DEPARTMENT OF AGRICULTURE

Forest Service

36 CFR Part 219

National Forest System Land and Resource Management Planning

AGENCY: Forest Service, USDA.

ACTION: Final rule.

SUMMARY: The Department of Agriculture is issuing final regulations to guide land and resource management planning in the National Forest System. These rules require an integration of planning for National Forests and Grasslands, including the timber, range, fish and wildlife, water, wilderness, and recreation resources, together with resource protection activities and coordinated with fire management and the use of other resources, such as minerals. These rules will implement provisions of the Forest and Rangeland Renewable Resources Planning Act of 1974, as amended by the National Forest Management Act of 1976.

DATE: Effective October 17, 1979.

ADDRESSES: A copy of these final rules may be obtained from: Chief, Forest Service, USDA, P.O. Box 2417, Washington, D.C. 20013.

FOR FURTHER INFORMATION CONTACT: Charles R. Hartgraves, Director, Land Management Planning, P.O. Box 2417, Washington, D.C. 20013, 202-447-6697.

1. Purpose

The Forest and Rangeland Renewable Resources Planning Act of 1974 (RPA) (88 Stat. 476, et seq.), as amended by the National Forest Management Act of 1976 (NFMA) (90 Stat. 2949, et seq.) (16 U.S.C. 1601-1614), specifies that an interdisciplinary approach will be used in land and resource management planning and that there will be a periodic review of the planning process, followed by any necessary amendments, to keep it current with statutory requirements. These statutes also provide for the establishment and revision of national, regional and local resource goals and objectives which are based on a periodic assessment of the future supply and demand of renewable resources from public and private forest and range lands. Achievement of these goals and objectives is the purpose of the planning process provided in these regulations. These acts also require public participation in the development, review and revision of land and resource management plans, and the coordination of such plans with State and local units of government and other Federal agencies.

These rules apply to all land and resources management plans developed hereafter for the National Forest System.

These rules require an integration of planning for national forests and grasslands, including the timber, range, fish and wildlife, water, wilderness, and recreation resources, together with resource protection activities and coordinated with fire management and the use of other resources, such as minerals. By October 1985, plans required by these regulations should be developed for all National Forest System lands.

2. Introduction

Public participation was extensive and was a major factor in developing the final regulations. The public was invited to comment on the first draft of the regulations which appeared in the Federal Register August 31, 1978 (Vol. 43, No. 170). Two public hearings were also conducted specifically to obtain views. From the initial inception of work to develop the regulations through to the present time, the Forest Service and the Department have maintained an open-door policy with the public and interest groups to obtain information as well as to explain work and progress. Eighteen Committee of Scientists' meetings were open to the public, and a total of 737 individual responses containing 5,373 distinct references to various parts of the August 31, 1978 draft regulations were received, a substantial number of which were elaborate, detailed, and explicit. Included were letters from members of Congress, Federal, State and local governments, representatives of various interest groups, as well as the general public. As a consequence it was decided to revise the first draft of the regulations (August 31, 1978) and to republish them accompanied by a Draft Environmental Impact Statement. This appeared in the Federal Register, Vol. 44, No. 88, May 4, 1979. Since then another 245 responses have been received containing 1,581 distinct comments which have been analyzed and considered during the preparation of the final regulations and Final Environmental Impact Statement which follows this Summary of Public Comment Analysis.

The Committee of Scientists has prepared a Supplemental Final Report to the Secretary of Agriculture as to the scientific and technical adequacy of the May 4, 1979 draft of regulations. This report was submitted to the Secretary on August 17, 1979, and is printed as Appendix E of the Final Environmental Impact Statement.

3. Summary of Public Comment Analysis

A total of 245 comments was submitted containing 1,581 specific comments on the May 4 proposed rules. The specific comments break down into the following categories: 356 individual citizens; 701 organizations; 157 Government agencies; 367 Department and Forest Service. The majority of comments received were in letter form. Most comments were specific and succinct, and addressed only a few concerns, but several were, by comparison lengthy, detailed, and complex. All suggestions have been reviewed, analyzed, and considered in preparation of these regulations and supporting Final Environmental Impact Statement.

Comments are available for review at the Office of Land Management Planning, Forest Service, USDA, 14th and Independence Ave., S.W., Washington, D.C.

Section-by-Section Comments

Section 219.1—Purpose

This section received limited public comment. Comments suggested adding to environmental impacts the words "economic" and "social." "Economic" and "social" were added as well as replacing the use of "preferences" with "changing, social, and economic demands."

The Committee of Scientists and others recommended that a statement be added recognizing that the national forests are ecosystems and their management requires consideration of the interrelationships of the various environmental factors. This concept has been included under planning principles.

Comments also suggested that consideration of the relationship of mineral resources to renewable resources and preservation and protection of religious freedoms of American Indians be included under the planning principles. These have now been added to the final regulations.

Section 219.2—Scope and Applicability

There were very few comments on this section. There was a question on the meaning of "special area authorities." This was not changed in the regulations since examples of these authorities were listed in the section. The applicability of the regulations was clarified, however, to explicitly include waters as well as lands in the National Forest System.

Section 219.3—Definitions

Many comments requested changes in the published definitions as well as the

addition of many new definitions. The Department reexamined the definitions section and a number of changes were made. Definitions were added for: "base timber harvest schedule", "biological growth potential", "goods and services", "management prescription", and "planning area."

The following terms were redefined because of comments received for clarity: "diversity", "management direction", and "management practice." "Environmental assessment" was changed to "environmental analysis" to coincide with the terminology used in the Council on Environmental Quality guidelines. "Environmental documents" was redefined to include a list of documents required by 40 CFR 1508.10.

Minor changes in wording were made to the following terms: "capability", "Responsible Forest Service Official", and "standard." Some respondents wanted to change the definition of "multiple-use" and "sustained-yield of the several practices and services." These were not changed since they were defined by the Multiple Use-Sustained Yield Act of 1960. There were requests for definition of additional terms such as "wildlife", "recreation", "range", "wilderness", "facilities", "mitigating measures", "reasonable", "minimize", and others. Terms such as these, which are to have the standard dictionary definition or were in common usage, were not redefined for purposes of these regulations.

Section 219.4—Planning Levels

As in the previous August 31, 1978 draft, public comment on the May 4, 1979, proposed NFMA regulations continued to point out the need for a clearer description of the iterative nature of the three levels of planning and the process for developing and selecting the RPA Program and the relationships between the Program and the various levels of planning. Therefore, the "national" level of planning was completely rewritten in this section in response to the requests for clarification of the process for developing and selecting the RPA Assessment and Program. Section 219.9, Regional Planning Procedure, was strengthened to explain how the regional plan will implement RPA Program goals and objectives as well as provide information for the National Forest System portion of the assessment capability. In addition, language was deleted concerning transfer of information among planning levels (219.4(c)(1) through (4)), because it was confusing and appeared conflicting with other provisions. The concepts in 219.4(c) are now covered under Sections 219.5, Regional and Forest Planning Process, and 219.9, Regional Planning Procedure.

Section 219.5—Planning Process

This section was retitled "Regional and Forest Planning Process" to more correctly portray its coverage. Some of the comments pointed out that there was some confusion and misconception that this process applied to the formulation and establishment of RPA goals and objectives.

With respect to economic analysis practices, many commentors pointed out that the economic analysis criteria including the discount rate of interest should be established as soon as possible. The Forest Service plans to be responsive to this need through the issuance of manual and handbooks before December 1979.

Inventory data and information collection was of prime concern to the Committee of Scientists and the general public as well. These comments centered around the determination of adequacy of the data, data collection procedures, compatability requirements to obtain uniformity among forests, and the need to include criteria for coordination and cooperation with other agencies for data collection, storage, and evaluation. The Department is concerned that too much emphasis has been placed on the quantity of data gathered instead of what data are actually necessary to do planning effectively. Therefore, in changing final regulations, emphasis has been placed on the kinds and quality of data necessary. Acquisition of new data and information will be scheduled and planned so that it is appropriate for the decision to be made.

The necessity for consistency in data collection procedures between all levels of planning was addressed by the public. The Department recognized the need for common data definitions and standards to assure uniformity of information between the three levels of planning and added provisions for this to the regulations. These data definitions and standards will be established by the Chief, Forest Service. In addition, these regulations require that information be developed from common data definitions and standards and will be used to prepare the 1990 and subsequent Assessments and Programs.

The paragraph relative to the Formulation of Alternatives has been restructured upon recommendation of the Committee of Scientists. As previously written, some of the criteria was too stringent and unclear as to intent.

The public also expressed confusion with the term "no-action" alternative. The "no action" alternative is required by CEQ regulations. The "no action" alternative language was expanded to state that it is the "most likely condition expected to exist in the future if current management direction would continue unchanged".

Concern was expressed over using cost-effectiveness as a criterion of formulation of forest alternatives and that "cost-effectiveness" was not defined. The term cost-effectiveness has been changed to "cost-efficient" to display the intent to maximize the present net worth of each alternative subject to meeting the objectives of the alternative. The criterion has been modified to include the expression "to the extent practicable" to recognize that judgment must be used in the practical application of the "efficiency" criterion to a management task as complex as a forest plan.

The Committee of Scientists suggested that the phrase "restore renewable resources" was unclear as used in the criterion that "all alternatives will provide the treatments needed to restore renewable resources." This criterion has been reworded to clarify that each alternative will provide for the orderly elimination of backlogs of needed treatment for the restoration of renewable resources as necessary to achieve the multiple-use objectives of that alternative.

The Committee of Scientists recommended that language be added under Estimated Effects of Alternatives, which will require the interdisciplinary team to display how the regional and forest plans respond to the range of goals and objectives assigned from the RPA Program. This language has been added to the final regulations.

Also in response to comments received, two additional anticipated effects of implementation of each alternative were added:

(1) The relationship of expected outputs to the forest production goals in the current regional plan and

(2) The energy requirements and consideration of potential effects of various alternatives.

The Committee of Scientists pointed out that items (ii) and (iv) of paragraph (g) in the May 4 draft were actually in conflict; therefore, item (iv) was deleted.

It was not clear if the term "plan implementation" was meant to identify forest, regional, or national planning. The language was, therefore, rewritten to clarify reference only to regional and forest planning implementation.

Section 219.6—Interdisciplinary Approach

Public comments emphasized the need to establish operating procedures for the interdisciplinary team, as well as specifically state the authority and function of the team. The final regulations respond to this need by specifying that the team will ensure "coordinated planning which addresses outdoor recreation, range, timber, watershed, wildlife and fish, and wilderness opportunities." Further, the language was added that the planning team activities must be consistent with the principles of the Multiple Use-Sustained Yield Act and those principles stated in § 219.1. The above is in keeping with the concept and intent suggested by the Committee of Scientists. Operating procedures found throughout the regulations will be supplemented by a work plan for each team.

Section 219.7—Public Participation

The direction given for public participation was generally acceptable to the public, with the exception of the appeals provisions in § 219.7(o). The public generally commented that the limitation on administrative appeals of planning decisions would place an undesirable restriction on public participation.

The forest plan appeals provision has been completely rewritten and moved to § 219.11 to allow forest plans to be appealed under § 211.19 of this Chapter if the potential appellant was involved in the public participation phase and commented on the draft environmental statement/forest plan with respect to the specific issue being appealed. Intermediate decisions made during the planning process up to the time the plan is approved are not appealable.

Under the final regulations, regional plans are not subjected to the appeals procedure (CFR 211.19). However, within 45 days of the decision of the Chief, Forest Service, to approve or disapprove a regional plan, any person may request the Chief to reconsider his decision. The Chief must respond within 30 days to the request for reconsideration. The reconsideration provision relating to regional plans has been placed in § 219.9.

Section 219.8—Coordination of Public Planning Efforts

The majority of comments expressed were in agreement with this section as proposed in the May 4 draft.

The Committee of Scientists suggested that a new subsection be added to include the requirement that a program of monitoring and evaluation will be conducted that includes consideration of the effects of national forest management on land, resources, and communities adjacent to or near the national forest being planned. This has been added in order to further coordinate Forest Service activities with those on adjoining lands.

Section 219.9—Regional Planning Procedure

In response to comments that the May 4 proposal did not adequately deal with the visual resource, the following references to such have been made throughout the regulations and are noted as follows: 219.3(i), 219.5(g)(1), 219.5(h), 219.6(a), 219.10(b)(13), 219.12(i)(1)(ii), 219.12(i)(4), 219.13(b)(6), 219.13(b)(7), 219.13(c)(6), 219.13(d)(2)(i), 219.13(g).

Specifically, § 219.12(b)(6) now states that "The visual resource will be inventoried and evaluated as an integrated part of the forest planning process, addressing both the landscape's visual attractions and the public's visual expectation."

The comments concerning administrative appeal of regional plans are addressed in this analysis under § 219.7.

Section 219.10—Criteria for Regional Planning Actions

The title was changed to "Regional Planning Actions" at the suggestion of the Committee of Scientists. The section deals both with decision criteria and process procedures; therefore, the Committee felt the use of the term "criteria" to be inappropriate.

Public comments indicated that the list of management concerns should include consideration of meeting the RPA Program. In response to these comments, implementation of goals and objectives of the RPA Program (through regional policies and goals) has been clarified. Section 219.10(c) has been rewritten to the effect that, consistent with regional and forest resource capabilities, regional plans will implement the goals and objectives of the regional policies and goals, assigning resource production objectives to each forest area as well as providing information for the national assessment.

Some comments advocated the establishment of a definite minimum biological growth figure for timber harvesting (§ 219.10(d)(2)); a minimum of 50 cubic feet/per acre/per year was suggested. the 50 cubic feet/per acre/per year standard was rejected as it was felt that this cutoff point might arbitrarily eliminate viable timber production possibilities prior to evaluation of the ability of lands to meet specific forest objectives. The historical standard for definition of commercial forest land, 20 cubic feet/per acre/per year, will be used. The Department feels this provides a useful screen which eliminates land from further consideration which definitely does not qualify for commercial timber production, while not arbitrarily foreclosing on reasonable timber production possibilities.

Clarification of the need for, or lack of the need for, the gathering of new data was an issue. This is discussed under § 219.5 of this Analysis of Public Comment.

Comments indicated there was some confusion as to the order of planning—are regional or forest plans developed first? The regulations were not changed in this regard as it is the intent that a regional plan should be developed before the forest plans. However, during the transitional period the regulations allow for the development of forest plans prior to regional plans, but require that forest plans be reviewed upon completion of the regional plan and amended accordingly.

Section 219.11—Forest Planning Procedure

Comments on documentation requirements indicated a concern that flexibility of line officers would be seriously and adversely affected by having to justify and document every action. The NFMA strengthens and refines the planning process by ensuring that related activities are comprehensive and fully open to the public. The comments made which would weaken this requirement could not be accepted since the legislation requires public participation in the planning process, and documentation required by the regulations will serve to show how the responsible employee arrived at his/her decision.

Section 219.11(4) contains the new language on appeals of forest plans, which is addressed in detail in discussion of § 219.7 of this analysis.

There was some confusion whether the forest plan is a separate document or the *preferred* alternative in the EIS. The plan is the *selected* alternative in the final EIS. It will be expanded and published as a separate document with the EIS. The clarified wording in §§ 219.9 and 219.11 of the regulations should help clarify this section.

Section 219.12—Criteria for Forest Planning Actions

This section was changed to "Forest Planning Actions" for the reasons cited in § 219.10 of this analysis. Approximately 20 percent of all

comments were directed to this section, the majority of which concerned two issues: (1) lands not suitable for timber production and (2) departures from nondeclining even flow.

It was suggested that misinterpretation and confusion could result from the requirement to classify as "unavailable" those lands which had been "administratively withdrawn from timber production." Therefore, this language was rewritten as follows: ". . . legislatively withdrawn or administratively withdrawn by the Secretary or the Chief, Forest Service," indicating the inclusion only of those lands which have gone through a withdrawal process approved by the Secretary or Chief. Thus, there should be no misinterpretation that these lands would include marginal lands or special components in current forest plans.

There were considerable comments concerning the identification of lands suitable for timber production (§ 219.12(b)(2)). The timber industry contends that economic criteria used to determine suitability should be applied in a way which identifies as unsuitable only those lands which are not economically viable timber production opportunities in their own right (before discretionary environmental and multiple-use constraints are applied). They feel it is important that criteria for determining suitability eliminate the economic burden for discretionary environmental and multiple-use contraints. It was felt that if this is not done, the economic viability of management is distorted by the decision to emphasize other objectives. The industry stated that this becomes a self-fulfilling cycle which plays into the hands of those who, on one hand, advocate maximum emphasis to nontimber objectives on the national forests and, on the other hand, complain that timber management is not a viable economic proposition there.

The environmental commentor guardedly approved of the strengthened economic criteria for determining lands suitable for timber production. However, it was pointed out that there was a serious danger in the ranking procedure proposed. The ranking procedure presents a powerful tool for planners that may have a negative result. The concern is that it was possible that once lands suited for timber production are ranked, planners would feel compelled to develop land allocation proposals that devote all of the higher ranking lands to timber production, even though such lands may be critical to maximizing forest benefits other than timber production or may be relatively dangerous to log in light of soil sensitivity data. In other words, the potential timber land rankings may end up dictating land allocation patterns for all of the resource uses, particularly in light of the pressure to meet assigned timber production goals with a limited budget. To avoid this return to functionalism in resource planning, it was recommended that separate rankings of the relative suitability of lands for all other resources and uses should be required. There were many other suggestions on language changes, including recommendations by the Committee of Scientists. Considering these comments and the recommendations of the Committee of Scientists, § 219.12(b)(2) has been rewritten using mostly the recommendations of the Committee of Scientists.

The difference between the Department procedure for identifying unsuitable lands and the Committee of Scientists' recommendations concerns the preliminary economic analysis of lands prior to formulation and evaluation of forest alternatives. Specifically, the Committee of Scientists has recommended ranking the lands by benefit-cost criteria to establish their relative economic efficiency in meeting timber goals which have been assigned to the forest through the regional plan. Although there are some technical difficulties in carrying out the Committee's proposal, the main Department objection to the procedure is that, without knowledge of the multiple-use objectives of each specific forest alternative, the ranking will not generally correspond to the most cost-efficient method of meeting overall forest objectives. As only timber benefits were to be included in the preliminary efficiency analysis, a one-to-one correspondence between the preliminary ranking and final land allocation for a forest alternative would be achieved only in the absence of multiple-use objectives and harvest flow constraints.

The Department feels that useful information can be generated before alternative formulation and evaluation without being prescriptive. The purpose of the preliminary analysis would be to provide the background costs and benefits of timber production for a range of management intensities to permit flexibility in meeting overall forest objectives efficiently during alternative evaluation.

The Department preliminary analysis proposes that the planning area be stratified into categories of similar management costs and returns considering the biological and physical conditions of the site and transportation. Costs and returns for timber production would be calculated for a range of management intensities for each category. The management intensity which maximized the present net worth for each category would be identified, but ordering of categories would not be required, nor would the adoption of the timber profit maximizing management intensity.

The costs and returns for the range of management intensities for each category would be considered, along with other resource information, in formulating alternatives and in determining the relative suitability of lands within the planning areas to meet the multiple-use objectives for each forest alternative in a cost-efficient manner. Other wording changes suggested by the Committee in the May 4 proposed regulations have been materially adopted.

One common recommendation was that the regulations clearly state that benefits must exceed costs in order for lands to be classified "suitable for timber production." This recommendation was not adopted since the regulations require that, based upon consideration of management objectives, lands will be tentatively classified not suited for timber production if they are not cost-efficient in meeting forest objectives.

Many asked for clarification of "assurance that lands can be restocked within 5 years." Some felt the time-frame too long; however, the NFMA specifically allows for restocking within 5 years after harvest. This requirement has been referenced throughout the regulations.

It was recommended that the measure of direct benefits used in the preliminary economic analysis be clarified. The term "expected future stumpage prices" has been expanded to "expected gross receipts to the government." The following language has been added for clarification: "Such receipts will be based upon expected stumpage prices from timber harvest considering future supply and demand situation for timber, timber production goals of the regional plan, and guidelines to be developed through direction in § 219.5(c)(6)."

A high level of interest has been expressed concerning the use of "local economic stability" as a criterion for examination of a departure alternative. Some public comment felt that this was "illegal" because the words "local economic stability" do not appear directly in NFMA. Other public comments refer to the legislative history and suggest that considerations of "local

economic stability" is one objective of multiple use management. There is no limitation in NFMA on the reasons for departures, but the act does provide that the Secretary's approval of a departure must be to meet overall multiple-use objectives, provided that any such departure "must be consistent with multiple-use management objectives of the land management plan." The Multiple Use-Sustained Yield Act defines multiple-use as "the management of all the various surface resources of the national forests so that they are utilized in the combination that will best meet the needs of the American people . . .." The Department feels the definition within the Multiple-Use Act supports the use of local economic stability" as one factor for examination of a departure alternative. Therefore, the regulations continue to use "local economic stability" as a criterion for examination of a dependent alternative.

It was further suggested, and adopted, that the word "overall" which appears in the act, be used as a modifier to "multiple use objectives".

Under the wilderness provisions of § 219.12(e), there was some confusion over the terminology "initial generation of forest plans." This paragraph was rewritten for clarity and provides for uses other than wilderness for those lands released for nonwilderness classification pursuant to RARE II decisions.

The Committee of Scientists expressed satisfaction with respect to the treatment of wilderness in the regulations.

Comments on the fish and wildlife provisions were directed mainly toward questions regarding indicator species; some suggested that the language be changed to include invertebrates as indicator species. This request was met.

There was some criticism that the proposed rules did not adequately ensure consideration in the decision process of range, recreation, soil and water, minerals, and the visual resource. However, the Committee of Scientists felt these sections were adequate and the Department agrees. Only minor word changes have been made to these sections.

As noted in § 219.9 of this analysis, the visual resource has been addressed in the regulations to a greater extent. It has been added to the list of requirements which the forest plan must specifically address. (§ 219.12(i)(6))

Section 219.13—Management Standards and Guidelines

Approximately 20 percent of all comments addressed this section, in particular the maximum size limitation of openings and protection of riparian areas.

Comments on the size of openings were evenly divided between those who oppose the national limits proposed in the May 4 draft regulation and those who favored these limits. These limits have been retained and a maximum size limit of 80 acres for yellow pine types in certain southern states has been added to be responsive to special needs identified in the Southern Region. (See § 219.13(d)(2)).

The comments on the protection of riparian areas were also equally divided. Section 219.13(e) was rewritten to include that this special attention area will include at least the riparian ecosystem. This was in response to comments that the area protection should be variable and should correspond to the recognizable area dominated by riparian vegetation. Factors have been listed which will be considered in the determination of what management practices may be undertaken in these areas.

Changes in the paragraphs on diversity were made to reflect the intent of the National Forest Management Act; e.g., to deal with plant and animal communities and tree species as recommended by the Committee of Scientists and several commentors.

As was pointed out in the Committee of Scientists' report, diversity is one of the most difficult issues with which the regulations deal. One environmental group stated that the May 4 draft still did not meet the congressional mandate that the regulations address "steps" to be taken to provide for diversity. Management practices which enhance diversity should be described, and the influence of silvicultural systems on forest structure and diversity should be discussed. They also stated that it was particularly important that the impact of rotation age on the development and stability of forest ecosystems be addressed. This recommendation was rejected by the Department as it would be virtually impossible to describe each management practice and forest structure for the variety of ecosystems involved throughout the Nation. This will be covered by each forest plan as directed by the regulations in § 219.13(g).

The timber industry comments stated that direction in §§ 219.13(b)(5) and 219.13(g) goes far beyond the intent of law. In addition, they stated that the two sections are in conflict; § 219.13(b)(5) directs that management practices preserve diversity of "endemic and desirable naturalized plant and animal species similar to those existing in the planning area", and § 219.13(g) directs that management practices "preserve and enhance species and communities diversity similar to that which would be expected in an unmanaged part of the planning area." Industry stated that both of these objectives cannot be achieved simultaneously. Their comments further stated that section 6(g)(3)(B) was concerned primarily with type conversion—specifically conversion of hardwoods to pine in the South. They felt this was what should be focused on.

In the Committee of Scientists' report, which is printed with the Final Environmental Impact Statement, the Committee has pointed out that they also feel the Forest Service has created problems for itself in rewriting two sections relating to diversity and to some extent, distorted the intent of the provisions contained in their recommendations. It was the Committee's opinion, that Congress used the term diversity to refer to biological variety rather than any of the quantitative expressions now found in the biological literature.

Upon the advice of the Committee of Scientists and the comments from the interest groups, § 219.13(b)(5) was revised by eliminating the conflicting language and referring to paragraph (g). Paragraph (g) was rewritten incorporating the Committee's recommendations, specifically providing that "The selected alternatives will provide for diversity of plant and animal communities and tree species to meet the overall multiple-use objectives of the planning area." The concepts recommended by the Committee have been incorporated except that the words "unmanaged forest" have been replaced with "natural forest."

Section 219.14—Research

The language was revised to better reflect suggestions of the Committee of Scientists to stress the importance of research in meeting the needs of the National Forest System. The annual report required at the national level will be prepared with assistance from regions and forest and range experiment stations.

Section 219.15—Revision of Regulations

It was generally accepted that the 5-year interval review of the regulations was appropriate.

Section 219.16—Transition Period

Comments were few, and this section was generally acceptable to the public as was written in the May 4 proposal.

Dated: September 12, 1979.

Bob Bergland,

Secretary.

Final Environmental Impact Statement

Final Regulations for National Forest System Planning, 1920 Land Management Planning, Forest Service. USDA

Lead Agency: United States Department of Agriculture, Washington, D.C. 20013.

Responsible Official: Bob Bergland, Secretary of Agriculture, Washington, D.C. 20013.

For Further Information Contact: Charles R. Hartgraves, Director, Land Management Planning, USDA Forest Service, P.O. Box 2417, Washington, D.C. 20013 (202-447-6697).

Abstract: This Final Environmental Impact Statement (FEIS) analyzes and evaluates alternative sets of proposed regulations developed in response to Section 6 of the National Forest Management Act and describes the preferred alternative which appears Appendix E. The regulations prescribe the process for preparation of all land and resource management plans developed hereafter for each administrative unit of the National Forest System. Also prescribed, and integrated into the planning process, are a number of technical standards which govern the conduct of management practices. The FEIS describes the conceptual basis for the planning process described in the proposed regulations, and the issues central to their need.

The alternative regulations are procedural. Although their promulgation would have only indirect effects on the quality of the human environment, there are important policy matters to consider in the use and application of a given alternative. This is especially true in the application of technical standards (specified management standards and guidelines) whose impacts are variable depending upon where they are applied. The qualitative nature of effects is addressed in this Final Environmental Impact Statement. Specific impacts will be discussed in detail and in quantitative terms in regional and forest level plans prepared under these proposed regulations. An environmental impact statement will be prepared for such plans pursuant to Council on Environmental Quality and Forest Service National Environmental Policy Act regulations.

Summary—Final Environmental Impact Statement

Proposed Regulations for National Forest System Resource Planning, 1920 Land Management Planning, Forest Service, USDA

Responsible Federal Agency: United States Department of Agriculture, Washington, D.C. 20013.

Responsible Official: Bob Bergland, Secretary of Agriculture, Washington, D.C.

For Information Contact: Charles R. Hartgraves, Director, Land Management Planning, USDA Forest Service, P.O. Box 2417, Washington, D.C. 20013 (202/447-6697).

Date of Transmission to EPA and to the Public: Draft: May 7, 1979. Final: September 17, 1979.

Summary

I. The Department of Agriculture will issue regulations to guide land and resource management planning for the National Forest System. This Final Environmental Impact Statement analyzes and evaluates alternative sets of proposed regulations and identifies the Preferred Alternative (see Appendix F). The alternatives were developed in response to the Forest and Rangeland Renewable Resources Planning Act of 1974 (RPA), as amended by the National Forest Management Act of 1976 (NFMA).

To be understood, the regulations have to be read in their entirety. They are complex. Thus, many requirements can be fully understood and appreciated only upon a complete reading of several sections to ascertain relationships between requirements in one and those in another.

The NFMA requires that regulations be issued which describe the process for developing and revising land management plans for administrative units of the 187-million-acre National Forest System (NFS). The alternative regulations explain the process and contain management guidelines and standards which relate to the national, regional, and local resource goals established by the Forest Service Renewable Resources (RPA) Program. The process and guidelines described insure in various ways that economic, environmental, and ecological aspects are consistent with the RPA, Multiple Use-Sustained Yield Act, and other statutes which affect Forest Service activities. The regulations provide for integrated planning throughout the NFS for the management, protection, and use of timber, range, fish and wildlife habitat, water, recreation, and wilderness resources. The integration is accomplished with the aid of interdisciplinary teams, public participation, and is coordinated with the land management planning processes of States, local governments, and other Federal agencies.

The NFMA was enacted to resolve long-standing issues about managing National Forest resources. The central or primary issues and concerns which are discussed in this FEIS and which the proposed regulations address are:

—The conceptual framework for the integrated planning process.

—The interdisciplinary approach to planning.

—Diversity of tree species and plant and animal communities.

—The role of economic analysis.

—The determination of lands not suited for timber production.

—Departures (limitations on timber removal).

—Size of openings created by harvest cutting.

—Public participation.

—Management of wilderness areas, and disposition of roadless areas.

—Coordination in planning between Federal, State, and local governments.

—Protection of riparian areas.

II. Alternatives Considered In This Final Environmental Impact Statement.

There is an infinite variety of ways for language to capture the intent of NFMA in process, management standards, and guidelines. Alternatives presented in this FEIS cover language to address the central issues and concerns mentioned above. Since NFMA mandates development of regulations, a "no action" alternative was not created for presentation, discussion, and evaluation in the DEIS or in this FEIS. (For a description of pre-NFMA planning policy and direction, the reader is referred to Forest Service Manual 8200.)

Neither is a public comment alternative presented in this FEIS. Though the DEIS contains such an alternative (Alternative No. 5), it was conceptual, and consequently was difficult to analyze in terms of effects. Therefore, it was decided not to create and present a similar alternative in the FEIS. Instead, the public comment received was analyzed and used to create the FEIS Preferred Alternative. A summary of this comment is presented in section VII. It is further discussed in section IV, Alternatives Considered, in terms of how the comment contributed to the Preferred Alternative.

Alternatives considered in the FEIS are: 1. Forest Service Draft Regulations as published in the Federal Register, Vol. 43, No. 170, August 31, 1978, as further explained and evaluated in a published Environmental Assessment

Report, and Supplement, dated August 24, and September 12, 1978, respectively.

2. Environmental Group's proposals for § 219.10(d), as published in the Federal Register, August 31, 1978.

3. Timber Group's proposals for § 219.10(d), as published in the Federal Register, August 31, 1978.

4. Committee of Scientists Final Report to the Secretary of Agriculture, dated February 22, 1979, and recommended regulations attached thereto.

5. Public comment on the August 31, 1978 Draft Regulations; the summary or consensus view. This Alternative was only used in the Draft Environmental Impact Statement and was not evaluated in the Final Environmental Impact Statement. In the FEIS public comments from the May 4, 1979 Draft Environmental Impact Statement were analyzed and used to help develop the Preferred Alternative, Number 8.

6. The DEIS Preferred Alternative published May 4, 1979 in the Federal Register, Vol. 44, No. 88: Regulations with provisions for nationally established standards for protection of riparian areas and harvest cut openings.

7. Regulations identical in all respects to Alternative No. 6 EXCEPT that standards for protection of riparian areas and harvest cut opening sizes will be established through the regional planning process.

8. Revised and Final Regulations, the Preferred Alternative, developed in response to comments received on the DEIS.

III. NFMA requires an integrated plan for each administrative unit of the NFS. The planning process prescribed establishes an interdependency of land management and resource planning.

It is virtually impossible to quantify the specific effects of implementing any of the alternative regulation proposals. The regulations direct the process of preparing and revising plans, and have no direct effect on the human environment, nor do they commit land or resources. The regulations establish procedures for planning future commitments.

Effects on the production of goods and services are conjectural and cannot be verified quantitatively until the planning is completed. Anticipated impacts will be identified in plans prepared pursuant to the regulations and to the NEPA process.

Some general qualified effects or impacts of the alternatives are presented in table form by issues. For example, each alternative enhances plant and animal diversity, protects soil and water values and the visual resource, and ensures long term productivity. The relative contribution toward enhancement of each alternative is illustrated in the appropriate tables. The actual results, quantitatively, will not be known until individual plans are completed.

IV. Consultation with others, including the public, was extensive and was a major factor in developing the alternatives discussed in the DEIS and the FEIS Preferred Alternative. The public was invited to comment on the first draft of the regulations which appeared in the Federal Register August 31, 1978. Two public hearings were also conducted specifically to obtain views. From the initial inception of work to develop the regulations through to the present time, the Forest Service and the Department have maintained an open door policy with the public and interest groups to obtain information as well as to explain work and progress. Eighteen Committee of Scientists meetings were opened to the public, and a total of 737 individual responses containing 5,373 distinct references to various parts of the August 31, 1978 draft regulations were received, a substantial number of which were elaborate, detailed, and explicit. Included were letters from members of Congress, Federal and State Agencies, local governments, representatives of various interest groups, as well as the general public. As a consequence it was decided to revise the first draft of the regulations (August 31, 1978) and to republish them accompanied by a Draft Environmental Impact Statement. This appeared in the Federal Register, Vol. 40, No. 88, May 4, 1979. Since then another 245 responses have been received containing 1581 distinct comments, all of which have been analyzed and considered during the preparation of this FEIS.

Appendix "A" contains a list of Federal agencies, State governments, national organizations and individuals from whom written comments were received following publication of the first draft regulations on August 31, 1978. The list also indicates by (*) those from whom written comments were received on the DEIS published May 4, 1979 in the Federal Register.

All those who commented on, or who otherwise requested copies of the August 31, 1978 draft regulations, received a copy of the DEIS as published in the Federal Register on May 4, 1979. They also received a complete copy of the Forest and Rangeland Renewable Resources Planning Act of 1974 as amended by the National Forest Management Act of 1976. The Committee of Scientists Report and their Recommended Regulations, and the Forest Service Perferred Alternative Regulations were also printed in the May 4, 1979 Federal Register to accompany the DEIS, and were therefore available to reviewers. Consequently this material is not printed again in this FEIS but is made part of it by reference. Copies of the DEIS and the material which accompanied it are available to anyone upon written request.

All those groups or individuals who have commented on the DEIS will be sent a copy of this FEIS.

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I. Introduction

Legislative Development Background

The Forest and Rangeland Renewable Resources Planning Act of 1974 (RPA), as amended by the National Forest Management Act of 1976 (NFMA), is a comprehensive framework and primary source of direction to the Forest Service to fulfill its mandate to manage the National Forest System (NFS). The central element of the Act is the institution of land and resource managment planning as a basic means to achieve effective use and protection of renewable resources and a proper balance of the use of NFS lands.

Section 6 of the Act requires the Secretary of Agriculture to prescribe NFS land and resource management planning regulations. The standards and guidelines in these new regulations must be incorporated into NFS land and resource management plans and every effort is to be made to complete such plans by September 30, 1985.

An initial draft of the proposed regulations was published in the Federal Register, Vol. 43, No. 170, August 31, 1978 (pp. 39046–39059) for public review and comment. An Environmental Assessment Report and Supplement were also prepared dated August 24, and September 13, 1978, respectively. These draft regulations had been under preparation since the spring of 1977, when the Secretary of Agriculture

appointed a Committee of Scientists to provide advice and counsel on the development of the regulations required by Section 6 of NFMA. Publication of these first draft regulations prompted substantial comments, suggestions, and recommendations from the general public, and various resource and environmental groups. It was, therefore, decided to revise the August 31, 1978 draft regulations and to submit alternative regulations to the public in draft form to be accompanied by a Draft Environmental Impact Statement (DEIS). These draft alternatives as influenced by the subsequent public comment, are the basis for the Preferred Alternative presented in this FEIS.

The regulations (the Preferred Alternative) may be implemented no sooner than 30 days following the date the Notice of Availability of this FEIS is published in the Federal Register by the Environmental Protection Agency.

