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Report to Secretary, Department of Agriculture; by Henry Eschwege, Director, Community and Economic Development Div.

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The Department of Agriculture's Forest Service's planning efforts have evolved over many years from single resource plans to multiple resource management plans that consider all forest resources. Findings/Conclusions: While some individual regions and forests have made considerable progress in multiple resource land use planning, overall progress has been slow and problems have been encountered. Recent legislation requires the Forest Service to develop and implement a comprehensive, integrated land management planning system by 1985. Regulations to implement the planning system must be issued by October 1978. Recommendations: The Forest Service should identify specifically how many planning levels the new system will have and give priority to completing higher level plans first; specify the role of the various types of existing plans in the new planning system; standardize the terminology, format, and timeframe to be covered by land management plans and establish national standards to measure quality of plans; provide direction and guidance to field planners on how to obtain and utilize public input in the planning process and stress the need for early and extensive coordination with other Forest Service planning units and with State and local governments and other Federal agencies; establish minimum standards for data needed at each planning level; develop a system to monitor implementation of land management plans; establish fiscal and management control over planning by formalizing procedures for determining costs of and funding arrangements for planning; and adopt measures to provide incentives to facilitate recruitment and retention of qualified planning personnel. (Author/SC)

6977

REPORT BY THE U.S.

General Accounting Office

The National Forests--Better Planning Needed To Improve Resource Management

The Department of Agriculture's Forest Service's planning efforts have evolved over many years from single resource plans to multiple resource management plans that consider all forest resources. GAO found that although some individual regions and forests have made considerable progress in multiple resource land use planning, overall progress has been slow and problems have been encountered.

Recent legislation requires the Forest Service to develop and implement a comprehensive, integrated land management planning system by 1985. Regulations to implement the planning system must be issued by October 1978. GAO makes a number of recommendations to assist the Service in developing the regulations and subsequent manuals and guidelines.



CEG-78-133
JULY 12, 1978



UNITED STATES GENERAL ACCOUNTING OFFICE
WASHINGTON, D.C. 20548

COMMUNITY AND ECONOMIC
DEVELOPMENT DIVISION

B-125053

The Honorable
The Secretary of Agriculture

Dear Mr. Secretary:

This report presents a series of recommendations for the Forest Service to consider in developing its regulations, guidelines, and manuals for implementing the new land management planning system required by the Forest and Rangeland Renewable Resources Planning Act of 1974 and the National Forest Management Act of 1976. The regulations are to be issued by October 1978.

Our review was done concurrently with the Service's efforts to design and develop its new planning system. We recognize that the Service may already be addressing some of the matters covered by our recommendations.

As you know, section 236 of the Legislative Reorganization Act of 1970 requires the head of a Federal agency to submit a written statement on actions taken on our recommendations to the Senate Committee on Governmental Affairs and the House Committee on Government Operations not later than 60 days after the date of the report and to the House and Senate Committees on Appropriations with the agency's first request for appropriations made more than 60 days after the date of the report.

We appreciate the cooperation which Forest Service officials gave us during our review. Their comments on the matters discussed in this report have been incorporated throughout.

We are sending copies of this report to the Committees mentioned above, other committees and Members of Congress, the Chief of the Forest Service, the Inspector General, and

various other persons and organizations which have indicated an interest in the matters discussed.

Sincerely yours,

A handwritten signature in cursive script that reads "Henry Eschwege". The signature is written in black ink and is positioned above the typed name and title.

Henry Eschwege
Director

GENERAL ACCOUNTING OFFICE
REPORT TO THE SECRETARY
OF AGRICULTURE

THE NATIONAL FORESTS--BETTER
PLANNING NEEDED TO IMPROVE
RESOURCE MANAGEMENT

D I G E S T

The Department of Agriculture's Forest Service needs to insure that in developing the regulations, guidelines, and manuals for its new land management planning process, problems encountered in past planning efforts are avoided and matters that will bear upon the effectiveness of the new process are adequately dealt with.

Historically, the Service has emphasized timber production over other forest resource development. In 1960 the Congress mandated that the Service manage the national forest system giving equal consideration to the multiple uses of the forests. Additional legislation in the late 1960s resulted in the Service's beginning to develop a multilevel land use planning system to provide multiple-use direction through a comprehensive planning process.

More recent legislation (the Forest and Rangeland Renewable Resources Planning Act of 1974 and the National Forest Management Act of 1976) requires a more systematic planning process--called land management planning--to insure that the national forests continue to provide sustainable timber supplies to meet national demands while giving adequate consideration to other forest uses in resource management decisions. The Service is to issue regulations for implementing the new planning system by October 1978. (See pp. 1 to 4.)

GAO and its consultants reviewed the Service's past planning efforts and the requirements of the 1974 and 1976 acts to identify (1) problems in past planning which should be avoided in the new planning process and (2) other matters which the Service should address when preparing the regulations, manuals, and guidelines to implement the recent acts.

CED-78-133

PROBLEMS WITH PAST PLANNING EFFORTS
THAT NEED TO BE AVOIDED IN LAND
MANAGEMENT PLANNING

Forest Service planning evolved over many years from single resource planning to multiple-use planning. Although the emphasis since about 1970 has been on comprehensive land use plans, a vast array of plans--as many as 48 different types--still exists. (See pp. 7 to 9.)

Some individual regions and forests made considerable progress in developing land use plans. Overall, however, progress was slow and problems were encountered. Similar problems need to be avoided in the new land management planning effort. These problems relate to:

- The need to develop plans in sequential order so that lower level plans are adequately responsive to higher level direction. For land use planning, only two of the Service's nine regions prepared plans in proper sequence. (See p. 9.)
- The need to provide more specific guidance to field planners to avoid differences among plans as to their objectives, their terminology and format, and the time periods they cover. (See p. 10.)
- The need for national monitoring standards to measure whether plans are prepared consistently. The Service had not established such standards for land use planning. (See p. 13.)

OTHER MATTERS THAT NEED TO BE DEALT
WITH IN LAND MANAGEMENT PLANNING

GAO and its consultants also noted a number of matters which will bear upon the effectiveness of the land management planning process. These matters, some of which the Service may already be addressing in preparing its regulations, include:

- Integrating planning with the Service's programming and budgeting system so that the new land management planning system will provide a basis for credible program decisions. In

the past most program decisions stemmed from sources other than land use plans and the traditional budget process, which bases programs and budgets on historical funding levels, tended to emphasize those activities emphasized in the past. (See p. 14.)

--Involving the public and other Federal, State, and local agencies early and extensively in its planning process. In the past success in obtaining public involvement depended on the initiative of regional foresters and individual planners. Coordination with other agencies was limited for various reasons, including the large number of plans prepared, the lack of specific decisions and direction in the plans that would help identify impacts on other agencies, passiveness in soliciting coordination, and the fact that other agencies were not always concerned with the same issues or at the same planning stage as the Service. (See pp. 17 and 19.)

--Identifying data needs and sources properly and making sure that data is adequately collected, analyzed, interpreted, and used in the planning process and that, once data is collected, it is recorded and stored for future use. (See p. 20.)

--Developing and analyzing alternative plans before selecting a preferred plan. To help insure objectivity, bias and predeterminations in formulating and considering alternatives need to be eliminated and methods used to select alternatives need to be improved. (See p. 22.)

--Considering and evaluating the effect of new plans on the commitments which the Service and others have made on the basis of past plans. Any changes that may invalidate the old plans, and thus jeopardize existing commitments, could erode the Service's credibility and foster potential litigation. (See p. 25.)

--Making sure that the regions adequately address in their plans or in area guides the specific problems or issues of each of the vast and geographically and economically different areas in the region. (See p. 26.)

- Giving appropriate attention to such organizational and administrative aspects of planning as organizational and funding arrangements; the importance attached to planning; and the selection, recruitment, and training of planners. (See p. 26.)

