base, or timber management has been modified. Slopes of greater than 30 percent will be harvested only if it is economically feasible to do so. The suitable timber base includes 75,233 acres out of a tentatively suitable timber base of 110,700 acres.

The public-use fuelwood program is unchanged. Wood gathering above the 8,000-foot elevation in the White and Inyo Mountains continues to be prohibited.

## Visual Resources

### Current Direction and Opportunities for Change

Visual resources on the Forest are presently managed to meet inventoried Visual Quality Objectives (VQOs). Management activities are planned and mitigation measures are prescribed so that VQOs for affected lands will be met. The Mammoth and June Lake communities and associated winter sports development represent the most significant visual impacts within the Forest boundary. The Forest Service has no control over development and activities within communities.

Additional winter sports development and new hydroelectric and/or geothermal developments could cause major visual resource disruptions during the planning period. There is a need to establish direction for applying VQOs to such developments.

### Supply and Demand

The Inyo National Forest has an extraordinary visual resource. That resource can be described in terms of variety class, sensitivity level, visual quality objectives, visual condition, and visual absorption capability.

Variety Class A lands are distinctive. Forty-four percent of lands on the Forest fall into this category. Variety Class B lands are common and

comprise 48 percent of the Forest. Variety Class C lands, representing minimal variety, comprise 8 percent of the Forest.

The sensitivity level of the landscape is a measure both of use (how many people see it) and visual quality (what is seen and how close it is). Sensitivity Level 1 (most sensitive) applies to 76 percent of the Forest, Level 2 applies to 9 percent, and Level 3 applies to 15 percent.

Visual Quality Objectives (VQOs) describe the degree to which the natural landscape can acceptably be modified, based on a combination of variety class and sensitivity level. The VQO of Preservation (no modification) applies to all Wildernesses and Research Natural Areas, or 31 percent of the Forest. The Retention VQO (modifications must not be visually evident) applies to 17 percent. Partial Retention (modifications must be visually subordinate to the natural landscape) applies to 34 percent. Modification (may be visually dominant, but must conform to natural character) applies to 14 percent. Maximum Modification (visually dominant but not the primary focal point) would be acceptable on only 3 percent of the Forest.

Existing Visual Condition (EVC) describes the degree to which the natural landscape has already been altered. EVC Type I (untouched) describes 76 percent of the Forest; Type II (changes unnoticed), 9 percent; Type III (minor disturbances), 10 percent; Type IV (disturbances), 4 percent; Type V (major disturbances), 1 percent, and Type VI (drastic disturbances), none.

Visual Absorption Capacity is the ability of vegetation and topography to screen disturbances from view. A high level of absorption capacity has been estimated for 16 percent of the Forest; moderate capacity on 39 percent, and low capacity on 15 percent. Wildernesses have not been inventoried for this quality.

Supply can be identified numerically by using the above figures to calculate a Visual Quality Index (VQI). The VQI for the current visual situation on the Inyo is 142.07, which is extremely high.

There is a high level of demand for scenic beauty on the Forest due both to the high levels of recreation and to the fact the U.S. 395 is a major national travel route. It is therefore important to maintain visual resource values on the Inyo.

### Plan Management Emphasis

The Plan emphasizes a continued high level of visual quality for its economic and social benefits to local communities and to millions of annual recreation visitors. This emphasis is expressed by assigning VQOs to specific acres of land that are consistent with the overall management direction for that land.

## Watershed – Soils

### Current Direction and Opportunities for Change

Soil resources are presently managed by mitigating activities to minimize impacts. Where soil impacts are severe, watershed restoration projects may

also be undertaken. There is an opportunity to establish soil management direction in the Plan that goes beyond current management by tailoring direction to specific management areas.

### Supply and Demand

Soils on the Forest are variable in terms of parent material, physiographic position, susceptibility to erosion, and capacity to support vegetative growth. Most soils on the Forest are coarse-textured. The most common parent material is granitic; the second-most common is pumiceous. The remaining soils are derived from limestone, metasedimentary rock, and basalt. Physiographic position ranges from flat tableland to gently sloping alluvial fans to extremely steep mountainsides.

Most of the soils on the Forest are in optimal or near-optimal condition. These soils typically suffer little or no accelerated erosion, are stable, and each soil type is producing vegetation at its optimal level. However, wet meadows grazed by livestock and alpine ski areas are especially susceptible to soil erosion, due to both soil characteristics and to the management activities that occur there.