Management of the National Forest System (NFS)

The Forest Service administers 187 million acres of Federal land located in 44 states, Puerto Rico, and the Virgin Islands. The management of those lands also affects all or portions of about 39 million acres of intermingled State and privately owned lands. Except where special, restricted uses are prescribed by law, this Federal land is managed under the concept of multiple use (as defined by the Multiple Use-Sustained Yield Act of 1960) for a variety of products, services, and uses including wood, water, wildlife and fish, forage, wilderness, and outdoor recreation. The enduring resource of the National Forest System is its capability to meet a wide variety of public needs. Multiple-use management provides the architecture for harmoniously nurturing the balance between productive ecosystem longevity and societal desires. Careful analysis of use relationships and available opportunities within a context of equitable distribution and just compensation are required to meet the goals embodied in the Multiple Use-Sustained Yield Act of 1960. So that the various uses are harmonized to minimize conflicts and adverse impacts on the land, the relative values of the different resources are considered in determining forest and rangeland resource use patterns that will meet the needs of the American people.

Evolution of National Forest System Planning

During the early 1900's, most National Forest System lands were inaccessible, public demands for goods and services were low, and conflicts among resource uses were minor. Priority was given to protecting these public lands from fires, damaging insects and diseases, and unauthorized use. Resource production and use served local rather than regional or national needs. Most Forest Service planning in that era centered on specific work plans for forest land rehabilitation, protection, and reforestation.

By the late 1930's, however, there existed a general public awareness that more intensive management of the National Forests—and the utilization of their various renewable resources on a sustained-yield basis—should also serve the national interest. This prevalent philosophy, coupled with a need for vital timber during World War II, spawned a dramatic expansion of National Forest resource management and utilization in the 1940's and 1950's.

Although early laws governing the establishment and administration of the National Forests referred only to timber and water resources, the other resources—wildlife, forage, and outdoor recreation—have always been protected and managed. By 1939, the Forest Service had made clear its policy to administer the National Forests on multiple-use principles.

Following World War II, the agency completed an appraisal of the Nation's forest situation and developed the concept of composite resource planning. The various resources were inventoried, and a composite plan prepared that described types of vegetation, location of streams and other bodies of water, areas requiring special management, planned recreation areas, primary transportation routes, and other pertinent factors.

Recognizing the lack of specific statutory direction to manage all the resources of the National Forests under multiple-use principles, the Forest Service proposed a multiple-use act in the late 1950's. Passage of the Multiple Use-Sustained Yield Act of 1960 provided congressional endorsement of the Forest Service policy and practice of equal consideration of all National Forest renewable resources.

Land management planning was formalized into a distinct process upon passage of the Multiple Use-Sustained Yield Act. Until shortly after passage of the National Environmental Policy Act of 1969, this process was commonly referred to as "multiple-use planning," and the basic documents that described how the various resource uses would be coordinated were called "multiple-use plans." Separate plans were made for each National Forest Ranger District.

These multiple-use plans usually zoned National Forest System land and included specific coordinating requirements to ensure compatability of resource uses. They did not set resource development goals. Such goals were established by separate resources development plans prepared for each National Forest. The Ranger District multiple-use plans were used to coordinate the actions taken to achieve the objectives of the National Forest System resource development plans.

District Rangers were also required to prepare a special impact analysis before undertaking any significance resource development project. The analysis contained a statement on the nature and scope of the project, the expected impact the project would have on each resource, and how the project would be carried out to conform to the multiple-use plan requirements. The format of these reports was similar to that of present-day environmental impact statements.

In the early 1960's, another factor had also entered the resource picture—intensified public concern for environmental policy. Suddenly, it seemed, the Nation realized that clean air, clean water, and natural beauty were just as important to its standard of living as industrial products. Increased concern for the Nation's forest lands was part of this awakening environmental consciousness. Many Americans became aware of the National Forest System and realized that although these public lands contained substantial amounts of the Nation's remaining natural resources, there were limits to their uses.

The desire for a quality environment, however, did not lessen the need for forest products and services from the National Forests. On the contrary, while concern for the environment reached new heights, so did the demand for products and services. One result of this was the passage of the 1964 Wilderness Act. Since the 1920's, the Forest Service has identified and designated areas of high wilderness value on the National Forests. Development of these areas was precluded by direction of the Secretary of Agriculture or the Chief, Forest Service. the Wilderness Act created the National Wilderness Preservation System and provided for the designation of Federal land to be preserved in their natural state.

By the mid-1960's, the Forest Service was caught in a dilemma. On one hand, conflicting demands for forest resources were increasing rapidly; on the other hand, the renewable resource base was perceived as shrinking with the implementation of the Wilderness Act. Some critics claimed that management of the National Forest System was out of

balance, that some uses were being increased at the expense of others, and that the Forest Service was ignoring its mandate to manage the National Forest System for multiple uses. And, seemingly, the public wasn't being given a chance to formally influence the Forest Service decisionmaking process. The Forest Service land management planning process changed in three major aspects in response to these public concerns and to the National Environmental Policy Act (NEPA) of 1969.

The first change converted Ranger District multiple-use plans to land management unit plans. Unit plans are considerably more detailed. They apply to geographic areas containing similar social and physical resources and land characteristics rather than to Ranger Districts, and they are accompanied by environmental impact statements.

The second change incorporated more strict interdisciplinary analyses into the planning process. Before NEPA, multiple-use plans received multidisciplinary review. After NEPA, review was accomplished through interdisciplinary interaction.

The third change formally involved the public in forming and reviewing unit plans.

In August 1974, Congress enacted the Forest and Rangeland Renewable Resources Planning Act (RPA). Although it did not significantly change existing Forest Service land management planning procedures, it made the development and maintenance of National Forest System land and resource management unit plans statutory requirements. It re-emphasized that an interdisciplinary approach be used in the development and maintenance of land management plans. It required that periodic comprehensive programs be developed that would integrate all Forest Service activities. And it more directly involved Congress in evaluating Forest Service programs and in assigning priorities. The RPA also provided for an assessment of the Nation's renewable resources, including those of the National Forest System. This Assessment provides the basic information for resource management planning at national, regional, and local levels.

The National Forest Management Act of 1976 amended RPA to provide additional statutory direction on the preparation and revision of National Forest System land and resource management plans.

Major highlights of NFMA are land management planning, timber management actions, and public participation in Forest Service decisionmaking. Also featured are requirements for coordination with planning processes of State and local governments and other Federal agencies, and an interdisciplinary approach to plan development and maintenance. It reaches beyond the 187 million acres of the National Forest System to recognize the importance of scientific research and cooperation with State and local governments and private landowners. So, in effect, it addresses all three major areas of Forest Service operations in carrying out its national forestry leadership role—management of the National Forest System, natural resources research, and cooperative forestry assistance to State and private landowners.

A major part of the NFMA is devoted to strengthening the Forest and Rangeland Renewable Resources Planning Act (RPA). All but one of the first 12 sections are amendments to it, nearly tripling the length of the Resources Planning Act. Some of these amendments include requirements for recommendations in the RPA Program which evaluate major Forest Service program objectives; explain opportunities for all forest and rangeland owners to improve their lands; recognize the need to improve and protect soil, water and air; and state national goals relating to all renewable resources.

Land management planning direction is the core of the Act. Regulations—the Preferred Alternative presented in this FEIS—will be promulgated which prescribe the process for development and revision of land management plans. Management guidelines will deal with overall NFS land management and require that lands be identified according to their suitability for resource management.

These guidelines will relate to the RPA Program goals to ensure that economic, environmental, and ecological aspects are consistent with the Multiple-Use Sustained-Yield Act and RPA. They will provide for the diversity of tree species and plant and animal communities, and for research, management evaluation, and monitoring to prevent impairment of the land's productivity.

Each administrative unit of the National Forest System will prepare, through an interdisciplinary team approach and with the aid of public participation, an integrated, comprehensive land management plan to be revised at least every 10 years (NFMA permits revision on a 15 year cycle). The land management plan and supporting functional plans must be integrated.

The NFMA contains direction on harvest scheduling practices followed by the Forest Service. The annual allowable sale quantity (harvest) from each National Forest will generally be limited to a quantity equal to or less than a quantity which can be removed annually on a sustained-yield basis. The Act gives the flexibility to depart from this policy through land management planning, including public participation. Departures from the standard policy must be in harmony with multiple-use management objectives developed during the planning process and described in the land management plan.

Land areas not suitable for timber production will be identified in land management plans considering physical, economic and other factors. These lands are not to be harvested for 10 years except for salvage sales or sales to protect other multiple-use values.

Such lands will be reviewed every 10 years thereafter and may be returned to production if appropriate.

Silvicultural standards will insure that, generally, stands of trees shall be harvested when mature (culmination of mean annual increment of growth). However, timber stand improvement measures, salvage operations and removal of trees for multiple-use purposes are not precluded. This means that stands of trees within the National Forests in general shall be sawtimber rather than pulpwood size before harvesting. The Act also directs that diversity of plant and animal communities should be provided for and appropriate tree species diversity maintained. In brief, there should be no large-scale conversations of National Forest lands to a single-tree species.

The Act incorporates into law the substance of the so-called "Church Guidelines." These guidelines include the caution that clearcutting should only be used where it is the optimum method.

Public participation in development and revision of land and resource management planning was a prime consideration in congressional thinking. The phrases "public participation" or "public involvement" are used 11 times in the Act and are clearly indicated in other sections.

Regulations must be written to carry out the public participation aspects of the law. Not only has Congress ordered fuller public participation in the decisionmaking process, but it also made rules so the public can participate with relative ease.

A Committee of Scientists—composed of non-Forest Service personnel—was established to help develop regulations for all land management planning, including timber and other resource

plans, by providing scientific advice and counsel, and to insure that the planning process developed is interdisciplinary.

Direction for Planning and Management

Planning for resource allocation and the conduct of subsequent management practices require (1) the best available resource data and information, including the views of citizens and special interest groups, other Federal, State and local agencies, and (2) the synthesis and evaluation of such data and information utilizing professional and administrative judgments as to how best to meet statutory goals and objectives and achieve the interests and expectations of the public. To accommodate these requirements, all Forest Service activities are grouped into 12 program elements comprised of eight resource elements (recreation, wilderness, wildlife and fish, range, timber, water, minerals, and human and community development) and four support elements (protection, lands, soils, and facilities).

Resource program elements are defined as major Forest Service mission-oriented endeavors that fulfill statutory or executive requirements and indicate a collection of activities from the various operating programs required to accomplish the agency mission.

Support program elements are activities and costs that do not primarily benefit a single resource element. However, these elements encompass the activities that are necessary to maintain and facilitate outputs of several or all resource elements.

The mission elements that follow for each program element provide overall national direction for the activities within that element.

Land management planning is the principal device for conveying management direction to and from the national level to National Forest planning areas.

Resource Program Elements

1. Recreation. The primary mission of this element is to provide outdoor recreation opportunities for the Nation. This includes all activities necessary to protect, administer, and develop outdoor recreational opportunities within the National Forest System so that they meet their appropriate share of the Nation's existing and anticipated demand compatible with other resource values; protect, manage, and provide trails and other access to the scenic and cultural resources within the National Forest System; conduct research to improve the effectiveness of providing and managing outdoor recreational opportunities; and provide technical assistance and advice to non-Federal landowners for dispersed recreation.

2. Wilderness. The primary mission of this element is to secure the benefits of an enduring resource of wilderness by assuring that suitable, needed, and available National Forest System lands will be designated for preservation and protection in their natural condition. National Forest System wilderness areas are administered for the use and enjoyment of the American people so as to leave the resource unimpaired for future use and enjoyment, to preserve their wilderness character, and to provide for the gathering and disseminating of information regarding their use.

The classification and study of National Forest System areas for possible wilderness designation are included in the Lands support element, while the management of such areas is included in the Recreation resource element. Wilderness research is related to recreation research to provide knowledge to manage and protect wildernesses and unique ecological features.

3. Wildlife and Fish. The primary mission of this element is to provide productive wildlife and fish habitats, with special emphasis on threatened and endangered species. Management of wildlife and fish habitats is closely coordinated with the States, because States have prime responsibility for management of wildlife and fish populations. This coordination includes maintaining close working relations among National Forest System units and other Federal, State, and private land managers. The element includes activities necessary to protect, administer and develop National Forest System wildlife and fish habitats; assist non-Federal land managers through cooperative forestry programs; and develop new knowledge through research on the environmental requirements of wildlife and fish and attainable management alternatives under these requirements.

4. Range. The primary mission of this element is to provide for efficient ways of livestock grazing on forest and rangelands commensurate with other commodity, environmental, social, and aesthetic needs. Ecological and management information about range ecosystems is provided for non-livestock purposes, such as endangered plants and wild free-roaming horses and burros. This element includes all those activities that bear directly upon management, use, and protection of National Forest System range resources; cooperative activities for the use and improvement of non-Federal forested ranges; and research to provide a sound technical and ecological base for range management, use and protection.

5. Timber. The primary mission of this element is to enhance the growth, utilization, and utility of wood and wood products to help meet the Nation's short- and long-term needs. It includes management activities in the National Forest System and on non-Federal lands, as well as research activities that contribute to the improvement, growth, and timely and efficient harvests of timber from forest land, consistent with other resource values; the efficient processing and utilization of wood and wood-related products; and the development of better management methods.

6. Water. The primary mission of this element is to protect, conserve, and enhance water resources within the National Forest System consistent with other resource values. This element also includes watershed and river basin planning and development, in cooperation with States and other agencies, designed to increase knowledge about the water resource. Included are research and cooperative activities to meet water quality and quantity standards onsite and offsite to reduce pollution and to improve water resource features.

7. Minerals. The primary mission of this element is to integrate the exploration and development of mineral resources within the National Forest System with the use and protection of other resource values. Research and cooperative activities related to the reclamation of mined lands are also included.

8. Human and Community Development. The primary mission of this element is to help people and communities to help themselves. The element includes activities that provide: Youth development through resource conservation work and learning experiences; adult employment and training opportunities through various Federal human resource programs; rural community planning development information and services; and technical forestry assistance and research for urban areas in the establishment, management, and protection of open space and the use of trees and woody shrubs.

Support Program Elements

1. Protection. The primary mission of this element is to protect and maintain forest and rangelands. It includes insect and disease control, fire protection, law enforcement, development of knowledge through research, and the technical assistance needed for National Forest

System and other public and private forest and rangelands.

2. Lands. The primary mission of this element is to assist in land management planning and provide special land-use administration, landownership adjustment, multiresource studies, and new knowledge through research which primarily benefits multiple resource element outputs. These activities cover technical assistance and cooperation on non-Federal lands as well as within the National Forest System.

3. Soils. The primary mission of this element is to protect, conserve, and enhance the soil productivity of forest and rangelands. It includes the development of new knowledge through research, surveys, protection, rehabilitation, and improvement activities directed toward non-Federal lands as well as within the National Forest System.

4. Facilities. The primary mission of this element is to provide and maintain capital improvements such as buildings, roads, fences, bridges, dams, and airfields.

Central Issues and Concerns Addressed by Alternative Regulations

The NFMA was enacted to resolve long-standing issues concerning the management of National Forest resources. It clarified rules about the use of silvicultural practices and required that certain land and resource management planning practices be developed and used. The alternative regulations described in the DEIS and this FEIS respond to the NFMA by prescribing a planning process and technical standards and guidelines to govern planning and management activities. The central or primary issues and concerns which the alternative regulations attempt to address are described below. These issues are further discussed in two ways: First in section IV in terms of how the various alternative regulations address the issues; and second, in section V in terms of relative effects (on issues) of the alternatives on certain factors.

1. The Conceptual Framework for The Integrated Planning Process. There are many major proven conceptual models for planning-decisionmaking policy formulation. Which model or combination is best suited to congressional direction that the Forest Service define a unified planning process with supporting guidelines and standards to implement on each administrative unit of the National Forest System? Should emphasis be on process or on prescription? To what extent and detail should the relationships among and between planning levels and resource management functions be defined? Does planning proceed from the top down, from the bottom up, or through iterative, negotiated cycles between levels?

2. The Interdisciplinary Approach to Planning. The primary concerns are the purpose of the interdisciplinary team, who can be members, what disciplines should be represented, what should be the professional and technical qualifications of teams members, and the responsibilities of team leaders?

3. Diversity of Tree Species and Plant and Animal Communities. Congressional intent concerning "diversity" seems clear: it will be considered in planning, and it is to be provided and maintained by management. The basic issue is whether the regulations should be very specific or provide discretionary authority in providing diversity through management practices and activities. Of further concern is whether to prescribe by regulation how to measure diversity, and should existing diversity be maintained and reduced only to achieve necessary multiple-use objectives.

4. The Role of Economic Analysis. NFMA requires economic analysis of management program alternatives to determine economic consequences, and that economic analysis will be undertaken at all appropriate places throughout the planning process. At issue is the nature of economic tests which might be made, and whether Congress intended that benefits must exceed costs for each and every proposed management practice.

5. Determination of Lands Not Suited for Timber Production. A primary issue is the role that economics should exert in determining lands not suited for timber production. Some critics argue that NFMA prohibits management practices where costs exceed benefits and that, as a consequence, timber harvesting may not occur where benefits are less than costs. Another interpretation is that a strict economic test is not required, but rather that economics be one of several criteria used to determine suitability for harvest.

6. Departures (Limitations on Timber Removal). The National Forest Management Act limits the sale of timber from each National Forest to a quantity which can be removed annually in perpetuity on a sustained-yield basis with discretion to depart from this policy in order to meet overall multiple-use objectives. This provision to depart is not in Section 6, but in Section 11 (or Section 13 of the amended RPA). This separation has raised the issue of whether the determination of the timber allowable sale quantity and departures should be handled outside of the forest planning process or as a separate and distinct step after the forest plan has been completed. Another concern is the question of what conditions should trigger the formulation of a departure alternative, as well as how the approval process for such an alternative might be determined.

7. Size of Openings Created by Harvest Cutting. Controversy over timber harvest methods on National Forest lands sparked the NFMA legislation. Congress debated whether to mandate strict nondiscretionary prescriptions for the management of National Forest lands and resources, or to require development of regulations to guide a planning process which would incorporate certain technical standards and guidelines to govern management activities. The latter course was taken, but the issue of prescription vs. planning process continued during development of the proposed regulations. The crucial issue is how specific should be the standards and guidelines for planning and managing each of the resources. For example, should the regulations prescribe the maximum size of openings created by harvest cuts, or instead should they describe the process by which the size of such openings would be determined on the basis of more site specific information.

8. Public Participation. The minimal elements of adequate public involvement are mentioned in the NFMA: The public must be adequately informed throughout the planning process; plans must be available in convient locations; documents forming a plan must be integrated and located together to facilitate public review; and procedures for public participation must be identified in regulations covering the planning process.

The issues are the adequacy provided within the regulations for allowing the public to influence the decision process. In the past, this has included the use of the administrative review process to alter the decisions. There is substantial doubt as to whether the appeal process, as previously applied, is permitted under NFMA. Should the scope and level of public involvement be described in regulations or be discretionary? Should regulations define the agency as an active participant in representative democracy? In the past this role has been reserved for elected officials. Should public participation be required in certain steps of the planning process?

9. Management of Wilderness Areas and Disposition of Roadless Areas. NFMA provides little guidance about wilderness resource planning. Issues to resolve through the proposed regulations

are the need to identify and appraise additional candidate areas and whether to establish maximum allowable levels of use.

10. Coordination in Land Use Planning between Federal, State and Local Governments. Planning by different entities that does not consider mutual goals and policies can frustrate National Forest management. The issues are the need to be aware of, evaluate, and consider the plans and policies of other planning bodies, and to involve appropriate representatives from them in National Forest planning activities.

11. Protection of Riparian Areas. At issue is the question of whether regulations should prescriptively designate a uniform protective strip around water bodies or provide criteria for protection that allows for local management variability.

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II. The Affected Environment

The affected environment is the entire National Forest System, approximately 187 million acres of Federal land administered by the Forest Service, and about 39 million acres of intermingled State and privately owned lands. The formal System consists of 154 National Forests totalling 183.4 million acres, 19 National Grasslands with 3.8 million acres, and about 0.5 million acres of smaller purchase units, land utilization projects, and research areas. Initial reservation of public domain land contributed 160 million acres to the System with the remaining 28 million acres acquired by purchase, exhange, transfer, or other forms of acquisition.

The majority of land, 163.8 million acres, is located in the western portion of the United States, including Alaska. Approximately 23.9 million acres are located in the East. Although the land base is not evenly distributed throughout the country, National Forests and Grasslands provide an opportunity for all people to enjoy the many goods and services they offer. Lands within the NFS span a broad range of land forms and environment. For a discussion of land surface divisions, the reader is referred to work by Edwin H. Hammond.[1]

Vegetation. The vegetation of the National Forest System is as diverse as the plains, valleys, and mountains on which it grows.

For a thorough discussion about the relationship of vegetation to various generalized ecosystems in this Nation, the reader is referred to work by Robert G. Bailey.[2] Potential natural vegetation of the United States was mapped by A. W. Kuchler in 1966.[3] This mapping represents vegetation that would occur naturally in a given area if succession were not interrupted.

Air. The Nation's air quality is mandated by the Clean Air Act (Pub. L. 88–206) and its amendments. The 1977 amendments (Pub. L. 95–95) specified, among other things, certain Federal areas, such as national parks, wilderness, national monuments, national seashores, and other areas of special national or regional values, be designated for air quality protection.

The amendment adopted a system by which the entire nation would be designated specific air quality classes. Three categories were established—Class I, Class II, and Class III. Presently, each class represents a defined, allowable increase in particulate matter and sulfur dioxide. Class I allows the smallest pollution increment.

Clean Air Act Amendments initially classfied all lands. Mandatory Class I status was given to international parks, national wilderness areas over 5,000 acres in size, national memorial parks that exceed 5,000 acres, and national parks that exceed 6,000 acres and were in existence on the date of enactment of the 1977 Clean Air Act Amendments. All other areas (except those redesignated Class I by regulation prior to August 7, 1977), were designated Class II.

Section 164 of the Act gives State and federally recognized Indian Tribes authority to redesignate classifications for areas within their geographic boundaries. This authority was constrained to the extent that mandatory Class I areas could not be redesignated and certain other areas may be redesignated only as Class I or II.

Environmental Amenities. Perception of our environment is primarily a visual experience, but our senses of smell, taste, touch, and hearing contribute to complete our perception of environmental amenities. Mainenance of air quality provides environments pleasant to our senses of smell and enhances opportunities to enjoy expanded views and vistas.

The landscape character of this Nation can be described in terms of land and rock forms (topography), waterbodies, and vegetative patterns. These are components of the visual resource that, when seen in varying combinations, can be used to evaluate the visual quality of an area. Maintenance and protection of the visual resource is an important factor for the millions of people who view National Forests, and management of this resource is an important part of total land and resource management within the National Forest System.

Noise, or more precisely the lack of it, is an amenity savored by the American public. Complete solitude may usually

[1] Hammond, Edwin H. 1964. Analysis of Properties in Land Form Geography: An application to Broad Scale Land Form Mapping. Annals of the Association of American Geographers. Volume 54:11–23.

[2] Bailey, Robert G. 1976. Ecoregions to the United States. U.S. Department of Agriculture. Forest Service. Map and Discussion.

[3] Kuchler, A. W. 1966. Potential Natural Vegetation Map. U.S. Department of Interior. Geological Survey. Map and Discussion.

be obtained within wilderness and more remote roadless areas. A quiet, relaxed environment can be found throughout most National Forests and Grasslands. But other users often prefer noise and bustle. The management challenge for the National Forest System is to provide a cross-section of environments the many publics wish to use.

Resource Use. Management of the lands and renewable surface resources of the National Forest System emphasizes the continuous production of multiple-use benefits for the American people. In contrast, management emphasis for lands administered by the National Park Service is preservation of areas of natural, historical, recreational, or scenic attractions. The National Wildlife Refuges are managed to protect various wildlife species.

For a more complete description of the resource uses made of and planned for on the National Forest System, the reader is urged to review the Draft Environmental Impact Statement for the 1980 Update of the Forest Service RPA Program. This document, released for public review on March 27, 1979, is available from Forest Service Regional Offices and headquarters in Washington, D.C.

Cultural Resource. Development of this Nation can be traced through many remaining archeological and historical sites, an invaluable asset for study of what has preceded us. However, the cultural resource on National Forests and Grasslands is neither fully discovered nor totally understood. Historical sites are being discovered as we continue to know more of this land. Though the resource has not been completely inventoried, it is protected by law and is recognized as an integral part of the total Forest Service land and resource management program.

Socio-economic Environment. This is related to population and demand for goods and services. Our 220 million residents rely upon the wealth of natural resources this country can provide for food, shelter, and employment. In addition, many seek escape from normal activities that surround them and find relief in natural attractions that abound in mountains, lakes, and valleys of this diverse land. The National Forest System provides both physical needs essential for comfort and diversified environments that promote quality of life.

Direct cash receipts from the National Forest System in fiscal year 1977 totaled a little more than $691.5 million. Timber receipts were by far the largest source, with receipts from mineral leases and royalties second. Fees from grazing and other permits were third. Twenty-five percent of the receipts received were returned to counties and States where the revenue originated for the purpose of funding schools and developing secondary roads. Additional receipts in the form of deposits and value added bring the total to more than $1 billion.

Total dollar receipts are not a large factor when compared to the Nation's income, but they do represent much more then returns to the U.S. Treasury. The direct benefit created by the sale and use of National Forest and Grassland resources accounts for more than 180,000 person-years of employment. Indirect benefits from supporting industries add additional employment and dollar incomes to this total. Investments in transportation systems, cooperative assistance, and other non-qualifiable factors are also positive benefits derived from the National Forest System.

For many, the National Forest System is a special place remembered because of a recreational experience. It has symbolic meaning for those living within its shadows or concern for management of this Federal land, whether they depend upon it, have intimate knowledge of it, or only recognize it as "being there".

Land use decisions can affect every individual. Those with an economic or specialized recreation interest can be affected if areas are identified for wilderness use. Others with more of a preservation orientation may be disturbed if a favorite roadless area becomes available for use of its commodity resources, and roads are built into the area. Various uses of land are complex in nature and at times conflicting. What is ideal for one group of individuals may adversely affect others. Within this framework, the process for planning and managing the National Forest System must occur.

III. Evaluation Criteria

Criteria for evaluating alternative regulations are based primarily on the specific guidelines and standards identified in the National Forest Management Act. The options for developing the regulations are limited to some extent by legal requirements and the intent of the law. This not only narrows the range of available alternatives but also reduces the degree of evaluation required in proposing the regulations. The following evaluation criteria will be applied:

1. NFMA Requirements. Alternatives will be evaluated on the basis of how well they achieve the specific requirements of the National Forest Management Act. In some instances it may be necessary to interpret the "intent" of the Act in order to make this evaluation.

2. Scientific and Technical Adequacy. A number of issues contained in the proposed regulations relate to scientific and highly technical aspects of natural resource management. While there may be general agreement among the scientific community on most of these issues, some disagreement does exist and much political controversy has surrounded some of the technical aspects of management. The scientific and technical aspects of various alternatives must be separated from the political controversies which surround them, and evaluated solely on the basis of generally accepted scientific knowledge.

3. Acceptability to Diverse Publics. General acceptance of the regulations is essential if the planning process is to be responsive to the specific concerns identified during the legislative history of the Act. Alternatives will be evaluated on the basis of input from public participation. Acceptability will continue to be evaluated as the preferred alternative regulations are promulgated and put to use. Public feedback will be influential in the development and use of supplementary material essential to carrying out the planning process.

4. Achievement of RPA Program Goals. The NFMA provides for a planning process as part of the RPA Program development process, and requires standards and guidelines to govern management activities. These management activities in turn affect commodity and amenity production goals and targets (outputs) established in the RPA Program. In addition to identifying outputs, the Program must also specify the results anticipated and the benefits associated with investments, and compare the inputs and anticipated costs with the total related benefits, direct and indirect returns. The costs and benefits of producing commodities is considered within a framework of environmental protection: Program provisions must also protect and where appropriate, improve the quality of soil, water, and air resources.

Alternatives will be evaluated recognizing these dual goals—commodity production and environmental protection. For environmental protection, alternatives will be judged on the extent to which they provide safeguards against resource damage or abuse. This reflects how the alternatives provide for or improve the non-commodity or amenity values. For commodities, the

alternatives will be judged on the basis of their tendency to maintain or increase supply goals (targets) consistent with the evolving RPA Program, using timber as the commodity affected.

5. Compliance with Executive Order No. 12044. Alternatives will be evaulated against direction that regulations be as simple and clear as possible; that regulations shall achieve legislative goals effectively and efficiently; that regulations shall not impose unnecessary burdens on the economy, on individuals, on public or private organizations, or on State and local governments.

6. Accountability. Evaluation will be made as to how visible accountability is made through regulation in terms of who is responsible for actions and decisions.

7. Capability to Implement. Forest Service programs and personnel requirements are subject to constraints set by Congress and the Executive branch. Alternatives will be evaluated in light of personnel and skill requirements, and time required to undertake and complete planning actions specified.

8. Flexibility. In the application of resource management standards and guidelines, it must be recognized that local resource conditions vary considerably, thus necessitating special requirements or exceptions. Alternatives will be evaluated on the basis of the extent to which they permit local management discretion. Procedural standards necessary to address special needs and exceptions must be judged on the basis of their ability to maintain quality, conformity, and adequate review of management actions while not burdening the entire management systems with trivial details.

IV. Alternatives Considered

Many requirements in the alternative regulations cannot be understood without reading several sections to ascertain the relationships between requirements in one and those of another. Therefore, the reader is urged to read and study the regulations in their entirety.

The purpose of this section is to describe the substantive alternatives which have been considered during the process of developing both the draft and the proposed final regulations for land management planning for the NFS. This section concludes with a description of the Preferred Alternative for this FEIS, Alternative No. 8.

Organization of this Section. The organization of this section is similar to that of the DEIS (Federal Register, May 4, 1979); however, some changes have been made in the presentation of material for the purposes of clarity and reader understanding. Alternative No. 5 in the DEIS dealt with public comments on the original draft regulations which appeared in the Federal Register on August 31, 1978. These public comments were used in the evaluation and revision of the original draft regulations and are reflected in Alternative 6 (the preferred alternative) of the DEIS. Following publication and distribution of the DEIS, the Department received 1581 additional specific comments which dealt with the DEIS preferred alternative (Alternative 6). Since Alternative 5 dealt with comments received on the original draft regulation only. This information is available in the May 4, 1979, DEIS and, therefore, is not repeated in this FEIS.

This section is now organized as follows:

A summary description of alternatives is provided for each of the alternatives (with the exception of Alternative 5) identified in the DEIS. These alternatives include the Planning Process Framework, Alternative 1, Alternative 2, Alternative 3, Alternative 4, Alternative 6 (DEIS preferred alternative), and Alternative 7.

A description of Alternatives 1,2,3,4,6, and 7 relative to the issues identified in Section I of this document.

A table which identifies the substantive changes which the Department now proposes to make to Alternative 6 of the DEIS as a result of internal review and public review and comment. This table shows the location of changes and the reason and nature for changes to Alternative 6. These changes constitute Alternative 8, the preferred alternative of this FEIS.

A summary description of Alternative 8 (the preferred alternative of this FEIS).

A description of Alternative 8 as it relates to the 11 issues identified in Section I of this document.

Summary Description of DEIS Alternatives

A variety of approaches could be used to develop regulations in response to Section 6 of the NFMA. Variations within the actual planning process, the definitions of specific terms, and establishment of various standards could be developed in numerous ways.

There are at least two sets of alternatives to develop and consider. One set concerns planning precess. The other concerns regulatory language, style, and structure in terms of describing the rules which are to be applied through the planning process to management of National Forest System lands and resources.

The Planning Process Framework: The Forest Service has been involved since its creation in the development of a land management process (see Section I). This process for allocating resources, determining outputs, and measuring impacts and tradeoffs has evolved from practical experience and application mostly at the forest level. Intense public interest in management of the National Forests has produced modifications in the evolving planning process. This public interest culminated in passage of the NFMA which requires the Forest Service to define, through rulemaking, a unified planning process with supporting guidelines and standards to be implemented on every administrative unit of the National Forest System. NFMA thus created the need to evaluate current planning and decisionmaking in detail. It set the stage for developing the function and content of land management plans. If the present planning system is to be improved, as NFMA strongly implies, then knowledge is needed about general planning theory. This would provide a conceptual basis for developing operational planning process alternatives.

The advantages and limitations of various planning process concepts and approach possibilities are described in material appended to and made part of the minutes of the May 24–26, 1977 Committee of Scientists Meeting. A brief description of planning concepts and approaches appears in Appendix "B" of this FEIS.

The alternative regulations presented in this FEIS are a composite structure of mixed scanning and the systems theory, and the mutual causal approach. This selection best provides for the interdisciplinary approach to integrated planning mandated by NFMA.

Alternatives for Regulation Language to Address Central Issues

NFMA mandates development of regulations to set forth a process for the development, maintenance, and revision of National Forest System land and resource management plans. The regulations are also to contain standards and guidelines to govern the conduct of management activities. As a consequence of this mandate, a "no action" alternative was not created for presentation, discussion, and evaluation in the DEIS or this FEIS. The only realistic "no action" alternative might have been planning as currently practiced according to direction in Forest Service Manual 8200. The continuation of this direction is clearly not what Congress intended by enacting NFMA.

There are an infinite variety of ways for language to capture the intent of NFMA in management guidelines and

standards. The language is presented in a reasonable range of alternatives to address the central issues and concerns presented in Section I.

The various alternative language sets proposed are described below and are arranged by source (see the Summary, Part II) in the order corresponding to the eleven central issues identified in Section I. However, in the interest of brevity, and to facilitate analysis, some of the language presented is in summary form. All of the original material, including public comments, is available for review in its original form at Forest Service Headquarters, in Room 4021 South Agriculture Building, Washington, D.C.

This information includes the following: (1) Draft Regulations, August 31, 1979 as published in the Federal Register, Vol. 44, No. 170, including language proposals by Environmental and Timber groups.

(2) Committee of Scientists Report of February 22, 1979 to the Secretary, and suggested regulations, published in the Federal Register, Vol. 44, No. 88, May 4, 1979.

(3) Forest Service Revised Draft Regulations, the Preferred Alternative (No. 6) of the DEIS, published in the Federal Register, Vol. 44, No. 88, May 4, 1979, as part of the DEIS.

(4) Public comment on item number one (1) above.

(5) Public comment on item number three (3) above.

Items (1), (2), and (3) above have already been published with the DEIS and made available to the public. Consequently, they are not printed again in this FEIS. Instead they are incorporated herein by reference. Copies will be made available upon receipt of written request.

A summary description of the DEIS alternatives 1, 2, 3, 4, 6, and 7 is provided below. Each alternative is briefly described or characterized as follows:

Alternative 1—Forest Service Draft Regulations (Federal Register August 31, 1978). The original draft regulations are largely procedural in nature. The process which is to be followed in making land management decisions is outlined with greatest emphasis upon planning at the forest level. National, regional, and forest levels of planning are implied; however, the draft contains very little detail for regional planning. For the most part, the resource standards and guidelines which appear in the draft can be characterized as broad statements of concerns which must be addressed throughout the planning process. For several issues, the draft language is merely a restatement of the NFMA requirements. The management standards for determining lands not suitable for timber production are among the most detailed of all the standards presented. The draft requires both biological growth minimums and economic efficiency considerations. The biological growth minimums are not specified nationally, but are required to be stated in the regional plans. Protection standards for streams and lakes are not specified, but are required to be stated in the forest plans. Standards for selection of silvicultural systems and for size limits for openings created by cutting are to be determined by the regional planning process. The administrative appeals process would remain unchanged from the present situation. Departures would be handled at the forest planning level. Throughout the draft, the primary emphasis is upon procedures to be followed and concerns to be addressed, all within a framework which would permit a great deal of local (forest level) management discretion. It is functional in its approach to formulating standards and guidelines, and not specific that the determinations of localized standards and guidelines is part of, and as a consequence a result of the planning process.