RECOMMENDATIONS TO THE SECRETARY
OF AGRICULTURE

GAO is recommending a series of actions covering the problems and matters discussed in this report that the Forest Service should consider in drafting its regulations and developing its subsequent manuals and guidelines for land management planning. Although the Service may already be addressing some of these problems and matters, recommendations are included on each of them in the interest of completeness and so that all will receive appropriate attention. Among the recommendations are that the Forest Service:

- Identify specifically how many planning levels the new system will have and give priority to completing higher level plans first.
- Specify the role of the various types of existing plans in the new planning system.
- Standardize the terminology, format, and time frame to be covered by land management plans and establish national standards to measure quality of plans.
- Provide direction and guidance to field planners on how to obtain and utilize public input in the planning process and stress the need for early and extensive coordination with other Forest Service planning units and with State and local governments and other Federal agencies.
- Establish minimum standards for data needed at each planning level and provide guidance to planners on identifying and evaluating sources of data; developing projected demand; integrating, assessing, and reporting impacts of plans; and analyzing data in unfamiliar and hard-to-measure areas.

- Develop a system to monitor implementation of land management plans.
- Establish fiscal and management control over planning by formalizing procedures for determining costs of and funding arrangements for planning.
- Adopt measures to provide incentives to facilitate recruitment and retention of qualified planning personnel and develop a national training program for planners. (See pp. 29 to 35.)

AGENCY COMMENTS

Forest Service officials commented orally on this report. Their comments have been incorporated where appropriate throughout the report.

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ABBREVIATIONS

GAO	General Accounting Office
RPA	Resource Planning Act

CHAPTER 1

INTRODUCTION

The Department of Agriculture's Forest Service, which manages about 188 million acres in the national forest system, has historically emphasized timber production over other forest resource development. However, in recent years increased awareness and competing demands to use the limited national forest lands and resources have emphasized the need to consider all of the forests' potential uses, including fish and wildlife, recreation, water, range, wilderness, minerals, and timber.

Congressional directions and public concerns have highlighted the need to consider, develop, and protect all forest resources through a systematic and comprehensive planning process which would weigh alternative demands and provide a basis for making good multiple-use decisions for resource management. The Forest Service has taken many steps to respond to these concerns. This report discusses several matters which the Service needs to consider in developing regulations and guidelines for its land management planning process.

PUBLIC CONCERNS AND CONGRESSIONAL DIRECTION

Various segments of the public have voiced concerns about how the national forests have been and will be used:

- Wildlife conservation groups have expressed concern about the loss of wildlife habitat.
- Recreationists have sought increased opportunities for a variety of recreational activities in the forests, including camping, hiking, hunting, fishing, and backpacking.
- Environmentalists are concerned about protecting fragile soils, streams, visual qualities, and other forest resources.
- Wilderness proponents have called for setting aside more land as wilderness and primitive areas.
- Timber interests want more growth and harvesting of trees.
- Mining interests are pressing for more mineral development.

In response to these concerns, several laws have been enacted affecting the planning, management, and use of national forest lands. The Multiple Use and Sustained Yield Act of 1960 (16 U.S.C. 528-531) mandates that in managing the national forest system the Forest Service give equal and balanced consideration to all forest resource uses. The National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.) requires detailed statements on the environmental impacts of proposed major Federal actions. The Forest and Rangeland Renewable Resources Planning Act of 1974, as amended by the National Forest Management Act of 1976 (16 U.S.C. 1600 et seq.), provides further congressional emphasis and direction to assure that while the national forests continue to provide sustainable timber supplies to meet national demands, other forest resources are adequately considered in all Forest Service land management decisions.

The 1974 act requires the Secretary of Agriculture to prepare and periodically update a renewable resource assessment and a renewable resource program. The assessment--called the Resources Planning Act (RPA) assessment--is to include among other things

- an analysis of present and anticipated uses of, demand for, and supply of renewable resources;
- an inventory of present and potential renewable resources and an evaluation, together with estimates of investment costs and expected returns to the Government, of opportunities for improving yields of tangible and intangible goods and services;
- a description of Forest Service programs and responsibilities in research, cooperative programs, and management of the national forest system; and
- a discussion of important policy considerations, laws, regulations, and other factors expected to influence and affect significantly the use, ownership, and management of forest, range, and other associated lands.

The program--called the RPA program--is to be developed in accordance with the principles of the 1960 and 1969 acts and in relation to the RPA assessment. It is to include among other things

- an inventory of specific needs and opportunities for both public and private program investments;

- specific identification of program outputs, anticipated results, and benefits associated with the investments;
- a discussion of priorities for accomplishing the inventoried opportunities;
- a detailed study of personnel requirements to implement and monitor the programs; and
- program recommendations.

The 1974 act also requires as part of the RPA program that the Secretary develop, maintain, and, as appropriate, revise land and resource management plans for units of the national forest system and coordinate them with the land and resource management processes of State and local governments and other Federal agencies. In developing and maintaining land management plans, the Secretary is to use a systematic interdisciplinary approach to achieve integrated consideration of physical, biological, economic, and other sciences.

The 1976 act amended the 1974 act to set forth standards and guidelines for the plans and to require that (1) a systematic land management planning approach be used to assist in all resource development decisions, (2) the Service issue regulations for implementing the planning system by October 22, 1978, and (3) the Service attempt to complete the plans by September 30, 1985. Existing land and resource management plans are to be used until the new plans are developed.

LAND MANAGEMENT PLANNING

The Forest Service is now designing and developing a land management planning system in response to the 1974 and 1976 acts. This is the latest of a variety of planning efforts the Forest Service has carried out over the years. The Service's immediately preceding planning system--called land use planning--was begun in the early 1970s.

The land use planning system was to consist of

- broad objectives and policy spelled out by the Chief of the Forest Service,
- area guides developed by the regional foresters for each of 34 geographic areas,
- forest plans covering each of the 154 national forests, and

- unit plans covering each of about 1,600 individual land units in the forests.

The actions needed to carry out the land use plans' objectives were to be detailed in resource plans, such as those for timber or wildlife.

Land management planning will be similar to land use planning in that it will consist of a hierarchy of direction and plans. The direction will be provided by the RPA assessment and program. However, only two planning levels-- regional and forest--are to be below the assessment and program. Area guides are to be optional, and unit planning is not to be part of the system. The other major differences between the land use planning system and the new land management planning system are that in the new system:

- Lower planning levels are to provide the data on the capabilities of the national forests to meet the goals and objectives set by the higher levels.
- The forest-level plan is to integrate the resource plans into a multiresource forest management plan.
- Land management planning is to be linked to and provide the framework for developing Forest Service budgets.
- The Service is required to coordinate its planning efforts with other Federal, State, and local agencies.

COST OF PLANNING

The Forest Service's land use planning efforts were costly, and its efforts to complete the new land management plans throughout the national forest system by 1985 are also expected to be costly, involving manpower, extensive training, and expertise that it must develop or recruit.

The actual cost of land use planning is not readily determinable because Service headquarters did not budget or account for planning costs as a separate item. Service officials, however, estimated that the cost of area guides ranged from \$150,000 to \$310,000 each and of forest and unit plans from \$100,000 to \$300,000 each. Assuming \$230,000 as the average cost of each area guide, and 200,000 as the average cost of each forest and unit plan, the Service would have spent about \$53 million for the 21 area guides, 41 forest plans, and about 200 unit plans completed at the time of our review. Headquarters officials estimate that the required land management planning will cost \$20 million to \$30 million annually.