The demand for optimal soil condition is related primarily to the demands for vegetative growth (for timber, range, wildlife habitat, and scenic values) and for water quality. Stable and productive soils are needed to meet the demand for most of the other resources produced on the Forest.

### Plan Management Emphasis

Practices that conserve soil productivity and reduce erosion are emphasized in Forest-wide Standards and Guidelines. Key watershed improvement needs are identified for specific management areas.

## Watershed – Water

### Current Direction and Opportunities for Change

Water quality is presently managed by applying Best Management Practices (BMPs) to all management activities and implementing improvement projects on damaged watersheds. The two alpine ski areas have developed and implemented Erosion Prevention Plans. There is no need to change direction, but it would be desirable to emphasize existing direction and to provide for watershed monitoring in the Plan.

Water rights for consumptive water use are administered by the state. There is a need to encourage the development of legal mechanisms for obtaining water rights for nonconsumptive (instream) uses such as fish habitat and visual quality. The consumptive rights of other parties to water on National Forest land could easily conflict with the management of Forest resources dependent on instream flow.

Water yield is presently managed by allowing storage and regulation reservoirs to be operated on the Forest. There is little, if any,

opportunity for additional reservoir capacity or for increasing water outputs by vegetation management.

### Supply and Demand

Water quality on the Inyo is good overall. Established water basin objectives are met by more than 97 percent of the water coming off the Forest. As bacterial, nutrient, and chemical problems are small and localized, the main threat to clean water is sedimentation.

The major existing sources of sediment are eroded wet meadows (damaged by poor range management in the past) and alpine ski areas. The greatest potential for additional sediment production comes from mining, geothermal development, ski area development, and roads and trails. Timber management is not a major threat to water quality on the Inyo as long as it occurs on slopes and soil types similar to those currently under management.

The demand for water quality is reflected in the fact that most of the water flowing from the Forest serves domestic or municipal water needs, either locally or in urban areas. Clean water is also a recreational attraction.

The Forest holds adequate water rights to meet its current and foreseeable consumptive needs. Those needs are expected to grow no more than five percent over the next fifty years.

Water flowing off the Forest amounts to an average of 1,093,000 acre-feet per year. The demand for water from the Forest is expected to increase with increasing populations, both in local communities and in urban areas that use water from the Forest. The demand for water in Mammoth Lakes, in particular, is likely to grow quickly with additional ski area capacity, and possibly with geothermal development as well.

### Plan Management Emphasis

The Plan stresses the importance of compliance with Best Management Practices and ski area Erosion Prevention Plans, and continuing implementation of Watershed Improvement Plans to protect and improve water quality.

The water rights situation remains unchanged; the Forest has adequate water rights to furnish water for projected consumptive needs. Changes would have to occur legislatively at the state level in order to provide water rights for instream values.

The possibilities of increasing water yield or availability for municipal use will be studied on a case-by-case basis as demand increases. No Forest-wide opportunities to increase water yield have been identified.

## Wild and Scenic Rivers

### Current Direction and Opportunities for Change

The Forest is presently managing the Middle Fork of the San Joaquin River as a candidate Wild and Scenic River, protecting its wild and scenic qualities.

The San Joaquin flows between the Sierra and the Inyo National Forests. The Sierra has the lead responsibility for making a recommendation to Congress for wild and scenic designation for this river.

### Supply and Demand

The South Fork of the Kern and the North Fork of the Kern have recently been designated as Wild and Scenic Rivers by Congress. Advocates of Wild and Scenic Rivers have been outspoken at the national level in their demand that some free-flowing waters be protected. The Congressional action that established the Wild and Scenic River program recognizes that demand.

### Plan Management Emphasis

The Plan prescribes management direction for all three rivers, based on their status.

## Wilderness

### Current Direction and Opportunities for Change

The John Muir, Ansel Adams (formerly Minarets), Hoover, and Golden Trout Wildernesses are currently managed under individual wilderness management plans. Although overall wilderness direction is adequate for planning purposes, certain aspects of wilderness management plans need to be corrected to improve consistency from one plan to another. The Plan can facilitate this process. Wilderness management plans are reviewed periodically, and area-specific changes are made as the need arises.