Alternative 2—Environmental Groups' Proposals for ™219.10(d) (Federal Register August 31, 1978). This alternative addresses only two issues; the determination of lands not suitable for timber production, and procedures for allowing departures from nondeclining yield. This proposal specifies a national minimum biological growth potential for timber production. Under the requirements of this alternative, no timber harvesting would occur for at least 10 years on National Forest System lands on which the biological growth potential is below 50 cubic feet per acre per year growth of industrial wood in natural stands. There are several other factors to be used in the determination, including size and location of isolated tracts, nonmarketable species, slope and soil stability. In addition to these constraints, an economic efficiency test is required for the determination. Lands are not to be harvested for at least 10 years if direct benefits from growing and harvesting timber are less than the anticipated direct costs to the government, including interest on capital investments. Direct costs and direct benefits are defined. This alternative stipulates that departures may be considered only after the forest plan has been approved. In other words, departure determinations would not be permitted as part of the Forest land and resource management planning process. All proposed departures are submitted to the Chief, Forest Service, via the Regional Forester. If approved, the Chief would then direct the forest supervisor to prepare the proposals and a draft and final EIS. Final approval for all departures rests with the Secretary.

Alternative 3—Timber Groups' Proposals for Section 219.10(d) (Federal Register August 31, 1978). This alternative addresses two issues; determination of lands not suitable for timber production, and departures from nondeclining yield. This proposal emphasizes the role of timber production targets assigned to the forests through the RPA Program. Consequently, suitability determination (as opposed to nonsuitability) is stressed and is recognized as being largely dependent upon the ability of the forests to meet the assigned targets. A minimum biological growth potential is to be specified by the regional plan, and economic analysis is required to determine if lands are efficient for producing timber. Lands would not be used for timber production if those lands were not needed to meet the assigned targets and they were not efficient for producing timber. Departures would be considered and formulated if no timber harvest alternatives could achieve the assigned goals, or if implementation of the alternatives would result in local economic instability or inadequately maintain local or national supply needs. Departures would not require approval above the forest planning level.

Alternative 4—Committee of Scientists Final Report to the Secretary (February 9, 1979), and Recommended Regulations attached thereto. The Committee of Scientists reviewed the original draft regulations and recommended alternative language and, in some instances, completely new material for inclusion in the regulations. Generally, the Committee's proposals expand and add specific detail to the original draft (August 31, 1978) regulations. A number of organizational changes for regulation material are also suggested. The Committee's revisions include the addition of considerably more detail to the relationship among planning levels (national, regional, and forest), specifications for the interdisciplinary planning approach, rationale and requirements for public participation, more substantial requirements for coordination, and more specific requirements for resource standards and guidelines, including wilderness management, riparian zones, fish and wildlife, and diversity. The administrative appeals procedure would

remain unchanged from the present. The Committee has proposed a new and detailed treatment of regional planning similar to forest planning. The Committee's recommendations for lands not suited for timber and for departure, similar to those of the August 31, 1978 draft, are more specific and clear. An added requirement for departures specifies that each must be approved by the Chief, Forest Service. Although the Committee recommends a 30-meter protection strip for riparian areas it agrees with the August 31, 1978 draft that the maximum size for openings created by timber cutting be set by regional plans or regional silvicultural guides, and not be set as a national standard.

Alternative 5—Public Comment on the August 31, 1978 Draft Regulations. Though the DEIS contained this Alternative (No. 5) it was conceptual and did not lend itself to comparative analysis as did the other alternatives. Consequently, it was decided not to include a similar alternative in the FEIS. Instead, public comment on the DEIS was analyzed and used to modify the DEIS Preferred Alternative. This has become the FEIS Preferred Alternative. It is further described in this Section as Alternative 8, and again in Section VI.

Alternative 6—The Preferred Alternative Identified in the DEIS. These revised draft regulations contain provisions for nationally established standards for protection of riparian areas and for the size of harvest cut openings. This alternative is the end result of public involvement and work by the Committee of Scientists with the Forest Service in the process of developing the regulations required by NFMA. A number of organizational changes, the incorporation of new material, and more specific direction have considerably changed the alternative compared to the original draft of August 31, 1978. Most of the Committee of Scientists recommendations are reflected in this alternative. It is important to point out here that these recommendations were also strongly influenced by interactions of interest groups with the Committee. Key substantive coverage by this alternative includes the following: More detail concerning the relationships among planning levels; detailed provisions for the conduct of regional planning; more thorough treatment and clarity of purpose concerning public participation and coordination activities; more specific concerning determinations of lands not suited for timber production with the direction that biological growth potential minimums be set in regional plans, and lands be ranked for their economic efficiency for producing timber; requirements that departures from non-declining yield be analyzed through the NEPA environmental assessment process and be approved by the Chief; setting of maximum size of harvest cut openings (40-, 60-, or 100-acre maximums depending on geographic location) with exceptions provided for through regional plans where larger openings will produce more desirable combinations of benefits; and special protection of streams and lakes by requiring special attention to strips 100 feet along both sides of perennial streams, lakes and other bodies of water. The administrative appeal procedure is modified as a result of this alternative. Organizational changes include addition of material concerning regional planning, and separation of planning process criteria from resource management standards and guidelines. The planning process has been clarified and expanded explicitly to cover national and regional, as well as forest level planning.

Alternative 7—Revised Draft Regulations. These regulations are identical in all respects to Alternative No. 6 except that riparian protection areas and harvest cut opening sizes will be established through the regional planning process.

Alternatives by Issues

Regulatory language sets follow for the eleven selected issues discussed in Section I. Since Alternatives 6 and 7 are identical except for issues 7 and 11, Alternative No. 7 is discussed only for these two issues. Alternative 2 and 3 address only issue 5 and 6 and are shown for these issues only. For a discussion of Alternative 5, The reader should refer to the DEIS.

Issue No. 1—Conceptual Framework for an Integrated Planning Process. Alternative 1: The August 31, 1978 draft regulations are a mix of approaches with emphasis given to a "process" oriented approach. Three levels of planning (forest, regional, and national) are described in terms of information flows. However, the planning process is described only in terms of forest level planning and is not related to the other two levels.

Alternative 4: The Committee of Scientists endorses the "process" approach as opposed to a "prescriptive approach." It is recommended that the important interactive nature of the three levels of planning be conveyed in the regulations, and that the regulations also specify procedures for developing the regional plan and its content similar to requirments specified for forest plans.

Alternative 6: The recommendations of the Committee of Scientists have been adopted in the preferred alternative. In addition, a great deal more detail has been added to planning criteria and requirements throughout the entire planning process. Although the revised regulations contain many more "prescriptive" requirements than the earlier draft, the revised version is more "process" oriented than the original draft. A completely new section devoted entirely to a description of the "planning process" has been added. There is also an expanded, much more detailed treatment of the role and function of national, regional, and forest level planning. The interrelationships among the planning levels have been outlined. There are two new separate sections devoted to regional planning. One describes in detail the regional planning procedure and the other establishes criteria for regional planning actions. The requirements for forest planning have been expanded and are detailed in the same manner as those for regional planning. Provisions are made through regional planning to provide a range of objectives which forest plans must address though the planning process.

Issue No. 2—The Interdisciplinary Approach to Planning. Alternative 1: The August 31, 1978 draft states that an interdisciplinary approach shall be followed. With the exception of a requirement for two or more specialities to be represented, no specific requirements for team make-up or qualifications are given. Complete discretion is given to the forest supervisor for deciding both composition and qualifications.

Alternative 4: The Committee recommends more specific language on description of interdisciplinary process, actual philosophy that is to guide the team; and requirements for composition of team and for qualifications of members.

Alternative 6: Most of the Committee of Scientists' proposed language has been adopted in the revised version. The role and responsibilities of the team have been more clearly specified. The revision includes requirements for composition of the team and for qualifications for team members.

Issue No. 3—Diversity. Alternative 1: The August 31, 1978 draft requires that inventory information include quantitative data for determining species and community diversity. The forest planning section also specifies that each management alternative include provisions for diversity and that effects of each alternative on diversity

be estimated. There is also a specific requirement to estimate diversity effects for fish and wildlife. Methods or measures of diversity are unspecified.

Alternative 4: The Committee generally supports treatment of diversity in the regulations. Recommendations for clarifying and strengthening the language in a number of places are included. The Committee recommends against requiring the use of quantitative diversity indices. In addition, the Committee adds to the regulations specific language to ensure that planned type conversions must be justified by detailed analysis showing biological, economic, and social consequences.

Alternative 6: The Committee of Scientists' recommendations for clarifying language and establishing criteria have been adopted for this alternative. Management standards and guidelines for diversity have been expanded with more emphasis on type conversions. Additional requirements have been specified to ensure coordination with other Federal, State, and local agencies. Specific requirements for designation and management of special interest areas and research natural areas have been added.

Issue No. 4—The Role of Economic Analysis. Alternative 1: The August 31, 1978 draft regulations suggest that population and employment data be collected, that demand projections be used, and required that expected benefits be included in this analysis. Specific requirements for analysis include effects on distribution of goods, services and uses, changes in payments to local governments, income, employment, and economic efficiency. Direct and indirect benefits and costs are to be estimated using standards and practices to be established later by the Chief, Forest Service. Economic impact estimates of different range management alternatives on local livestock industry are also required. It is required that lands be classified as not suitable for timber produciton if "an economic analysis reveals that the lands are not efficient for producing timber."

Alternative 2: The overall issue of economic analysis is not addressed. Economic efficiency analysis for the classification of lands suitable for timber would be provided for in this alternative as part of the regulations recommended under Issue No. 5. (See Issue No. 5, Alternative No. 2)

Alternative 3: The proposal does not address the general issue of economic analysis. Some economic evaluation requirements are included in "suitable lands" requirements. (See Issue No. 5, Alternative No. 3)

Alternative 4: The Committee concludes that language in the draft regulations dealing with economic analysis is often vague and must be improved if direction is to be clear. The Committee has proposed more specific direction for ensuring that competent economic analysis occurs in all appropriate places in the planning process and are displayed for consideration of the economic consequences of alternatives.

Alternative 6: Substantial requirements relating to economic efficiency analysis, evaluation criteria, and guiding principles for management have been added in this alternative. Additional analysis requirements have been specified for regional and forest planning including supply and demand assessments and economic impact evaluation for alternatives considered. The role of economic analysis in the determination of lands not suitable for timber production and consideration of community stability objectives have been clarified. Requirements have been specified for economic evaluation of values foregone by wilderness designation.

Issue No. 5—Determination of Lands Not Suited for Timber Production. Alternative 1: The August 31, 1978 draft regulations outline a process for determining lands not suited.

1. Lands are considered "not capable" if biological growth potential is below a minimum set by the regional plan.

2. Lands are "not available" if they have already been designated for some other use.

3. Lands are "not suited" if timber production would result in adverse impacts upon soils, productivity, watershed, threatened or endangered species, or cannot be restocked in 5 years.

4. Lands that have been classified as "capable, available, and suitable" are to be further reviewed during the formulation of alternatives stage of planning and are classed as "not available" if management objectives for the area preclude timber production or limit production to the point where silvicultural standards cannot be met.

5. Lands that are classed as "capable, available, and suitable" may be classified as "not suited" if an economic analysis reveals that these lands are not efficient for producing timber.

6. No timber harvesting can occur for at least 10 years on lands "not suitable."

Alternative 2: This alternative includes the following limits for identifying timber producing lands:

1. Lands are "not capable" if biological growth potential is below 50 cubic feet per acre per year of industrial wood in natural stands (higher standard may be established by regional plan).

2. "Not available" if lands are administratively or legislatively withdrawn.

3. Lands are "not suited" if: A. They consist of isolated tracts of commercial forest land (stringers) such that organizing and scheduling periodic harvest is impractical;

B. They contain non-marketable timber species;

C. Slope is equal to or greater than the angle of repose of the soil, or the critical angle for slope stability;

D. Lands have soil types for which erosion rates during the first 10 years following logging would cause loss of soil greater than the amount that would be generated naturally through periodic weathering during one period of rotation; or

E. No technology has been developed or is expected to be developed in the next 10 years, that is or will be available and feasible for use in the forest during such period, that will enable timber production from the land without significant or long-lasting resource damage to soil, productivity, or watershed conditions; without significant adverse impact on threatened or endangered species; and with assurance that such lands can be adequately restocked within 5 years after final harvest.

4. Lands classified as "capable, available, and suited" for timber production are further identified as:

A. "Not available" for timber production if those lands will be managed to meet objectives of the forest plan that either preclude timber production or limit timber production to the point where silvicultural systems and resources could not be employed within the standards and guidelines for silvicultural systems and resource protection contained in these regulations and in the forest plan;

B. "Not suited" for timber production if the anticipated direct benefits from growing and harvesting timber are less than the anticipated direct costs to the government, including interest on capital investments required by timber production activities. Specific standards and practices for making the economic analysis required by this section are to be established by the Chief, Forest Service in regulations which shall be effective on the same date as these regulations, and shall be applied uniformly and nationally, provided that in determining net benefits from timber production the following principles shall be followed:

(1) Direct benefits include the anticipated revenue from harvesting

timber crops, and any benefits that can be reasonably attributed to increased production of other services such as forage, water flows, and wildlife;

(2) Direct costs include the anticipated investments, maintenance, and operating management and planning costs attributable to timber production activities, and any costs that can be reasonably attributed to decreased production of other services and to mitigation measures necessitated by the impacts of timber production. In the case of roads, only the additional investments in the road system required by timber growth and harvesting activities are to be included in direct costs; and

(3) The rate of interest used to discount future benefits and costs shall be equal to the rate expected for alternative uses of Federal funds, as set by the Office of Management and Budget.

5. No timber harvesting shall occur on lands classified as "not capable" or "not available," for timber harvesting and for 10 years on lands "not suited," excluding salvage sales and other special circumstances.

Alternative 3: The alternative makes a key factor upon which suitability determinations will be made on the production goals assigned to the forest through the regional plan from the RPA Program. The proposal requires that timber producing lands be identified in the following manner:

1. "Not capable" if biological growth potential is below minimum standard defined by the regional plan.

2. "Not available" if the land is legislatively or administratively withdrawn from timber production.

3. "Not suited" if technology is not now available or none is expected to be developed within the next 10 years that would permit harvesting which meets silvicultural guidelines.

4. Lands classified as "capable, available, and suited" will be further reviewed and identified as "not suited" if those lands are not needed to meet production goals from the regional plan and "lands are not efficient for producing timber." Additional economic analysis requirements for this determination include: "Any economic analysis will be based on the assumptions that the lands are managed primarily for timber production and are in fully regulated condition; that technically feasible management practices are applied which have a net economic benefit given anticipated future price levels and cost levels reasonable and directly related to efficient and prudent timber management; and that the cost of administration, protection, and access are borne proportionately by those other resource values produced while the land is under primary management for timber."

Alternative 4: The August 31, 1978 draft provides for a 5-step process for identifying lands not suited. The Committee does not consider this adequate and recommends the following procedure:

1. Lands are screened to determine if they are "available" for (i.e., not already designated for other use) timber production;

2. "Available" lands are then screened to identify areas that are "not suitable" for timber production because of physical, technical, biological (including a minimum productivity standard), or environmental factors;

3. Lands passing these tests are then subjected to economic analysis and ranked to determine their relative economic efficiency for commercial timber production; and

4. Alternative land management plans are formulated, lands are allocated to timber harvest on a cost-effective basis, and these allocations then may be adjusted and revised on the basis of multiple-use considerations.

Alternative 6: The treatment of this issue in this alternative is based upon the Committee of Scientists' recommended language and organization. Minimum biological growth standards to be used in the determination of timber production capability will be established by the regional plan using the criteria specified in the regulations. Lands with potential for commercial timber production will be evaluated using the assumptions and criteria in the regulations to determine their relative economic efficiency for this use. Lands which are more "efficient" (relative to other lands) will be allocated for timber production before less "efficient" lands are used. There is no minimum economic return specified in the regulations, nor is there a firm requirement that net benefits must exceed costs for this use.

Issue No. 6—Departures.—Alternative 1: The August 31, 1978 draft requires that the allowable sale quantity be determined on the principle of sustained yield and only based on lands "capable, available and suitable." The following requirements are specified:

1. For the base harvest schedule the planned sale and harvest for any future decade must be equal to or greater than the planned sale and harvest for the preceding decade, providing that the planned harvest is not greater than the long-term sustained yield capacity (non-declining flow).

2. Long-term sustained-yield, base timber harvest schedules, and departures are subject to the following guidelines:

A. "For the long-term sustained-yield capacity and the base harvest degree of timber utilization consistent with the goals, assumptions and standards contained in or used in preparation of the current Renewable Resource Program and regional plan. For the long-term sustained-yield capacity, the management and utilization assumptions must reflect those projected for the fourth decade of the regional plan. For the base harvest schedule, the management and utilization assumptions must reflect the projected changes in practices for the four decades of the regional plan. Beyond the fourth decade, the assumptions must reflect those projected for the fourth decade of the regional plan."

B. "For departure alternatives to the base harvest schedule which provide outputs above the current regional plan, assume an appropriate management intensity."

C. "In accordance with the established standards, assure that all even-aged stands scheduled to be harvested during the planning period shall generally have reached the culmination of mean annual increment of growth. Mean annual increment must be based on management intensities and utilization standards expressed as units of measure consistent with the regional plan. Exceptions to those standards are permitted for the use of sound silvicultural practices, such as thinning or other stand improvement measures; for salvage or sanitation harvesting of timber stands which are substantially damaged by fire, windthrow, or other catastrophe, or which are in imminent danger from insect or disease attack; for the improvement of age-class distribution; or for the removal of particular species of trees after consideration has been given to the multiple uses of the area being planned and after completion of the public participation process applicable to the preparation of a forest plan."

D. "For all harvest schedules, achieve a forest structure by the conclusion of the scheduling period that will enable perpetual timber harvest thereafter at the long-term sustained-yield capacity, consistent with the long-range multiple-use objectives of the alternatives."

3. Departures should be considered under any of the following conditions:

A. "None of the timber harvest alternatives formulated has the capacity to produce the goods, services, or uses

to meet objectives specified for the area by the regional plan."

B. "Attainment of the multiple-use objectives of the forest plan will be enhanced by more rapid and efficient achievement of the long-term sustained-yield capacity of the forest owing to present forest structure or by reducing high mortality losses."

C. "Implementation of the base harvest schedule would cause instability or dislocation in the economic area in which the forest is located."

4. The proposal also specifies how the harvest schedule is to be selected:

A. "Selection of a harvest schedule must be made following a comparison of management alternatives. . . . This comparison must include an evaluation of the sustained-yield goals, silvicultural standards and guidelines, and the effects of timber removal on other resources. . . . The selected harvest schedule provides the allowable sale quantity, or the quantity of timber that may be sold from the area of land covered by the forest plan for the plan period. Within the planning period, the volume of timber to be sold in any one year may exceed the average annual allowable sale quantity so long as the total amount sold for the planned period does not exceed the allowable sale quantity."

Alternative 2: The proposal would not permit departures within the regular planning process, but specifies that a forest plan may be amended to increase or decrease the allowable sale in the following manner:

1. Regional Forester may ask the Chief, Forest Service to "consider" departure if departure would "enhance" multiple use objectives by "improving age-class distribution, reducing high mortality losses, or reducing conflicts."

2. The Regional Forester must submit a report giving information to support recommended departure.

3. The Chief may agree to "consider" departures and direct the Forest Supervisor to prepare proposals, and draft and final EIS's are required for proposals.

4. In formulating proposed departures, the following is required:

A. Each departure proposed shall reflect management direction established in the forest plan regarding constraints on harvest, type of silvicultural systems to be used, and silvicultural standards and guidelines. Lands that would be affected by the increase or decrease in harvest level shall be specifically identified;

B. Each departure shall assume a degree of timber utilization and management intensities consistent with those assumed in the preparation of the base timber harvest schedule and demonstrate that forest structure by the end of the planning horizon would enable perpetual harvest thereafter at the long-term sustained-yield capacity; and

C. Each departure shall be evaluated in accordance with regulations covering estimated effects of alternatives and compared with the forest plan. Such comparison shall include an evaluation of the consistency of the departure with the multiple-use objectives of the forest plan.

5. The Secretary, after review of the final EIS, must approve all departure proposals.

Alternative 3: The proposed alternative altered the provisions set out in Alternative No. 1 in the following ways:

1. For base timber harvest schedule(s) "the planned sale and harvest for any future decade must be equal to or less than the long-term sustained-yield capacity" rather than the preceding decade and "the total harvest must also be the maximum achievable from the forest during the first rotation."

2. Add an exception to the standards for assuring that all even-aged stands scheduled to be harvested generally have reached the culmination of mean annual increment of growth—"for the improvement of age-class distribution."

3. "For all harvest schedules, other than the base harvest schedule, achieve a forest structure by the conclusion of the forest rotation that will enable sustained-yield capacity, consistent with the long-range multiple-use objectives of the alternatives."

4. An additional condition for departure was added. "Implementation of an alternative plan would provide greater public benefits, including, but not limited to a combined flow of public and private timber that better meets local and national demands or achieving to the extent possible a better balance between expenditures for timber management and the return to the Federal Government from the sale of timber and the value of other related uses."

5. Additional factors were added in the step for selecting the harvest schedule:

A. "Selection of harvest schedule must be made following a comparison of management alternatives and the public benefit to be achieved from each."

B. "The responsible Forest Service official shall describe in writing the justification for the selection made and the standards used."

Alternative 4: The Committee recommends adoption of the principles in the August 31, 1978 draft with the addition of:

1. Statement of basic policy with regard to timber harvest scheduling;

2. Language to make clear that departures from the base harvest schedule and the planning required for departures is discretionary; and

3. Authority for approving any departure above the base timber schedule should lie with the Chief.

Alternative 6: The Committee of Scientists' proposals have been adopted. With the exception of specifying that the Chief, Forest Service, must approve departures, this alternative for the regulations is similar to the original draft requirement concerning this issue. Consideration of local economic disruptions has been maintained.

Issue No. 7—Size of Openings Created by Harvest Cutting

Alternative 1: The August 31, 1978 draft requires that maximum size limits for clearcutting will be determined through the regional planning process.

Alternative 4: The Committee alternative agrees with the August 31, 1978 draft that maximum size limits be set regionally.

Alternative 6: This alternative for the regulations establishes the maximum size for openings created by timber cutting. These maximum sizes are: 60 acres for the Douglas fir forest type of California, Oregon, and Washington; 100 acres of the hemlock-Sitka spruce forest type of coastal Alaska; and 40 acres for all other forest types. There are provisions for exceptions to these size limits. These are:

1. Regional plans may specify smaller maximum sizes for geographic areas of forest types based upon the factors detailed in the revised regulations.

2. Regional plans will include provisions for exceptions that will permit larger size openings than those specified in the regulations. The minimum set of factors to be considered for exceptions is outlined in the revised regulations. Forest plans must conform to the size limitations established by the regional plan. Any exceptions (except catastrophic losses) to exceed the 60-, 100- or 40-acre maximum size limits must be approved by the Chief, Forest Service. At least 30 days public notice must be given before the size limits may be exceeded.

Alternative 7: The revised draft regulations require that maximum size limit for harvest cut openings will be determined through the regional planning process.

Issue No. 8—Public Participation

Alternative 1: The August 31, 1978 draft regulations use a theme of criteria to achieve compliance and uniformity.

This concept of rulemaking provides latitude for adaptation to future social changes, but does not specifically state standards on the role the public may exercise in the decision process. Standards are established for the availability of documents and their required residence. Criteria for the type of meetings to be held and where in the process they are to take place are discretionary in this version of the regulations. The administrative appeals process is unchanged in this alternative.

Alternative 4: The Committee of Scientists' version of the regulations contain more specific requirements in several areas. The Committee felt that the vague and broad discretion in the August 31, 1978 draft regulations would "lead to discontent and an unhappy, uninformed public."

The more specific areas recommended by the Committee of Scientists are:

1. A general policy statement and objectives of public participation.
2. Provide for a mutual program of information and educational exchange.
3. Provide explicitly for public participation at: the beginning of the process, after conclusion of inventories and assessment, and before a preferred alternative is chosen.
4. The responsible official should show evidence that all public input to the plan has been analyzed, evaluated and considered.
5. More specific language on the kind of places to meet such as county courthouses in affected counties.
6. The nature of public participation be made more explicit by:

A. Stressing that informal activities are to be encouraged for information exchange.

B. Stating that notifications shall be made highly visible.

C. Officials responsible shall continue to meet all other obligations for carrying out public participation requirements.

7. The public should be made aware of the kinds of informational materials that will be available.

In summary, the Committee of Scientists' version of the regulations on public participation in the planning process proposes more prescriptive rules than the August 31, 1978 draft regulations. The administrative appeals process is unchanged in this alternative.

Alternative 6: Much of the language and organization recommended by the Committee of Scientists has been adopted in the revised regulations. As a result, the revised version is significantly more detailed than the original draft. The revision includes explicit material on the purpose of public participation, required public notices, and the manner in which public input will be used in the planning process. In addition, the public participation responsibilities of the interdisciplinary team have been clarified. One important change has been made to the limitation for public comments. This alternative provides for 90 days written responses for national and regional planning comments (original draft specified 60 days). The appeals process is modified in this alternative. Objections to planning decisions (to adopt plans) in this alternative are excluded from review under the current administrative appeal procedure.

Issue No. 9—Management of Wilderness Areas and Disposition of Roadless Areas

Alternative 1: The August 31, 1978 draft regulations require that:

1. Lands designated by Congress or the Forest Service as suitable for wilderness will be studied for possible inclusion in the Wilderness System; lands designated to be managed for non-wilderness will not be considered for possible wilderness in the first generation of forest plans.
2. During the 15th-year revision (second generation) of forest plans, other areas will be evaluated for possible wilderness designation.
3. The "appropriateness" of designating the lands under 2 above will be considered.
4. Forest plans must provide direction for management of designated Wilderness and Primitive Areas.

Alternative 4: Committee recommends clarifying language to address two issues: Identifying and appraising additional candidate areas, and establishing maximum allowable levels of use. Key provisions include:

1. Forest plans will include an evaluation of the wilderness resource present and provide management planning for it.
2. All potentially eligible lands should be considered at each revision of the forest plan.
3. Costs and benefits should be considered in the same way as are other resources in considering wilderness status.
4. Criteria for designation should be evaluated continuously as experience dictates; and
5. Determination of "carrying capacity" should be made for each area.

Alternative 6: The proposals recommended by the Committee of Scientists have been adopted in the revised regulations. In addition, the language of the original draft has been altered in order to clarify the factors to be considered in evaluating wilderness potential and wilderness area management. Minerals development considerations are not addressed specifically in regard to wilderness issues; however, provisions for these concerns are included elsewhere in the revised regulations. Requirements are specified to ensure that levels and kinds of wilderness use are evaluated and considered in wilderness management. Special attention is also required for off-site impacts and adjacent area management.

Issue No. 10—Coordination

Alternative 1: The August 31, 1978 draft requires coordination with "other affected public entities and Indian tribes." Notice of preparation or revision of forest plans must be given to State agencies, Indian tribes, and heads of county boards affected. Documentation of all consultation is required.

Alternative 4: Committee proposes substitute language to assure that other governmental units understand how they can be involved in Forest Service planning, that the Forest Service make real efforts at coordination, and that Forest Service planners will evaluate and consider the plans of other governmental units as they develop plans. Specifically, recommendations include requirements that:

1. The responsible Forest Service officials be aware of the plans and policies of other units of government;
2. Appropriate State and local government representatives be involved and consulted;
3. A request be made of each State for appointment of a person to coordinate State involvement;
4. The forest plan documents that plans, programs and policies of other units of government have been analyzed;
5. Coordination take place at crucial times in the planning process;
6. An attempt to be made to identify goals and plans of owners of intermingled private lands; and
7. That there be coordination within the Forest Service in the designation of special purpose areas.

Alternative 6: With some minor modifications, the Committee of Scientists' detailed proposals have been adopted.

Issue No. 11—Protection of Riparian Areas

Alternative 1: This version of the regulations speaks indirectly to management of the riparian area in the water and soil resources section. These regulations direct that existing or potential watershed conditions that will influence soil productivity, water yield, water pollution or hazardous events will be evaluated.

Alternative 4: This alternative provides prescriptive regulatory language as protection for riparian areas. It provides for special attention to be given to a strip approximately 30 meters wide along both sides of all perennial streams, lakes and other bodies of water. Any activities conducted in this area would be carried out so as not to result in detrimental change and only carried out if multiple-use benefits exceed costs.

Alternative 6: The treatment of this issue in the revised regulations is based primarily upon the recommendations of the Committee of Scientists. This alternative proposes that special attention be given to lands and vegetation for approximately 100 feet along both sides of all perennial streams, lakes, and other bodies of water. All management activities which seriously and adversely affect water conditions or fish habitat will be permitted only if conducted so as to protect these waters from detrimental change. Interdisciplinary teams will determine constraints to be placed on management activities in the riparian area to assure protection of water quality and other multiple-use values.

Alternative 7: This alternative requires that special attention be given to riparian areass (perennial streams, lakes and other bodies of water). The riparian area will be identified using criteria established in regional plans.

Alternative 8—The Preferred Alternative

This alternative is a revision of the May 4, 1979 Draft Environmental Impact Statement Preferred Alternative (Alternative 6). Alternative 8 was created as the result of review and analysis of public comments on the May 4, 1979 Preferred Alternative version. The Committee of Scientists' views on the May 4 version was included in the public comment analysis. While there are some minor changes in all major provisions of the Regulations, significant changes are displayed in the Table presented below. For example, some changes of interest are: (1) Planning process descriptions are strengthened to exhibit and describe the links between the RPA Program and Assessment, and regional and forest planning; (2) The process for determining lands not suited for timber production is clarified to show how certain physical and economic factors are interpreted to determine land suitability for production, and how this relates to formulating alternatives to meet multiple use management objectives; (3) The consideration of departures from the base harvest schedule is to be unconstrained during planning and is mandatory under certain stated conditions. However, the final selection of a departure alternative is keyed to the principle that it must be consistent with the multiple use objectives stated in the land management plan; (4) The approval or disapproval of forest plans is appealable under 36 CFR 211.19, but not for regional plans. For the latter, a reconsideration process is established. The reconsideration and appeal process is described under 219.9 and 219.11, respectively; (5) Provisions are made for developing and adopting common data definitions and standards to be applied between all planning levels. Data acquisition is to be scheduled and planned, and its nature is to be appropriate for the management decisions required; (6) An 80-acre size-of-harvest-cut opening is established for the yellow pine types in certain southern states; (7) The 100-foot "special attention" zone around water bodies is expanded to include recognition of riparian ecosystems.

Location and Description of Major Changes in DEIS Preferred Alternative No. 6 and Incorporated into FEIS Alternative No. 8, Preferred Alternative

Regulation section DEIS	Regulation section FEIS	Nature of the change
219.1(b)	219.1(b)	Additional text for clarification and description of planning fundamentals.
	219.3(c)	Definition added for base timber harvest schedule.
		Definition added for biological growth potential.
219.3(h)	219.3(j)	Clarification—definition consistant with CEQ Regulations (environmental documents).
	219.3(m)	Definition added for goods and services.
219.3 (o) and (p)	219.3 (r), (s), (t), (u)	Expanded definitions for management direction, intensity, practice, prescriptions; to clarify the relation between practices and prescriptions.
	219.3(x)	Previously overlooked defintion for planning area added.
219.4(b)(1)	219.4(b)(1)	Revises description of National level Assessment and Program activity and clarifies relationship to regional and forest level planning.
219.4(c)(1)(4)		Deleted as superfluous.
219.5(c)(6)	219.5(c)(6)	Establishes rule for determining discount rate to be used.
219.5(d)	219.5(d)	Provides for variable data resolution based on nature of decisions to be made, that data needs are to be analyzed, planned, and acquisition scheduled; and provides for adoption of common data definitions and standards.
219.5(f)	219.5(f)	Formulation of alternatives rewritten to reduce ambiguity,
219.5(g)	219.5(g)	Estimated effects of alternatives expanded to include measurements of effects from meeting targets established through RPA Program.
219.5(g)(5)(iii) and (iv)		Deleted—redundant.
219.6(a)	219.6(a)	Paragraph expanded to provide more explicit direction and philosophy concerning interdisciplinary approach to planning.
219.6(b)	219.6(b)	Adds areas of professional knowledge and makes consultation obligatory when specialized knowledge on team is not available.
219.7(d) and (e)	219.7(d) and (e)	Revised to provide more explicit direction about public participation process and use of information.
219.7(a)	219.7(a)	Deleted. (See 219.9(b) and 219.11(c).)
	219.8(j)	New text to provide for monitoring effects of plan implementation on adjacent, private and other ownership lands.
	219.9(b)	New text to exclude decisions to approve or disapprove regional plan from administrative appeals procedure; provides for reconsideration of such decisions; provides for stays of implementation.
219.10(c)	219.10(c)	Rewritten for clarification to show how plans must respond to and reflect RPA program goals and objectives.
	219.11(c)(4)	New text to replace DEIS text in 219.7(c); provides for appeals of decisions to approve or disapprove a forest plan; specifies procedures for remand, revision and amendment; describes process for requesting stay of implementation, and prerequisites for potential appellants to file for appeals.
219.11(g)	219.11(g)(1) and (2)	Clarifies and augments considerations required in regional management situation analyses.
219.11(h)	219.11(h)	To explicitly state that the Forest Plan is the selected alternative from the FEIS.
219.11(h)(3)	219.11(h)(3)	Rewritten to make explicit that forest plan will contain statement of multiple use management objectives.
219:12(b)(2)(3)(4)	219.12(b)(2)(3)(4)	Rewritten to clarify the process of determining lands not suited.
219.12(d)(1)(ii)(D)	219.12(d)(1)(ii)(D)	Clarifies and simplifies language.

Location and Description of Major Changes in DEIS Preferred Alternative No. 6 and Incorporated Into FEIS Alternative No. 8, Preferred Alternative—Continued

Regulation section DEIS	Regulation section FEIS	Nature of the change
219.12(d)(1)(iii)	219.12(d)(1)(iii)	Rewritten for clarity; establishes that departures will be considered during planning when certain conditions exist.
219.12(e)(1)(ii)	219.12(e)(1)(ii)	Expanded to insure interagency cooperation and coordination.
219.12(g)(2)	219.12(g)(2)	Provides that indicator species may be vertebrate and/or invertebrate.
219.13(d)(2)	219.13(d)(2)	Adds yellow pine type and sets 80-acre limit for harvest openings in certain southern states.
219.13(e)	219.13(e)	Revised to include at least the area covered by the riparian ecosystem.
219.13(g)	219.13(g)	Revised to reflect terms as used in the NFMA ("plant and animal communities," and "tree species").

Issue No. 1—Planning Process Framework. This alternative incorporates some new or amended language to generally strengthen the overall planning process, including the addition of some new definitions. The relationship of forest and regional planning to the Assessment and Program is clarified and strengthened in terms of identifying information transfers and specifications that plans must describe how they respond to program goals and objectives, as well as state the multiple use management objectives for the planning area. The data and information acquisition process is expanded to require analysis of these needs.

Issue No. 2—Interdisciplinary Approach. This alternative amplifies the philosophy underlying the approach to planning.

Issue No. 3—Diversity. Some editorial revisions have been made to clarify terms and intent of the regulations. The treatment of this issue remains in concept basically unchanged from the DEIS preferred alternative. The legislative language "diversity of plant and animal communities" and "diversity of tree species" is maintained in the proposed regulations.

Issue No. 4—The Role of Economic Analysis. A provision has been added which specifies that the discount rate for analysis is to be established by the Chief and in the absence of such an established rate, the rate used in the RPA program may be used. Some minor editorial changes have been made including the deletion of repetitious material.

Issue No. 5—Determination of Lands Not Suited for Timber Production. The provisions in regulations for determining lands not suited for timber management has been modified to clarify the process and to specifically portray that these determinations will first be based upon economic and physical factors, then integrated to provide for evaluating effect and/or achievement on multiple use objectives. The reason for this change was the previous language provided only for the determination to be based on effects and/or achievements of single functional objectives. The interdisciplinary team, with review of public comment, felt this revision of provision more closely reflects the legislative intent.