SCOPE OF REVIEW

We made this review to identify problems encountered by the Forest Service in past and present land use planning and in programing and budgeting which should be addressed in implementing the requirements of the 1974 and 1976 acts. As part of our review we looked at existing Forest Service plans to determine what types were in use, how well they covered multiple-use needs, what problems had been encountered that will need to be avoided in the new land management planning process, and what other matters need to be dealt with if the objectives of the 1974 and 1976 acts are to be met. Our review was done concurrently with the Service's efforts to design and develop its new land management planning system, and we agreed to provide our observations and suggestions to assist the Service in developing its regulations and instructions.

Three independent consultants assisted us in evaluating the Forest Service's land use planning activities. They were

--Dr. George N. Kurilko, SWA Group (land use consultants), Sausalito, California;

--Dr. Donald A. Jameson, Associate Dean, College of Forestry and Natural Resources, Colorado State University; and

--Dr. David B. Field, Associate Research Professor, School of Forest Resources, University of Maine.

These consultants provided us with technical expertise in analyzing selected land use plans for (1) the adequacy of the resource data used in terms of quantity and quality, (2) public participation in the planning process, and (3) methods used to develop and select viable resource alternatives.

We reviewed the sections of the 1974 and 1976 acts pertaining to land management planning. We interviewed Forest Service headquarters officials concerning the preparation of the RPA assessment and program, the development of land management planning regulations, and the Service's programing and budgeting process. We also talked with officials of various other Federal and State agencies with which the Forest Service coordinates its planning activities. We visited the following 7 Forest Service regions, 13 forests, and 10 district offices.

<u>Region</u>	<u>National forest</u>	<u>Ranger district</u>
1--Missoula, Montana	Idaho Panhandle Beaverhead Flathead	Sand Point Priest Lake
2--Denver, Colorado	Pike-San Isabel Shoshone White River	Pikes Peak Wapiti Wind River
4--Ogden, Utah	Boise Wasatch	Ogden
5--San Francisco, California		
6--Portland, Oregon	Gifford Pinchot Deschutes Colville	Wind River
9--Milwaukee, Wisconsin	White Mountain	Ammonoosuc Evans Notch
10--Juneau, Alaska	Tongass	Stikine Area

We discussed the contents of this report with Forest Service officials. Their comments are incorporated throughout the report as appropriate.

CHAPTER 2

PROBLEMS WITH PAST PLANNING EFFORTS THAT NEED TO BE AVOIDED IN LAND MANAGEMENT PLANNING

Forest Service planning has evolved over many years from a system of individual and generally unrelated planning for managing specific resources, activities, or forest areas to a system of planning designed to address the management of all forest resources on a multiple-use basis. Although a vast array of plans still exists--Service officials have identified as many as 48 different types still in use--the emphasis since about 1970 has been on developing an overall, comprehensive land use plan for each forest, integrating some of the various individual plans where possible. The 1974 and 1976 acts build on that emphasis by requiring that a systematic land management planning approach be used to assist in all resource development decisions.

Some individual regions and forests made considerable progress in developing comprehensive land use plans, given the relative newness of the concept and the fact that the state of the art was not highly developed. Overall, however, progress was slow and problems were encountered. Similar problems need to be avoided if the new land management planning is to be the systematic process required by the 1974 and 1976 acts. These problems relate to the (1) sequence in which plans are developed, (2) guidance provided to field planners, (3) terminology and format of the plans, (4) time periods covered by the plans, and (5) need for national standards as to what constitutes an acceptable plan.

EXISTING FOREST SERVICE PLANS

Of the various types of plans now in use, many are specific operational plans prepared for certain activities, such as fire management or transportation. Others primarily address the management of a specific resource. Still others are designed to address the management of forest resources on a multiple-use basis. Among the major types of existing plans are resource management plans, multiple-use guides, and land use plans.

Resource management plans

Individual forests have prepared resource management plans since the early 1900s. They are functional plans aimed at developing one specific resource, such as timber, range, or recreation, in one specific forest or in a specific

portion of a forest. Because of past emphasis on timber production, timber management plans were prepared most frequently. These plans covered entire forests and were generally the most comprehensive and up to date. According to Service officials, the timber management plans were the only resource management plans required to cover the entire forest because calculations to determine the amount of allowable harvest are based on the total forest capability.

Plans for other resources generally were prepared only if significant amounts of the resource existed. They usually covered only portions of a forest. Many nontimber resource plans we reviewed were outdated or were very general in nature.

Forest Service officials said that the emphasis on single resource planning led to a lack of coordinated development of forest resources. Service officials noted that as a result damage to other resources occurred which would probably have been avoided under comprehensive, multiple-use land management planning.

Multiple-use guides

The 1960 Multiple Use and Sustained Yield Act requires that all resources of the forest receive equal consideration as management decisions are made. To meet this requirement, the Forest Service began preparing multiple-use guides at the region and district levels. These guides provided general policy direction for broad forest management zones. They did not set resource development goals. These goals were to be established in resource management plans.

Managers were to refer to the multiple-use guides when undertaking timber, recreation, or other projects to consider what protection should be given to other forest resources. District rangers were required to prepare a multiple-use survey or special impact analysis before undertaking any significant resource development project. The analysis was to contain a statement of the project's nature and scope, its expected impact on each resource, and how it would be shaped to conform to the multiple-use guide requirements.

The multiple-use guides, however, did not always result in adequate multiple-use planning. For example, a 1971 Service report on forest management on four Wyoming forests said:

"The appearance of overharvest in many places is created by timber management practices that were uncoordinated

or in conflict with the protection of other resource values. * * * Each of the forests has allowed logging in areas that would have been better left uncut; each has allowed some cutting with apparent disregard for other values and other resources * * *."

Land use plans

As a result of the National Environmental Policy Act of 1969, the Forest Service began in the early 1970s to develop a more elaborate and costly multilevel planning system which was to provide multiple-use direction through a systematic land use planning process. This process was to eventually include guides for each of 34 geographic areas and plans for each of the 154 national forests and for about 1,600 individual units within those forests. Area guides, to be prepared at the regional level, were to provide management guidance to each forest in the area to aid it in preparing forest plans. The forest plans were to provide basic direction for the unit plans. The unit plans were to be prepared for each forest unit and were to provide specific management direction for small parts of forests.

As of the time of our review, 21 area guides, 41 forest plans, and about 200 unit plans had been completed.

PLANNING SHOULD BE DONE IN HIERARCHICAL SEQUENCE

For its land use plans, the Forest Service envisioned a hierarchical sequence with area guides prepared first, followed by forest plans and then by unit plans with each providing direction to the next lower level plan. The Forest Service intends to use a similar hierarchical approach in preparing its land management plans. If lower level plans are prepared first, there is little assurance that they can be adequately responsive to higher level direction.

In most regions land use planning was not done sequentially and the systematic process the Service envisioned did not occur. For example, in Region 1 we found that no area guides had been completed, although there were some completed forest and unit plans. In Region 4 the unit plans which had been completed had been done without either an area guide or forest plan being completed first. Only two of the nine regions, Regions 8 and 9, prepared their plans in sequential order from area guides to unit plans.

According to Forest Service officials, the planned hierarchical sequence for land use planning could not always be

followed, particularly in the western regions where court decisions required that environmental impact statements be prepared before timber harvesting or other significant activities occurred in the forests. To continue day-to-day operations, the Chief of the Forest Service allowed the western regions to prepare unit plans, which contained environmental impact statements, before the forest plans or area guides were completed.

The lack of higher level plans also caused problems when plans for some units in a forest were prepared before others. Allocation of land to specific resource uses was generally reserved for unit planning. Because unit plans were often prepared independently, without quantified direction from higher level plans, allocations were made without an analysis of how each unit fit into the overall forest picture. For example, a unit plan may have allocated land to a specific resource use, such as recreation, when there may have been far better parcels of land in unplanned units for recreation.