The South Sierra Wilderness, which was designated in September 1984, does not yet have a management plan. Two additions to the Ansel Adams wilderness need to be incorporated into the Minarets Wilderness Management Plan, and that plan needs to be renamed. These planning needs should be addressed in the Plan.

### Supply and Demand

The Inyo National Forest has approximately 565,100 acres of designated wilderness; approximately 30 percent of the Forest land base. The Plan recommends that approximately 172,600 additional acres be added to the wilderness system which would bring the total wilderness component of the Forest to 38 percent. Wilderness recreation on the Forest amounted to 540,000 RVDs in 1982. There are 584.6 miles of wilderness trail currently maintained to Class I standards and 29 trailheads with a capacity of 2,212 PAOTs.

The demand for wilderness recreation exceeds the supply during the summer in the Ansel Adams and John Muir Wildernesses. Most of the wilderness trailheads on the Forest are managed under quotas that allow wilderness to be managed within established capacity limits. Most quotas are filled during the summer months. Only the less desirable trails and some mid-week and early- and late-season days are left unfilled.

The demand for wilderness use is dependent on the recreational appeal of a given area. Scenic attractions, ease of access, lakes, campsites, destination points, and sources of drinkable water are all important. The amount of non-wilderness roadless land on the Inyo with those characteristics is limited. It is unlikely, therefore, that wilderness supply could ever meet demand on this Forest unless demand were to decline.

### Plan Management Emphasis

The Plan incorporates existing wilderness management plans and recognizes the need for continuing examination and updating of those plans with changing conditions. The need to develop management direction for new wilderness is also addressed.

## Wildlife

### Current Direction and Opportunities for Change

The Forest currently manages wildlife with an emphasis on threatened, endangered, sensitive, special interest, and harvest (game) species. Threatened and endangered species habitat is managed with the objective of restoring species viability. Habitat for sensitive species is managed with the intent of preventing the species from becoming threatened or endangered as a result of management activities. Special interest species have values for scientific study or recreational appreciation; their habitat is managed with a goal of maintaining or increasing populations on the Forest. Harvest species are managed primarily to provide recreational hunting opportunities.

Habitat management plans have been developed on the Forest for some of these species. Others have to be developed.

Wildlife species that do not fall into one of the above mentioned categories have not benefited from specific habitat management activities. The Forest has the opportunity to apply the concept of Management Indicator Species (MIS) in the Plan. Management Indicator Species include threatened and endangered species, key sensitive species, key harvest species, and additional species that represent specific habitat types subject to the effects of Forest management. Management Indicator Species representing specific habitat types are intended to represent other wildlife species with similar requirements. As such, they are used to determine the population capabilities of different habitats and to evaluate management opportunities to enhance habitat. Management Indicator Species representing habitat types can include species from another category.

### Supply and Demand

Management Indicator Species on the Forest, by category, are:

Harvest	Mule deer, Blue grouse, Sage grouse.
Endangered	Bald eagle, Peregrine falcon.
Sensitive	Fisher, Sierra Nevada red fox, Goshawk, Pine marten, Spotted owl, Great gray

Special interest	owl, Wolverine, Sierra Nevada mountain sheep.
Dependent on riparian area	Golden eagle, Tule elk, Prairie falcon, Nelson mountain sheep.
Dependent on snags	Yellow warbler.
Dependent on early-middle seral stages of brush	Hairy woodpecker, Williamson sapsucker.
Dependent on older seral stage of coniferous forest	Sage grouse.
	Goshawk.

**Bald eagle:** The Inyo has a small amount of bald eagle wintering habitat. Approximately 20 to 30 birds winter on or near National Forest land. Current information does not indicate whether the number is increasing or decreasing.

**Tule elk:** There are approximately 600 elk in the Owens Valley. Numbers are increasing, and animals are removed for transplant.

**Mule deer:** The current population of mule deer that relies on the Forest for summer range, winter range, and/or migratory access is estimated at 20,200 animals. Those deer that summer and/or winter on Forest lands are estimated at 12,000 with a maximum potential population estimated at 16,000. Although the deer population has remained fairly constant over the past ten years, declines are perceptible over the past twenty to thirty years. The reasons for declining numbers are not known, but are being studied by the Department of Fish and Game in cooperation with other agencies, including the Forest Service.