Other provisions remain essentially the same as described in Alternative 6.

Issue No. 6—Departures. The provision for making departures in the DEIS Preferred Alternative appeared to many reviewers to be more broad than what NFMA seems to permit. Therefore, and substantially in response to public comment, the language was clarified to illustrate that the consideration of departure alternatives will be unconstrained during planning and is mandatory under certain conditions. However, if any departure alternative is to be selected, it must be consistent with multiple use objectives stated in the land management plan.

Issue No. 7—Size of Openings Created by Harvest Cutting. The treatment of this issue in Alternative 8 is identical to that of Alternative 6, except that an 80-acre size limit is established for yellow pine types in certain southern states.

Issue No. 8—Public Participation. Public participation provisions are identical to those in the DEIS Preferred Alternative (No. 6) except for the matter concerning appeals. In the Preferred alternative, appeal is discussed under §§ 219.9 and 219.11. The approval or disapproval of forest plans is appealable under 36 CFR 211.19. Such appeal was excluded in the DEIS. The approval or disapproval of regional plans is, however, excluded from review under 36 CFR 211.19, but provisions are made for reconsiderations of decisions by the responsible officer. In the case of forest plans, the appeals process is made consistent with intent of NFMA regarding the revisions of plans, public participation in those revisions, and the role of the interdisciplinary team in the process.

Appeals of actions or decisions subsequent to implementation of the regional plan are permitted in the Preferred Alternative. This alternative also has an added requirement defining the kind of information required to support requests for stays of decisions to approve or disapprove forest or regional plans, or subsequent actions or decisions.

Issue No. 9—Wilderness. This alternative is the same as origin—area presented in the DEIS Preferred Alternative.

Issue No. 10—Coordination. The treatment of this issue in Alternative 8 is identical to that of Alternative 6 except a provision is added which requires monitoring to consider the effects of managing the NFS on adjacent and nearby lands managed or under the jursidiction of other government agencies or local.

Issue No. 11—Protection of Riparian Areas. Alternative 6 has been revised to provide that special attention zone will at least include the riparian ecosystem. Also, factors are listed which will be considered in determining what management practices may be undertaken in these areas.

V. Effects of Implementation

A major effect of the alternative regulations proposed—if adopted—will be to integrate land management planning and functional (resource) planning. Planning of lands and resources of the National Forest System will be conducted by interdisciplinary teams rather than by individual resource or functional staff units. In many cases the same people and skills will be involved but in a different way. Some additional personnel ceilings will be required because of new skill requirements such as analysts, economists, biologists and writers.

Although resource management planning has always been a major responsibility in the Forest Service, the emphasis has primarily been on functional planning rather than on integrated resource planning (called multiple-use planning, unit planning, multi-disciplinary planning, etc.). In most instances functional planning remained a separate activity. Functional planning and land management planning often were carried out relatively independently, and budgeting was still along functional lines; the outcome was inevitable: land management planning became in itself a function, much like range management, timber management, and engineering. NFMA requires an integrated plan for each unit of the National Forest System. The planning process prescribed in the alternatives

establishes an interdependency of land management and resource planning.

The specific effects of implementing any of the alternative regulation proposals are virtually impossible to quantify. Regulations developed to direct the process of preparation and revision of land management plans have no direct effect on the human environment. The regulations do not commit land or resources. They only establish procedures, and standards and guidelines for planning future commitments. Some general qualified effects or impacts of alternatives are presented below in table form by issues.

Actual effects on the production of goods and services will be determined and verified when the planning is completed. Impacts will be identified in regional or in individual forest plans. These plans are subject to a complete environmental assessment with maximum public participation. Effects generated by the land and resource management alternatives will be analyzed in the environmental impact statement prepared during the actual planning effort.

There are several provisions within each alternative that affect the output of goods and services, particularly timber production. The determination of the allowable sale quantity will directly affect the level of timber available from the National Forests. This is particularly true if departures from non-declining flow are considered and selected. The identification of lands not suited for timber production may reduce the commercial forest land base, particularly where the minimum biological growth potential standard is set above the current minimum of 20 cubic feet per acre per year. Also, establishment of the maximum size of harvest cut opening and the protection of riparian areas will affect the overall cost of timber production or the total level of supply.

Generally, some outputs will decline temporarily. However, the capacity exists to expand activities with higher level investments so that most outputs could be increased in the long run.

The increased requirements imposed by the NFMA and regulation will increase costs through 1985 or until all plans are developed. This would be primarily due to establishment of the new procedures, requisite training needs, and the variations anticipated between the various National Forests and Grasslands in terms of planning already accomplished or in progress. As the Forest Service becomes more familiar with the new process, the cost should decline. There should be no significant difference between alternatives in long-term costs to the Forest Service as any particular alternative regulation might be promulgated. The integration of all planning efforts into one process should eventually reduce the costs.

Land management planning in the recent past has cost about $14 million annually. The anticipated annual costs and additional man years through 1984 are shown in the following table. The table reflects plans as currently scheduled. Costs include planning at all three levels, forest, regional and national.

Fiscal year	Number of forest plans	Total annual costs	Increased man years for planning functions	Cumulative man years over 1978 base year
1979	10	$19,850,000	+60	60
1980	30	21,100,000	+30	90
1981	30	22,500,000	+30	120
1982	30	22,800,000	0	120
1983	30	23,200,000	0	120
1984	20	14,700,000	−60	60
1985	4	12,000,000	−60	0

These costs reflect an increase for what has been land use or land management planning historically. New skill requirements, the need for additional personnel ceilings, and the uncertainty of the availability of the skills could require more contracting and resultant higher costs. Monitoring requirements may also add significantly to costs.

The effects of implementing alternative regulations on the physical and biological environment are not measurable except qualitatively. Each alternative set of regulations enhances plant and animal diversity, protects soil and water values and the visual resource, and ensures long-term productivity. The actual results will be known after the individual forest or regional plans are completed.

The alternative regulations require that a monitoring and evaluation process be identified and adhered to as a part of plan implementation. This process will: reveal how well the objectives of the forest plan have been met; quantify the effects of management activities upon the physical and biological environment; and develop a data base for plan updating.

There is no reliable way to estimate quantitatively the effect on the economic environment of promulgating any of the alternative regulations. It is assumed that better management decisions will result from improved economic analysis, because those decisions will be based on cost effectiveness data. Overall management of the NFS should become more cost effective and efficient.

Effects upon the social environment are difficult to quantify. No significant impacts or differences between alternatives are anticipated. The social environment is defined as the composite of social variables likely to be affected by planning for management of the NFS: population, dynamics, community economy, educational quality, health and environment, housing quality, leisure opportunities, community identity, minorities, and land use and tenure. Specific social effects will be determined and evaluated through the planning process for the appropriate level of planning. Public participation is required throughout the development and revision of all plans, resulting in more public awareness and understanding of National Forest System management.

This particular requirement is responsive to the concerns expressed before the NFMA was passed and specifically to Section 6(d) of the Act.

Relative Effects of Alternatives by Issues: To establish a basis for measuring anticipated implementation effects of each alternative, an independent set of key variables was identified by the interdisciplinary team for each issue. These variables are the factors affected by alternatives. The tables show in relative terms how the alternatives impact the factors listed. Language for alternatives 2 and 3 apply only to issues 5 and 6. Therefore, impacts for these two alternatives are shown only for these two issues. Language for Alternative Nos. 6 and 7 is the same for all issues except 7 and 11. Therefore, impacts for Alternative 7 are shown only for these two issues.

Issue No. 1—The conceptual framework for an integrated planning process. As discovered earlier there are a number of different conceptual frameworks for attempting both vertical and horizontal integration of the planning process. Integration requires a link vertically between the organizational hierarchy of national, regional and local levels, and a merging functionally at the local level the planning of range, wildlife and fish, recreation, timber, water, minerals, and other resources. Therefore, the conceptual method chosen has a significant effect on further options for resolving other issues. For example the incremental approach limits public participation in long-range decisions, while mixed scanning framework tends to enhance this option. (See appendix B.)

The practical concerns surrounding this choice relate to such basic items as public participation, the decision process, and agency responsiveness.

The alternative choice for how the regulations are to be promulgated under a given conceptual framework may have long reaching effects on how the integrated planning process will be carried out.

Issue No. 1.—(*Planning Framework*) *Relative Effects of Alternatives*

Impact of alternative on	Alternative No. 1	4	6	8
Public perception of process [1]	2	3	4	5
Agency responsiveness to deal with issues [2]	L	M+	M+	M+
Planning and decisionmaking process [3]	2	4	4	5

[1] On a continuum of increasing understanding from 1 to 5, with 5 high.
[2] Response to external stimuli as low, moderate or high.
[3] On a continuum of increasing complexity from 1 to 5, with 5 high.

Issue No. 2—Interdisciplinary Approach. The major debates over regulations on the interdisciplinary teams and approach have focused on technical more than behavioral characteristics. Team composition and leadership have been discussed from differing viewpoints, as well as individual qualifications necessary for legitimate memberships. In addition there has been continuing concern over the role the interdisciplinary team will play in the decisonmaking process. The key effects evaluated for this issue are team formation, duties and qualifications.

Issue No. 2.—(*Interdisciplinary Approach*) *Relative Effect of Alternatives*

Impact of alternative on	Alternative No. 1	4	6	8
Team formation [1]	1	3	4	4
Team duties [2]	2	4	4	4
Team member qualifications	1	4	4	4

[1] Continuum from (1) discretionary to (5) specific composition.
[2] Continuum from (1) weak to (5) strong direction given.
[3] Continuum from (1) discretionary to (5) specific requirements.

Issue No. 3—Diversity. Diversity is the condition of being different. The classification, measurement and control of the elements which make up diversity of forests and ranges are activities associated with managing renewable resources. It is the proportional distribution of diverse situations, such as different habitats, that determines the availability of timber, wildlife, range production, recreation, streamflow, aesthetics and other benefits. Therefore, diversity determinations have important implications in terms of opportunities for resource planning and management options.

Issue No. 3.—(*Diversity*) *Relative Effects of Alternatives*

Impacts of alternative on	Alternative No. 1	4	6	8
Genetic variability [1]	([4])	([5])	([6])	([7])
Type conversion [2]	2	4	4	4
Planning process [3]	4	2	2	3

[1] Relative to current situation. Genetic variability includes for this analysis habitat diversity.
[2] Continuum from (1) to (5) toward increasing complexity.
[3] Relative ease to convert to another type (tree species) on a scale from (1) to (5) toward increasing difficulty.
[4] No change.
[5] Increase.

Issue No. 4—Role of Economic Analysis. Analysis for determination of both efficiency and impacts has generated considerable debate. Much of it centers on the "state of the art" and the possibilities of a given technique being universally practical for nationwide implementation. The nature of economic tests to be made and whether Congress intended that benefits must exceed costs for proposed management practices are the key considerations for measuring effects of alternatives in the issue.

Issue No. 4.—(*Role of Economic Analysis*) *Relative Effects of Alternatives*

Impact of alternatives on	Alternative No. 1	4	6	8
Planning process [1]	2	4	3	3
Nature of analysis required [2]	2	4	3	3
Capability of Forest Service to implement direction [3]	4	2	3	3

[1] Increasing complexity on a scale of (1) to (5).
[2] Continuum from (1) none specified processes in terms of complexity or rigor.
[3] Low to High on a scale of (1) to (5).

Issue No. 5—Lands Not Suited for Timber Production. The issue in the "lands not suited for timber production" question appears to be a means, not ends, question. There is little disagreement over the desired results that there should be identified in the land management planning process lands not suited for timber production. The debate focuses on where in the process this identification should occur and how prescriptive the analysis screens should be in the regulations.

Issue No. 5—(*Lands Not Suited*) *Relative Effects of Alternatives*

Impact of alternatives on	Alternative No. 1	2	3	4	6	8
Total commercial timber base and supply [1]	3	5	2	2	3	3
Wildlife habitat abundance/diversity [2]	3/3	4/3	2/3	3/3	3/3	4/4
Planning process [3]	2	5	2	4	4	4
Amenities [4]	3	5	2	3	3	4

[1] Compared to current situation on a scale of (1) least to (5) most reduction excluding consideration of multiple use objectives.
[2] In terms of increasing abundance and diversity on a scale of (1) to (5), 5 high.
[3] Increasing complexity on a scale of (1) to (5).
[4] In terms of tendency to improve overall quality of water and visual resources, scale (1) to (5), 5 high.

Issue No. 6—Departures. The National Forest Management Act requires as a general policy that the Secretary limit the sale of timber from each National Forest to a quantity which can be removed annually in perpetuity on a sustained-yield basis with the discretion to depart from this policy in order to meet overall multiple-use objectives. This provision is found in a separate section of the Act (Section 11, or provisions (Section 6). This separation has caused some interests to believe that the determination of the timber allowable sale quantity should be handled either outside of the land management planning process or as a separate and distinct step after the land management plan has been completed.

Provisions within Section 6 clearly provide that decisions on the level of timber harvest be made within the integrated land management planning process. It is also required by NFMA that if a departure is selected, that it must be consistent with the multiple use management objectives stated in the land management plan.

Issue No. 6—(*Departure*) *Relative Effects of Alternatives*

Impacts on alternatives on	Alternative No. 1	2	3	4	6	8
Planning process [1]	2	5	2	3	3	3
Opportunity to change timber supply [2]	4	1	5	3	3	3

[1] On a scale of (1) low to (5) high toward increasing difficulty to make a departure.
[2] On a scale of (1) to (5) toward increasing agency flexibility to make determinations.

Issue No. 7—Size of Openings. At debate is the issue of the size of harvest cut opening to be allowed within a given silvicultural system. Should size standards be stated prescriptively or should size be harvest cut opening to be allowed within a given silvicultural system. Should size standards be stated prescriptively or should size be determined through the planning process on a regional or site specific basis?

Issue No. 7—*(Size of Openings) Relative Effects of Alternatives*

	Alternative No. 1	4	6	7	8
Impacts of alternatives on					
Per acre harvest costs [1]	No change	No change	Increase	No change	Increase.
Water quality	No change	No change	Increase	No change	Increase.
Timber supply [2]	No change	No change	Decrease	No change	Decrease.

[1] Relative to current situation which in this analysis is alternative No. 7.
[2] Relative to current situation. Increase harvest costs means some marginal sales become unavailable, thus reducing harvest in some areas.

Issue No. 8—Public Participation. Public participation in Forest Service decisionmaking has been an issue of experimentation and debate since the passage of the National Environmental Policy Act in 1969. Central to the issue is the openness that shall be maintained by the agency so that the public may become informed about National Forest matters and, if sufficiently interested, to participate through various forums, including the administrative review procedures, in the development, review and revision of land management plans.

Issue No. 8—*(Public Participation) Relative Effects of Alternatives*

Impacts of alternatives on	Alternative No. 1	4	6	8
Planning process [1]	2	4	4	5
Publics' awareness and understanding [2]	2	4	5	5
Public access to the decision process	4	4	3	5

[1] Increasing complexity on a scale of (1) to (5).
[2] Increasing improvement on a scale of (1) to (5).

Issue No. 9—Management of Wilderness and Disposition of Roadless Areas. How often and to what extent shall wilderness values be considered? At issue is the question of whether undeveloped areas should be considered for wilderness during each major plan revision if they are still in an essentially natural state, and should maximum levels of use be deferred through regulations?

Issue No. 9.—*(Wilderness Management) Relative Effects of Alternatives*

Impacts of alternatives on	Alternative No. 1	4	6	8
Disposition of RARE II area [1]	No	Yes	No	No
Use of areas [2]	2	4	4	4

[1] To consider in land and resource management plan before 1985.
[2] Process for determining potentials of areas and limitations to be placed on them is from (1) discretionary and unspecified to (5) required and specific.

Issue No. 10—Coordination. At issue is the amount and level of coordination that should be required during land and resource management planning between the Forest Service and other planning entities. Whether prescriptive requirements or process direction for achieving desired end results is the matter to be evaluated.

Issue No. 10.—*(Coordination) Relative Effects of Alternatives*

Impact of alternative on	Alternative No. 1	4	6	8
Planning process [1]	2	4	3	4
Levels of awareness and understanding [2]	2	4	3	3

[1] Increasing complexity on a scale of (1) to (5).
[2] Increasing improvement on a scale of (1) to (5).

Issue No. 11—Protection of Riparian Areas. The riparian ecosystem represents one of the richest areas in terms of flora and fauna within the National Forest System. The scientific community is divided on whether this ecosystem is fragile or resilent. There are many demands in this zone; for aesthetics, water quality consideration, recreation opportunities, road construction opportunities, wood, forage and wildlife opportunities. It's also a nice place to eat your lunch.

Conflicting demands for uses in these areas are escalated in the more arid parts of the West where this ecosystem is more scarce. The principle issue is the degree to which the regulations prescribe standards for riparian areas.

Issue No. 11.—*Protection Strips in Riparian Areas Relative Effects of Alternative*

Impacts of alternatives on	Alternative No. 1	4	6	7	8
Planning process [1]	1	5	5	4	5
Per acre harvest costs [2]	No Change	Increase	Increase	No Change	Increase.
Amenity values [3]	No Change	Increase	Increase	No Change	Increase.
Timber supply [4]	1	2	2	1	2
Wildlife and fisheries habitat	No Change	Increase	Increase	No Change	Increase.

[1] Increasing complexity on a scale of (1) to (5).
[2] Relative to current situation.
[3] Water and scenic quality.
[4] Relative to current situation on a scale of (0) no reduction to (3) most reduction.

VI. Evaluation of the Alternatives

Various approaches for planning, numerous definitions of terms, and a variety of alternative descriptions and language for management standards and guidelines were analyzed and evaluated almost continuously throughout the development of the proposed regulations. The following is an evaluation of how the alternative sets of regulations meet the evaluation criteria described in Section III.

Between Alternative Evaluation

	Alternative No. 1	[3]2	[3]3	4	6	7	8
Selection criteria [1]							
Effectiveness of meeting congressional intent on NFMA	3	2	2	4	4	3	4
Basis in technical and scientific principle	3	2	3	5	4	5	4
Acceptable to public	1	2	1	4	5	4	5
RPA program goals							
Amenity values [4]	2	3	2	4	5	4	5
Timber supply [5]	3	1	5	2	2	4	2
Conformity with executive order #12044 concerning simplicity-clarity of the regulations economic burden [2]	3/2	3/5	3/2	2/3	4/3	4/2	5/3
Establishing accountability	2	4	2	4	4	4	4
Capability to implement	5	4	5	3	3	3	3
Flexibility provided	4	2	5	4	3	4	3

[1] Ratings are on a scale of (1) low to (5) high in terms of how the alternative regulation sets meet the criteria listed. See Section I.I for a full description of each criteria.
[2] Higher number indicates greater burden.
[3] Alternatives 2 and 3 concern only Lands Not Suited for Timber Production and Harvest Schedules. For evaluation purposes these language sets were substituted for the corresponding language in Alternative 1 thus providing a complete regulation set to evaluate.
[4] Expressed in terms of the relative degree of environmental protection adequacy.
[5] Effect on Supply from (1) potential reduction to (5) potential increase.

Rationale for Rating Alternatives and for the Selection of the Preferred Alternative: The alternative planning processes and languages sets described to address the central issues have been analyzed and evaluated in this statement. The NFMA established bounds within which to develop the regulations. It required that a Committee of Scientists assist in the development of guidelines and procedurs. By utilizing this prescribed method, including provisions for public particiaption, the range of alternatives for consideration narrowed to the preferred alternative proposed for adoption. This set of regulations appears in the Appendix of this FEIS.

Meeting Congressional Intent on NFMA: NFMA presents congressional policy concerning the balance between protection of the environment and the need to provide adequate supplies of wood products. With this policy direction, Congress endorsed the concept that silvicultural prescription should be determined by the professional resource manager, not the legislator. Congress expects, however, that the regulations called for in NFMA will provide better controls on management planning and decisionmaking and that these controls will be influenced by interdisciplinary planning, and substantial public participation throughout the planning process.

The August 31, 1978 draft regulations met the intent of NFMA, but provided more discretion in the selection and use of guidelines and standards governing management activities. The Preferred Alternative represents a sensible compromise between discretionary management and management by inflexible rules. The alternative retains the option for more explicit management controls and direction if future management under the proposed regulations fails to meet congressional expectations.

Basis in Technical and Scientific Principles: There are substantial differences of opinion on many of the issues for which direction is provided in the alternative regulations. Congress, recognizing these differences, directed the Secretary to appoint a Committee of Scientists for advice in the preparation of these regulations. The interdisciplinary team that prepared this statement believes that the Committee of Scientists' version of the regulations represents the state of the art in technical and scientific areas. In most instances, the Preferred Alternative is based upon the Committee's technical and scientific recommendations. The August 31, 1978 draft, and the Environmental and Timber groups' proposals do not contain the same level of prescribed precision as the other two versions because they deal only with two specific issues. There was wide variation in the public comments on the August draft and the DEIS. Issues raised by the public were also reviewed by the Committee of Scientists.

It is possible, as the state of the art evolves in such areas as resource valuation, diversity measurements, etc., that direction will have to be modified to accommodate new techniques and approaches.

Acceptability to the Public: In evaluating public reaction to alternative regulations, more than 7,000 separate comments, as well as the texts of specific proposals from the general public, Environmental, Timber, and other Industrial groups, were reviewed (5323 on the first draft, 1581 on the DEIS). In addition, the Committee of Scientists' report proposals were examined in depth. All of the above information was used in alternative evaluation. While none of the alternative regulation sets will be acceptable to all interested groups, the interdisciplinary team concludes that the Preferred Alternative incorporates the most acceptable version to all publics. This version describes in more specific language the actions to be taken by the Forest Service during the land management planning process. This factor, coupled with the degree of environmental protection it affords, weighed heavily in identifying Alternative 8 as the Preferred Alternative.

Achievement of RPA Program Goals

Amenities: Public concern about environmental protection helped secure passage of the National Forest Management Act. The alternatives considered ranged from considerable flexibility at the national forest level in the August 31, 1978 version, to a more detailed approach to environmental protection proposed by the Committee of Scientists. Some of the key elements between alternatives were size of openings, riparian area protection, determination of lands not suited for timber management, diversity, public participation, coordination with other planning units and interdisciplinary teams.

The August 31, 1978 regulations provided considerable discretion in riparian area protection, and provisions for diversity. Discretion is also provided in the Preferred Alternative, though some limits are set. The detail and clarity of requirements mandated in the Preferred Alternative should, however, result in more complete, balanced consideration for environmental protection during the land management planning process, and therefore, more adequately provide for the supply of amenities than other alternatives.

Timber Supply and Other Commodities: Many of the provisions of NFMA may directly effect some RPA program goals such as timber supply; others such as diversity and riparian provisions can indirectly effect protection and/or production costs of most commodity goals.

Some issues assessed affect RPA timber and other commodity goals in different ways. For example, the riparian issue can affect the land base available for grazing domestic livestock and for producing timber. The lands not suited issue can affect the land base available for timber harvesting. Others, the size of openings for example, may influence wildlife habitat, or the conversion of non-commercial forest lands to production of wildlife and domestic livestock forage. Opening size affects the cost of harvesting timber because marginal timber from smaller areas may be excluded from harvesting. Thus the supply could be reduced, incurring higher prices.

The August 31, 1978, version provided more discretion to the land manager in selection and use of guidelines and criteria that affect the supply of goods and services that flow from the National Forest System lands. Most of the other alternatives reduce that discretion and consequently are expected to reduce commodity supply to varying degrees or increase the cost of maintaining or increasing the supply of these affected resources. Overall RPA Program commodity goals can be achieved with the Preferred Alternative through more intensive management of the National Forest System.

Conformity with Executive Order No. 12044: Executive Order No. 12044 directs that regulations prepared be as simple and as clear as possible. An evaluation of alternative language sets for regulations display a considerable range from simple to complex descriptions of direction and intent. The August 31, 1978 version of the regulations reflects a rather informal process-oriented approach while other versions, such as the Committee of Scientists and the Preferred Alternative are more explicit.

While the President's Executive Order prescribes simplicity and a reduction in implementation and economic burdens,

it also requires the agency to be responsive to public comment. The Interdisciplinary team found these two directives in conflict because the public, through their comments, addressed the need for regulations to provide more specific and prescriptive language.

The interdisciplinary team carrying out this evaluation felt that the need to respond to public comment was an important factor. As a result, all alternatives tend to be slightly inflationary because of their overall tendency to increase costs to manage the National Forest System.

Accountability: The regulations must clearly state who is responsible for certain actions, the nature and extent of responsibilities delegated, and clearly describe the appeal mechanisms in terms of substance and procedures.

Relative to the other alternatives, the August 31, 1978 draft regulations are considered to be weak in this respect. The principal reasons for this low ranking are:

1. August 31, 1978 draft implies that a great many decisions will be made during the regional planning process, but does not specify what the regional plan is, or how it will be done, or who is responsible for it.

2. Draft does not clearly define the role and responsibility of the interdisciplinary team.

3. With the exception of the regional planning shortcoming, the appeal procedures are adequate.

The Environmental Groups' proposal addresses accountability in the departures issue. Both the Chief and Secretary are identified as responsible for approving departures. There is, therefore, a high degree of accoutability for this issue. The Timber Groups' alternative does not alter the draft with respect to this point. The Committee of Scientists' proposals add specifications and requirements for regional planning, interdisciplinary approach and clarifying details to the appeals process. This alternative is considered to possess a higher degree of accountability than does the August 31, 1978 draft or the Timber Groups' proposals. The public comments stressed the need for more details on regional planning and the interdisciplinary approach. Suggested revisions were similar to those of the Committee of Scientists' alternative. The Preferred Alternative has incorporated the concerns voiced by the Committee of Scientists and the public comments.

Capability to Implement: The evaluation of feasibility is related to personnel and skill requirements, and the time required to undertake and complete planning actions specified. Neither the August 31, 1978 draft regulatins nor the Timber Groups' proposal would significantly affect either of these factors. The Environmental Groups' alternative would require more detailed economic evaluation for lands not suitable for timber harvest, and a more detailed, time consuming procedure for departures. The Environmental Groups' alternative is, therefore, considered to be somewhat more demanding than the August 31, 1978 draft and Timber Groups' proposal. The Committee of Scientists alternative is quite demanding as a result of suggested revisions to the interdisciplinary team approach, economic analysis requirements, diversity provisions, public participation requirements, coordination, and required riparian areas. Public comments indicate the need for more expanded interdisciplinary teams, greater public participation and coordination, more detailed economic analysis, and longer time limits for public review of plans. The public comments on the first draft and the DEIS were somewhat less demanding than the Committee of Scientists' alternative, but more demanding than the August 31, 1978 environmental or timber groups' proposals. Since the Preferred Alternative largely reflects the Committee of Scientists' proposals, the feasibility of this alternative is considered to be the same as for the Committee of Scientists alternative.

Flexibility: Flexibility is related to the degree to which regulaitions permit site-specific management discretion and allowance for exceptional circumstances. Both the August 31, 1978 draft and the Timber Groups' alternatives are considered to be highly flexible, especially with regard to openings created by cutting, biological growth minimums for timber, and protection standards for streams and lakes. The Environmental Groups' alternative is highly inflexible with regard to minimum biological growth standards. The Committee of Scientists proposal would result in somewhat less flexibility than the draft, primarily as a result of the riparian area requirements. The Committee's proposals to determine size opening standards at the regional level are identical to those of the August 31, 1978 draft. Many public comments were directed toward site specific concerns and were, therefore, highly inflexible when considered from the viewpoint of national regulaions. Alternatives 6, 7, and 8 are based primarily upon the revisions suggested by the Committee of Scientists and the concerns voiced throughout the public comments. While the Preferred Alterntive does not include a national biological growth minimum for timber harvest, it does include a number of detailed standards including maximum size for openings created by cutting; riparian protection area more detailed requirements for coordination, public participation, diversity and forest type conversions; wilderness management and roadless area evaluation. As a result of these requirements, the Preferred Alternative provides compromise flexibility.

VII. Consultation with others

Opportunities for public involvement in the development of the regulations have been made available beginning with the enactment of the NFMA in 1976. The Work Plan Outline was made available on March 5, 1977. It identified the tasks to be completed in the development of the regulations including the opportunity for public participation in the effort.

A Committee of Scientists (see Appendix D) was appointed by the Secretary of Agriculture in response to Section 6(h) of the Act, which charged the Committee to "provide scientific and technical advice and counsel on proposed guidelines and procedures to assure that an effective interdisciplinary approach is proposed and adopted." However, the Secretary broadened this charter to include advice and counsel on all parts of Section 6 of the Act. The Committee met many times in various locations (see Appendix C). It's work was conducted in three phases. The first was to work with Forest Service personnel to consider and prepare language for the regulations. This phase terminated upon publication of the draft regulations which appeared in the August 31, 1978 Federal Register. The second phase of the Committee's work was to evaluate the draft regulations and to prepare a report to the Secretary. This phase was completed when the Committee submitted its report to the Secretary on February 22, 1979. The last phase was completed with the submission of the Committee's report on the DEIS Prefered Alternative Regulations. The first report, together with the Committee's proposed regulations, is the basis for the Committee of Scientists Alternative discussed in the FEIS. The second report was considered as part of the entire public comment record on the DEIS.

The public, (State, local officials, interest group representatives and others) was given the opportunity to attend the Committee of Scientists meetings, and frequently participated in the discussions. The complete minutes of all these meetings are available for

review in the Forest Service Headquarters, Land Management Planning, Room 4021, South Agriculture Building, 12th and Independence Ave. S.W., Washington, D.C., and in the Library of Congress, and in Forest Service Regional Office headquarters.

The public was also given the opportunity to attend other meetings convened especially to obtain comments on the August 31, 1978 draft regulations. The proceedings of those meetings were published and are also available for review at Forest Service headquarters. The Forest Service received 737 letters containing 5,373 identifiable comments concerning the August 31, 1978 draft regulations. These letters and comments are available for review in Forest Service Headquarters along with the report and its summary of the public comment analysis. As a consequence of this public involvement, it was decided to revise the regulations and re-issue them accompanied by a draft environmental impact statement. The comments, along with the suggestions received through meetings open to the public, the work of the Committee of Scientists, and the technical reports prepared by the Forest Service staff, formed the basis of the alternatives discussed in the DEIS which was published in the Federal Register, Vol. 40, No. 88, May 4, 1979.

Since publication of the DEIS, another 245 letters and responses have been received containing 1581 distinct comments. All have been analyzed and considered, including the Committee of Scientists' comments on the DEIS Preferred Alternative, during the preparation of the FEIS and the final regulations identified in the FEIS as the selected Alternative.

All commentors on the DEIS will be furnished a copy of the EIS.

Summary of Public Comment Received on the DEIS Dated May 4, 1979

Appendix "A" contains the list of individuals and organizations who submitted comments on the DEIS and related material which accompanied it in the Federal Register, May 4, 1979. There were 245 submissions which contained 1581 distinct comments. Of this total, about 1400 comments were issue oriented, that is, were either specific to the DEIS Draft Regulations or to the issues presented, discussed, and evaluated in the DEIS. The distribution of these comments by source, by section of the regulations (preferred alternative in the DEIS), and by other categories is shown in the following table:

Distribution of Public Comment on the DEIS and Related Material by Source and Comment Category

Comment category	Type of respondent				Total
	Individual	Organization	Government agency	Forest Service	
Regulations:					
219.1 Purpose	4	13	8	6	31
219.2 Scope and applicability	2	3	1	1	7
219.3 Definitions	9	36	7	33	85
219.4 Planning levels	6	26	6	29	67
219.5 Regional and forest planning process	24	62	9	66	161
219.6 Interdisciplinary approach	9	16	4	11	40
219.7 Public participation	58	45	11	11	125
219.8 Coordination of public planning efforts	4	12	7	7	30
219.9 Regional planning procedure	5	14	7	29	55
219.10 Regional planning action	14	39	11	18	82
219.11 Forest planning procedure	15	28	2	33	78
219.12 Forest planning actions	76	181	29	60	366
219.13 Management standards and guidelines	102	129	31	41	303
219.14 Research	1	1	2	0	4
219.15 Revision of regulations	1	4	3	0	8
219.16 Transition period	0	4	0	0	4
Subtotal regulation	330	613	138	385	1,448
Other:					
Introductory material in FEDERAL REGISTER of May 4, 1979	0	2	0	0	2
DEIS	8	69	14	0	91
Committee of Scientists report	1	5	1	0	7
Committee of Scientists proposed regulations	1	6	0	0	7
No section	16	6	4	2	29
Subtotal other	26	88	19	2	135
Grand total	356	701	157	367	1,581

The majority of comments received were in letter form. Most of the comments were specific and succinct, and addressed only a few concerns, but several were, by comparison lengthy, detailed, and complex. All were reviewed, analyzed, and considered in the preparation of the FEIS.

All comments received are available for review at Forest Service Headquarters in Washington, D.C. Since the total submission is so voluminous, it is impractical to reproduce it in the FEIS. The substantive comment is, therefore, presented below in summary form, organized by section corresponding to the organization of the proposed regulations, i.e. 219.1, 219.2, etc.

Summary of Comments by Section

219.1 Purpose

Comments relating to this section of the draft regulations concentrated on the need to include cultural as well as natural resources and for giving consideration to renewable as well as non-renewable resources. A number of commenters praised planning coordination requirements in this section.

219.2 Scope and Applicability

It was suggested that the term "special area authorities" be defined.

219.3 Definitions

Almost every term received comment; however, the majority of response dealt with the differentiation between "guidelines" and "standards"; clarification of "diversity"; and the definition of "capability". Several respondents questioned the definition of "Responsible Forest Service official".

219.4 Planning Levels

The majority of comments centered on the process for developing and selecting the RPA Program and the relationships between the Program and the various levels of planning. The thrust of most comments was that the draft regulations should more clearly define these relationships.

219.5 Planning Criteria

Numerous comments were received concerning the relationship between the interdisciplinary team and "the responsible Forest Service official." The need to clarify the definition of "responsible official" was noted. Many comments dealt with specific criteria listed in the draft regulations:

Economic analysis criteria—Many commentors pointed out that the economic analysis criteria should be established as soon as possible.

Data inventory—Most of these comments centered around the determination of adequacy of the data, data collection procedures, compatability requirements to obtain uniformity among forests, and the need to include criteria for coordination and cooperation with other agencies for data collection, storage, and evaluation.

Analysis of the management situation—it was suggested that the term "society" be clarified. Numerous commenters pointed out the problems associated with estimating "demand".

Formulation of alternatives. The required "No Change" alternative was considered meaningless by most commenters. Concern about using cost effectiveness as a criteria for formulating alternatives was also expressed.

Estimated effects of alternatives—Most comments were related to problems inherent in estimating benefits and costs. Suggestions were made for additional effects to be measured such as the impact of the plan on the exploration and development of mineral resources. A number of commenters suggested that unconstrained single resource outputs (resource outputs ignoring other multiple-use consideration) and multiple-use outputs of each alternative should be compared.

219.6 Interdisciplinary Approach

Responses on this section of the regulations emphasized the need to establish operating procedures, and to spell out more fully the authority and the function of the Interdisciplinary Team, including how involvement of state and local agencies will be imcorporated. Other comments dealt with the need to add other disciplines and private citizens to the team. Some commenters suggested that private sector contract consulting should be emphasized in the regulations.

219.7 Public participation.

The majority of comments on this section of the draft regulations dealt with the proposed changes in the appeals process. Almost all commenters disagreed with these proposed changes. Numerous suggestions were received on methods of public involvement and notification. The use of the term "to the extent possible" was questioned. Most comments suggested that this was inappropriate and should be eliminated in this context. Many commenters felt that 15 days public notice for public participation activities for forest level planning activities was inadequate.

219.8 Coordination of Public Planning Efforts

The majority of comments expressed agreement with this section of the draft regulations; however, some commenters did point out that state and local coordination in the eastern United States would be extremely difficult and time consuming because of the greater number of state and local agencies.