Also, the consequences of planning unit by unit are never fully realized until the last unit plan is completed (when the forest situation might have completely changed). A supervisor may suddenly realize after a few unit plans are completed that the allocations are not equitable or may not provide the lands needed to meet one or more resources' program goals and objectives. The typically strong and polarized interest groups, such as the timber companies and wilderness proponents, are less likely to compromise their positions on each unit because they do not know what they will get out of the subsequent units or the forest as a whole.

It may not be possible for the Forest Service to always follow a hierarchical sequence in preparing its new land management plans. However, the Forest Service should give high priority to completing higher level plans first.

FIELD PLANNERS NEED MORE SPECIFIC GUIDANCE

We and our consultants observed some very good planning efforts at individual regions or forests but also noted problems which impaired the effectiveness of land use planning. These problems related to the guidance provided, the format and terminology used in different plans, and the time periods covered by the plans.

Although some minimum standards were established as to the objectives of each planning level, the guidance was not

specific and was therefore subject to much interpretation by field planners. Forest Service officials said that because the concept of comprehensive land use planning was new and the state of the art was not highly developed, the Service provided very general guidance to its field planners. The Chief of the Forest Service said that to promote innovation each region was permitted to experiment with how planning was to be accomplished. A formal organization was established to provide assistance in using new techniques and provide feedback on innovative techniques used in the field. According to Service officials, however, this effort was not totally successful.

Because of the lack of specific guidance, significant differences occurred among different plans. The plans for the White Mountain and Idaho Panhandle forests illustrate these differences. One of the objectives of the White Mountain forest plan was to allocate forest lands to either special uses, such as wilderness, or to one of four management areas. A management area is delineated by the type of management activity conducted in that area. Each management area emphasized a specific combination of resource uses to produce a desired amount of forest goods and services. For example, White Mountain's management area IV required a mixture of resource uses and outputs which would "emphasize opportunities for a natural recreational experience with a high degree of solitude." The forest plan also provided detailed and extensive coordinating requirements, gave specific direction as to what was expected from each unit, and identified a time schedule for preparing each unit plan.

In contrast, the Idaho Panhandle forest plan was not designed to allocate forest lands to resource uses, nor did it identify or provide specific direction for subsequent unit plans. Unit plans were to allocate land to various uses and the unit planning level was where most land use management decisions were to be made. The forest plan was primarily a policy guidance document that identified broad management zones based on either (1) geographic characteristics, such as a high mountain crest, or (2) influence zones, such as a travel influence zone along a road. The plan stated that the management zones would be eliminated as unit plans were completed. The objectives in the plan were very broad, and direction was in the form of general coordinating requirements, such as "Provide and maintain habitat diversity necessary for various fish and wildlife populations."

Because plan objectives differed, some plans contained specific, quantified goals for use in lower level plans

and in programing and budgeting while others did not. For example, the New England area guide in Region 9 and the Southeast Alaska area guide in Region 10 each included quantified resource production goals and management direction for the area and forests covered by the guide. The White Mountain forest plan, covered by the New England area guide, then allocated assigned resource goals to each unit of the forest. The goals provided in the plan could be used as a basis for programing and budgeting projects to meet these resource goals. In other regions reviewed, area guides and forest plans provided only broad direction without specifying goals for the areas or forests within the areas. Consequently, no quantified planning goals were provided for use in developing unit plans.

In addition to not providing specific and quantified resource goals and targets, many land use plans we reviewed did not identify or set priorities for specific management activities required to develop the various resources. For example, a plan may have allocated certain lands to recreation as the primary use. A variety of resource activities can be undertaken to develop recreation--such as establishing trails, campgrounds, and picnic areas. However, these activities were rarely included in plans. Without identifying the activities needed and the priority in which they were to be done, the plans did not provide a basis for programing and budgeting multiple-use activities. There were exceptions to this problem, such as the White Mountain unit plans. These plans provided a list of projects in priority order to be accomplished over the 10-year life of the plan.

Another problem was differences among plans in terminology and format used. For example, specific parcels of land which were to be analyzed were referred to in various plans as value comparison units, ecological land units, and resource capability units. Such terminology differences are confusing to the public who wish to participate in the planning process and to Service planners and managers who frequently transfer from one forest or region to another.

Format differences were also apparent. These differences were most obvious among plans at the same level that had different objectives. However, such differences also existed among plans with similar objectives. For example, each of the unit plans we reviewed included an environmental impact statement. In some cases it was quite difficult to distinguish the plans from the statements. In other cases the plans were clearly separate from the statements.

There were also differences in the time periods covered by different plans. One forest's unit plans covered a 20-year planning period, while another forest viewed its unit plans as 10-year documents. Some plans had no apparent established time periods.

The differences in time periods appeared to be indicative of different planning philosophies and objectives. The 20-year unit plans we reviewed were primarily land allocation documents which allocated lands for specific combinations of resource uses and provided protection policies for resources within the unit. In effect these plans were much like a zoning document which dictated where certain resource activities may occur in the future but did not identify which activities would or should occur. The 10-year unit plans were designed to provide more specific direction on what would occur in the future. This direction was in the form of a 10-year list of projects in priority order. This type of direction would be much harder and less realistic to project over a longer range of 20 years or more.

STANDARDS NEEDED TO MONITOR CONSISTENCY

The Service had not established national standards to measure whether land use plans were prepared consistently. This function was left to the regions' discretion. The regions had generally not established such standards or, if established, had applied them very loosely. The regions did some monitoring in the form of critiques as portions of the plans were completed. We were told that the only standard for planning was a past plan. As what was considered a "good" plan was completed, it was held up as a model but only until a "better" plan was done.

CONCLUSIONS

If the new land management planning is to be the systematic process required by the 1974 and 1976 acts the Forest Service will need to see that, to the extent possible, planning is done in hierarchical sequence; field planners are given more specific guidance on how planning is to be accomplished, what terminology and format are to be used, and what time periods are to be covered; and national standards are established as to what constitutes an acceptable plan.

CHAPTER 3

OTHER MATTERS THAT NEED TO BE DEALT WITH

IN LAND MANAGEMENT PLANNING

In addition to the specific problems with the Forest Service's land use plans discussed in chapter 2, we and our consultants noted a number of matters that will bear upon the effectiveness of the land management planning process. These matters, some of which the Service may already be addressing in preparing its regulations, include integration of the planning system with the Service's programming and budgeting system; public involvement and coordination with other Federal, State, and local agencies; data handling and analysis; formulation of alternative management programs; implications of certain changes in the planning system; and organizational and administrative matters.

These matters must be dealt with if good land management plans are to be developed and implemented to meet multiple-use requirements and the objectives of the 1974 and 1976 acts.

INTEGRATION OF PLANNING SYSTEM WITH PROGRAMING AND BUDGETING SYSTEM

The land management planning system is to provide a framework on which to base credible program decisions and budget requests. These should be in line with decisions made in land management plans. Although some land use plans have formed the basis for program decisions, we found that most of the forests' program decisions stemmed from other sources, such as individual resource plans, personal knowledge of district staff, crisis situations, and various directions from higher management levels.

For example, one project we noted, which was based on the judgment of a district ranger, entailed building a road and a two-lane bridge to provide access to an area estimated to contain 2,000 acres of harvestable timber. The road and bridge were constructed at a cost of almost \$100,000. Later, it was discovered that the road and bridge provided access to only about 200 acres of harvestable timber. A Forest Service review indicated that this road and bridge should never have been built and concluded that, had there been better planning, this project would not have been proposed.

One factor that may affect the extent to which land management plans are used in formulating budgets is the traditional budget process, which bases programs and budgets on historical funding levels. These have emphasized timber over other resource uses. The Service's fiscal year 1979 to 1983 program budgeting guidelines, for example, state that for fiscal year 1979 there would be five possible levels with the lowest level set at 95 percent of the fiscal year 1978 budget. Because of this type of approach, budgets and funding tend to continue to emphasize those activities which were emphasized in the past. The Service, which is working on this problem, should ensure that the new regulations spell out specifically how land management plans will be used in developing programs and budgets.