The California Department of Fish and Game has prepared deer herd management plans for each of the eight herds that use Inyo National Forest lands. Those plans and the goals they envision are as follows:

**Buttermilk Herd:** Maintain the population near current levels (3,000 deer) to maximize recreational hunting opportunities by maintaining the current quality and quantity of habitat and preventing deleterious impacts from future land uses.

**Casa Diablo Herd:** The current population is estimated at 1,500 deer. The goal is to increase that population to 2,245 deer by applying flexible harvest levels and by improving habitat and reducing competition and disturbance on key summer, intermediate, and winter range habitats.

**East Walker Herd:** The 1984 pre-season population was approximately 3,040 deer. The goal for this herd would be approximately 5,050 deer. Most increases would be achieved through range enhancement and reduced competition for forage on lands outside the Forest.

**Goodale Herd:** The current population is estimated at 2,600 deer. Goals are expressed as buck, doe and fawn ratios for the northern and southern subunits. The northern subunit will be maintained to maximize recreational hunting opportunities. The southern subunit will be managed with emphasis on older age-class bucks for viewing and late-season quota hunting. Habitat goals are to maintain the current quality and quantity of habitat and to prevent deleterious impacts of future land uses.

Inyo-White Mountains Herd: Maintain current landownership status, improve habitat conditions where possible, and prevent deleterious impacts from future land uses (there is insufficient census information for population goals).

Monache Herd: The primary management goal is to develop and maintain a spring population of 8,000 to 9,000 animals (an increase of approximately 2,000 deer over current levels). This population could be achieved through habitat improvement and land use priorities that favor deer.

Mono Lake Herd: The current fall population is estimated at 3,000 deer. The goal is to increase that number to 4,000 animals by improving key habitats, reducing competition with livestock and wild horses for forage, and improving sex and age ratios through flexible harvest levels.

Sherwin Grade Herd: Maintain the current population (2,300 to 2,400 deer) by restoring the quality of winter range, acquiring key winter range now in private ownership, and improving the sex and age ratios.

Deer rely most heavily on Forest lands for winter range. Most spend the summer at higher elevations and many of the northern herds summer west of the Forest boundary. The Inyo has 112,119 acres of key deer winter range, most of it between 4,500 and 6,000 feet elevation on the east slope of the Sierra Nevada.

The demand for deer hunting in the Eastern Sierra is high and has been relatively stable from year to year. In 1982 deer hunting amounted to 25,200 Wildlife and Fish User Days. This demand appears to be limited by supply, in terms of hunter success rates. If there were more deer, hunters would be more successful, and the demand for hunting would be expected to increase.

Peregrine falcon: Although peregrine falcons existed on the Forest in earlier times, the nearest active nesting pairs are now found in Yosemite Valley and Hetch Hetchy Canyon. Eight fledglings were reintroduced on the Forest in 1983 and 1984. There is potential nesting habitat for four nesting pairs.

Fisher: Two recent records and a few unsubstantiated reports exist for this species on the Forest. Dense forested habitat comprised of large trees are considered optimum habitat. West-side forests probably contain more suitable habitats than east-side counterparts.

Sierra Nevada red fox: A few substantiated sightings have been reported in the June Lake area. This species is found in open forest, alpine shrub and riparian habitats at higher elevations. Rock crevices and logs are required for denning.

Goshawk: Goshawk surveys have located approximately twenty-five active nest sites on the Forest, fifteen of these in suitable timber. Most surveys have been conducted in areas managed for timber. It is estimated that an additional twenty-five pairs have nest sites in wilderness or non-commercial timber areas. There is insufficient data to determine whether the goshawk population on the Forest is changing.

Blue grouse: Blue grouse is a harvest species typically found in forest and shrub habitats associated with riparian areas at high elevations in the Sierra

Nevada and White Mountains. There are no apparent conflicts between the needs of this species and the management of other resources. The demand for blue grouse as a game species on the Forest is light.

Sage grouse: The population of sage grouse on the Forest is declining. The reason for this decline is not known. It is suspected that certain livestock grazing practices and wildfire suppression have contributed to the increasing density of sagebrush and a declining amount of herbaceous understory which are, in turn, reducing sage grouse habitat capability. Studies are underway to analyze these factors and to make habitat improvement recommendations. Sage grouse are no longer found in several areas on the Forest that they formerly occupied.