219.9 Regional Planning Procedure

Several commenters suggested that the proposed regulations do not adequately deal with visual resources or unquantified environmental amenities. Other comments discussed potential problems associated with record of decision, the transition period between forest plans developed prior to regional plans, and the standards for determining "signficiant deviation" between regional plans and the national program funding or implementation.

219.10 Criteria for Regional Planning Actions

Many commenters noted that the list of management concerns did not include wilderness considerations, meeting the RPA program, or visual or mineral resource concerns. It was suggested that these be included. A number of commenters advocated the establishment of a definite minimum per acre growth figure for timber harvesting. A minimum of fifty cubic feet per acre per year was mentioned most often. Response to the clearcut size issue was mixed. In addition to pro and con comments regarding the level (national or regional) at which size limits should be set, there were a number of comments regarding the actual size limits themselves. Several comments stated that the draft regulations implied that little or no new data would be gathered and asked for clarfication of this point. There was some confusion as to whether or not regional planning came before forest planning.

219.11 Forest Planning Procedures

Several commenters expressed the opinion that the "forest plan content" should require detailed maps of the planning area including existing resources and existing and planned activities. Comments on documentation requirements indicated a concern that flexibility of line officers would be seriously and adversely effected by having to document and justify every action. The use of the term "significant change" in the discussion of forest plan amendments and revisions was questioned by several commenters. It was suggested that additional clarfiying language be included for this point.

219.12 Criteria for Forest Planning Actions

Approximately 20 percent of all comments received dealt with this section of the proposed regulations. Most of these were directed to two issues: "lands not suitable for timber" and "departures." Many commenters recommended that a national minimum biological growth standard be established to use in the determination of lands suitable for timber. It was suggested that 50 cubic feet per acre per year might be an appropriate standard. Others were concerned that timber harvesting on steep slopes was not specifically prohibited. Many commenters objected to the provision that lands would be classified as unsuitable if, based on multiple-use objectives, the land was suitable for resource uses that would preclude timber production. Numerous commenters recommended that the regulations clearly state that benefits must exceed costs in order for lands to be suitable for timber production. Several comments raised the question of restocking of timber lands. The proposed regulations state that lands will be considered suitable for timber production if there is "assurance that such lands can be adequately restocked within 5 years." There was some speculation as to the exact meaning of this provision. It was suggested that this lanuage be clarified. It was recommended that "direct benefits" not be measured in terms of "future stumpage prices", but rather, benefits should be net receipts on returns to the treasury.

The treatment of the departures issue was sharply criticized. It was suggested repeatedly that the justifications shown for departures were inappropriate and perhaps illegal. Most commenters asserted that departures may be considered *only* to the meet multiple-use objectives of a plan.

Some commenters on the wilderness planning provisions of this section suggested that the exclusion of RARE II non-wilderness lands from the first forest plans was inappropriate. Some felt that there was a need to specifically consider areas which were not inventoried during RARE II. There were a number of comments criticizing the absence of mineral exploration and development considerations from this section. A number of commenters expressed their agreement and support of the proposed regulations.

Comments on the fish and wildlife provisions of this section were directed mainly toward questions regarding indicator species. Many commenters suggested that the language be clarfied to insure that invertebrates may be used as indicator species. A number of respondents agreed with the provision for using state lists for threatened and endangered plants and animal species as a basis for identifying indicator species.

Most of the comments received regarding mineral exploration and

development were sharply critical of the proposed regulations. The Major criticism was that the proposed rules did not adequately insure that these considerations would be given appropriate weighting in the actual decision process. Similar criticisms were made concerning the treatment of rangeland resources, recreation, soil and water, and visual resources.

219.13 Management Standards and Guidelines

Approximately 20 percent of all comments received dealt with this section of the proposed regulations. Most of the comments on this section were concerned with two issues: Maximum size limits for tree openings and riparian protection strips. The large number of comments received on these issues indicate that they continue to be the most controversial issues raised by the proposed regulations.

The comments on clearcut size are about evenly divided between those who oppose the national limits established in the proposed regulations and those who are in favor of these limits. The most frequent criticism raised by those who opposed the national limits was that there was little or no justification established for the 100-, 60-, and 40-acre limits. This was considered to be a major omission, especially in view of the Committee of Scientists' recommendation against setting national limits of any kind. Almost all of those opposed to these national size limits suggested that the Committee of Scientists' recommendations be adopted in the final regulations. A number of commenters opposed the national limits on the grounds that the maximum sizes allowed were too large. It was frequently suggested that maximum size for *all* areas be set as 40 acres or smaller. Several commenters were concerned that if the size limits were set nationally, then all clearcuts would tend to be the maximum size allowed. Some asserted that the 40-acre size limit for the east and south would result in greatly reduced future timber volumes available for sale. The 100-acre size limit for the Alaska region received severe criticism. It was suggested that the limits should be at least 160 acres for Alaska. It should be reiterated that public comment on this issue was rather evenly divided between those who opposed the draft language and those who were in agreement. Generally, those who expressed agreement gave their unqualified support and frequently praised the treatment of this issue in the proposed regulations.

The types of comments received concerning the riparian protection strips were similar to those dealing with the clearcut size issue. That is, comments were about equally divided pro and con, and most were either strongly in favor or strongly opposed. Several commenters expressed the opinion that the 100 foot strip could be interpreted as a maximum distance and suggested that the language be clarified to clearly indicate that it was not the maximum. It was suggested that the riparian buffers should include seasonal as well as perennial streams.

Numerous commenters responded to the diversity provisions of this section. While most commenters appeared to agree with the intent of this provision, some concern was expressed regarding the use of the term "desirable" plant and animal species. The meaning of the word "desirable" in this context was questioned. Several commenters who appeared to agree with the diversity provisions also warned that the language used might result in a substantial additional work burden for the Forest Service as well as limiting management flexibility. There were many comments suggesting that the diversity provisions should be strengthened.

Other comments included suggestions to require consideration of fuel and energy requirements in the planning process, rangeland and range use, and timber removal on steep slopes. The 10-year maximum time for re-establishing vegetative cover disturbed by temporary roads was considered to be too lengthly.

219.14 Research

There were relatively few comments on this section of the regulations. Several commenters expressed concern the regulations do not specifically identify basic research as a valid and equal use of the NFS.

219.15 Revision of Regulations

The recommendation was made that all revisions to the regulations be accompanied by an Environmental Impact Statement. It was agreed that the 5-year review interval of the regulations was appropriate.

219.16 Transition Period

There were few comments on this section of the regulations. One commenter suggested that clarifying language be added to further explain the process to be used during the transition period.

VIII. Appendix Index

Appendix A: List of Commentors of the August 31, 1978 Draft Regulations published in the Federal Register, Vol. 43, No. 170, and on the DEIS and Preferred Alternative (Regulations) published in the Federal Register, Vol. 44, No. 88, May 4, 1979.

Appendix B: Planning Process Systems Considered.

Appendix C: Dates and locations of Committee Meetings, and other Public Meetings.

Appendix D: Names and Affiliations of the Committee of Scientists appointed by the Secretary as required under NFMA, Section 6(h).

Appendix E: Supplementary Final Report of the Committee of Scientists.

Appendix F: Table of Contents and index for final regulations. For purposes of the Federal Register the regulations follow the Appendix.

Appendix A

Everyone who commented on the August draft received a copy of the DEIS and relate material. The attached list indicates those who commented on the August 31, 1978 draft and the DEIS and related material. The latter group, those who commented or otherwise requested material in the May 4, 1979 Federal Register, are indicated by an asterisk.

Federal/State/Local Government

Federal Government

Agriculture, U.S. Dept. of

*Soil Conservation Soil, Box 2007, Albuquerque, NM 87103.
*Soil Conservation Service, 304 N. 8th Street, Room 345, Boise, ID 83702.

Commerce, U.S. Dept. of

National Oceanic & Atmospheric Adm., National Marine Fisheries Service, F7, Washington, D.C. 20235
National Oceanic & Atmospheric Admin., Northeast Region, Fisheries Management Operations Br., Gloucester, MA 01930.
*Council on Environmental Quality, 722 Jackson Place NW., Washington, D.C. 20006.
Environmental Protection Agency, Office of Federal Activities (A-104), Washington, D.C. 20460.

Interior, U.S. Dept. of the

*Office of the Secretary
Bureau of Land Management
*Bureau of Mines

Bureau of Reclamation

Office of Environmental Project Review
U.S. Fish & Wildlife Service
HCRS, Federal Lands Planning
Heritage Conservation & Recreation Service, Washington, D.C. 20243
*Bureau of Land Management, 136 E. South Temple, Salt Lake City, UT 84111.

Transportation, U.S. Dept of

Federal Highway Administration, Washington, D.C. 20590.
Honorable Dale Bumpers, United States Senate, Washington, D.C. 20510.

Honorable Thomas S. Foley, House of Representatives, Washington, D.C. 20515.
Honorable Jim Weaver, House of Representatives, Washington, D.C. 20515.
The Library of Congress, Environment and Natural Resources, Congressional Research Service, Washington, D.C. 20540.
Smithsonian Institute Bldg., Wilson Center (Samuel Hays), Washington, D.C. 20560.

State and Local Government

Alaska, State of

*Office of the Governor, Division of Policy Development & Planning, Pouch AD, Juneau, AK 99811.

Arizona, State of

State Land Dept., Conservation Division, 1624 W. Adams, Phoenix, AZ 85007.

Colorado, State of

Dept. of Natural Resources, 1313 Sherman St., Rm 718, Denver, CO 80203.
*Dept. of Natural Resources, Division of Wildlife, 6060 Broadway, Denver, CO 80216.

Florida, State of

Florida Game & Fresh Water Fish Comm., 620 S. Meridian Street, Tallahassee, FL 32304.

Georgia, State of

*Department of Natural Resources, 270 Washington St., SW, Atlanta, GA 30334.

Idaho, State of

Dept. of Fish and Game, 600 S. Walnut Street, Boise, ID 83707.

Louisiana, State of

Wildlife and Fisheries Comm., 400 Royal Street, New Orleans, LA 70130.

Michigan, State of

Chamber of Commerce, Natural Resources Programs, 501 S. Capitol Ave., Suite 500, Lansing, MI 48933.

Montana, State of

Dept. of Fish and Game, Wildlife Division, Helena, MT 59601.

Nevada, State of

Governor's Office of Planning Coordination, Capitol Complex, Carson City, NV 89710.
Dept. of Fish and Game, P.O. Box 10678, Reno, NV 89510.

New Mexico, State of

*Dept. of Natural Resources, Santa Fe, NM 87503.

Oregon, State of

Dept. of Forestry, Office of State Forester, 2600 State Street, Salem, OR 97310.

Utah, State of

*Office of the Governor, Salt Lake City, UT 84114.
State Planning Coordinator, 118 State Capitol, Salt Lake City, UT 84114.

Washington, State of

Office of the Governor, Legislative Bldg., Olympia, WA 98504.
Dept. of Game, Dept. of Natural Resources, 600 North Capitol Way, Olympia, WA 98504.
Buncombe County Soil & Water Conservation District, P.O. Box 2836, Asheville, NC 28802.
Council of State Governments, P.O. Box 11910, Lexington, KY 40578.
Denver Water Dept., 1600 W. 12th Avenue, Denver, CO 80254.
East Central Planning & Dev. Region, Chief/ Comprehensive Studies Div., P.O. Box 930, Saginaw, MI 48606.
Elko County Manger, Elko County Courthouse, Elko, NV 89801.
Western States Legislator, Forestry Task Force, 1107 9th St., Suite 614, Sacramento, CA 95814.
Barbara Tucker, State of Connecticut Senate, State Capitol, Hartford, CT 06615.
Senator Bob Lessard, Senate District 3, State Capitol, Rm 24H, St. Paul, MN 55155.
Senator Ivan M. Matheson, Utah State Senate, Salt Lake City, UT 84114.

Organizations

A. C. Dutton Lumber Corp. (Arthur D. Dutton), 12 Raymond Avenue, Poughkeepsie, NY 12603
Alaska Loggers Association (Donald A. Bell), 111 Stedman, Suite 200, Ketchikan, AK 99901.
Alaska Lumber & Pulp Co., Inc. (J. A. Rynearson), P.O. Box 1050, Sitka, AK 99835.
Alaska Women in Timber (Helen Finney), 111 Stedman Street, Ketchikan, AK 99901.
Allied Timber Company (Don Shalope), 2300 Southwest 1st Ave., Portland, OR 97201.
Alpine Lakes Protection Society (Donald Parks), 3127 181st Ave., NE, Redmond, WA 98052.
*AMAX (Stanley Dempsey), 13949 W. Colfax Ave., Bldg. #1, Golden, CO 80401.
American Forestry Association (Richard Pardo), 1319 18th St., NW, Washington, D.C. 20036.
American Hardwood Industries, Inc. (Charles J. Hamlin), Sixth Avenue, Union City, PA 16438.
*American Indian Law Center, Inc. (Vicky Santana), 1117 Stanford, NE, Albuquerque, NM 87196.
American Petroleum Institute (C. T. Sawyer & Wilson M. Laird), 2101 L Street, NW, Washington, D.C. 20037.
American Plywood Association (M. J. Kuehne), P.O. Box 2277, Tacoma, WA 98401.
*Animal Protection Institute of America (Belton Mouras & Richard Spotts), 5894 South Land Park Drive, P.O. Box 22505, Sacramento, CA 95822.
Appalachian Hardwood Management, Inc. (James L. Grundy), P.O. Box 427, High Point, NC 27261.
Appalachian Mountain Club (Sara H. Surgenor), 5 Joy Street, Boston, MA 02108.
Arcata Redwood (Terence L. Ross), P.O. Box 218, Arcata, CA 95521.
Arroyo Grande Resource Conserv. Dist. (William L. Denneen), P.O. Box 548, Arroyo Grande, CA 93420.
Aspen Wilderness Workshop, Inc. (Jay M. Caudill), Box 9025, Aspen, CO 81611.
*Atlantic Richfield Company (J. R. Mitchell & Clarie Mosley), 555 17th Street, Denver, CO 81611.
Basin Electric Power Corp. (Clarence A. Bind), 1717 E. Interstate Ave., Bismark, ND 58501.
Bell-Gates Lumber Corp. (Jerrol A. Gates), Jeffersonville, VT 05464.
Boating Industry Association (Jeff W. Napier), 1 N. Michigan Avenue, Chicago, IL 60611.
Bohemia, Inc., P.O. Box 2027, Grass Valley, CA 95945.
Booker Associates, Inc. (Peter F. Jackson), 343 Waller Avenue, Lexington, KY 40504.
Boyd Lumber Corp. (Butch Koykka), P.O. Box 112, Sedro Woolley, WA 98284.
Brady, Blackwell Associates, P.C. (Larry Resentreter), 520 E. 18th, Cheyenne, WY 82001.
Brookings Plywood Corporation (Robert L. Rogers), P.O. Box 820, Brookings, OR 97415.
Brown-Bledsoe Lumber Co. (John C. Baskerville, Jr.), P.O. Box 10098, Greensboro, NC 27404.
Brunswick Pulp Land Co. (C. H. Martin), P.O. Box 860, Brunswick, GA 31520.
Burlington Northern (S. G. Merryman), 650 Central Bldg., Seattle, WA 98104.
Burrill Lumber Co. (Daniel E. Goltz), P.O. Box 220, Medford, OR 97501.
Buse Timber & Sales, Inc. (Ron Smith), 3812 28th Place, N.E., Marysville, WA 98270.
California Assoc. of 4WD Clubs, Inc. (Ed Dunkley), P.O. Box 669, Sacramento, CA 95803.
California Trout (Herbert L. Joseph), 1516 Napa Street, Vallejo, CA 94590.
Canal Wood Corporation (N. V. Chamberlain), P.O. Box 308, Chester, SC 29706.
*Cascade Holistic Economic Consultants (Randal O'Toole), P.O. Box 3479, Eugene, OR 97403.
Central Cascades Conservation Council (Tony George), P.O. Box 731, Salem, OR 97308.
Chaco Energy Co. (J. W. Deichmann), P.O. Box 1088, Albuquerque, NM 87103.
Champion International Corp. (Gordon Crupper), P.O. Box 1208, Salmon, ID 83467.
Champion Timberlands (L. Heist), 1 Landmark Square, Stanford, CT 06921. (Richard A. Sirken), 405 Norway Street, Norway, MI 49870.
Chemeketans (W. B. Eubanks), 360½ State Street, Salem, OR 97301.
Chevron, USA, Inc. (L. C. Soileau III), 575 Market Street, San Francisco, CA 94105.
*Cities Service Company (Catherine Perman), Box 300, Tulsa, OK 74102.
Citizen's Committee to Save Our Public Lands (Ellen Drell), P.O. Box 1471, Willits, CA 95490.
Citizens for N. Idaho Wilderness (John Adams), Route 2, Culdesac, ID 83524.
Clearwater Forest Industries (Robert H. Krogh), P.O. Box 340, Kooskia, ID 83539.
Colorado Mining Association (David R. Cole), 330 Denver Hilton Office Bldg., 1515 Cleveland Place, Denver, CO 80202.
Columbia Audubon Society (Charles H. Eastman), 4805 Barber Street, Columbia, SC 29203.
Consolidated Papers, Inc. (Dan Meyer), P.O. Box 50, Wisconsin Rapids, WI 54494.
Continental Forest Industries (J. O. Cantrell), P.O. Box 8969, Savannah, GA 31402.
Day Mines, Inc. (Warren A. Cohen), P.O. Box 1010, Wallace, ID 83873.
Defenders of Wildlife (Sara Polenick), 6101 Griffin Lane, Medford, OR 97501.
*Designing With Nature (R. L. Elkum), Box 527, Moose Lake, MN 55767.

Diamond Internatonal Corp. (Roger A. Race), New York Woodlands Dept., Plattsburgh, NY 12901.
DuPage Audubon Society (Lisa Zebrowski), 27 W. 722 Elm Drive, West Chicago, IL 60185.
*Eagle Valley Environmentalists (Gilbert Walter), P.O. Box 155, Apple River, IL 61001.
East Central Idaho Planning & Development Assn., P.O. Box 330, Rexburg, ID 83440.
*Ecology Action for Rhode Island (Elizabeth Schiller), 286 Thayer Street, Providence, RI 02906.
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(Gilbert W. Zieman & Jane E. Booth), 200 South Michigan Avenue, Chicago, IL 60604.
*(Paul F. Ehinger & William F. Berry), 1500 Valley River Dr., Suite 240, Eugene, OR 97401.
*(Jack Heaston), P.O. Box 227, John Day, OR 97845.
(John J. Mahon), P.O. Box 808, Saratoga, WY 82331.
Ellingson Lumber Co. (John M. Brown), P.O. Box 866, Baker, OR 97814.
Elsa Wild Animal Appeal (Karen Johnston), P.O. Box 4572, North Hollywood, CA 91607.
Environmental Action of Michigan, Inc. (Alex Sagadz), 409 Seymour, Lansing, MI 48933.
*Environmental Defense Fund (Kathleen Zimmerman), 1525 18th Street, NW, Washington, DC 20036.
Environmental Impact Services (Mark Brosseau), 3815 East Bellevue, Tucson, AZ 85716.
*Environmental Information Center (Noel Rosetta), Box 12, Helena, MT 59601.
Evansville Veneer & Lumber Co. (John C. Ackerman), 100 South Kentucky Ave., Evansville, IN 47714.
Exeter Exploration Company (Jean Enstrom), P.O. Box 17349, Denver, CO 80217
Exxon-USA (H. W. Hardy), P.O. Box 2180, Houston, TX 77001.
Far West Ski Association (Nancy J. Ingalsbee), 3325 Wilshire Blvd., Suite 1340, Los Angeles, CA 99010.
Federal Timber Purchasers Assoc.
(James R. Craine), 3900 S. Wadsworth Blvd., Suite 201, Denver, CO 80235.
(Erwin Kulosa), P.O. Box 14429, Albuquerque, NM 87191.
*Federation of Western Outdoor Clubs (Dixie Boade), P.O. Box 71, Petersburg, AK 99833.
(Karen M. Fant), 5119½ 27th, NE, Seattle, WA 98105.
Finch, Pruyn & Co., Inc. (Norwood W. Olmsted), Glens Falls, NY 12801.
Fly Fishermen for Conservation, Inc. (Karl Klavon), 6628 N. Barton, Fresno, CA 93710.
Forest Engineers, Inc. (S. A. Newman), P.O. Box 156, Everett, WA 98206.
Forest Land Services, Inc. (James S. Paxton), P.O. Box 1211, Elkins, WV 26241.
*Forest Service Timber Purchasers Council (Everett Wells), c/o Georgia Pacific Corp., P.O. Box 407, Glenwood, AR 71943.
Fourply, Inc. (Dee W. Sanders), P.O. Box 890, Grants Pass, OR 97526.
Friday Harbor Laboratories (Gerald Audesirk), Friday Harbor, WA 98250.
Friends of the Earth
(Gordon Robinson), 124 Spear, San Francisco, CA 94105.
(Margie Ann Gibson) Northwest Office, 4512 University Way, NE., Seattle, WA 98105.
Friends of Wildlife (Beula Edmiston), 14 W. Markland Dr., Monterey Park, CA 91754.
Greater Snake River Land Use Congress (Bill Ryan), P.O. Box 902, Boise, ID 83701.
Group Against Smog and Pollution (Patricia B. Pelkofer), P.O. Box 5165, Pittsburgh, PA 15206.
Gulf Lumber Co., Inc. (Billy Stimpson), P.O. Box 1663, Mobile, AL 36601.
*Hammermill Paper Co., P.O. Box 1440, Erie, PA 16533.
Hampton Tree Farms, Inc. (John C. Hampton), Terminal Sales Bldg., Portland, OR 97205.
Herbert Lumber Company (Lynn Herbert), P.O. Box 7, Riddle, OR 97469.
Hines Lumber Co. (Julian H. Bucher), P.O. Box 484, Kremmling, CO 80459.
Hitchcock & Pinkstaff (John W. Hitchcock), P.O. Box 57, 419 East 6th Street, McMinnville, OR 97128.
Hocking Valley Rock Shop (Greg Vicker), 4650 Columbus-Lancaster Rd. NW, Carroll, OH 43112.
*Hood Canal Environmental Council (Donna Simmons), P.O. Box 126, Hoodsport, WA 98548.
Idaho Conservation League (Pat Ford), Box 844, Boise, ID 83701.
Idaho Environmental Council (Gerald A. Jayne) P.O. Box 1708, Idaho Falls, ID 83401.
Idaho Mining Association (A. J. Teske), P.O. Box 1738, Boise, ID 83701.
Idaho Pole Company
(J. R. McFarland), 227 S. First, Sandpoint, ID 83864.
(Art Crane), Box 1129, Bozeman, MT 59715.
Idaho Stud Mill (Gordon Wilson), P.O. Box 167, St. Anthony, ID 83445.
Idaho Study Group (Lee Milner), 215 4th Street, Lewiston, ID 83501.
Idaho Trails Council (Bernice E. Paige), Route 5, Box 59, Idaho Falls, ID 83401.
Independent Petroleum Association (Jack M. Allen), P.O. Box 1046, Perryton, TX 79070.
*Industrial Forestry Association (N. E. Bjorklund), 225 S. W. Broadway, Rm 400, Portland, OR 97205.
*Inquiring Systems, Inc. (David Kafton), 2532 Durant Ave., Suite 230, Berkeley, CA 94704.
*Institute for Forest Ecosystems Decisions (Richard Field & Peter Dress), Forestry Sciences Laboratory, Carlton Street, Athens, GA 30602.
International Assoc. of Fish & Wildlife (Anne Erdman), 1412 16th Street NW., Washington, DC 20036.
International Ecology Society (R. J. Kramer), 1471 Barclay Street, St. Paul, MN 55106.
International Paper Co.
(H. S. Winger), P.O. Box 2328, Mobile, AL 36601.
(W. R. Richardson, Jr.), P.O. Box 549, Panama City, FL 32401.
(Charles W. Compton), P.O. Box 400, Richmond Hill, GA 31324.
*International Snowmobile Industry Assoc. (Derrick Crandall), Suite 850 South, 1800 M Street NW., Washington, DC 20036.
Irrigation Association (Jean Roper), 13975 Connecticut Avenue, Silver Spring, MD 20906.
Izaak Walton League of America (Loren Hughes & Bill Fleischman) (Union County Chapter), LaGrande, OR 97850.
J. Gibson McIlvain Co., Route 7, White Marsh, MD 21162.
James W. Sewall Co. (Robert B. Fiske), Box 433, Old Town, Maine 04468.
*John Muir Institute (Henry H. Carey), Box 4551, Santa Fe, NM 87502.
Kern Plateau Association, Inc. (R. H. Doody), 153 Mankins Circle, Porterville, CA 93257.
*Kentucky Rivers Coalition (Kevin Murphy), P.O. Box 1308, Lexington, KY 40590.
Kinzva Corporation (Allen R. Nistad), Route 2, Box 2100, Heppner, OR 97836.
Kogap Lumber Industries (S. V. McQueen & Jerry S. Lausmann), P.O. Box 1608, Medford, OR 97501.
L. D. McFarland Co. (D. R. Netro), P.O. Box 670, Sandpoint, ID 83864.
Lake Pleasant Forest Products Corp. (Dean Hurn), P.O. Box 149, Beaver, WA 98305.
*Lane County Audubon Society (Sydney Herbert), P.O. Box 5086, Eugene, OR 97405.
League of Women Voters
*(Ruth Hinefeld & Lee Carpenter), 1730 M Street NW., Washington, DC 20036.
League of Women Voters of California (Joan Rich), 942 Market St., Suite 505, San Francisco, CA 94102
League of Women Voters of Florida (Lois Harrison), 1035-S South Florida Avenue, Lakeland, FL 33803.
League of Women Voters of Indiana (Nancy Doemel), RR 8, Oak Hill Road, Crawfordsville, IN 47933.
League of Women Voters of Pennsylvania (Margot Hunt), 8th & Market Streets, Philadelphia, PA 19105.
League of Women Voters of Tennessee (Shirley C. Patterson), 1701 21st Avenue, South, Suite 404, Nashville, TN 37212.
(Caroline Williams), 6903 Hickory View Lan Chattanooga, TN 37421.
(Carla M. Hansmann), 1496 18th Avenue, Seattle, WA 98122.
*Louisiana-Pacific Corporation
(Lloyd Jones & D. L. Finney), P.O. Box 6600, Ketchikan, AL 99901.
(Philip V. Petersen & Lowell Ambrosini), P.O. Box 120, Ukiah, CA 95482.
(Theresa L. Brass), P.O. Box 756, Escanaba, MI 49829.
(Kent Studebaker), 1300 SW Fifth Avenue, Portland, OR 97201.
M. A. Rigoni, Inc., 215 Sunset Lane, Perry, FL 32347.
M. L. King Co. (Frederick W. King), P.O. Box 456, Joplin, MO 64801.
M. S. Hancock, Inc. (K. David Hancock), Casco, Maine 04015.
Massachusetts Audubon Society (Deborah N. Howard), Lincoln, MA 01773.
Mauk Forest Products, Inc. (F. L. Young), P.O. Box 430, Meridian, MS 39301.
Mead (Darrel F. Roberts), World Headquarters, Courthouse Plaza NE, Dayton, OH 45463.
*MECCA Wildlife Task Force (Bette Kent), 5913 Ewing Ave., South, Minneapolis, MN 55410.
*Mendocino Environment Center (Tom Wodetzki), Box 557, Mendocino, CA 95460.
Merrill & Ring, Inc. (Glenn Wiggins), P.O. Box 30, Port Angeles, WA 98362.

Metropolitan Area Planning Council (Alexandra D. Dawson), 44 School Street, Boston, MA 02108.
*Michigan Forest Association (Barbara Clark), P.O. Box 1064, Traverse City, MI 49684.
Michigan United Conservation Clubs (Dennis Fijalkowski), P.O. Box 30235, Lansing, MI 48909.
Minnesota Forest Industries (M. J. Latimer), 908 Pioneer Bldg., St. Paul, MN 55101.
Montana Pole & Treating Plant (William C. Dockins), P.O. Box 3506, Butte, MT 59701.
*Montana Wilderness Association (Doris Milner), Route 1, Box 1410, Hamilton, MT 59840.
*Motorcycle Industry Council, Inc. (John F. Wetzel), 1 Connecticut Ave. NW., Suite 522, Washington, DC 20036.
National Audubon Society (Michael D. Zagata), 1511 K Street NW., Washington, DC 20005.
*National Audubon Society (Pauline Plaza), 9250 W. 5th Avenue, Lakewood, CO 80226.
National Catholic Rural Life Conference (Bishop Maurice J. Bingman), 3801 Grand Avenue, Des Moines, Iowa 50312.
*National Forest Products Association (John Crowell, Ralph D. Hodges and Doug MacCleery), 1619 Massachusetts Ave., NW, Washington, DC 20036.
National Governors' Association (Robert N. Wise), Hall of the States, 444 N. Capitol Street, Washington, DC 20001.
National Lumber & Building Material Dealers Association (Richard D. Snyder), 1990 M Street, NW, Suite 350, Washington, DC 20036.
*National Wildlife Federation (Peter Kirby & Thomas Kimball), 1412 16th Street, NW, Washington, DC 20036.
*Natural Resources Defense Council, Inc.
(Tom Barlow & Tom Stoel), 917 15th Street, NW, Washington, DC 20005.
(Trent Orr), 2345 Yale Street, Palo Alto, CA 94306.
New England Power Service (Gordon E. Marquis), 20 Turnpike Road, Westborough, MA 01581.
New England Trail Rider Association (David Sanderson), P.O. Box 66, West Newbury, MA 01985.
New Mexico Wilderness Study Committee (Bob Langsenkamp), P.O. Box 81, Silver City, NM 88061.
*Northwest Pine Association
(Charles Arment), 415 NE Burgess Place, Bend, OR 97701.
(Scott Horngren), 238 Peyton Bldg., Spokane, WA 99201.
*Northwest Timber Association (Martin Devere), 1355 Oak Street, P.O. Box 5554, Eugene, OR 97405.
Oregon Archeological Pres. Comm. (Irene H. Warner), 19790 S. Old River Drive, West Linn, OR 97068.
Oregon Student Public Interest Research Group (Kirk Roberts), 918 S. W. Yamhill, Portland, OR 97205.
Oregon Wilderness Coalition (Andy Kerr), P.O. Box 3066, Eugene, OR 97403.
Outdoors Unlimited, Inc.
(Roberta Andersen), Two Clocktower Square, 14221 E. 4th Ave., Suite 220, Aurora, CO 80011.
(Rem Kohrt), P.O. Box 167, St. Anthony, ID 83445.
Owens-Illinois, Inc. (J. G. Barton), P.O. Box 1, Big Island, VA 24526.
*Ozark-Mahoning Co. (M. L. Hahn), Rosiclare, IL 62982.
Pacific Management Group, Wells Fargo Bldg., 2140 Shatlack Avenue, Berkeley, CA 94704.
*Pacific Northwest 4-Wheel Drive Assn. (Bill Larkin), 3205 Butterfield Rd., Yakima, WA 98901.
*Packaging Corporation of America (Robert F. Davis), P.O. Box 316, Manistee, MI 49660.
Paul Bunyan Lumber Company (Milton Schultz & R. H. Richards, Jr.), P.O. Drawer 487, Anderson, CA 96007.
Placer County Conservation Task Force (Gayle Russell), 460 Racetrack Street, Auburn, CA 95603.
Potlatch Corporation
(Richard V. Warner & C. R. McKinley), P.O. Box 390, Warren, AR 71671.
(R. M. Steele), P.O. Box 3591, San Francisco, CA 94119.
*(Jay Gruenfeld, Jim McNutt, James Morris and Mary Lou Franzese), P.O. Box 1016, Lewiston, ID 83501.
(Thomas Smrekar), Box 510, Cloquet, MN 55720.
*Public Lands Institute (Todd Bacon), 1740 High Street, Denver, CO 80218.
*Public Lands (Omer Humble), 330 Denver Hilton Office Bldg., 1515 Cleveland Place, Denver, CO 80202.
Puget Sound Plywood, Inc. (G. C. Carver), P.O. Box 1378, Tacoma, WA 98401.
*Resources for the Future (John Krutilla), 1755 Massachusetts Ave., NW, Washington, DC 20036.
Robert F. Knoth & Co., 134 E. Bay Street, Charleston, SC 29401.
Rocky Mountain Energy Co. (Elizabeth H. Richardson) 4704 Harlan, Denver, CO 80212.
*Rocky Mountain Oil & Gas Association (Jack Swenson), 345 Petroleum Club Bldg., Denver, CO 80202.
*Saint Joe Minerals Corp. (Harold Myers), P.O. Box 500, Viburnum, MO 65566.
St. Regis Lumber (William B. Ward), Klickitat, WA 98628.
St. Regis Paper Co.
(John K. McBride), P.O. Box V-X, Libby, MT 59923.
(H. D. Phillips), Deferiet, NY 13628.
(R. A. Martin), P.O. Box 1593, Tacoma, WA 98401.
Schnabel Lumber Co. (John J. Schnabel), P.O. Box 129, Haines, AK 99827.
Scott Paper Co.
(H. D. Fisher), Scott Plaza, Philadelphia, PA 19113.
(Kurt Munnich), Everett, WA 98201.
Seaboard Lumber Co. (D. E. Dyson), P.O. Box 3603, Seattle, WA 98124.
*Sierra Club—Legal Defense Fund, Inc.
(Julie E. McDonald), 311 California Street, Suite 311, San Francisco, CA 94104.
Bloomington Group (Paul Hughes), P.O. Box 961, Bloomington, IN 47401.
*Florida Chapter (Doug Alderson), 2311 Mavis Circle, Tallahassee, FL 32301.
Harvey Broome Group (Sharon Simpson) 144 Fox Road, Knoxville, TN 37922.
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Appendix B

Planning process or system alternatives which are considered are described below. For a more complete discussion, the reader is referred to the minutes of the May 24–26, 1977 Committee of Scientists meeting.

1. Incrementalism: policy of decisionmaking as variations on the past. The land manager views public policy and decisionmaking as a continuation of the past government activities with only incremental modifications. This process is based on the successive comparison of a limited array of policies or decision alternative.

2. Rationalism: policy or decisionmaking as efficient goal achievement. A rational policy or decision is one that is correctly designed to maximize or minimize net value achievement. Policy and decisionmaking is approached through means-ends analysis. First, the desired ends are determined, then the alternative means to achieve them are designed.

3. Mixed Scanning: policy and decisionmaking as variations on the past in line with modified efficient goal achievement. This process is a mixture of Incrementalism and Rationalism. It attempts to limit the details and explores longer run alternatives.

4. System Theory: policy and decisions as rational system output. This theory is an extension of the scientific method. The problem is defined, objective set, alternatives developed and evaluated, and a decision made as to the preferred course of action. A mechanism of monitoring and updating is needed.

5. Group Theory: policy and decisionmaking as a group equilibrium. This is based on the belief that interaction among groups is the central fact of political decisiomaking. Groups struggle: policy and decisions result when equilibrium between groups is reached.

6. Game theory: policy as rational choice in competitive situations. This is the making of rational decisions in situations where participants have choices to make and the outcome depends on the choices made by each of them. There is no independently best choice. This theory provides a way of thinking clearly about policy or decisions choices in conflict situations.

7. Institutionalism Theory: policy and decisionmaking as inherant institutional activity. The activities of individuals and groups are generally directed toward governmental institutions. Public policy and decisions are authoritatively determined, implemented, and enforced by governmental institutions.

8. Elite Theory: policy or decision as the preference of an elite. Elite shape mass opinion on policy or decision questions more than do the masses because the latter are apethetic and ill-informed. In other words, policies flow from elites to the masses: they do not arise from the masses.

9. Anti-Planning: policy and decisionmaking as output of an individualistic decisionmaking. This is a common form of planning. A system or problem exists which needs to be managed. The manager studies aspects of the problem he deems important, utilizes data from staff, and decides what to do.