Without land management plans to identify management activities to be programmed for all resources, programming and budgeting decisions may continue to be left to a series of negotiations and priority interpretations at each management level. For example, in one region the districts made several program proposals for timber and other resources. Proposals involving timber were based on timber management plans which spelled out some specific timber activities. Because resource plans for recreation, watershed, wildlife, and range activities did not exist, the districts based their proposals for these activities on the rather general policies contained in the timber management plans. These proposals were revised, combined with other proposals, given new priorities based on negotiations and judgments at each management level, and eventually proposed to Service headquarters.

Because the districts' timber proposals were based on rather specific plans, they tended to be less negotiable than proposals for other resource activities. None of the districts' proposals for new development activities for nontimber resources survived the negotiating process. The only proposals for nontimber resources that survived were those associated with (1) the planning and monitoring of proposed timber sales activities to assure protection of the other resources and (2) recurring maintenance activities.

We also noted that the districts' program proposals tended to lose their identities when they were combined and their priorities changed at each higher level. In such situations funds subsequently received cannot be easily identified with or related to original program proposals. This creates a problem, especially when there is a turnover in personnel. The budgetary process is started about 2

years in advance of the budget year, and the district ranger who initiates the program proposals may be transferred by the time budgetary funds are received. Because the funds the districts receive for various management activities, such as recreation and timber, are not identified with specific projects, it may be difficult for a new district ranger to determine which projects were programed by the former ranger and the priority for completing these projects.

In addition, the headquarters groups responsible for the RPA, for programing and budgeting, and for land management planning will need to be coordinated. In the past these groups have generally operated independently. The programing and budgeting group's existing direction to the field for the annual budget does not fit into the current RPA goals and targets. Also, the field resource managers have expressed opinions that the annual budget process does not complement or fit into the long-range RPA goals and objectives. The Service is aware of the problems in coordinating the activities of these headquarters groups and has established several committees to insure coordination. Close coordination among these groups is essential to insure that land management plan goals are adequately reflected in budget proposals and that the plans themselves reflect the national goals of the RPA assessment and program.

Also, the goals and targets used in land management plans should be stated in the same terminology as the goals and targets used in the RPA program and in the annual program and budget. For example, timber production goals have been expressed in both cubic feet and board feet. To ensure linkages between the RPA program goals and targets, the land management plan goals and targets, and the programing and budgeting system, consistent terminology should be used.

INVOLVEMENT OF THE PUBLIC AND OTHER FEDERAL, STATE, AND LOCAL AGENCIES IN PLANNING

The Forest Service is required by law to provide for public participation in the planning process. The law also requires that the plans be coordinated with the land and resource management processes of State and local governments and other Federal agencies because the RPA program covers all lands, not just lands the Service manages. For its land use planning, the Service left the method of obtaining outside involvement to the discretion of regional foresters. Because of this approach some differences occurred in how regions and even forests within a region obtained outside involvement.

Public participation

Most land use conflicts stem from the differing values that the many sectors of the public place on the management of public lands and on the goods and services which they produce. Public participation provides an important input into the planning process and into conflict resolution. Meaningful public involvement obtained continuously from the first steps of planning efforts could provide the credibility needed in Forest Service resource management decisionmaking.

In the land use planning system, heavy reliance was placed on the planners' initiative to solicit and analyze public input. Land use plans reviewed demonstrated that the success of satisfying the public varied as different techniques and procedures were used. Many Forest Service planners made only passive attempts to involve the public. For example, one forest planner did not solicit public input until management alternatives had already been formulated. Often, public input analysis was limited to simply printing public comments in the plans' environmental impact statements.

In some cases the requirements of the National Environmental Policy Act represented the only point in the process where public comments received formal acknowledgement and responses. Even then, however, the comments did not necessarily lead to changes or adjustments in plans. Such minimum response can adversely affect public confidence in the Forest Service. Public comments on draft environmental statements also were to be incorporated at higher planning levels. In one case one of our consultants could not determine from subsequently published plans if or in what ways these comments may have been used.

Feedback to the public also needs more conscious attention from Forest Service planners at all levels. We noted sincere efforts to employ public input but found that the planners had consistent difficulty in communicating to the public how its input was being used. The Service should require that the feedback process be formalized by providing for regular and frequent reports back to the public on the planners' responsiveness to public preferences and suggestions. These reports could take various forms, including monthly or quarterly newsletters, audio-visual slide shows that can be updated easily for regularly scheduled progress meetings, frequent newspaper articles, issue-related field tours, and "white paper" reports to special interest groups. The choice of mechanism should be left to those who must implement it.

The Forest Service has begun a new program to acquaint planners and other responsible officials with these techniques. A draft handbook entitled "Inform and Involve" has been issued for in-house comments. The Service should insure that this program reaches all planning levels so that these techniques are used in obtaining and reporting on public involvement.

Our consultants noted that in analyzing public input the Service needs to insure that proper consideration is given to public comments by combining comments from similar interest groups. It is generally considered inappropriate and misleading to analyze public input on planning issues simply by tallying the number of people who are for or against a particular viewpoint. Yet this technique has been used in some Forest Service planning. This takes no account of the probability that the actively participating public represents only certain interests. Opinions tallied by interest groups, on the other hand, have proven more useful in most cases. Grouping the general public into a number of more homogeneous groups should be encouraged in Forest Service planning to facilitate analysis of public input.

Our consultants also observed that field personnel varied in their approaches to recording and analyzing public input and relied heavily on subjective analyses. Although subjectivity may not lead to a wrong conclusion, it depends on individual interpretation, often by key individuals who may be unfamiliar with handling public response in quantity. Also, individual interpretation permits individual bias to enter what should be a much more objective evaluation procedure.

The difficulties of evaluating public input objectively are not easily overcome, and the inherent problems are not unique to the Forest Service but are shared by numerous public agencies. The problems are largely related to the state of the art. Accordingly, the goal of the Forest Service should be to provide at least some uniform guidance that would enable those responsible for analyzing public input to recognize and use available and emerging techniques.

The Service should familiarize its planners with objective analytical techniques now available, including some already used by the Forest Service (e.g., PUBLIC--a procedure for public involvement), that focus attention on content analysis. Another is systematic development of criteria for weighing public response and review of these criteria by the public before their application.

The analytical techniques and the assumptions and judgments used in interpretation should be made clear and available for public review.

Some planning efforts have emphasized early, continuous, and extensive public involvement. Where heavy emphasis was placed on public input, innovative techniques were used and apparently were successful in obtaining meaningful public input. For example, in completing one forest's plan, working groups comprising representatives of segments of the public were given guidance from the area guide and participated jointly with forest officials in developing and selecting alternative plan decisions. Forest officials emphasized that this extensive public involvement was largely responsible for their history of no litigation since the forest was created. The Forest Service needs to identify such innovative techniques and disseminate this information to other planners.

Coordination with other Federal, State, and local agencies

Coordinating land management planning efforts with other Federal, State, and local agencies will be critical to the Service in determining its role in meeting local and national resource needs. To help insure effective coordination, the Forest Service has to provide its resource managers with clear and concise guidelines for actively soliciting Federal, State, and local agency input in planning for resource development. Without gaining active and meaningful coordination with other agencies, resource management decisions will continue to be made without adequately considering the role and acceptance of outside agencies.

Most regions had little success coordinating past planning efforts with other agencies. Reasons for this included the following.

- Piecemeal unit planning discouraged coordination because so many plans were prepared and cumulative effects were unknown.
- Many plans did not make specific decisions or contain quantified direction which would help to identify any impact on other agencies.
- Service planners or managers were too passive in soliciting coordination.