The current population of birds is estimated at 500 individuals, located primarily in the Lake Crowley basin and the northern White Mountains. The maximum habitat capacity of the Forest for sage grouse is estimated at 1,500 birds.

Sage grouse is considered an important upland game bird in California. The demand for hunting the species is high and is expected to remain so. However, due to declining numbers of birds, the California Department of Fish and Game closed the hunting season for sage grouse in 1983, 1984, 1985, and 1986.

Pine marten: Martens are a relatively common carnivore in dense stands of red fir and lodgepole pine at higher elevations.

Spotted owl and Great gray owl: There is little data on the occurrence of these species on the Forest. Although two spotted owl sightings have been documented on the Forest, there have been no documentations of nest territories. The demand for spotted owl habitat is high, as it is decreasing throughout the timbered areas of California and the Pacific Northwest. Spotted owls require large tracts of old-growth timber. This seral stage is also a prime potential source of wood products. There is considerable concern that without special management spotted owls could become threatened within the next fifty years. On the Inyo National Forest, red fir stands have the highest potential for spotted owl nesting habitat. There are no timber harvests scheduled in these stands during this planning period.

Great gray owl sightings on the Forest have not been verified. There are few potential conflicts between the habitat needs of that species and other resource management because most of the suitable habitat is in wilderness.

Nelson (desert) mountain sheep: Nelson mountain sheep are found in both the White and Inyo Mountains. It is estimated that there are approximately one hundred sheep in the White Mountains, and the population appears to be increasing. Little is known about the Inyo herd, but the population has been estimated at thirty.

There is a significant demand for Nelson mountain sheep for scientific research, recreational appeal, and (potentially) for hunting. Auctions in other states for permits to shoot a ram have raised bid prices exceeding \$60,000. This interest is expected to continue.

Sierra Nevada mountain sheep: Virtually all of the Sierra Nevada mountain sheep in California are found on the Inyo National Forest. There are five populations on the Forest. Two populations represent natural distributions; the remaining three have been reintroduced into historic range. There is additional potential for reintroduction, as the Baxter herd is healthy and growing, and there is still suitable unoccupied habitat on the Forest. The total existing population includes approximately three hundred animals. If all identified suitable habitat on the Forest were occupied, it could support as many as one thousand animals.

The Sierra mountain sheep is in demand primarily for recreational observation and scientific study. Two wild sheep societies and the California Department of Fish and Game are especially interested in the management of mountain sheep.

Riparian area-dependent species: Riparian vegetation covers approximately two percent of the Inyo National Forest; the remaining lands are, for the most part, arid and sparsely vegetated. The population and trend of riparian-area dependent wildlife species has not been studied. The amount and condition of riparian habitat is vulnerable to the impacts of ground disturbance, vegetation manipulation, and/or streamflow reduction. Many types of resource management have the potential to affect riparian areas.

Approximately 20 percent of historic stream habitat in the Mono and Owens Basins has been eliminated by water removal, irrigation, and recreational activities. Eighty-eight percent of all existing streams have been diverted to some extent.

Maintaining the quality of aquatic and riparian habitat is a critical concern. Since nearly all species are dependent on these areas at some time in their life cycles, activities that adversely affect these habitats have more potential for affecting the overall wildlife resource on the Forest than any other kind of Forest activity. For these reasons, the demand for riparian habitat on the Inyo is high.

Snag-dependent species: Snag densities on the Inyo are low, due both to the slow rate of natural snag recruitment and the amount of illegal public snag cutting for fuelwood. The population and trend of snag-dependent species is thought to be declining in areas accessible to the public and open to fuelwood gathering. Habitat for snag-dependent species declines wherever new roads are constructed and lands become accessible to woodcutters. The demand for snags on the Forest is high.

Snag-dependent species are dependent on both standing dead trees (snags) and down and dead logs. Dead and down wood is legally available to woodcutters and declines rapidly wherever it is accessible by vehicle.

Species dependent on early-middle seral stages of brush: See sage grouse.

Species dependent on older seral stages of coniferous forest: See goshawk.

### Plan Management Emphasis

Habitat management Standards and Guidelines for Management Indicator Species and other emphasis species, needed management plans, and research and inventory needs are addressed in the Plan.