Major problems outside the planning realm itself greatly constrain the type of planning procedure which can be used. Two concepts of considerable importance are "paradigm" and "people". A "paradigm" is a set of conceptual constructs which govern the viewpoints of people involved in a planning process. The people are referred to as "hierarchists," "individualists," and "mutualists," who use different paradigms, respective "one way casual," "random process," and "mutual casual." These notions were also considered and used as part of the conceptual basis for designing the planning process.

Appendix C

Committee of Scientists and other Meeting Dates and Locations:

May 24–26, 1977—Washington, D.C.
June 19–21, 1977—Boise, Idaho
July 27–28, 1977—Juneau, Alaska
August 29–30, 1977—Denver, Colorado
September 21–23, 1977—Minneapolis, Minnesota
October 27–28, 1977—San Francisco, California
December 1–2, 1977—Atlanta, Georgia
January 16–18, 1978—Phoenix, Arizona
February 23–24, 1978—Biloxi, Mississippi
March 29–30, 1978—Dallas, Texas
April 17–18, 1978—Washington, D.C.
July 14, 1978—Washington, D.C.
September 28–29, 1978—Denver, Colorado
November 1–2, 1978—Seattle, Washington
December 7–8, 1978—Sacramento, California
January 8–9, 1979—Houston, Texas
January 26, 1979—Washington, D.C.
June 20–21, 1979—Asheville, North Carolina.

Public Meetings on the National Forest Management Act Regulations:

September 15, 1978—Washington, D.C.
November 27, 1978—Washington, D.C.

Appendix D

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Dr. R. Rodney Foil, Mississippi Agricultural and Forestry Experiment Station, Mississippi State, Mississippi, and specialist in forest resource management.
Dr. Ronald W. Stark, Forest Entomologist and Coordinator of Research, University of Idaho, Moscow, Idaho.
Dr. Earl L. Stone, Jr., Soil Scientist and Professor, Department of Agronomy, Cornell University, Ithaca, New York.
Dr. Dennis E. Teeguarden, Professor of Forestry Economics, College of Natural Resources, University of California, Berkeley, California, and specialist in applying operations research to forest resource allocation problems.
Dr. William Webb, Wildlife Biologist, formerly Professor in Wildlife Management, State University of New York, Syracuse, New York, now retired.

Appendix E—Supplementary Final Report of the Committee of Scientists, August 17, 1979

Introduction

This report contains the views of the Committee of Scientists, established pursuant to section 6(h) of the National Forest Management Act of 1976 (NFMA), as to the scientific and technical adequacy of the May 4, 1979, draft of regulations prepared by the Forest Service to implement the land and resource management planning provisions of NFMA. In our earlier report (Federal Register 44(88): 26599–26657) we commented at length on various aspects of the scientific, technical, and legal adequacy of the first draft of the regulations published August 31, 1978 (Federal Register 43(170): 39046–39059). We also phrased our recommendations in specific regulatory language (Federal Register 44(88): 26643–26657).

In the present report, our final statement, we comment on how well the revised second draft (Federal Register 44(88): 26583–26599) speaks to issues raised in our earlier report and upon the many improvements and additions that have been made to the August 31, 1978, draft. In addition, we recommend changes in language where such seem needed.

A word about the Committee of Scientists and its work is in order. The Committee is composed of 7 persons appointed by the Secretary of Agriculture. It began its work in May, 1977, and essentially completed its duties in January 1979. Section 6(h) of NFMA charges the Committee to provide the Secretary with scientific and technical advice and counsel on the proposed guidelines and procedures to assure that an effective interdisciplinary approach for implementing section 6 of NFMA is adopted. Although the actual charge pertained only to subsection 6(g) of NFMA, the complex interrelationships among the various sections of the Act required that, in order to do its job effectively, the Committee had to consider all provisions of NFMA that relate to land management planning and timber management.

The Committee met 18 times at various locations throughout the country. Its meetings were entirely open and provided an excellent opportunity for members of interest groups to have access to the drafting of the regulations. Although we suspect that Congress envisioned a more reactive role for us, it proved most efficient for us to participate at times in the actual drafting process. Therefore, the final wording of the regulations does contain some material that originated in the Committee.

This final report was prepared by the Committee after a meeting in Asheville, N.C., on June 20–21, attended by four members (Cooper, Foil, Stone, Teeguarden). Box, Stark and Webb have read and approved the report.

Our earlier report stated that the first draft of the regulations, despite some important deficiencies, represented a major step forward in Forest Service policy. Furthermore, we considered it generally responsive to NFMA even though a number of important issues were not adequately handled. The second draft is a major improvement upon the first. It not only contains the needed specificity in important areas but also shows evidence of substantial creative thinking by the Forest Service in revising the original draft. It shows clear evidence that the Forest Service has considered both the public comments on the first draft and the specific recommendations of the Committee of Scientists.

Despite this praise, there are still some problems involved with the second draft. Some problems are associated with organization; others are associated with inadequacies or omissions. We identify these and suggest corrective language. Other problems arise from the

fact that the precise methodologies necessary to execute some of the critical planning steps simply have not been developed. We cannot develop such technology; we simply identify where these problems occur, point out their significance, and express our confidence that they can be solved if NFMA is supported as Congress intended.

After a brief general comment, our views are presented in the order that subjects appear in the May 4, 1979, second draft. When we refer to section numbers in the second draft we identify them as sections from the "second draft." Materials coming from our earlier report are identified by section number of the "COS report." Where we do not comment on a section or on a requirement, it can be assumed that we support the text proposed by the Forest Service in its second draft.

General Comment

The second draft of the regulations is a very careful exposition of a planning process. As we stated in our report on the first draft, we consider such emphasis on process entirely proper, because we interpret NFMA as instructing the Forest Service to develop a *process* for planning use of lands in the National Forest System.

The planning process of the second draft is developed from the first. We felt that the process described in the first draft could be made to work. The improvements in the planning process embodied in the second draft, together with the greater specificity of that draft, makes a competent blueprint for future planning. On the whole, we approve of the changes in the second draft. In our analysis we point out some concerns and propose language to cope with them.

We also repeat here the admonition of our earlier report: that the regulations have to be read in their entirety to be understood. The regulations are a complex, finely-tuned, document. Many requirements cannot be understood without reading several sections and observing the relationships between requirements in the several sections.

Finally, our report points out that the first draft regulations were not specific enough in prescribing actions and procedures to meet the requirements and intent of NFMA. This matter was the subject of intense debate in our meetings and the debate continues. Our report presented the view that the regulations should be specific in establishing the principles of land management planning and establishing the process to be used in applying those principles. We further stated that the regulations should not be specific in regard to prescriptions for the solution of on-the-ground management problems. Much of our report was directed to providing what we considered to be appropriate specificity in key areas. The second draft of the regulations contains a very high percentage of the recommendations made in our report and adds some specificity deemed necessary by Forest Service officials. The aggregate effect of these recommendations is a very detailed set of regulations. The degree of detail has, in some cases, led to the charge that the second draft is "over-specific." It is our view that this charge is invalid. We consider that, in virtually all cases, the degree of specificity in the second draft is required in order to meet congressional intent as specified in NFMA and its legislative history. It is simply not possible to carry out the planning requirements of NFMA in accordance with a set of regulations that contain nothing but generalities. Answers to vital management issues can be discovered by professionals, but Congress intended, and the public desires, that the process used be fully described in regulations. Although some may wish differently, the degree of specificity represented by the second draft and the recommendations of our report is what NFMA, in our opinion, requires.

Section-by-Section Analysis

Section 219.1 Purpose.

No comment.

Section 219.2 Scope and applicability.

No comment.

Section 219.3 Definitions.

No comment.

Section 219.4 Planning levels.

In our earlier report, we criticized the section on "Planning levels" in the first draft as failing to make clear the iterative nature of the exchanges among the various planning levels, and for inadequate description of development of the regional plan and its content. We pointed out the RPA/NFMA planning process must begin with on-the-ground assessments of the capabilities of each National Forest to supply goods and services at various budgetary levels, and of local demands. Such information should then be aggregated at the regional and national levels into regional plans and the RPA Assessment and Program. Regional and forest goals are then formulated by disaggregation of these data. The key is continuous iteration and interchange of information between the various planning levels.

We consider that § 219.4 of the second draft adequately captures the sense of this concept. The language of one section (219.4(c)(3)) however needs revisions. We propose that it be reworded as follows: "(3) Proposed Program alternatives. The Program is formulated from the Assessment analysis of resource supply and demand relationships and from alternative program objectives prepared at the national level and reviewed and evaluated at the regional and forest levels for feasibility and compatibility with regional and forest capabilities as expressed in regional and forest plans."

Section 219.4(b)(3) should cite section 13 of NFMA in addition to section 6 as the authority for development of land and resource management plans.

Section 219.5 Planning Process.

Organizationally this section represents the largest difference between the first draft and our report, on the one hand, and the second draft on the other. As we understand it, this section is designed to show that certain general features of the planning process pertain to the development of both regional and forest plans. It is followed by two sections (219.9 and 219.11) dealing with the specifics of regional and forest planning procedures respectively. We have no quarrel with this organization per se, although it is not what we recommended in our report. Our view is that if the Forest Service planners feel comfortable with the organization of the second draft, then it should be adopted. We do recommend, however, that section 219.5 be retitled "Regional and Forest Planning Process" to more accurately portray its intent.

Our concerns stem from what has been left out in generalizing to create this new general section and for requirements that are now not stated in clear enough terms.

Our first concern is that all reference to the discount rate that will be used in economic calculations, such as the determination of suitable lands for timber harvest, has been removed from the second draft. The discount rate is an important factor in calculations and the public is entitled to know where the Forest Service will obtain this datum. Accordingly, we recommended that § 219.5(c)(6) be reworded as follows: "(6) Guidelines for economic analysis practices established by the Chief, Forest Service, that will become effective within one year after final publication of these planning rules in the Federal Register, including a discount rate of analyses either equal to the rate used in the RPA Program or otherwise justified; and"

We are concerned also about treatment of inventory data and information collection in § 219.5(d). Because the requirements in this area

were specific in § 219.9(c) of the first draft and even more specific in § 219.10(c) of our report, the change to brief general requirements in § 219.5(d) of the second draft could be interpreted as indicating that the Forest Service does not consider availability of data to be a major problem in planning. We stressed in our report, and we now stress again, that unless adequate data are available, the entire planning process will be a meaningless game. No plan can be any better than the data that underlie it. Consequently, attention to data collection, storage, and treatment is a very important feature of the planning regulations.

We do not believe that the wording of § 219.5(d) is intended to downplay the importance of inventory data acquisition and management. Statements made in our meetings indicate that none of the National Forests now has adequate inventory data to support planning. Initial planning efforts by certain lead forests, however, apparently have given undue attention to data gathering without a clear relationship to the decision process. The altered language attempts to correct this misemphasis. We believe such correction can be achieved without downplaying the cardinal importance of a sound inventory process and suggest that the matter be resolved in the following way:

1. The wording in § 219.5(d) should be retained but augmented by clear direction that each regional and forest plan should outline a program for gathering and managing data related to the specific needs of that region or forest. A review of this problem by the Society of American Foresters proposes certain criteria for this information plan. We commend them to the Forest Service as being sound and useful for what we think is needed.

2. Material describing the nature of inventory data that will be needed in support of the respective plans should be inserted in the sections on criteria for regional plans (§ 219.10) and forest plans (§ 219.12). The insertion in criteria for regional plans need not be long, but substantially more detail, in line with § 219.10(c) of our report, should be included in the section pertaining to forest planning.

In § 219.5(e)(2) the word "demand" is used in two senses. We suggest that for clarity the words "level of demand" used in the sixth line of the section be changed to "level of goods and services."

Section 219.5(f) dealing with the formulation of alternatives is rather different from that which we recommended in § 219.10(f) of our report. Our concern is not with this but with the omission of some important ideas and the unworkability of several provisions. We suggest that:

1. Section (f)(1)(iii) should be reworded. The section is so stringently worded as to be unreasonable in its requirements. For example, it could be interpreted as requiring the restoration of an animal species that had been extirpated from the region of the forest prior to the time it became a National Forest. Section (e)(1)(iii) of our 219.10 could serve as a guide for more moderate language.

2. Section (f)(1)(iv) is operationally difficult. We suggest that the wording used be: "(iv) Each identified major public issue and management concern will be addressed in one or more alternatives; and"

3. The word "cost-effective" be changed to "efficient" in § 219.5(f)(1)(v) and § 219.12(b)(4)(iii) where it also occurs. The intent of the use of the term "cost-effective" is to maximize the present net worth of each alternative *subject* to meeting the objectives of the alternative. Therefore, the following sentence should be added to § 219.5(f)(1)(v): "Efficient refers to the set of practices which maximize the sum of anticipated discounted direct benefits less anticipated discounted direct costs."

4. A new subsection (iv) should be inserted in § 219.5(f)(2), to show the role of RPA goals and objectives in formulating alternatives, as follows: "(iv) the extent to which it fulfills the goals and objectives assigned in the regional or forest plan, as appropriate."

Section 219.5(g) dealing with estimation of the effects of alternatives exemplifies the loss of specificity which occurred as the planning requirements were generalized to relate to both the regional and forest plan. A comparison of this section with its counterpart in our report, § 219.10(f) shows that the version in the second draft consists primarily of very general statements similar to those contained in (1) through (4) of our report, plus an outline of the economic analyses that are to be made in determining the benefits and costs associated with each alternative. Nowhere is there any real direction with respect to estimating environmental or social effects. Our direction that the impact of each alternative on diversity be assessed (§ 219.10(f)(1) (vi) and (vii) (in our report)) is also lacking. Accordingly, we suggest that:

1. The entire section be rewritten to reflect a better balance among the effects that are to be assessed and to show that environmental and social effects and effects on diversity, in addition to economic implications, are to be assessed.

2. The economic requirements of § 219.5(g)(5) be rewritten. Specifically, (ii) and (iv) should be restructured, inasmuch as they now appear to conflict with one another. The procedure described in (ii) for assignment of dollar values to nonmarket goods and services is, in our opinion, suspect and should be eliminated. Subsection (iv) hints that the preferred alternative will be the one that maximizes net worth and this inference should be eliminated. We suggest that our § 219.10(f)(4), or its sense, be substituted for (iv). The words "real-dollar" in (iii) might better be replaced by the term "constant-dollar."

3. A subsection be added to tie the effects of the alternative to the regional plan such as: "(8) Display the relationship of expected outputs to the forest production goals given in the regional plan."

4. A special cross-reference be added at the end of 219.5(g) to indicate that each alternative will be evaluated in terms of the management standards specified in § 219.13 (b) and (g).

We recommend that a reference to the standards in § 219.13 (b) and (g) also be added to § 219.5(h) to indicate that they will play an important role in the evaluation of alternatives.

Finally, does the term "plan implementation" (§ 219.5(j)) apply to forest planning, regional planning, or national planning? Although Forest Service officials have control over program proposals and plan implementation, to what extent do all levels in the agency have control over budget *allocations*? If the intent of the section is to define appropriate actions to be undertaken if budget allocations are not sufficient, then (i)(2) and (j)(3) should be combined.

Section 219.6 Interdisciplinary Approach.

This section is improved over the first draft. Requirements relating to the appointment of the team, its *modus operandi*, and the philosophy that is to guide it are all more explicitly stated.

However, we continue to be concerned with this section because of NFMA's special charge to the Committee that is ". . . assure that an effective interdisciplinary approach is proposed and adopted." Our report set out three issues critical in assuring an effective interdisciplinary approach: These are 1) composition of the team and the qualifications of its members; 2) the philosophy that guides the team; and 3) the actual planning process that the team uses. Some minor additions, patterned after suggestions in our report,

will better assure that the section provides an effective interdisciplinary approach.

The requirements of the second draft with regard to item 1) above are virtually identical to those of our report with one important exception. We recommended in our § 219.6(b) that, when Forest Service employees with appropriate expertise or qualifications are not available, the team *shall* (emphasis added) consult persons other than Forest Service employees. The second draft states only that the team "may" consult such persons. We suggest that "shall" as in our original language is better direction in the event the required expertise is lacking.

Our report also emphasized that it would be highly desirable for qualified employees of state agencies to be able to serve as members of planning teams. We think that this is the most direct way to meet Congress' expectation that ". . . the expertise of affected state agencies will be obtained and used . . ." Furthermore, this procedure seemed to us to have the added value of substantially increasing the credibility of Forest Service planning, particularly at the state level. It now appears, however, that this is legally not possible. It is a fact, however, that careful coordination among Forest Service and state planners is critical to the success of plans, particularly in areas of shared responsibilities, such as wildlife management. It is not clear to us that the full desires of Congress for coordination with the states can be realized through the coordination process alone. Therefore, we recommend that the Forest Service explore other ways in which it can make judicious use of non-Forest Service employees as participants in the interdisciplinary planning process.

The material in the second draft relating to the qualifications of team members is similar to what is in our report. We consider the spelling out of additional attributes of team members in § 219.6(c) of the second draft to be a good addition. We suggest only two minor additions in this area:

1. insert the word "higher" after "or" in line 10 of § 219.6(c), and

2. add the last two sentences of 219.5(c) from our report to the end of § 219.6(c) of the second draft.

We consider that the policy direction to the team in the second draft § 219.6(a) is still weak. It specifies reasonably well what the team is supposed to do but does not specify the philosophy that will guide it. We suggest that the sense of the following two paragraphs, an amalgam from the introduction and (a) of our § 219.5, be added as the introduction to 219.6 of the second draft:

Section 219.6 Interdisciplinary Approach.

The Forest Service shall use an interdisciplinary approach at each level of planning in the National Forest System to assure that plans provide for multiple use and sustained yield of the products and services to be obtained from the National Forests in accordance with the Multiple Use-Sustained Yield Act of 1960. This approach should insure coordinated planning for outdoor recreation, range, timber, watershed, wildlife and fish, and wilderness. Land management systems, harvest levels, and procedures must be determined with due consideration for (1) their effects on all resources, (2) the definition of "multiple use" and "sustained yield" as provided in the Multiple Use-Sustained Yield Act of 1960, and (3) the availability of lands and their suitabilities for resource management.

An interdisciplinary team, appointed by the responsible Forest Service official, shall be used at each level of planning. Through essentially continuous interactions, the team shall insure that planning achieves the goals of multiple use and sustained yield management, by giving consideration to all resources and to the effects of management of one resource upon other resources. The interdisciplinary team shall be guided by the fact that the forests and rangelands of the National Forest System are ecosystems and, hence, that management for goods and services requires an awareness of the interdependencies among plants, animals, soil and other environmental factors that occur within such ecosystems. Proposed management programs must be both consistent with the nature of these interactions and based upon the results of economic and social analysis."

Section 219.7 Public Participation.

The guidance provided in this section is generally adequate. Sufficient direction is provided for the public participation effort so that Forest Service planners can be clear as to what is expected of them. Perhaps more important, sufficient guidance is provided so that the public can understand Forest Service obligations and procedures relating to public participation.

Although the section is somewhat different from that proposed in our report, it speaks to many of our suggested additions to the requirements contained in the first draft. The second draft, however, fails to specify that public participation is required at a certain minimum number of key steps in the planning process, and that the responsible official must document that he has analyzed and evaluated public input. Our proposed admonitions to encourage informal activities, discourage obscure notification, and encourage clarity in writing have been omitted. Finally, a very controversial limitation on the right of appeal has been inserted as a new § 219.7(o) in the second draft.

If the sense of the following minor additions are made to § 219.7 of the second draft, then the requirements for public participation activities (excluding the appeal provision) will be more useful and acceptable.

1. The order of the statements of intent in § 219.7(a) should be altered. As presently ordered, they suggest that informing the public of Forest Service activities is more important than insuring that the Forest Service understands the needs and concerns of the public. We recommend that (a)(3) be placed first, as the concept was in our report, and the others numbered accordingly. We also suggest that (a)(5) be reworded as follows: "(5) Demonstrate that public concerns and input are evaluated and considered in reaching planning decisions." The inclusion of the concept in (a)(4) is excellent. In reality, however, it is a statement of the basic goal of public participation, and the other statements are goals subordinate to it. Therefore, we suggest that the concept embodied in (a)(4) be moved up to the lead language of (a) where it can serve as part of the introduction to the various subgoals of public participation. If this is done, then the first sentence of § 219.7(f) should be deleted.

2. The requirements from line 10 to the end of § 219.6(c) in our report, which are omitted from 219.7(d) of the second draft, should be reinserted. This will provide minimal assurance that activities will stress informality and that materials are written in such a way as to be of maximum value to the public.

3. The notice requirements at the end of § 219.6(d) of our report should be inserted at the end of § 219.7(c) of the second draft.

4. A sentence should be added at the end of § 219.7(e) of the second draft containing the sense of the last sentence of our §219.6(j). We suggest: "In addition, the plan shall contain written material demonstrating that the significant issues raised during public participation have been analyzed and evaluated."

5. The sense of our § 219.6(g) should be inserted at an appropriate place in § 219.7 of the second draft. This will

insure that public participation activities occur at certain key steps during the planning process. We feel that the public should know where these steps are (where in the process it can expect to be involved) and that the Forest Service officials need to have these spelled out so as to assist in planning public participation programs.

6. Section 219.7(l) of the second draft should be reworded as follows: "All documents considered in development of plans will be available at the office where the plan was developed."

Solution of the problem presented by the limitation on administrative appeals embodied in § 219.7(o) of the second draft is a much more difficult problem. We understand why the Forest Service inserted this provision. It fears that endless appeals of planning decisions may prevent for years the final implementation of a plan. The administrative morass that such a situation would create is clearly undesirable. On the other hand, we understand why so many readers of the second draft, object to the Forest Service proposal. No one willingly wishes to surrender the right of administrative appeal and have his source of redress for planning decisions lie only in the courts. It appears to us that §219.7(o) will be undesirable and unacceptable to many. We recommend that the Forest Service develop a different solution, even though this may mean changes in its administrative appeal procedures.

Section 219.8 Coordination of Public Planning Efforts.

This section is vastly improved over the treatment in the first draft. It is now a workable blueprint for coordination of Forest Service planning with that of other State and Federal agencies.

Because this section so closely follows the recommendation of our report, we have no substantive changes to suggest. One important matter is the procedure outlined in § 219.8(d) of the second draft to facilitate coordination with State governments. This involves a requirement that regional foresters seek agreements with Governors or their designated representatives on certain crucial procedural measures. We had suggested that the Forest Service request each Governor to designate a person to act as contact person with respect to all planning activities. Although the Forest Service proposal is different from ours, it appears equally likely to work and equally capable of producing the desired results, that is, a closer liaison with each state during all levels of planning.

We suggest that state and local growth plans be added to the inventory requirement of § 219.8(f). Growth plans, where such exist, can be powerful expressions of political and social desire with regard to the location of industry and public services. To ignore them is unwise as we point out in our report.

We further suggest that the final draft include § 219.7(j) of our report or its sense. It seems important to make clear that the mutual effects of land management practices on National Forests and adjacent lands is a proper subject of the monitoring program. If such a requirement is not specified, we think it likely that monitoring will be confined to more obvious subjects such as water quality, soil changes, and biotic effects.

We also suggest the deletion of the words "and on which management is being practiced similar in character to that being practiced on adjacent national forest lands" which appear at the end of the first line of § 219.8(g) of the second draft. Although this phrase originated in our discussions of coordination with the Forest Service and were included in our report, they now appear to place an inappropriate limitation on the intent of the section.

Finally, we find that most of the cross-referencing additions we have recommended at the end of our section on coordination have been omitted from the second draft. Although such cross-referencing adds redundancy and length to the regulations, we consider it useful in understanding the relationships of the various requirements to each other, and recommend that it be restored.

Section 219.9 Regional Planning Procedure.

Our report stated that the proposed three-tiered planning process, involving national, regional, and forest planning was sound. We are pleased to see this concept substantially improved in the second draft. The requirements governing the regional planning procedure have been greatly expanded and clarified. Furthermore, a section dealing with the content of the regional plan and the planning criteria to be included in it has been added. Taken together, these sections provide an adequate framework for developing the regional plan. Although regional plans are not called for in NFMA, we thoroughly agree with the Forest Service view that they are critical to the whole RPA planning process. Nevertheless, some changes in §§ 219.9 and 219.10 of the second draft are desirable, in order that the regional plans can play the vital role envisioned by the Forest Service.

Section 219.9 is straight-forward and we find few problems in it. We recommend small changes as follows:

1. In § 219.9(a) we suggest, that for clarity, the phrase "forest planning areas" in the first sentence be changed to "National Forests or forest planning areas."

2. In § 219.9(d), the role of the State and Private Forestry and Experiment Station elements of the Forest Service is not clearly specified. We suggest that this could be done in the third sentence of § 219.9(d).

3. Section 219.9(i)(6) should read "National Forest System programs."

4. Section 219.9(i) on monitoring seems forced, and put in more for symmetry than for real effect. The items to be monitored seem very broad and very difficult to quantify. The section certainly does no harm but if it is to be left, we suggest that it be reworked so as to be somewhat more substantive and clearer in its objectives. The section should make clear that regional goals and objectives are to be the subjects of monitoring and that specific on-the-ground management practices will be monitored in conjunction with the individual forest plans.

Section 219.10 Criteria for Regional Planning Actions.

We find more substantive problems in this section dealing with regional planning criteria. The title is misleading inasmuch as the section includes criteria of two sorts: criteria for planning and decision criteria. How the term is used is not entirely clear. Perhaps it would be better simply to title the section "Regional Plan Content" and structure it around the outline in § 219.9(h). Uncertainty as to the meaning of the word "criteria" crops up again in conjunction with the long list of concerns in § 219.10(b). Most of these are not expressed as criteria and might better be phrased simply as concerns to be considered in regional planning.

Section 219.10(c) is weak because it does not make clear the relationship between the regional plan and the RPA Assessment and Program. The words "contribute and respond to" are hardly operational. We suggest the initial wording of the section be changed to: "(c) To the extent consistent with regional and forest resource capabilities, regional plans will meet RPA goals and objectives by providing long-range policies, goals, and objectives;"

Section 219.10(d) creates problems on several counts. First, the section clearly specifies material that relates to the content of the regional plan. The standards and criteria enumerated are items that must be developed in each

regional plan and which then set dimensions on the individual forest plans in a given region. We suggest either that § 219.9(h) be moved into § 219.10 to form the basis for the section, or that § 219.10(d) be moved to 219.9(h)(5). Either move would resolve the inconsistency.

The content of 219.10(d) also poses problems. The section is similar to 219.8(e) of our report except that it omits our sections (1) silvicultural systems, (5) management intensity and utilization standards, (6) regeneration criteria, and (7) cost standards for determination of land suitable for timber harvest. Section 219.10(d) of the second draft also omits important language at the end of our § 219.8(e) relating to the use of Regional Silvicultural Guides and to consistency among regions. We recommend that:

1. Our § 219.8(e)(1) and (5) be inserted as written in § 219.10(d) of the second draft.

2. Our § 219.8(e)(6) be inserted in § 219.10(d) of the second draft but that subsequent wording relating to the development of Regional Silvicultural Guides be revised so as to make clear that this section need not be subject to the same public participation constraints as are the other sections. We consider this to be appropriate because of the technical complexity of the issue.

3. A section relating to determination of cost standards be inserted in § 219.10(d) of the second draft as follows: "(9) Establishment of the price standard(s) to be used in determining the potential economic suitability of land for commercial timber production as required in § 219.12(b)."

4. All of the material at the end of our § 219.8(e) beginning with the words "These prescriptions, size limits, and standards . . ." and ending with the words ". . . justify such differences." be added at the end of § 219.10(d) of the second draft.

The statement in § 219.10(f) of the second draft that "Very little new data will be gathered through land and resource inventories" concerns us. We recognize the practical need to develop regional plans, or at least the first generation of them, without a massive effort to gather new data. The tone and implication of (f), however, is that data are not important to the regional plan and that it can be fabricated entirely from existing data. We think this implication is wrong and that it fails to convey the problem that the Forest Service faces. We suggest that § 219.10(f) be rewritten so as to provide some more substantive standards for data gathering in conjunction with the regional plan. Such guidance is sorely needed both by Forest Service planners and by the public that may seek to interact with the Forest Service in the development of regional plans.

Section 219.11 Forest Planning Procedure.

This section closely parallels the construction of the first draft and that of § 219.9 of our report. The principal differences are in (a) the greater specificity of the second draft, (b) inclusion of several sections (plan content, monitoring and evaluation) that were previously included with the section describing the forest planning process, and (c) addition of some new material (planning records).

Our report stated that the procedures proposed for forest planning were satisfactory and that they laid out the major responsibilities and requirements to be met. The proposed changes in this section strengthen it, and we therefore support its adoption.

Section 219.12 Criteria for Forest Planning Actions.

The second draft creates two sections (Criteria for forest planning actions (§ 219.12) and Management standards and guidelines (§ 219.13)) from material previously included in a single section of the first draft and in our report. We felt more comfortable having the material related to the management of a given resource included in a section treating that resource. As our report noted, however, placing all guidance for planning and managing each resource in an individual subsection dealing with that resource, might imply continuation of functional resource planning. This may be sufficient reason for the Forest Service to espouse the treatment contained in the second draft despite whatever awkwardness results. Whatever the reason, our opinion is that if the Forest Service understands this structure, and can operate comfortably under it, there is no technical reason why it should not be adopted.

The content of §§ 219.12 and 219.13 of the second draft, taken collectively, is close to that recommended in our report. We had criticized the section on management standards and guidelines in the first draft as being too limited in specificity and failing to deal with a number of critical issues. We are pleased at the adoption of the basic framework together with nearly all of the specific planning criteria and management standards of our report. We have a number of specific suggestions, however, for change which we think will substantially strengthen the section and render it more satisfactory.

As noted above in our comments on § 219.5, the second draft is deficient with respect to criteria for inventories, particularly those basic to the forest plan. We suggest that the sense of § 219.10(c) from our report could be made a new § 219.12(b) in the final draft. We agree that a "shopping list" such as this does not assure competent inventory but it does indicate that the agency is indeed serious about accumulating an adequate data base to support its planning and management programs.

The very difficult problem of determining lands available, capable, and suitable for timber production and harvesting is treated in § 219.12(b) of the second draft. Our report analyzed this issue at length and proposed an alternative procedure to that contained in the first draft. The second draft generally follows our proposal. Nevertheless the procedure outlined in the second draft contains some problems that need to be resolved before it will be entirely satisfactory. These problems and our proposed resolutions are as follows:

1. Section 219.12(b)(1)(i) requires that any land that has been ". . . legislatively or administratively withdrawn from timber production" be designated as not suited for timber production. We agree that such a screen should be used first in determining the suitability of lands for timber harvest. Because there is some ambiguity as to what is meant by the term "administratively withdrawn", however, we recommend that the term be defined by reference to the authority used to make the withdrawal.

2. Some of the criteria used in making the economic tests for suitability have been moved to § 219.5, and the wording of others has been altered in the second draft. These changes are substantive and appear to imply policies with which we disagree. The Forest Service has chosen not to use our proposal that direct benefits be expressed in terms of an "alternative cost standard." We recognize that the concept is untried and that its implementation might be difficult, but the concept has merit and should be retained as an alternative approach. However, the use of "expected future stumpage prices" as the measure of direct benefits in the second draft needs further development before it can be accepted as a valid measure of public benefit. Our reservations about using stumpage price as a measure of public benefit were discussed in our previous report (see our discussion of § 219.10(d) of the first draft). What is and what is not included in the term "stumpage" needs to be defined. For example, does it include

roads and other aspects of the sale of timber? Furthermore, because the benefit/cost criterion will be used, either formally or informally, as a decision criterion, "stumpage price" becomes a policy matter.

Accordingly, we recommend that a schedule of prices, whether expressed as stumpage price or alternative cost standard, be determined as a part of the regional plan. We have included recommended language for such determination in conjunction with our comments on § 219.10 of the second draft (See discussion of § 219.10(d), Item 3). Because of the geographic variation in Forest Service Regions, this schedule will have to be broken down by subregions in the regional plan.

3. A statement concerning the "interest rate used to discount future benefits and costs of timber production" has been eliminated entirely from the second draft. We understand that this determination may well be made by an authority other than the Forest Service, such as OMB or the Secretary of Agriculture. Despite this, we think that specification of the ultimate source of the interest rate used would help public understanding. As stated earlier, we suggest that it be added among the economic criteria outlined in § 219.5(c)(6), and cross-referenced into § 219.12(b).

4. Because specification of the practices associated with a particular intensity of management is critical to the economic test for suitability, we recommend that the following qualifier be inserted after the first sentence of § 219.12(b)(2)(iii) in the second draft: "However, the practices associated with a particular intensity of management must be economically efficient."

5. Section 219.12(b)(4) is unclear. Paragraph (4)(i) seems to relegate timber production to a residual use. The shift in order of the three paragraphs, (i), (ii), and (iii) from that in our report changes the emphasis of the section. We recommend that the order and wording embodied in (A), (B), and (C) of our § 219.(e)(1)(iii) be used instead of the treatment now in the second draft.

6. Section 219.11(e)(1)(iv) in our report has been omitted from the second draft. Although the basic concept embodied in this paragraph seems to be treated in the evaluation of alternatives requirements, we consider the sense of the paragraph important to a thorough understanding of the determination of lands suitable for timber harvest. We recommend that this paragraph be reinserted as § 219.12(b)(5) of the final draft, with the current (5) becoming (6).

The provisions governing determination of timber harvest schedule (§ 219.12(d) of the second draft) are essentially those of the first draft which, in turn, derived from language we recommended. We support the proposed language, we consider that the provisions for determining departures from the base schedule are both appropriate and consistent with NFMA, and we concur with the change that requires a plan containing a departure to be approved by the Chief of the Forest Service. Several minor problems in this section have been brought to our attention and we suggest they be dealt with as follows:

1. It was pointed out to us in our June, 1979, meeting that the present wording of § 219.12(d)(1)(ii)(D) seems redundant and unnecessary in light of the specified requirement for "long term sustained yield" elsewhere in § 219.12(d)(1)(i). Furthermore, this paragraph could require unnecessarily expensive analyses when extremely irregular initial conditions combine with short-run objectives so as to make it impossible to achieve the long-term sustained-yield structure except after a considerable period of time. We consider this paragraph as necessary, however, because it spells out a design standard for the determination of departures. Therefore, we recommend that the initial wording of (D) be altered as follows: "(D) For all harvest schedules, demonstrate that each is consistent with achievement of a forest structure that will enable perpetual timber harvest . . ."

2. Section 219.12(d)(1)(iii) has now been worded in such a way that only one alternative is required in conjunction with the calculation of a departure. Furthermore, the wording requires that the alternative be "considered and formulated." We recommend the following substitute wording: "(iii) One or more alternatives providing for departures from the base harvest schedules will be formulated, considered and subjected to comparative analysis when any of the following conditions occur:"

Finally, it has been pointed out to us that the timber harvest scheduling provisions relate primarily to even-aged management and harvesting. This may create problems if the provisions are to be applied to other harvest and management systems.

Provisions of the second draft relating to identification and management of wilderness (§ 219.12 (e) and (f)) agree with our report (§ 219.11(g)) in all respects, except to specify that lands designated for non-wilderness purposes in the recent RARE II classification need not be again assessed as wilderness as the first generation of new forest plans is prepared. We concur with this exception and consider the revised draft wholly satisfactory with respect to the wilderness resource.

The second draft includes virtually all of the language that we recommended for special guidelines to govern the planning for wildlife and fish (§ 219.12(g)), range (§ 219.12(h)), recreation (§ 219.12(i)), and soil and water resources (§ 219.12(k)). We have no further recommendations in regard to these sections.

We are pleased to see that a section dealing with mineral resources (§ 219.12(j)), is contained in the second draft. We also commend the Forest Service for including provisions relating to cultural resources and for research natural areas. All three of these new provisions add an important dimension to the regulations.

Section 219.13 Management Standards and Guidelines.