--Agencies were not given the opportunity for joint/partnership participation.

--Other agencies were not at the same level or stage of planning as the Service, and sometimes these agencies were not concerned with the same issues as the Service.

Some of the more successful coordination efforts with other agencies were due to the initiative of local Service planners and managers. For example, the Tongass National Forest appeared to have excellent coordination with the State. State officials told us that the successful coordination was directly attributable to the efforts of the current regional forester. In the past the State had not been allowed to participate in the Service's planning. Now it is limited only by its own desire or ability to participate.

DATA HANDLING AND ANALYSIS

Data handling and analysis involves such tasks as the identification of information requirements and sources and the collection, collation, analysis, storage, retrieval, and display of the data. These tasks can be expensive and time consuming. For example, forest planners estimated that the collection of base information for one unit plan in Region 9 represented from 50 to 70 percent of the total cost of planning that unit.

In almost all locations visited, planners cited the lack of time as a major constraint in properly analyzing and interpreting data. On the other hand, some resource specialists would have desired more time to collect data. Our consultants felt that in many cases the additional data was desired to increase the levels of confidence rather than to fill gaps in data already available. For example, in one forest data on wildlife was collected over three summers. Data collected during the first or second summer may well have sufficed for planning purposes. Setting standards as to how much data is enough is always difficult and in some cases may not even be possible. We believe, however, that the Forest Service at a minimum should emphasize the judicious use of time and resources in data collection.

Much of the cost of collecting data for successive planning efforts could be reduced if data were entered in a data storage and retrieval system. However, our consultants noted many instances where the data used in planning was not stored in a data file. For example, data used to prepare a dispersed recreation suitability analysis for the Deschutes

forest plan existed in the personal knowledge and experience of the recreation specialist. Some of his knowledge, such as data on insect population and potable water sources, could have been recorded rather easily but was not. It would be impossible for anyone other than this specialist to review and revise recreation boundaries without going through an extensive data collecting process.

Some planning data, such as soils information, geological hazards, and potable water sources, generally need to be gathered only once. Dynamic data, such as social and economic data and recreation use levels, would need to be periodically updated, but should also be stored because it could show trends which are important for planning.

Besides cost and storage, other data handling and analysis matters that will need attention are as follows.

- Identification of data sources. Some land use plans showed sources of data used in preparing the plans while others did not. It was often difficult to determine what data was used in the analyses leading to the plans.
- Data needed to measure the effects of alternatives. Because basic research data was sometimes lacking, planners were not always able to properly measure the effects of alternatives on various resources in quantitative terms. (The effects can be measured with the use of what are called "output coefficients.") For example, in Southeast Alaska the lack of basic research data on the relationship between deer habitat requirements and population levels impaired an adequate evaluation of timber stand rotation alternatives.
- Data used to determine demands. The Forest Service's planning system is designed to set strategies for meeting the various demands for forest resources. Our consultants noted confusion in determining demand. In some area guides and forest plans reviewed in Regions 2 and 6, for example, the developed capability to provide a resource--the resource supply--was used to represent the demand for that resource.
- Data in hard-to-measure areas. A seemingly prevalent problem our consultants noted was that Service planners had difficulty in dealing with data in unfamiliar and hard-to-measure areas, such as social and

economic areas. The problem stems not so much from the lack of available data but from a lack of experience or training in selecting, analyzing, and interpreting it and making use of the results in planning.

--Handling of resource elements. Related to the above, our consultants found that one of the resources to be addressed in RPA planning--human and community development (manpower programs and job training)--was being treated in the Tongass forest plan as an element that was impacted upon instead of one being planned for. Also, a forest plan in Region 6 essentially ignored this element.

The Service should provide planners with guidance on identifying and evaluating sources of data, especially in unfamiliar issue areas. The various regional offices might act as "clearinghouses" and issue direction to the planners in each region on what published and unpublished sources of data are available on the physical, biological, social, and economic environments of the region. The guidance could also include information on where and how such data may be acquired, problems with any source material, aids to interpretation and limits on data usefulness, and unacceptable data sources.

This guidance could help in reducing data gaps, upgrading the quality of the data used, avoiding new research and data collection efforts if data acceptable to higher levels of the Service already exists, and providing new or newly transferred personnel with immediate guidance in beginning data assembly. The initial focus of this technical assistance program should be in those planning areas where limited expertise exists, primarily in social and economic areas.

FORMULATION OF ALTERNATIVES

Developing and analyzing alternative plans before selecting a preferred plan is a principal aim of a planning process. This allows for determining the course of action which best satisfies intended objectives. Generally, there should be no predetermination of a preferred plan. Alternatives should be equally considered before a selection is made.

It is difficult to design a balanced program of resource uses that satisfies both human needs and public priorities. However, the land management planning process must

demonstrate the consequences and constraints of alternative management programs which meet multiple-use objectives. To help insure objectivity in the land management planning process, the Forest Service will need to (1) eliminate biases and predeterminations in formulating and considering alternatives and (2) improve the methods used to develop and analyze alternatives.

Need to eliminate biases

Our consultants noted instances where the outcome of the land use planning process seemed to be predetermined. For example, program direction in the Southern Rocky Mountain preliminary guide was so specific that no matter what the subsequent analyses at the forest or lower planning levels showed, the program direction seemed to be already dictated.

In another case the alternatives to the plan selected for the Deschutes Forest were developed after the fact. The district rangers were not involved nearly as much in formulating the alternatives as they were in developing the preferred plan. One of our consultants questioned the actual role of alternatives in decisionmaking on the Deschutes. He said that if the role was merely to bolster public reception of the selected plan, any further review of the quality of the alternatives and the adequacy of the coverage of issues was irrelevant.

Another area of concern is the manner in which resource management conflicts are to be resolved. For example, on one forest, a conflict arose between rangers on adjoining planning units. One emphasized timber over other resources while the other emphasized recreation. Their plans reflected these biases. The forest supervisor attempted to resolve the conflict by requiring that timber harvest levels not be reduced more than 10 percent below existing levels. Similar parameters were not placed on recreation or the other resources.

The Forest Service should emphasize to its planners and managers the need to objectively develop and analyze alternatives and to avoid requirements which tend arbitrarily to favor one resource over another.

Methods used to develop and analyze alternatives

In some instances Forest Service personnel have responded well in applying analytical techniques in the plan-

ning process. Our consultants thought Region 2 was particularly imaginative in its use of linear programming in planning for the Rio Grande River Basin in Colorado. Use of analytical techniques has been uneven, however, and the Forest Service needs to improve its guidance to its planners on the use and appropriateness of available methodologies.

With regard to appropriateness, our consultants noted that planners sometimes decided not to use available analytical techniques because of certain perceived problems. For example, one planner in Region 9 thought that certain techniques (1) could not be implemented within the time constraints set for planning and (2) might generate too much information at a higher cost. Also, it was not clear to him how the techniques could be explained to the public or how public input could be incorporated into the process in a meaningful way.

One benefit of using analytical techniques is that they facilitate the analysis of many feasible alternatives. In the example cited above, the planner elected to trade away the opportunity to consider more alternatives because of the problems he perceived. The Forest Service should consider these problems in determining the appropriateness of the various techniques.

A second area where planners need guidance is in their use of output coefficients. These coefficients are numerical indexes which quantify a particular output per acre of land. For example, assume that 15 visitor days a year (the output coefficient) could be expected from 1 acre of land devoted to recreation use on a specific land unit. By devoting 10 acres of the land unit to recreation, 150 visitor days a year would be the expected output. Under different land use alternatives for this unit, the number of acres devoted to recreation and the expected outputs could change, but the coefficient should remain the same. Coefficients for other land units, however, could well be different.