As mentioned, the content of § 219.13 is similar to material in parts of § 219.11 of our draft. The section dealing with standards that all management practices will meet (§ 219.13(b)) is an expansion of our § 219.11(a). Likewise, the requirements of most other sections can be tracked back to our § 219.11(a) which, in part, can be tracked to the report of the Forest Service Silviculture Task Force presented to our meeting in the fall of 1978. Generally speaking, we find the language in § 219.13 of the second draft acceptable. Certain issues deserve further comment, however, and in some cases minor changes of wording seem called for.

The silvicultural provisions of the second draft (§ 219.13 (c) and (d)) differ from our recommendation in only one major respect, that is, control of the size of openings created by harvest cutting.

The second draft establishes three categories of maximum size according to forest regions and type, with a blanket 40 acres maximum applying to all types of the contiguous U.S. other than the Douglas-fir type where the limit is 60 acres (§ 219.13(d)). Larger openings may be permitted as exceptions in regional plans. These provisions are in contrast to our rationale and suggested regulation language (§ 219.11(a)(3)) which assigned setting of appropriate maximums to the regional plans in the interests of greater precision and flexibility.

Otherwise the provisions of the draft under Vegetation Management (§ 219.12(c)) and Management Standards and Guidelines § 219.13(c) are in close agreement with our suggested language (§ 219.10(a)(2) and § 219.11(a)(3)). The factors to be considered in establishing

size limits for openings in the regional plan, under our proposal (§ 219.11(a)(3)), however, now appear as considerations when establishing exceptions to nationally prescribed maximums in the regional plan.

We recognize that setting national maximum size limits has taken on a symbolic importance for some environmental groups. The provisions of Alternative No. 6 of the DEIS in this respect are an evident concession to such feelings, and do not have any factual basis in forest ecology and land management. We recognize also that present practices on National Forests commonly are within the indicated maximums so that delays, added costs or lower returns, and reduced management options may occur in relatively few locations if the provisions for exceptions are indeed used effectively. In our judgment, however, the imposition of nationally prescribed maximums lacks any technical or scientific foundation, and will in no way improve the quality of resource management. Rather it is simply an unnecessary constraint or source of delay in interdisciplinary planning at the Forest and Regional levels.

We again call attention to the discussion of this issue in our report: "There simply is no scientific justification for establishing any single maximum (or minimum) area limit for the entire nation, nor yet for any region as a whole. In our view, the sole technical purpose of maximum size limits is as an outside safeguard against the unpredictability of natural events and on-the-ground misjudgments or excesses of zeal. That purpose is served only when the limits are made appropriate to particular sets of terrain, soil, climatic probabilities, and vegetation. A single arbitrary value, selected as a compromise, must necessarily prevent or needlessly hamper planning operations at some locations while providing wholly inadequate safeguards to more difficult or hazard-prone situations at others.

The present draft regulations require that each regional plan establish maximum limits for the area to be cut in one harvest operation, according to geographical area and forest type (§ 219.10(d)(3)(vi)). These provisions spell out no less than ten factors that must be considered in setting these limits. Furthermore, the regional plan is subject to the environmental impact statement process."

Accordingly, we reiterate our original recommendation that each regional plan establish a series of maximums appropriate to particular forest types and physical situations.

We also call attention to the term "tree openings" in the lead sentence of § 219.13(d) of the second draft. This term is ambiguous and should be replaced with language such as "When openings are created in the forest by the application . . ."

In our report we pointed out that the first draft of the regulations contained numerous provisions intended to safeguard soil stability, soil productivity and water resources, and recommended two additional provisions: an emphasis on official technical handbooks consolidating site specific instructions, and a special planning requirement for streamside and lakeside margins.

The present draft in (§§ 219.12(k) and 219.13 (b), (c), (e) and (f)) includes essentially all of the previous and recommended provisions contained in our proposed language (§ 219.11(a) (4), (5) and 219.11(f)) but with improved phrasing. There are two consequential differences, however.

Section 219.13(e) of the second draft, establishing the special planning strips, states that, "no management practices will be permitted (in these) that seriously or adversely affect water conditions or fish habitat." This compares with our proposed language, "all management activities, such as . . ., will be conducted in such a way as to protect these waters from detrimental changes . . . (in compliance with other cited regulations) and to the extent that total multiple use benefits exceed costs." We regard the latter language as more realistic and flexible in practice, with an emphasis on finding solutions, where these exist, rather than encouraging blanket prohibitions.

Section 219.13(f) of the second draft, which includes provision for official technical handbooks, omits our requirement that these contain performance standards and tolerance limits. We recognize that an objective basis for setting definitive standards and limits is lacking in many instances at present, and hence our proposal may be too stringent. Nevertheless we regard the establishment of such standards and limits as preferable to use of unspecified qualitative terms.

The second draft also contains an important new provision § 219.13(b)(12) regarding establishment of vegetation on the total area disturbed by roads. Among other benefits the resulting stabilization of disturbed surfaces would reduce likelihood of sediment entering streams in some situations.

Accordingly, we consider the revised draft as highly satisfactory in respect to soil and water protection, but recommend that the provision on special planning strips be changed to more nearly accord with the sense of our original proposal.

We wish to emphasize also that the requirement for special planning of strips bordering permanent streams and lakes is by no means an automatic provision for "buffer strips". The required planning may indeed call for "buffer strips" to trap sediment, to prevent equipment, animal, or human activity along water margins, or to control water temperature where these are appropriate. But elsewhere the physical circumstances and the outcome of interdisciplinary planning may result in quite other treatments, provided that water quality is not impaired. Accordingly we consider the use of the term "buffer strip" as a synonym for special planning strips unfortunate, not in accord with the specific language of the regulations, and likely to mislead the casual reader. We recommend that it be replaced in the DEIS. Moreover we recommend that the rationale for treatment of such strips, as contained in our report, be made explicit in the final EIS to avoid possible misunderstanding.

Diversity continues to be one of the most difficult issues with which these regulations must deal. We analyzed the issue in our report and stressed that, in our opinion, Congress used the term diversity to refer to biological variety rather than any of the quantitative expressions now found in the biological literature. Accordingly, we supported a straightforward definition of the term, such as that found in the second draft (§219.3(e)) and helped develop a treatment of diversity that insured it would be considered throughout the planning process rather than as one isolated step in the process.

The treatment of diversity in the second draft is generally consistent with our report. However, there are some important differences to be resolved in the final draft. Our § 219.10, describing the forest planning process, required (§219.10(c)(2)(viii)) that quantitative data useful for determining diversity be collected. No such requirement appears in the second draft; it will be restored however, if our recommendations relating to inventory requirements are followed.

Furthermore, our sections on the formulation of alternatives (§219.10(e)(2)(iv)) and estimation of the effects of alternatives (§219.10(f)(1) (vi) and (vii)) both required that diversity be considered in structuring and evaluating alternatives. Both of these requirements have been lost in the process of generalizing the planning process to pertain both to regional and forest plans. Because both of these requirements are critical to an appropriate evaluation of

diversity, we recommend that they be reinserted. Our proposed changes in §219.5 of the second draft would resolve this problem.

In rewriting two key sections relating to diversity, the Forest Service seems to have created problems for itself and, to some extent, distorted the intent of the provisions contained in our report. The two sections involved are § 219.11(a)(1)(v) from our report which is equivalent to § 219.13(b)(5) of the second draft, and § 219.11(a)(6) from our report, which is equivalent to § 219.13(g) of the second draft. We recommend these be rewritten as follows:

"(5) Provide for and maintain diversity in plant and animal communities to meet overall multiple-use objectives, including, where appropriate and to the degree practicable, preservation of the variety of endemic and desirable naturalized plant and animal species currently found in the area covered by the forest plan;"

"(g) Diversity of plant and animal communities and tree species will be considered throughout the planning process. Inventories will include quantitative data making possible the evaluation of diversity in terms of its prior and present condition. For each planning alternative, the interdisciplinary team will consider how diversity will be affected by various mixes of resource outputs and uses, including proposed management practices. The selected alternative will provide for diversity of plant and animal communities and tree species to meet the overall multiple-use objectives of the planning area. To the extent consistent with the requirement to provide for diversity, management practices, where appropriate and to the extent practicable, will preserve and enhance the diversity of plant and animal communities and tree species so that it is at least as great as that which would be expected in an unmanaged part of the planning area. Reductions in existing diversity of plant and animal communities and tree species will be made only where needed to meet overall multiple-use management objectives. Planned type conversions will be justified by an analysis showing biological, economic, and social consequences, and the relation of such conversions to the process of natural change."

We also recommend that the word "natural" in the fifth line of the definition of diversity in § 219.3(e) be removed. The wording that we recommend for § 219.13(b)(5) makes clear that preservation of the variety of endemic and desirable naturalized plant and animal species is a goal of diversity considerations. Therefore, the word "natural" is not necessary in the definition.

Finally, many comments have been raised indicating that no reference should be made to "species" or "species abundance" in the definition of diversity that appears in the final draft. Such references appear in the definition in the second draft (219.3(e)). The argument against including references to species and abundance in the treatment of diversity is that no references to these dimensions of the diversity problem appear in NFMA or its legislative history. If this were as far as the matter went, it could be resolved by omitting them from the definition. However, in assessing the diversity of plant and animal communities the Forest Service must deal with both numbers and kinds of species. It is simply not possible to assess diversity without knowing what kinds of species compose the different communities in a region and the numbers of each that are present for the simple reason that kinds and numbers are the biological ways that diversity is measured. On the other hand, controlling the maximum numbers and general distribution of say, deer and bear, may be absolutely necessary in multiple use management. The problem is a true administrative "Catch-22", and it seems to us the Forest Service can do little other than it has done in phrasing its regulatory response to Congress' direction.

Section 219.14 Research.

The requirements for incorporating research into the planning process seem to have been simplified over those in our report. We have concluded that the essential points are in the second draft and that additional wording would not be particularly useful.

A recommendation that emerged from our discussions, however, is that the required annual report, which is to describe the status of major research programs and relate this to National Forest management (219.14(c) of the second draft), be developed at the regional, rather than national, level. We feel that research can best be coordinated at the regional level and that the report will be more useful if prepared there.

We call attention again to the need for better coordination between research and forest management. Coordination of forest planning and Forest Service research is an administrative matter, however, and it is unlikely to be measurably improved by requirements in regulation form.

Section 219.15 Revision of Regulations.

We are pleased that a provision for periodic revision of the regulations is included. Although we understand that the Secretary of Agriculture can appoint whatever advisory committees he might desire, we still feel that there is great benefit to be derived from continued involvement of a Committee of Scientists, such as ours, in the process of further revision of these regulations.

Therefore, we recommend that such a provision be included.

Section 219.16 Transition Period.

No comment.

Closing Comments

In closing, we would emphasize several points. Some relate to our review of the second draft of the regulations; the remainder concern the actions required during the next few years to successfully implement these regulations.

We must stipulate that, of necessity, our review of the second draft has been limited. Each of us has read the draft thoroughly and four of us discussed it at our last meeting. Because of the complexity of the regulations and the rather sweeping reorganizational changes made in the draft, however, there is a possibility that we have not caught or evaluated all changes of consequence.

The planning process described by these regulations is a complex one. It will be costly, in terms of personnel and resources, to implement. Our report comments on the need for adequate numbers and a balanced mix of interdisciplinary team members in the Forest Service if the planning envisioned by these regulations is to become reality. We continue to be concerned about this matter, and problems encountered by the Forest Service its trails of these regulations on certain "lead Forests" suggest that such concern is justified. Originally, The Forest Service hoped to be able to develop interdisciplinary planning teams for given forests by assigning specialists to temporary duty at a succession of National Forests. In this way the same specialists could deal with similar issues on several forests progressively, thus holding down personnel costs. For a variety of reasons that appear to be well justified, it now appears desirable to train local planners to deal with their own issues, in order that there be local leadership in the development of the plan and, more importantly, local commitment to its implementation. Key specialists assigned from the Region can provide some leadership and quality control, but the urgent need is for planning competence on each forest supervisor's staff. This requires more personnel skilled in planning, especially in such areas as economics, data management and recreation, than are now available. This need must be met somehow if planning is to succeed.

It seems clear to us, therefore, that our report was correct in stating that Forest

Service estimates of the cost of planning were grossly conservative. Our report cited Department of Agriculture data; contained in the House Report on NFMA, indicating planning costs of $20 million per year for the five fiscal years from 1977–1981. Revised figures (p. 26576) in the draft EIS accompanying the second draft indicate the costs will be nearly $140 million for the seven fiscal years from 1979–1985. This averages slightly less than $1 million per plan. An increased manpower need of 1.9 man years per plan is also estimated. Although these figures are higher than earlier estimates, we still regard them as conservative. The total added effort and costs required by inventory, economic analysis, and monitoring requirements alone pose new dimensions, far beyond anything now under way in the Forest Service.

Thus we again emphasize our earlier statement that, if the Congressional intention of NFMA is to be realized, adequate funding for increased personnel and data acquisition *must be made* available by each administration and by Congress. If this is not done, the process will not work.

The regulations provide guidelines for planning, and the standards or procedures for developing standards, for critical management actions on the National Forests. We think that sound, wise answers to local and regional problems, such as timber harvest scheduling, harvest methods, and wilderness allocation, can be generated through the RPA/NFMA planning process. The task now is to make that process work. We trust that both Congress, and the various groups with interests in management of the National Forests, will allow the planning process to be implemented and allow it to deal with critical management problems.

We close this report and our participation on a positive note. The Forest Service has been through some trying times, recently. RARE-II, NFMA, and reorganization have been difficult issues with which to deal. The agency has come through all of these with its professional stature intact. The quality of the regulations developed for implementing the planning provisions of NFMA indicates that the Forest Service can respond to public concerns in a professional, yet sympathetic, way. As we said in our report, if the agency can bring the same dedication to implementing the regulations that it brought to writing them, then certainly the outcome will be positive.

Finally, a word of thanks and congratulations to Chief John R. McGuire and his staff. The assistance they provided us made a difficult task far easier. Although we disagreed many times, we were able to resolve virtually all of our substantive differences. We particularly wish Chief McGuire well on the occasion of his retirement. We trust that new Chief Max Peterson will have the support and forbearance of all, both inside and outside the Forest Service, as he turns to the difficult task of implementing these sweeping regulations.

Title 36 of the Code of Federal Regulations, is amended by adding a new Part 219, consisting of Subpart A as set out below.

PART 219—PLANNING

Subpart A—National Forest System Land and Resource Management Planning

Sec.

Authority.—Secs. 6 and 15, 90 Stat. 2949, 2952, 2958 (16 U.S.C. 1604, 1613); and 5 U.S.C. 301.

Subpart A—National Forest System Land and Resource Management Planning

§ 219.1 Purpose.

(a) The regulations in this subpart set forth a process for developing, adopting, and revising land and resource management plans for the National Forest System. The purpose of the planning process is to meet the requirements of the Forest and Rangeland Renewable Resources Planning Act of 1974, as amended (hereafter RPA) including procedures under the National Environmental Policy Act of 1969 (hereafter NEPA) for assessing economic, social, and environmental impacts. These regulations prescribe how land and resource management planning is to be conducted on National Forest System lands. The resulting plans will provide for multiple use and sustained yield of goods and services from the National Forest System.

(b) Plans guide all natural resource management activities and establish management standards and guidelines for the National Forest System. They determine resource management practices, harvesting levels and procedures under the principles of multiple use and sustained yield and the availability and suitability of lands for resource management. All levels of planning will be based on the following principles:

(1) That the National Forests are ecosystems and their management for goods and services requires an awareness of the interrelationships among plants, animals, soil, water, air, and other environmental factors within such ecosystems. Proposed management will consider these interrelationships;

(2) Consideration of the relative values of all renewable resources, including the relationship of mineral resources to these renewable resources;

(3) Establishment of goals and objectives for the sustained yield of products and services resulting from multiple-use management without impairment of the productivity of the land;

(4) Protection and, where appropriate, improvement of the quality of renewable resources;

(5) Preservation of important historic, cultural and natural aspects of our national heritage;

(6) Protect and preserve for American Indians their inherent right of freedom to believe, express, and exercise their traditional religions;

(7) Provision for the safe use and enjoyment of the forest resources by the public;

(8) Protection of all forest and rangeland resources from depredations by the forest pests, using ecologically compatible means;

(9) Coordination with the land and resource planning efforts of other Federal agencies, State and local governments, Indian tribes, and adjacent private landowners;

(10) A systematic, interdisciplinary approach to ensure coordination and integration of planning activities for multiple-use management;

(11) Early and frequent public participation;

(12) Establishment of quantitative and qualitative standards and guidelines for land and resource planning and management;

(13) Management of National Forest System lands in a manner that is sensitive to economic efficiency; and

(14) Responsiveness to changing conditions in the land and changing social and economic demands of the American people.

§ 219.2 Scope and applicability.

The regulations in this subpart apply to the lands and waters in the National Forest System. Planning requirements for managing special areas, such as wilderness, wild and scenic rivers, national recreation areas, and national trails, will be included in land and resource management planning pursuant to these regulations. Whenever the special area authorities require additional planning, those authorities will control in implementing the planning process under this subpart.

§ 219.3 Definitions.

For purposes of this subpart the following words shall have these meanings:

(a) "Allowable sale quantity": The quantity of timber that may be sold from the area of land covered by the forest plan for a time period specified by the plan. This quantity is usually expressed on an annual basis as the average annual allowable sale quantity.

(b) "Assessment": The Renewable Resource Assessment required by the RPA.

(c) "Base timber harvest schedule": The Timber Harvest Schedule in which the planned sale and harvest for any future decade is equal to or greater than the planned sale and harvest for the preceding decade of the planning period and this planned sale and harvest for any decade is not greater than long-term sustained yield capacity.

(d) "Biological growth potential": The average net growth attainable in a fully stocked natural area of forest land.

(e) "Capability": The potential of an area of land to produce resources, supply goods and services, and allow resource uses under an assumed set of management practices and at a given level of management intensity. Capability depends upon current conditions and site conditions such as climate, slope, landform, soils and geology, as well as the application of management practices, such as silviculture or protection from fire, insects, and disease.

(f) "Corridor": A linear strip of land which has ecological, technical, economic, social, or similar advantages over other areas for the present or future location of transportation or utility rights-of-way within its boundaries.

(g) "Diversity": The distribution and abundance of different plant and animal communities and species within the area covered by a land and resource management plan.

(h) "Economic efficiency analysis": A comparison of the values of resource inputs (costs) required for a possible course of action with the values of resource outputs (benefits) resulting from such action. In this analysis, incremental market and nonmarket benefits are compared with investment and physical resource inputs.

(i) "Environmental analysis": An analysis of alternative actions and their predictable short- and long-term environmental effects, which include physical, biological, economic, social, and environmental design factors and their interactions. Environmental assessment is the concise public document required by the regulations for implementing the procedural requirements of NEPA, [40 CFR 1508.9].

(j) "Environmental documents": A set of concise documents to include, as applicable, the environmental assessment, environmental impact statement, finding of no significant impact, or notice of intent.

(k) "Even-aged silviculture": The combination of actions that results in the creation of stands in which trees of essentially the same age grow together. Managed even-aged forests are characterized by a distribution of stands of varying ages (and therefore tree sizes) throughout the forest area. Regeneration in a particular stand is obtained during a short period at or near the time that the stand has reached the desired age or size and is harvested. Clearcutting, shelterwood cutting, seed tree cutting, and their many variations are the cutting methods used to harvest the existing stand and regenerate a new one. In even-aged stands, thinnings, weedings, cleanings, and other cultural treatments between regeneration cuts are often beneficial. Cutting is normally regulated by scheduling the area of harvest cutting to provide for a forest that contains stands having a planned distribution of age classes.

(l) "Goal": A concise statement of the state or condition that a land and resource management plan is designed to achieve. A goal is usually not quantifiable and may not have a specific date for completion.

(m) "Goods and services": The various outputs produced by forest and rangeland renewable resources. The tangible and intangible values of which are expressed in market and nonmarket terms.

(n) "Guideline": An indication or outline of policy or conduct.

(o) "Integrated pest management": A process in which all aspects of a pest-host system are studied and weighed to provide the resource manager with information for decisionmaking. Integrated pest management is, therefore, a part of forest or resource management. The information provided includes the impact of the unregulated pest population on various resources values, alternative regulatory tactics and strategies, and benefit/cost estimates for these alternative strategies. Regulatory strategies are based on sound silvicultural practices and ecology of the pest-host system. Strategies consist of a combination of tactics such as stand improvement plus selected use of pesticides. The overriding principle in the choice of strategy is that it is ecologically compatible or acceptable.

(p) "Long-term sustained yield capacity": The highest uniform wood yield from lands being managed for timber production that may be sustained under a specified intensity of management consistent with multiple-use objectives.

(q) "Management concern": An issue or problem requiring resolution, or condition constraining management practices identified by the interdisciplinary team.

(r) "Management direction": A statement of multiple-use and other goals and objectives, the management prescriptions, and the associated standards and guidelines for attaining them.

(s) "Management intensity": The relative cost of a possible management direction and/or management practice.

(t) "Management practice": A specific action, measure, or treatment.

(u) "Management prescription": Management practices selected and scheduled for application on a specific area to attain multiple-use and other goals and objectives.

(v) "Multiple use": "The management of all the various renewable surface resources of the national forests so that they are utilized in the combination that will best meet the needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; that some lands will be used for less than all of the resources; and harmonious and coordinated management of the various resources, each with the other, without impairment of the productivity of the land, with consideration being given to the relative values of the various resources, and not necessarily the combination of uses that will give the greatest dollar return or the greatest unit output." (16 U.S.C. 531(a))

(w) "Objective": A specific statement of measurable results to be achieved within a stated time period. Objectives reflect alternative mixes of all outputs or

achievements which can be attained at a given budget level. Objectives may be expressed as a range of outputs.

(x) "Planning area": The area covered by a Regional or Forest Plan.

(y) "Policy": A guiding principle upon which is based a specific decision or set of decisions.

(z) "Program": The Renewable Resource Program required by the RPA.

(aa) "Public issue": A subject or question of widespread public interest relating to management of National Forest System lands identified through public participation.

(bb) "Public participation activities": Meetings, conferences, seminars, workshops, tours, written comments, response to survey questionnaires, and similar activities designed and held to obtain comments from the general public and specific publics about National Forest System land management planning.

(cc) "Real dollar value": A value from which the effect of change in the purchasing power of the dollar has been removed.

(dd) "Responsible official": The Forest Service employee who has been delegated the authority to carry out a specific planning action.

(ee) "Silvicultural system": A combination of interrelated actions whereby forests are tended, harvested, and replaced. The combination of management practices used to manipulate the vegetation results in forests of distinctive form and character, and this determines the combination of multiple resource benefits that can be obtained. Systems are classified as even-aged and uneven-aged.

(ff) "Standard": A principle requiring a specific level of attainment, a rule to measure against.

(gg) "Suitability": The appropriateness of applying certain resource management practices to a particular area of land, as determined by an analysis of the economic and evironmental consequences and the alternative uses foregone. A unit of land may be suitable for a variety of individual or combined management practices.

(hh) "Sustained-yield of the several products and services": "The achievement and maintenance in perpetuity of a high-level annual or regular periodic output of the various renewable resources of the national forest without impairment of the productivity of the land." (16 U.S.C. 531(b))

(ii) "Timber harvest schedule": The quantity of timber planned for sale and harvest, by time-period, from the area of land covered by the forest plan. The first period, usually a decade, of the selected harvest schedule provides the allowable sale quantity. Future periods are shown to establish that sustained yield will be achieved and maintained.

(jj) "Timber production": The growing, tending, harvesting and regeneration of regulated crops of industrial wood. Industrial wood includes logs, bolts or other round sections cut from trees for industrial or consumer use, except fuelwood.

(kk) "Uneven-aged silviculture": The combination of actions that result in the creation of forests in which trees of several or many ages may grow together. Managed uneven-aged forests may take several forms depending upon the particular cutting methods used. In some cases, the forest is essentially similar throughout, with individual trees of many ages and sizes growing in close association. In other cases, small groups of trees of similar age may be intermingled with similar groups of different ages; although the groups are even aged, they are not recorded separately. Finally, an uneven-aged forest may contain two or three distinct age classes on the same area, creating a storied forest. Under uneven-aged silviculture, regeneration is obtained several or many times during the period required to grow an individual tree to maturity. Single-tree selection cutting, group selection cutting, and other forms of partial cutting are used to harvest trees, obtain regeneration, and provide appropriate intermediate culture. Cutting is usually regulated by specifying the number or proportion of trees of particular sizes to retain within each area, thereby maintaining a planned distribution of size classes. Scheduling by area harvest is often used as well.

§ 219.4 Planning levels.

(a) The planning process requires a continuous flow of information and management direction among the three Forest Service administrative levels: national, regional, and designated forest planning area. Management direction will be based principally upon locally derived information about production capabilities; reflect conditions and circumstances observed at all levels; and become increasingly specific as planning progresses from the national to regional level, and from the regional to designated forest planning area. In this structure, regional planning is the principal process for conveying management direction from the national level to designated forest planning areas and for conveying information from such areas to the national level.

(b) Planning levels and relationships are set forth in paragraphs (b) (1) through (3) of this section.

(1) *National.* The Chief, Forest Service, will develop the Assessment which will include an analysis of present and anticipated uses, demand for, and supply of the renewable resources of forest, range, and other associated lands with consideration, and an emphasis on, pertinent supply and demand and price relationship trends; an inventory of present and potential renewable resources and an evaluation of opportunities for improving their yield of tangible and intangible goods and services, together with estimates of investment costs and direct and indirect returns to the Federal Government; a description of Forest Service programs and responsibilities in research, cooperative programs, and management of the National Forest System; and analysis of important policy issues and consideration of laws, regulations, and other factors expected to influence and affect significantly the use, ownership, and management of forest, range, and other associated lands. This assessment will be based on the future capabilities for each forest and regional planning area. Based on the Assessment which will include information generated during the regional and forest planning process, the Chief will develop alternative Programs. In formulating those alternatives the costs of supply and the relative values of both market and nonmarket outputs will be considered. The alternatives will include national renewable resource goals, quantified objectives, resource outputs and represent a range of expenditure levels sufficient to demonstrate full opportunities for management. A portion of each national goal and objective, expressed in the selected Program as a range of outputs, will be assigned to each region and be incorporated into each regional plan. The objectives assigned to each region will be based on local supply capabilities and market conditions. Economic efficiency and potential environmental effects will be considered in these assignments.

(2) *Regional.* Each regional forester will develop a regional plan in accordance with the procedures, standards, and guidelines specified in this subpart. The required planning process is established in § 219.5. Procedural requirements for regional plans are established in §§ 219.9 and 219.10, and resource management standards and guidelines are set forth in § 219.13. The regional planning process will respond to and incorporate the Program direction established by the Chief, Forest Service, under paragraph (b)(1) of this section. Regional objectives will be assigned to designated forest planning areas. These assignments will be based upon: supply capabilities,

socio-economic assessments, potential environmental effects, economic efficiency criteria, community stability objectives, and resource management standards and guidelines which have been established by the planning process. The regional forester may request adjustment of assigned regional objectives prior to their incorporation into the plan. Any adjustment will require the approval of the Chief, Forest Service.

(3) *Forest.* Forest plans will be developed for all lands in the National Forest System in accordance with the procedures, standards, and guidelines specified in this subpart. The planning process is established in § 219.5, and procedures are set forth in §§ 219.11 and 219.12. Resource management standards and guidelines are established in § 219.13. One forest plan may be prepared for all lands for which a forest supervisor has responsibility, or separate forest plans may be prepared for each national forest, or combination of national forests, within the jurisdiction of a single forest supervisor. These forest plans will constitute the land and resource management plans developed in accordance with §§ 6 and 13 of the RPA, as amended, and will include all management planning for resources. Forest plans will address the goals and objectives established by the regional plan. The objectives assigned to each forest will be evaluated in order to assure that they are compatible with local supply and demand, economic efficiency, community stability, and potential environmental effects. Based upon this evaluation, the forest supervisor may request adjustment of assigned objectives prior to their incorporation into the forest plan. Any such adjustment requires the approval of the regional forester.

§ 219.5 Regional and Forest Planning Process.

(a) *General planning approach.* The NEPA environmental analysis process will be included in the process for development of a regional or forest plan. Except where the planning process requires additional action, a single process will be used to meet the planning requirements and the NEPA process. The planning process adapts to changing conditions by identifying public issues, management concerns, and use and development opportunities. It consists of a systematic set of interrelated actions which include at least those set forth in paragraphs (b) through (k), of this section that lead to management direction. Planning actions, in addition to those in this section may be necessary in particular situations. Some actions may occur simultaneously, and it may be necessary to repeat an action as additional information becomes available.

(b) *Identification of issues, concerns, and opportunities.* The interdisciplinary team will identify and evaluate public issues, management concerns, and resource use and development opportunities, including those identified through public participation activities and coordination with other Federal agencies, State and local governments, and Indian tribes throughout the planning process. All public issues and management concerns are investigated and evaluated in order of their apparent importance. The responsible official will determine the major public issues, management concerns, and use and development opportunities to be addressed in the planning process.

(c) *Planning criteria.* Criteria will be prepared to guide the planning process and management direction. Process criteria may apply to collection and use of inventory data and information, analysis of the management situation, and the design and formulation of alternatives. Decision criteria will be developed and used to evaluate alternatives and to select one alternative to serve as the proposed plan. All criteria, including any revisions, will be developed by the interdisciplinary team and approved by the responsible official. Generally, criteria will be based on:

(1) Laws, executive orders, regulations, and Forest Service Manual policy;

(2) Goals and objectives in the Program and regional plans;

(3) Recommendations and assumptions developed from public issues, management concerns, and resource use and development opportunities;

(4) The plans and programs of other Federal agencies, State and local governments and Indian tribes;

(5) Ecological, technical and economic factors;

(6) Guidelines for economic analysis practices, including standards for benefits and costs, and the discount rate of interest will be established by the Chief, Forest Service, and become effective within one year after final publication of these planning rules in the Federal Register; and

(7) The resource management standards and guidelines in § 219.13.

(d) *Inventory data and information collection.* Each responsible official will obtain and keep current inventory data appropriate for planning and managing the resources under his or her administrative responsibility, and will assure that the interdisciplinary team has access to the best available data, which may require that special inventories or studies be prepared. The interdisciplinary team will collect, assemble, and use data, maps, graphic material, and explanatory aids, of a kind, character, and quality, and to the detail appropriate for the management decisions to be made. Existing data will be used in planning unless such data is inadequate. Data and information needs may vary as planning problems develop from identification of public issues, management concerns, and resource use and development opportunities. Acquisitions of new data and information will be scheduled and planned as needed. Methods used to gather data will be consistent with those used to monitor consequences of activities resulting from planning and management. Data will be stored for ready retrieval and comparison and periodically will be evaluated for accuracy and effectiveness. Common data definitions and standards to assure uniformity of information between all planning levels will be established by the Chief, Forest Service. As information is recorded using common data definitions and standards, it will be applied in any subsequent planning process. Information developed from common data definitions and standards will be used in the preparation of the 1990, and subsequent Assessments and Programs.

(e) *Analysis of the management situation.* The analysis of the management situation is a determination of the ability of the planning area covered by the Regional or Forest Plan to supply goods and services in response to society's demand for those goods and services. The analysis will display the capability to supply outputs and uses, and projected demands for the outputs or uses over time. It will identify any special conditions or situations which involve hazards to the resources of the planning area and their relationship to proposed and possible actions being considered. The analysis will determine:

(1) Ranges of various goods, services and uses that are feasible under existing conditions at various levels of management intensity;

(2) Projections of demand, using best available techniques, with both price and non-price information which, in conjunction with supply cost information, will be used to evaluate the level of goods and services that maximizes net public benefits; to the extent possible, demand will be assesed as a price-quantity relationship;

(3) Potential to resolve public issues and management concerns;

(4) Technical, economic, and environmental feasibility of providing the levels of goods, services, and uses

resulting from assigned goals and objectives; and

(5) The need, as a result of this analysis, to establish or change management direction.

(f) *Formulation of alternatives.* A reasonable range of alternatives as provided for in paragraphs (1) and (2) of this paragraph, will be formulated by the interdisciplinary team to provide different ways to address and respond to the major public issues, management concerns, and resource opportunities identified during this planning process. Alternatives will be described in draft and final environmental impact statements.

(1) Alternatives will reflect a range of resource outputs and expenditure levels. In formulating these alternatives, the following criteria will be met:

(i) Each alternative will be capable of being achieved;

(ii) A no-action alternative will be formulated, that is the most likely condition expected to exist in the future if current management direction would continue unchanged;

(iii) Each alternative will provide for the orderly elimination of backlogs of needed treatment for the restoration of renewable resources as necessary to achieve the multiple-use objectives of that alternative.

(iv) Each identified major public issue and management concern will be addressed in one or more alternatives; and

(v) Each alternative will represent to the extent practicable the most cost efficient combination of management practices examined that can meet the objectives established in the alternative;

(2) Each alternative will state at least:

(i) The condition and uses that will result from long-term application of the alternative,

(ii) The goods and services to be produced, and the timing and flow of these resource outputs;

(iii) Resource management standards and guidelines; and

(iv) The purposes of the managment direction proposed.

(g) *Estimated effects of alternatives.* The interdisciplinary team will estimate and display the physical, biological, economic, and social effects of implementing each alternative including how the plan responds to the range of goals and objectives assigned to it from the RPA Program. These effects will include at least the following:

(1) The expected outputs for the planning periods, including appropriate marketable goods and services, as well as non-market items, such as protection and enhancement of soil, water and air, and preservation of aesthetic and cultural resource values;

(2) The relationship between local, short-term uses of the renewable resources and the maintenance and enhancement of long-term productivity;

(3) The adverse environmental effects which cannot be avoided;

(4) Resource commitments that are irreversible and irretrievable;

(5) Effects on minority groups and civil rights;

(6) Effects on prime farmlands, wetlands and flood plains;

(7) The relationship of expected outputs to the forest goals given in the current regional plan;

(8) The energy requirements and consideration of potential effects of various alternatives; and

(9) Direct and indirect benefits and costs, estimated in accordance with paragraph (c)(6) of this section, analyzed in sufficient detail to:

(i) Determine the expected real-dollar investment, administrative and operating costs of the plan;

(ii) Estimate the real-dollar value of all outputs attributable to each plan alternative to the extent that dollar values can be assigned to nonmarket goods and services using physical outputs or relative indices of value when such values may not be reasonably assigned and;

(iii) Evaluate the economic effects of alternatives, including the distribution of goods and services, the payment of taxes and charges, receipt shares, payments to local government, and income and employment in affected communities.

(h) *Evaluation of alternatives.* The interdisciplinary team will evaluate the significant physical, biological, social, economic and environmental design effects of each management alternative according to the planning decision criteria. The evaluation will include a comparative analysis of the management alternatives and will compare economic efficiency and distributional aspects, outputs of goods and services, and protection and enhancement of environmental resources. The responsible official will review the interdisciplinary team's evaluation and will recommend a preferred alternative or alternatives to be identified in the draft environmental impact statement.

(i) *Selection of alternative.* After publication of the draft environmental impact statement, the interdisciplinary team will evaluate public comments and, as necessary, revise the appropriate alternative. The responsible official will recommend a selected alternative for the final environmental impact statement using the decision criteria developed pursuant to paragraph (c) of this section. The official will document the selection with a description of the benefits, relative to other alternatives as described in paragraph (h) of this section.

(j) *Plan implementation.* During the implementation of each plan the following requirements, as a minimum, will be met:

(1) The responsible official will assure that annual program proposals and implemented projects are in compliance with the plan;

(2) Program budget allocations meet the objectives and are consistent with all applicable standards and guidelines specified in the plan; and

(3) Plan implementation is in compliance with §§ 219.9(d) and 219.11(d).

(k) *Monitoring and evaluation.* At intervals established in the plan, management practices will be evaluated on a sample basis to determine how well objectives have been met and how closely management standards and guidelines have been applied. The results of monitoring and evaluation may be used to analyze the management situation during revision of the plan as provided in paragraphs (k) (1), (2) and (3) of this section.

(1) The plan will describe the following monitoring activities:

(i) The actions, effects, or resources to be measured, and the frequency of measurements;

(ii) Expected precision and reliability of the monitoring process; and

(iii) The time when evaluation will be reported.