Our consultants noted that planners were confused as to the proper use of these coefficients. Some planners adjusted the coefficients when analyzing alternatives for the same unit. Other planners used the same coefficients for all land units although the output levels expected from different units varied according to the land's capability to produce a forest resource. By using coefficients the way they did, these planners did not provide management with a valid picture of the outputs that would be expected from the various alternatives.

A third area of concern is the way the impacts of various alternatives will be considered in developing plans meeting the requirements of the National Environmental Policy Act. This act requires reporting a proposed action's impacts on the existing environment. One of our consultants noted a case involving grazing levels on the Deschutes National Forest where the impacts were reported, not on the existing environment, but on a hypothetical environment.

In this case the actual grazing allotment in 1976 amounted to 15,930 animal unit months, but in the draft environmental statement, 109,200 animal unit months--the optimum output level for grazing--was used to measure impacts. As a result, when each plan alternative was measured against the optimum level, an adverse impact on grazing was indicated, whereas use of the actual grazing level would have indicated a positive impact. Our consultant felt that this was an unintentional error but that it could have misled decisionmakers who were trying to use impact analysis to evaluate alternatives.

IMPLICATIONS OF CERTAIN CHANGES IN THE PLANNING SYSTEM

Two planning levels in the Service's land use planning system were unit plans and area guides. Under the new land management planning system, unit plans will be eliminated and area guides will be optional at the discretion of the region. These changes have some implications which need to be adequately considered and evaluated.

The 1976 act requires that resource plans and permits, contracts, and other instruments for use and occupancy of national forest lands be consistent with land management plans. Existing instruments are to be made consistent as soon as practicable and, as land management plans are revised, the instruments are also to be revised as necessary. Any revisions in the instruments are to be subject to valid existing rights.

State and private forestry interests, private landowners, and others may have already made financial and other commitments based on completed unit plans. Although Service officials indicate that existing unit plans, in which at least \$40 million has been invested, will be incorporated into the new planning system, it is unclear to us how this will be accomplished. Any changes that may invalidate the old plans, and thus jeopardize existing commitments, could erode the Service's credibility and foster potential litigation. Accordingly, the Service must insure that in devel-

oping and reviewing new plans, its planners and managers consider and evaluate the effect of any changes on existing commitments.

Under the new planning system, use of area guides will be optional. The regional plans are intended to replace them. Because regions cover vast and geographically and economically different areas, a regional plan may not adequately address the specific problems or issues of each area in a region. For example, Region 9 extends from the New England States to the Great Lakes and as far south as Missouri. The issues, especially social and economic issues, facing the forests in New England are not the same as those facing the forests in the other areas of the region. In such situations area guides, which would identify and describe issues both common and unique to certain areas, could provide a link from the overall regional goals to the forests within the region. The regions should be encouraged to use area guides or some equivalent vehicle and, if not used, should be required to justify the decision by showing how the functions of a guide are otherwise accommodated in the regional plans.

ORGANIZATIONAL AND ADMINISTRATIVE MATTERS

The effectiveness of the new planning system will depend greatly on the (1) organizational and administrative arrangements that the Service will establish for the planning process, (2) importance it will attach to planning, and (3) expertise and interaction of its planners and planning teams. In reviewing land use planning, we noted or field officials told us about the following problems which the Service experienced in these areas.

1. The Service did not establish consistent and formal field organizations to develop land use plans. Each region and forest developed its own planning organization. The success of planning often depended on the individual manager's commitment to land use planning and the priority he gave to planning. Planning was accomplished through a variety of organizational arrangements, such as one individual who drew on available expertise, a full-time permanent planning team, or an ad hoc task force. This informality was viewed by field planners as lack of recognition of the planning function as a possible career or as enhancing an individual's career development. As a result, field employees felt frustrated when assigned as planners and discouraged from remaining in the planning field.

2. Planners also perceived a lack of management commitment at the forest or regional level to land use planning which also led to dissatisfaction with the role as planner. Forest managers' involvement in planning efforts varied. Some managers acted as team leaders and were actively involved in planning efforts. Other managers were not active participants and, as a result, may not have fully understood the ramifications of the plans. Managers' involvement in planning is critical because they must select and implement the preferred alternative and be responsive to the public on a day-to-day basis.
3. Selecting and recruiting field planners were not always done consistently among field offices. Criteria and standards for selecting key individuals on planning teams were not uniformly applied. Personnel selected to spearhead planning efforts came from a variety of backgrounds and positions. Some had no experience in planning.
4. Although persons assigned as planning team leaders may have had little or no experience or academic background in planning, the Service had not established a national training program for all of its planners.
5. Both the 1974 act and the National Environmental Policy Act require an interdisciplinary approach to planning. Existing Service manuals define an interdisciplinary approach loosely. Therefore, each region has had to determine how to implement an interdisciplinary team approach. Critical disciplines were not always represented on planning teams, and the interaction of the teams had not always led to a true interdisciplinary team approach.
6. Planning efforts were sometimes disrupted because team members had other responsibilities that received priority over planning. Review and evaluation of roadless areas and work involving on-the-ground projects were examples of these other responsibilities.
7. Planning was not funded separately. Funds and manpower were taken from other functional areas, such as timber management or wildlife. Consequently, planning was sometimes perceived as a secondary effort.

8. Some study plans were prepared before starting various planning efforts, but they were not always used effectively. Such preplanning is necessary to ensure management commitment to the planning effort and to identify the milestone events in the planning process and the resources (manpower and dollars) necessary to accomplish the planning. The primary problem in the past was that study plans were not formalized to the extent that they served as an agreement between management and the planners. This occurred because of the informal nature of the planning organization and because planning had not always received the priority required to do an effective job.

CONCLUSIONS

To enhance effective development and implementation of the new land management plans, the Forest Service needs to insure that

- the planning system is integrated with its programing and budgeting system;
- the public, State and local governments, and other Federal agencies are involved early and extensively in the planning process;
- data needs and sources are properly identified and data is adequately collected, analyzed, interpreted, and used in the planning process;
- alternative management programs are developed and equally and objectively considered;
- the implications of certain changes in the planning system receive due consideration; and
- the organizational and administrative aspects of planning, such as organizational and funding arrangements, the importance attached to planning, and the selection, recruitment, and training of planners, receive appropriate attention.

CHAPTER 4

RECOMMENDATIONS TO THE SECRETARY OF AGRICULTURE

According to Forest Service officials, the Service plans to have a hierarchical planning system whereby goals for each resource are established in the Resources Planning Act program. These goals are to be allocated by region through regional plans and further allocated down to forest plans. A feedback system which will validate the goals is envisioned. The forests' capabilities to meet resource goals will be determined through land management plans. The capability information will be fed back through regional plans to the RPA program where goals are adjusted to reflect the forests' abilities to produce resources.

To make this system cohesive so the various planning levels can be linked, the Forest Service must set specific guidelines as to what each planning level is to accomplish and how these plans are to be prepared. It also needs to take actions to insure that problems encountered in past and present land use planning will be avoided in the new system and that matters which will bear upon the effectiveness of land management planning are adequately dealt with in its regulations, manuals, and guidelines.

We recognize that in preparing the regulations due in October 1978, the Forest Service may already be addressing some of the problems and matters discussed in this report. However, in the interest of completeness and to insure that all the problems and matters we identified receive appropriate attention, we offer the following recommendations for the Service's consideration in drafting the regulations and in developing subsequent manuals and guidelines.

1. To help insure a systematic planning process, the Service should:

- Specifically identify how many levels of planning there will be in its new planning system and clearly and concisely state the objectives of each planning level.
- Once the levels of planning have been defined, give priority to completing higher level plans first in order to provide direction to lower level plans.
- Require that regional plans, as a minimum, set specific goals for forest plans. Goals can be expressed in terms of ranges of outputs; for example, between

1 million and 1.5 million board feet of timber, or 500,000 to 700,000 visitor days a year. Also, forest plans should set specific output goals using as guidance the output ranges allocated by the regions and should identify and set priorities for the management activities to meet the goals. The plans should also contain coordinating policies which provide for the protection and maintenance of all resources when engaging in a particular resource development activity.

- Encourage the use of area guides or some equivalent vehicle to insure that problems of each of the geographically and economically different areas in a region are adequately addressed. Regions should justify decisions not to use area guides--which are to be optional in the new system--by showing in their regional plans how the functions of a guide are otherwise accommodated.
- Specify the role of resource management plans in the new planning system. If they are to be continued, the 1976 act requires that they be included in the new integrated land management plans. Because resource management plans were generally aimed at developing one resource, any direction provided in those plans should not be emphasized when including them in the new system.
- Identify and analyze the various other types of existing plans and provide specific guidance to the field as to how those plans will be used in the new system. The Service should take these steps because considerable time and money have been spent on past planning efforts, and because the Service has made commitments in some of these plans that will have to be considered and evaluated to test their validity and assess the impact of changing them.
- Standardize the terminology, format, and time frame covered by the plans and specifically spell out how land management plans will be used in developing programs and budgets.
- Establish national standards to measure the quality of plans and to insure that the objectives of each planning effort are met. Additionally, a system should be established whereby plans can be evaluated with this criteria.

- Establish formal procedures whereby directions (goals and targets, etc.) from higher level plans, including the RPA assessment and program, are verified and/or changed, if necessary, as planning becomes more precise at lower levels.
- Insure that, except for distinguishing between long-range and short-range goals and objectives, there are no differences between planning goals and objectives, RPA program goals and objectives, and annual program budget goals and objectives.
- Coordinate the activities of the headquarters groups responsible for the RPA, for programming and budgeting, and for land management planning, to insure that land management plan goals are adequately reflected in budget proposals and that the plans themselves reflect the national goals of the RPA assessment and program.

2. To insure timely and meaningful public involvement in the land management planning process, the Service should provide direction and guidance to the planners which would

- identify the milestone decision points in the planning process where public views and public participation must be solicited,
- identify the appropriate segments of the public to contact,
- acquaint planners with existing and emerging techniques for interpreting and applying public input in decisionmaking,
- describe the methodologies to use in collecting public input and displaying it in plans,
- specify how local public input is to be considered in light of regional and national needs, and
- require the establishment of a monitoring system that provides frequent feedback to the public on the use of its input and the progress made in the planning efforts.

3. Each planning level should be encouraged to develop, in advance of its planning effort, a written statement of how it intends to design and carry forth an effective public participation program that is responsive to lower level

needs and issues. The written program should be submitted to the regional office to review compliance with guidelines and, more importantly, for a necessary overview to see what technical assistance can be offered by the regional office and, through the regional office, what experiences on other forests in the region can be communicated to a given forest to improve particular aspects of its proposed program.

4. The Service should stress coordination of its land management planning with other Forest Service planning units, with State and local governments, and with other Federal agencies. Guidelines or directions should

- identify those agencies or organizations which should be involved in the land management planning process and stress that these agencies should be represented on planning teams,
- emphasize joint/partnership involvement of other agencies as opposed to just having these agencies review plans,
- require the regional offices to aggressively undertake a program to inform other agencies and the public about the new planning system (including planning objectives), and
- specify the involvement of the Forest Service's State and Private Forestry and Research organizations in the planning process and show how their programs are to be included in plans.

5. A formalized study plan should precede each planning effort. The study plan should outline (1) planning steps or procedures, (2) resources necessary to prepare the plan (staff and money), (3) timing of critical steps in the planning effort, (4) data needs, (5) organization of the interdisciplinary team, (6) specific techniques to be used in gathering and analyzing data (including public input), and (7) coordination with other Federal, State, and local agencies.

6. To insure proper handling and analysis of data used in preparing land management plans, the Service should:

- Establish guidelines on minimum standards for the data needed at each level to prepare plans; for example, economic analyses require such data as employment levels and population statistics.

- Ensure that guidelines provide consistency between results of data analyses. For example, resource outputs in plans should be consistently computed; that is, different planners should be able to compute and arrive at the same results on such things as outputs and capability for the same piece of ground.
- Provide more specific guidance covering the data analyses of hard-to-measure areas, such as social and economic areas, in which the field planners may lack expertise. The guidance should cover specifically the type of data needed, how to analyze the data, and how to display effects.
- Provide direction aimed at securing more conformity among data bases and establish a procedure for monitoring conformity. With respect to conformity, we are referring to data bases at the different levels of planning, from the lowest planning level to the national level.
- Emphasize the judicious use of time and resources in collecting data.
- Require that data used in planning be stored in a data file and that plans identify the sources of data used in analyses leading up to the plans. The data should be stored in some uniform manner to facilitate its use at the various planning levels.
- Attempt to determine where data is lacking to measure the effects of alternatives on various resources and schedule research projects to gather the necessary data.
- Provide planners with guidance on identifying and evaluating sources of data so as to assist in reducing data gaps, upgrade the quality of the data used, help avoid unnecessary research and data collection efforts, and provide new or newly transferred personnel with immediate guidance in undertaking data gatherings. The various regional offices might act as "clearinghouses" and issue direction to planners in each region on what published and unpublished sources of data on the physical, biological, social, and economic environments of the region and areas therein are considered relevant, reliable, and most current. Direction could also include information on where and how such data may be acquired. Problems with any source material should be identified where relevant, including aids to interpretation and

limits on usefulness. Unacceptable data sources should also be noted.

- Provide guidance to the planners in the proper use and calculation of output coefficients. The concept is a very useful planning analysis tool if procedures are defined by which it can be integrated in the land management process.
- Direct planning teams in the proper development and display of projected demands for forest resources.
- Provide specific direction for integrating the human and community development resource element in land management plans.

7. To insure that impacts of plan alternatives are measured against the existing environment and not against a hypothetical or potential environment, the Service should develop specific guidelines for assessing and reporting the impacts of plans.

8. The Service should define and provide guidance on what constitutes an interdisciplinary approach and how an interdisciplinary approach can be achieved if certain disciplines cannot be represented on a planning team.

9. The Service should develop a system to monitor the implementation of land management plans. This monitoring system could include a feedback system whereby State and local government agencies are kept apprised of the progress made in implementing the plans.

10. The Service should identify and attempt to recruit the type of personnel necessary to accomplish the planning. Specific guidelines or minimum standards on qualifications should be established for identifying personnel who may be recruited from within or outside the Service.

11. Because planning assignments have been viewed by field planners as removal from normal career development patterns and as jeopardizing their long-range career goals, the Service should consider adopting measures to provide incentives to these individuals to encourage participation in planning and facilitate recruitment and retention of qualified personnel.

12. To establish fiscal and management control over planning, the Service should formalize its procedures for determining the costs of and the funding arrangements for land management planning.

13. The Service should develop a national training program to provide for quality and consistent planning. The training should cover what is expected of each planning level for such things as objectives, content, format, and terminology of the plans. In this regard, the Service should consider developing model (hypothetical) plans to show what it expects a plan to look like. The training should also cover such things as planning principles, methodologies, techniques, and analytical procedures. This training is very critical because personnel who must do the planning often have little or no planning experience.

Related training on a less intensive scale should also be provided to Service managers responsible for implementing the plans because this will require an understanding of how the plan was prepared. In this regard the Service should require the extensive involvement of management in the planning process so that managers not only understand the plans but support them as well.

14. The Service should emphasize to its planners and managers the need to objectively develop and analyze alternatives and to avoid requirements which tend arbitrarily to favor one resource over another.