(2) Evaluation reports will contain for each monitored management practice at least a quantitative estimate of performance comparing outputs and services and their costs with those projected by the plan and documentation of evaluated measured effects.

(3) Based upon the evaluation reports, the responsible official will make changes in management direction, or revise or amend the plan as necessary to meet the goals and objectives.

§ 219.6 Interdisciplinary Approach.

(a) A team representing several disciplines will be used at each level of planning to insure coordinated planning which addresses outdoor recreation, range, timber, watershed, wildlife and fish, and wilderness opportunities. The team is to coordinate and integrate planning activities consistent with the principles of the Multiple-Use Sustained-Yield Act of 1960 and § 219.1 of this subpart. Through interactions among its members, the team will integrate knowledge of the physical,

biological, economic and social sciences, and environmental design arts in the planning process. Team functions include, but are not limited to:

(1) Assessing the problems and resource use and development opportunities associated with providing of goods and services;

(2) Obtaining the public's views about possible decisions;

(3) Coordinating planning activities within the Forest Service and with local, State and other Federal agencies;

(4) Developing the land and resource management plan and associated environmental impact statement pursuant to the planning process;

(5) Giving the responsible official an integrated perspective on land and resource management planning; and

(6) Establishing monitoring and evaluation standards and requirements for planning and management activities.

(b) The team will be composed of Forest Service personnel who collectively represent diverse specialized areas of professional and technical knowledge about natural resource management applicable to the area being planned. The team will consider problems collectively, rather than separating them along disciplinary lines. The team is encouraged to consult persons other than Forest Service employees when required specialized knowledge does not exist within the team itself.

(c) The responsible official, in appointing team members, will determine and consider the qualifications of each team member on the basis of the complexity of the issues and concerns to be resolved through the plan. Each team member will, as a minimum, either have successfully completed a course of study in a college or university leading to a bachelor's or higher degree in one or more specialized areas of assignment or have recognized expertise and experience in professional investigative, scientific, or other responsible work in specialities which members represent. In addition to technical knowledge in one or more resource specialities, members should possess other attributes which enhance the interdisciplinary process that, as a minimum, should include:

(1) An ability to solve complex problems;

(2) Skills in communication and group interaction;

(3) Basic understanding of land and natural resource planning concepts, processes, and analysis techniques; and

(4) The ability to conceptualize planning problems and feasible solutions.

(d) The responsible official will appoint a leader of the interdisciplinary team. Team leadership should be assigned to individuals possessing both a working knowledge of the planning process and the ability to communicate effectively with team members. The team leader will coordinate the specialists, focusing their attention on team goals.

§ 219.7 Public Participation.

(a) Because the land and resource management planning process determines how the lands of the National Forest System are to be managed, the public is encouraged to participate throughout the planning process. The intent of public participation is to:

(1) Ensure that the Forest Service understands the needs and concerns of the public;

(2) Inform the public of Forest Service land and resource planning activities;

(3) Provide the public with an understanding of Forest Service programs and proposed actions;

(4) Broaden the information base upon which land and resource management planning decisions are made; and

(5) Demonstrate, that public issues and inputs are considered and evaluated in reaching planning decisions.

(b) Public participation in the preparation of draft environmental impact statements for planning begins with the publication of a notice of intent in the Federal Register. After this publication, all public participation for land and resource management planning will be coordinated with that required by the NEPA and its implementing regulations.

(c) Public participation, as deemed appropriate by the responsible official, will be used early and often throughout the development, revision, and significant amendment of plans. Public participation activities will begin with a notice to the news media, which includes as appropriate the following information:

(1) The description of the proposed planning action;

(2) The description and map of the geographic area affected;

(3) The issues expected to be discussed;

(4) The kind, extent, and method(s) of public participation to be used;

(5) The times, dates, and locations scheduled or anticipated, for public meetings;

(6) The name, title, address, and telephone number of the Forest Service official who may be contacted for further information; and

(7) The location and availability of documents relevant to the planning process.

(d) Public participation activities should be appropriate to the area and people involved. Means of notification should be appropriate to the level of planning. Public participation activities may include, but are not limited to, requests for written comments, meetings, conferences, seminars, workshops, tours, and similar events designed to foster public review and comment. To ensure effective public participation, the objectives of participation activities will be defined beforehand by the interdisciplinary team. The Forest Service will state the objectives of each participation activity to assure that the public understands what type of information is needed and how this information relates to the planning process. The responsible official and interdisciplinary teams will consult and be guided by Forest Service Handbook 1626.

(e) Public comments will be analyzed individually, and by type of group and organization to determine common areas of concern and geographic distribution. The results of this analysis will be evaluated to determine the variety and intensity of viewpoints about ongoing and proposed planning, and management standards and guidelines. Conclusions about comments will be used to the extent practicable in decisions that are made.

(f) The primary purpose of public participation is to broaden the information base upon which planning decisions are made. Public participation activities also will help in monitoring and evaluation of implemented plans. Suitable public participation formats, requirements, and activities will be determined by the responsible official.

(g) All scheduled public participation activities will be documented by a summary of the principal issues discussed, comments made, and a register of participants.

(h) At least 30 days' public notice will be given for public participation activities associated with the development of national or regional plans. At least 15 days' public notice will be given for activities associated with forest plans. Any notice requesting written comments on national and regional planning will allow at least 90 calendar days for responses. A similar request about forest planning will allow at least 30 calendar days for responses.

(i) A list of individuals and groups known to be interested in or affected by the plan will be maintained. They will be notified of public participation activities.

(j) The responsible official, or his representative, will attend or provide for adequate representation at public participation activities.

(k) Copies of approved plans will be available for public review, as follows:

(1) The Assessment and the Program will be available at national headquarters, each regional office, each forest supervisor's office, and each district ranger's office;

(2) The regional plan will be available at national headquarters, that regional office and regional offices of contiguous regions, each forest supervisor's office of forests within and contiguous to that region, and each district ranger's office in that region;

(3) The forest plan will be available at the regional office for that forest, that forest supervisor's office and forest supervisors' offices contiguous to that forest, each district ranger's office in that forest, those district rangers' offices in other forests that are contiguous to that forest, and at least one additional location determined by the forest supervisor, which will offer convenient access to the public; and

(4) The above plans may be made available at other locations convenient to the public.

(l) Documents considered in the development of plans will be available at the office where the plans were developed.

(m) Upon issuance of a draft environmental impact statement on a plan, revision, or significant amendment, and concurrent with the public participation activities of this section, the public will have a 3-month period to review the statement for the proposed plan, revision, or significant amendment. During that time, additional public participation activities will take place to review the actions proposed in the draft environmental impact statement.

(n) Fees for reproducing requested documents will be charged according to the Secretary's Fee Schedule (7 CFR Part I, Subpart A, Appendix A).

§ 219.8 Coodination of Public Planning Efforts.

(a) Efficient management of the resources of the National Forest System results from planning that is coordinated among all levels of government, including other Federal agencies, State and local governments, and Indian tribes. Such coordination ensures that government objectives, policies, and programs for resource management are compatible to the extent possible. Therefore, the Forest Service will coordinate its national, regional, and forest planning with the equivalent and related planning efforts of other Federal agencies, State and local governments, and Indian tribes.

(b) The responsible official, through the interdisciplinary team, will coordinate Forest Service planning with land and resource management planning of other affected government entities and Indian tribes to ensure that planning includes:

(1) Recognition of the objectives of other Federal, State and local governments, and owners of intermingled and adjacent private lands, as expressed in their plans and policies;

(2) An assessment of the interrelated impacts of these plans and policies;

(3) A determination of how each Forest Service plan should deal with the impacts identified; and

(4) Where conflicts are identified, consideration of alternatives for their resolution.

(c) The responsible official will give notice of the preparation, revision, or significant amendment of a land and resource management plan, along with a general schedule of anticipated planning actions, to the State Clearinghouse (OMB Circular A-95) for circulation among State agencies. The same notice will be mailed to all Tribal or Alaska Native leaders whose tribal lands may be impacted, and to the heads of county boards for the counties that are involved. These notices will be issued simultaneously with the public notice required in § 219.7(b).

(d) To facilitate coordination with State governments, regional foresters will seek agreements with Governors or their designated representatives on procedural measures such as exchanging information, providing advice and participation, and time frames for receiving State government input and review. If an agreement is not reached, the regional forester will provide an opportunity for Governor and State agency review, advice, and suggestion on guidance that the regional forester believes could affect or influence State government programs.

(e) The responsible official in developing land and resource plans, will meet with the designated State official (or designee), representatives of other Federal agencies and Indian tribal governments at the beginning of the planning process to develop procedures for coordination. As a minimum, such conferences will also be held after public issues and management concerns have been identified and prior to recommending the selected alternative. Such conferences may be held in conjunction with other public participation activities, provided that the opportunity for government officials to participate in the planning process is not thereby reduced.

(f) The responsible official will review the planning and land use policies of other Federal agencies, State and local governments and Indian tribes. The intensity of the review will be appropriate to the planning level and requirements of the envisioned plan. This review will include, but not be limited to, plans affecting renewable natural resources, minerals, community and economic development, land use, transportation, water and air pollution control, cultural resources, and energy. The planning records will document this review.

(g) The responsible official, in the development of forest plans and to the extent feasible, will notify the owners of lands that are intermingled with, or dependent for access upon, national forest lands. Planning activities should then be coordinated to the extent feasible with these owners. The results of this coordination will be included in the plan as part of the review required in paragraph (f) of this section.

(h) The responsible official, in developing the forest plan, will seek input from other Federal, State and local governments and universities, to help resolve management concerns in the planning process and to identify areas where additional research is needed. This input should be included in the discussion of the research needs of the designated forest planning area.

(i) A program of monitoring and evaluation will be conducted that includes consideration of the effects of national forest management on land, resources, and communities adjacent to or near the national forest being planned and the effects upon national forest management of activities on nearby lands managed by other Federal or government agencies or under the jurisdiction of local governments.

§ 219.9 Regional Planning Procedure.

(a) *Regional plan.* Regional planning will provide national forests (forest planning areas) with goals and objectives, regional issue resolution, and program coordination for National Forest System, State and Private Forestry, and Research. A plan will be developed for each administratively designated region in the National Forest System. The preparation of a regional plan, revision, or significant amendment will comply with the requirements of the planning process established in §§ 219.5 and 219.10 and this section.

(b) *Responsibilities.* The Chief, Forest Service, will establish agency-wide policy for regional planning and approve all regional plans, revisions, or

significant amendments. The regional forester will be responsible for the preparation of the regional plan, and revisions or significant amendments to the regional plan. The regional interdisciplinary team will develop a regional plan using the process established in § 219.5 which shall include the steps in paragraphs (b) (1) and (2) of this section.

(1) A draft environmental impact statement will be prepared, describing the proposed plan, revision, or significant amendment. A notice of intent to prepare this statement will be issued in the Federal Register. The draft statement will identify a preferred alternative. Beginning at the time of notification of availability of the draft environmental impact statement in the Federal Register, the statement will be available for public comment for at least 90 days at convenient locations in the vicinity of the lands covered by the plan, revision, or significant amendment. During this period, and in accordance with the provisions in § 219.7, the responsible official will publicize and hold public participation activities as deemed appropriate for adequate public input.

(2) A final environmental impact statement will be prepared, and after the regional forester has reviewed and concurred in the statement, the regional forester will recommend to the Chief, Forest Service that it be filed with the Environmental Protection Agency. At least 30 days are required between the date of notice of filing of the final environmental impact statement and the decision to implement actions specified in the plan, revision, or significant amendment. The plan, revision, or significant amendment will be based on the selected alternative.

(c) Plan approval. The Chief, Forest Service, will review the proposed plan, revision, or significant amendment and the final environmental impact statement and take either of the actions in paragraphs (c)(1) and (2) of this section.

(1) Approve the plan. If approved, the plan will not become effective until at least 30 days after publication of the notice of the filing of the final environmental impact statement. The Chief, Forest Service, will attach to the final environmental impact statement a concise public record of decision which documents the approval. The record of decision will accomplish the following:

(i) State the decision;

(ii) Identify all alternatives considered in making the decision on the plan, revision, or significant amendment;

(iii) Specify the selected alternative;

(iv) Identify and discuss all factors considered by the Forest Service in making the planning decision, including how such factors entered into its decision; and

(v) State whether all practicable means to avoid or minimize environmental harm from the alternative selected have been adapted, and, if not, why they were not.

(2) Disapprove the plan, and return it to the regional forester with a written statement of the reasons for disapproval. The Chief, Forest Service may also specify a course of action to be undertaken by the regional forester in order to remedy the deficiencies, errors, or omissions of the plan or environmental impact statement.

(3)(i) The approval or disapproval of a regional plan, revision, or significant amendment, or reconsideration under paragraph (ii) of this paragraph, is not subject to review under § 211.19 of this chapter or any other administrative appeal procedure. This exclusion does not apply to appeals or decisions to be taken under the regional plan on the grounds of nonconformity or to appeals of decisions taken under the plan which are appealable grievances under § 211.19 of this chapter.

(ii) Any person may request the Chief, Forest Service, to reconsider the decision to approve or disaprove a regional plan, revision, or significant amendment. A written request for reconsideration must be filed within 45 days of the time of the Chief's decision and must be accompanied by a written statement giving the reasons why the decision to approve or disapprove is erroneous and any factual information necessary to support these reasons. A written decision on the request for reconsideration will be made within 30 days of the receipt of the request and will state the reasons for the decision reached on the request.

(iii) Any person, either at the time of requesting reconsideration or prior to filing such a request, may request the Chief, Forest Service, to stay the decision approving or disapproving the regional plan, revision, or significant amendment providing a showing is made that, without a stay, implementation will result in irreversible harm or will have an immediate direct and adverse effect on the requesting party.

(d) *Conformity.* The regional forester will manage the national forest lands under his or her jurisdiction in accordance with the regional plan. The regional forester or area director will assure that all State and Private Forestry programs planned with the States or other governmental agencies are coordinated with the regional plan. The research station director will use the regional plan to help identify research needs for National Forest System lands. Differences between annual budget proposals and actual funding allocations may require the regional forester to make changes in scheduling. When each regional plan is approved, each forest plan in that region will be revised or amended to bring it into conformity as soon as practicable. When each regional plan is revised or amended the affected forest plans will be revised or amended to conform as soon as practicable.

(e) *Amendment.* The regional forester may amend the regional plan through an environmental analysis which will be used to determine the significance of proposed amendments. If the analysis indicates the preparation of an environmental impact statement is necessary, the amending process will follow the same procedure as used in the preparation of the plan. If the amendment is determined not to be significant, it may be implemented by the responsible official after public notice. The regional plan will be reviewed for possible amendment in conjunction with the development of the Assessment and Program or whenever the funded and implemented program deviates significantly from the 5-year levels specified in the regional plan.

(f) *Revision.* The regional forester will determine by an analysis of the management situation whether a revision is necessary because conditions or the demands of the public in the region have changed significantly. Revision will not become effective until considered and approved in accordance with the requirements for the development and approval of a regional plan.

(g) *Planning records.* The regional forester and the interdisciplinary team will develop and maintain a system that records decisions and activities that result from the process of developing a regional plan, revision or significant amendment. This system will contain all planning records including a work plan to guide and manage planning, the precedures which were used in completing each planning action and the results of those actions. These records document the accomplishment of legal and administrative planning requirements. They include at least the draft environmental impact statement, final environmental impact statement, regional plan, and record of decision. The adequacy of the record system will be approved by the regional forester.

(h) *Regional plan content.* The following general format and content

outline is required for all regional plans. In addition, the regional forester may specify formats and require further content within the following outline appropriate to the planning needs of that region:

(1) A brief description of the major public issues and management concerns which are pertinent to the region, indicating the disposition of each issue or concern;

(2) A summary of the analysis of the regional management situation, including a brief description of the existing management situation, demand and supply projections for resource commodities and services, production potentials, and resource use and development opportunities;

(3) Description of management direction including programs, goals and objectives;

(4) A distribution of regional objectives to each of the forest planning areas, and additional objectives added to reflect specific regional needs;

(5) Management standards and guidelines and those specific standards and guidelines listed in § 219.10(d);

(6) Description of the monitoring and evaluation necessary to determine and report achievements and effects;

(7) Appropriate references to information used in development of the regional plan; and

(8) The names of interdisciplinary planning team members, together with a summary of each member's qualifications and areas of expertise;

(i) *Monitoring and evaluation.* Monitoring and evaluation of planned actions and effects will be carried out in compliance with § 219.5(k). Monitoring and evaluation will include, but is not limited to:

(1) Management practices relating to regional or subregional programs;

(2) State and Private Forestry programs carried out in conjunction with states or other governmental agencies;

(3) Economic and social impact on regional publics;

(4) Resource outputs or environmental impacts which relate to areas more widespread than national forests or States;

(5) Research programs which are related to other research activities or ongoing management practices on a regional scale; and

(6) National Forest System programs.

§ 219.10 Regional Planning Actions.

(a) The regional interdisciplinary team, as directed by the regional forester, will follow the process and procedures established in §§ 219.5 through 219.9 in preparing the regional plan, revision, or significant amendment. The appropriate planning actions of the regional planning process will be guided by at least the criteria provided in paragraphs (b) through (g) of this section. Additional planning criteria may be found in the guidelines for managing specific renewable resources set forth in the Forest Service Manual and Handbooks.

(b) In addition to public issues and management concerns identified through public participation and coordination, each regional plan will address issues and concerns referred from national or forest planning. Some management concerns that should be considered in regional and in forest planning are the needs to:

(1) Provide goods and services efficiently;

(2) Produce timber and wood fiber;

(3) Manage and utilize range resources and improve range grazing;

(4) Manage fire to improve and protect resources;

(5) Protect resources from disease, pests and similar threats;

(6) Enhance water quality and quantity, soil productivity, and restore watershed conditions;

(7) Adjust landownership as needed to support resource management goals;

(8) Provide various recreation options;

(9) Maintain or improve fish and wildlife habitats;

(10) Improve critical and essential habitats of threatened or endangered plant and animal species;

(11) Assess probabilities of mineral exploration and development for immediate and future needs, and consider non-renewable resources in the mangement of renewable natural resources;

(12) Construct, operate, and maintain transportation facilities;

(13) Identify, protect, and enhance the visual quality;

(14) Require corridors to the extent practicable, to minimize adverse environmental impacts caused by the proliferation of separate rights-of-way;

(15) Discover, manage, protect, and interpret cultural resource values which are qualified or may qualify for inclusion in the National Register of Historic Places;

(16) Identify typical examples of important botanic, aquatic, and geologic types, and protect them through establishment of research natural areas; and

(17) Provide for various wilderness management options.

(c) Consistent with regional and forest resource capabilities, regional plans will implement the goals and objectives of the RPA Program by establishing regional policies and goals, assigning resource production objectives to each forest area to be covered by a Forest plan, and issuing needed guidelines for resolving the major public issues and management concerns which are identified through public participation and coordination activities. Information developed in regional plans will be made available to the National level Assessment and Program activity.

(d) Each regional plan will establish standards and guidelines for:

(1) Prescribing according to geographic areas, forest types, or other suitable classifications, appropriate systems of silviculture to be used within the region;

(2) The maximum size, dispersal, and size variation of tree openings created by the application of even-aged managment and the state of vegetation that will be reached before a cutover area is no longer considered an opening, using factors enumerated in § 219.13(d);

(3) The biological growth potential to be used in determining the capability of land for timber production as required in § 219.12(b)(1)(ii);

(4) Defining the management intensity and utilization standards to be used in determining harvest levels for the region;

(5) Recommended transportation corridors and associated standards for forest planning, such as standards for corridors, for transmission lines, pipelines, and water canals. The designation of corridors is not to preclude the granting of separate rights-of-way over, upon, under, or through the public lands where the authorized official determines that confinement to a corridor is not appropriate;

(6) Identification of potential uses of available air quality increments (42 U.S.C. 7473(b)) and protection of the portion of the increment needed to implement forest plans; and

(7) Provision of a unit of measure for expressing mean annual increment as required in § 219.12(d)(1)(ii)(C).

(e) Public participation and coordination activities will be adapted to the circumstances of regional planning. Particular efforts will be made to involve regional and national representatives of interest groups. Coordination will stress involvement with appropriate Federal agencies, State and local governments, and Indian tribes. Regional foresters will seek agreements with Governors, or their designated representatives, on procedures for coordination in accordance with § 219.6(d).

(f) Data for regional planning will be based principally on information from forest planning, with other data provided by the States, other Federal

agencies, and private sources. Very little new data will be gathered through land and resource inventories. Data and information standards and guidelines established nationally will be followed in structuring and maintaining required data.

(g) The regional analysis of the management situation will, as appropriate, consider results of each forest's analysis of the management situation for that region.

§ 219.11 Forest Planning Procedure.

(a) *Forest Plan.* The preparation of a forest plan, revision, or significant amendment will comply with the requirements of the planning process established in §§ 219.5 and 219.12 and this section.

(b) *Responsibilities.* The forest supervisor and the interdisciplinary team are responsible for the activities set forth in paragraphs (b) (1) and (2) of this section.

(1) *Forest supervisor.* The forest supervisor has overall responsibility for the preparation and implementation of the forest plan and appoints and supervises the interdisciplinary team.

(2) *Interdisciplinary team.* The team will implement the public participation and coordination activities. The team will continue to function even though membership may change, and will monitor and evaluate planning results and recommended revisions and amendments. The interdisciplinary team will develop a forest plan, revision, or significant amendment using the planning process established in § 219.5, including the steps in paragraphs (b)(2)(i) and (ii) of this section:

(i) A draft environmental impact statement will be prepared, describing the proposed plan, revision, or significant amendment. A notice of intent to prepare this statement will be issued in the Federal Register. The draft statement will identify a preferred alternative. Beginning at the time of the publication of the notice of availability notification in the Federal Register, the statement will be available for public comment for at least 3 months, at convenient locations in the vicinity of the lands covered by the plan, revision, or significant amendment. During this period, and in accordance with the provisions in § 219.7, the responsible official will publicize and hold public participation activities as deemed appropriate for adequate public input.

(ii) A final environmental impact statement will be prepared, and after the forest supervisor has reviewed and concurred in the statement, the forest supervisor will recommend to the regional forester that it be filed with the Environmental Protection Agency. At least 30 days are required between the date of notice of filing of the final environmental impact statement and the decision to implement actions specified in the plan, revision, or significant amendment. The plan, revision, or significant amendment will be based on the selected alternative.

(c) *Approval process.* The regional forester will review the proposed plan, revision, or significant amendment and the final environmental impact statement and take one of the actions in paragraphs (c)(1) through (3) of this section.

(1) Approve the plan. If approved, the plan will not become effective until at least 30 days after publication of the notice of the filing of the final environmental impact statement. At the time of filing the FEIS with the Environmental Protection Agency, the regional forester will attach to the Final Environmental Impact Statement a concise public record of decision which documents the approval. The record of decision will accomplish the following:

(i).State the decision;

(ii) Identify all alternatives considered in making the decision on the plan, revision, or significant amendment;

(iii) Specify the selected alternative;

(iv) Identify and discuss relevant factors considered by the Forest Service in making the planning decision, including how such factors entered into its decisions; and

(v) State whether all practicable means to avoid or minimize environmental harm from the alternative selected have been adopted, and, if not, why they were not.

(2) Disapprove the plan which will be returned to the forest supervisor with a written statement of the reasons for disapproval. The regional forester may also specify a course of action to be undertaken by the forest supervisor in order to remedy the deficiencies, errors, or omissions of the plan or Environmental Impact Statement.

(3) Transmit to the Chief, Forest Service, for approval or disapproval, if the selected harvest schedule is not the base timber harvest schedule for the designated forest planning area as required in § 219.12(d)(2).

(4)(i) Persons who participated in the planning process, or who can show good reason why there were unable to participate, and who have an interest which is, or may be adversely affected by a decision to approve or disapprove a forest plan, revision, or significant, amendment, may request a review of that decision. Intermediate decisions made during the planning process and prior to the approval or disapproval decision are not reviewable. If the party requesting review participated in the planning process, administrative review is limited to those issues which the requesting party raised during participation in the planning process. Participation in the planning process means direct and documented involvement with the responsible official or the interdisciplinary team in the planning process described in § 219.5 of this subpart. Except as provided in this paragraph, the provisions and procedures which apply to administrative review under § 211.19 of this chapter apply to the review of decisions approving or disapproving a forest plan, revision, or significant amendment.

(ii) The reviewing officer will determine whether the deficiencies, errors, or omissions, found in the plan, revision, or significant amendment, are of such a nature as to require reconsideration. If reconsideration is necessary, the Chief, Forest Service, will remand the plan, revision, or significant amendment, to the Regional Forester with instructions as to how to proceed in the reconsideration.

(iii) Any person, either at the time of filing a request for review, or prior to filing such a request, may request the reviewing officer to stay a decision approving or disapproving the forest plan, revision, or significant amendment, providing a showing is made that, without a stay, implementation will result in irreversible action or irreparable harm or will have an immediate, direct and adverse effect on the requesting party.

(d) *Conformity.* As soon as practicable after approval of the plan, revision, or significant amendment, the forest supervisor will ensure that, subject to valid existing rights, all outstanding and future permits, contracts, cooperative agreements, and other instruments for occupancy and use of affected lands are in conformity with the plan. All subsequent administrative activities affecting such lands, including budget proposals, will be in compliance with the plan. The forest supervisor may change proposed scheduling to respond to minor differences between planned annual budgets and appropriated funds. Such scheduled changes will be considered an amendment to the forest plan, but will not require preparation of an environmental impact statement unless the changes significantly alter the relationship between levels of multiple-use goods and services projected under planned budget proposals as compared to those levels projected with actual appropriations. An environmental impact statement will be prepared if the

scheduling changes will result in significant adverse environmental impacts not taken into account in an existing environmental impact statement.

(e) *Amendment.* The responsible official may amend a plan through an environmental analysis or through the procedures established for the preparation and approval of the forest plan. Such an amendment will be deemed significant if the analysis indicates the need to prepare an environmental impact statement. If such a need is indicated, the amending process will follow the same procedure as in the preparation of the plan. If, based on the environmental analysis, the amendment is determined not to be significant, it may be implemented by the forest supervisor following appropriate public notification.

(f) *Revision.* A forest plan will be revised at least every 10 years, or more frequently whenever the forest supervisor determines that conditions or the demands of the public in the area covered by the plan have changed significantly. The interdisciplinary team may, through the monitoring and evaluation process, recommend a revision of the forest plan at any time. Revisions are not effective until considered and approved in accordance with the requirements for the development and approval of a forest plan. The forest supervisor will review the conditions on the land covered by the plan at least every 5 years to determine whether conditions or demands of the public have changed significantly.

(g) *Planning records.* The forest supervisor and interdisciplinary team will develop and maintain a system that records decisions and activities that result from the process of developing a forest plan, revision, or significant amendment. Records will be maintained that support analytical conclusions and alternative plans made by the team and approved by the forest supervisor throughout the planning process. Such supporting records provide the basis for the development of, revision, or significant amendment to the forest plan and associated environmental documents.

(h) *Forest plan content.* The forest plan is the selected alternative described in the Final Environmental Impact Statement. The plan will contain the following:

(1) A brief description of the major public issues and management concerns which are pertinent to the forest, indicating the disposition of each issue or concern;

(2) A summary of the analysis of the management situation, including a brief description of existing management situations, demand and supply conditions for resource commodities and services, production potentials, and use and development opportunities;

(3) Long-range policies, goals, and objectives, and the specific management prescriptions planned; to meet the policies and to achieve the multiple-use goals and objectives;

(4) Proposed vicinity, timing, standards and guidelines for proposed and probable management practices;

(5) Monitoring and evaluation requirements which are pertinent at the forest level;

(6) Appropriate references to information used in development of the forest plan; and

(7) Names of the interdisciplinary planning team members, together with a summary of each member's qualifications and primary responsibilities or contributions to the forest planning effort.

(i) *Monitoring and evaluation.* Monitoring and evaluation of planned actions and effects will be carried out in compliance with § 219.5(k) and paragraphs (i) (1) through (3) of this section. In addition, management practices associated with each of the resources planned will be evaluated with reference to the standards and guidelines contained in the forest plan through monitoring on an appropriate sample basis. Methods used to monitor consequences of activities resulting from planning and management practices will be consistent with those used to gather data and information.

(1) Monitoring requirements in the forest plan will include descriptions of:

(i) Activities, practices and effects that will be measured and the frequency of measurements;

(ii) Expected precision and reliability of the monitoring process; and

(iii) The time at which evaluation reports will be prepared.

(2) An evaluation report will be prepared for management practices monitored and will contain at least the following:

(i) A quantitative estimate of performance comparing outputs and services with those projected by the forest plan;

(ii) Documentation of measured effects, including any change in productivity of the land;

(iii) Recommendations for changes;

(iv) A list of needs for continuing evaluation of management systems and for alternative methods of management; and

(v) Unit costs associated with carrying out the planned activities as compared with unit costs estimated in the forest plan.

(3) Based upon the evaluation reports, the interdisciplinary team will recommend to the forest supervisor such changes in management direction, revisions, or amendments to the forest plan as deemed necessary.

§ 219.12 Forest Planning Actions.

(a) In the preparation of the proposed forest plan, revision, or significant amendment, the interdisciplinary team, as directed by the forest supervisor, will follow the planning process established in §§ 219.5 through 219.8, 219.11, and in this section. The criteria in paragraphs (b) through (m) of this section provide the minimum requirements to be considered if appropriate for the forest being planned. Additional planning criteria may be found in the guidelines for managing specific renewable resources set forth in the Forest Service Manual and Handbooks.

(b) Each forest plan will identify lands available, capable, and suitable for timber production and harvesting during the planning process in accordance with the planning criteria in paragraphs (1) through (4) of this paragraph.

(1) During the analysis of the management situation, data on all National Forest System lands will be reviewed and those lands meeting all of the requirements of paragraphs (b)(1) (i) through (iv) of this section will be tentatively identified as available, capable and suitable for timber production. Those lands that fail to meet any of these requirements will be designated as not suited for timber production.

(i) The land has not been legislatively withdrawn or administratively withdrawn by the Secretary or the Chief, Forest Service, from timber production.

(ii) The biological growth potential for the land is equal to or exceeds the minimum standard for timber production defined in the regional plan.

(iii) Technology is available that will ensure timber production from the land without irreversible resource damage to soils, productivity, or watershed conditions.

(iv) There is reasonable assurance that such lands can be adequately restocked as provided in § 219.13(h)(3).

(2) Lands that have been tentatively identified as available, capable, and suitable for timber production in paragraph (1) above will be further reviewed and assessed prior to formulation of alternatives to determine the costs and benefits for a range of

management intensities for timber production. For the purpose of analysis, the Forest will be stratified into categories of land with similar management costs and returns. The stratification should consider appropriate factors that influence the costs and returns such as physical and biological conditions of the site and transportation. This analysis will compare the direct costs of growing and harvesting trees to the anticipated receipts to the government, including capital expenditures required by timber production, in accordance with § 219.5 and paragraphs (i) through (iii) below and will identify the management intensity for timber production for each category of land, which results in the largest excess of discounted benefits less discounted costs.

(i) Direct benefits are expressed by expected gross receipts to the government. Such receipts will be based upon expected stumpage prices from timber harvest considering future supply and demand situation for timber, timber production goals of the Regional plan, and § 219.5(c)(6).

(ii) Direct costs include the anticipated investments, maintenance, operating, and management and planning costs attributable to timber production activities, including mitigation measures necessitated by the impacts of timber production.

(iii) Economic analysis must consider costs and returns of managing the existing timber inventory in addition to long-term potential yield.

(3) During formulation and evaluation of each alternative as required under § 219.5(f) and (g), combinations of resource management practices will be defined to meet management objectives for the various multiple uses including outdoor recreation, timber, watershed, range, wildlife and fish, and wilderness. The formulation and evaluation will consider the costs and benefits of alternative management intensities for timber production from paragraph (2) in accordance with § 219.5(f)(v). Lands will be tentatively identified as not suited for timber production if:

(i) Based upon a consideration of multiple-use objectives for the alternative, the land is proposed for resource uses that preclude timber production, such as wilderness;

(ii) Other management objectives for the alternative limit timber production activities to the point where silviculture standards and guidelines set forth in § 219.13 cannot be met; or

(iii) The lands are not cost-efficient in meeting Forest objectives including timber production for the alternative under consideration over the time period of the program.

(4) Selection among alternatives will be done in accordance with § 219.5(i). Lands identified as tentatively not suited in paragraph (b)(3) of this section will be designated as not suited for timber production in the selected alternative.

(c) When vegetation is altered by management, the methods, timing, and intensity of the practices determine the level of benefits that can be obtained from the affected resources. The vegetation management practices chosen for each vegetation type and circumstance will be defined in the forest plan with applicable standards and guidelines and the reasons for the choices. Where more than one vegetation management practice will be used in a vegetation type, the conditions under which each will be used will be based upon thorough reviews of technical and scientific literature and practical experience, with appropriate evaluation of this knowledge for relevance to the specific vegetation and site conditions. On National Forest System land, the vegetation management practice chosen will comply with the management standards and guidelines specified in § 219.13(c).

(d) The selected forest management alternative includes the timber harvest schedule which provides the allowable sale quantity. The harvest schedule of each alternative, including those which depart from base harvest schedules, will be formulated in compliance with § 219.5(c) and the criteria in paragraphs (1) and (2) of this paragraph.

(1) Alternatives will be formulated that include determinations of the quantity of the timber that may be sold during the planning period. These quantity determinations will be based on the principle of sustained yield and will meet the constraints set out in § 219.13. For each management alternative, the determination will include a calculation of the long-term sustained-yield capacity and the base harvest schedule and when appropriate, a calculation of timber harvest alternatives that may depart from the base harvest schedule as provided in paragraphs (i) through (iii) of this paragraph.

(i) For the base harvest schedules the planned sale and harvest for any future decade will be equal to or greater than the planned sale and harvest for the preceding decade of the planning periods provided that the planned harvest is not greater than the long-term sustained-yield capacity consistent with the management objectives of the alternative.

(ii) The determinations of the appropriate long-term sustained-yield capabilities, base harvest schedules, and departure alternatives to the base harvest schedule will be made on the basis of the guidelines which follows:

(A) For the long-term sustained-yield capacities and the base harvest schedules, assume an intensity of management and degree of timber utilization consistent with the goals, assumptions, and standards contained in, or used in the preparation of the current Program and regional plan. For the base harvest schedule, the management and utilization assumptions will reflect the projected changes in practices for the four decades contained in, or used in the preparation of the current Program and regional plan. Beyond the fourth decade, the assumptions will reflect those projected for the fourth decade of the regional plan;

(B) For alternatives with harvest schedules which depart from the corresponding base harvest schedule, assume an appropriate management intensity;

(C) In accordance with the established standards, assure that all even-aged stands scheduled to be harvested during the planning period will generally have reached the culmination of mean annual increment of growth. Mean annual increment will be based on management intensities and utilization standards assumed in paragraphs (ii) (A) and (B) above and expressed as units of measure consistent with the regional plan. Exceptions to these standards are permitted for the use of sound silvicultural practices, such as thinning or other stand improvement measures; for salvage or sanitation harvesting of timber stands which are substantially damaged by fire, windthrow or other catastrophe, or which are in imminent danger from insect or disease attack; or for the removal of particular species of trees after consideration has been given to the multiple uses of the area being planned and after completion of the public participation process applicable to the preparation of a forest plan; and

(D) Each harvest schedule will provide for a forest structure that will enable perpetual timber harvest at the long-term sustained-yield capacity, and multiple-use objectives of the alternative.

(iii) Alternatives with harvest schedules which depart from the principles of paragraph (i) above and will lead to better attaining the overall objectives of multiple-use management will be considered and formulated when any of the following conditions are indicated:

(A) High mortality losses from any cause can be significantly reduced or prevented or forest age-class distribution can be improved, facilitating future sustained yield management;

(B) Implementation of the corresponding base harvest schedule would cause a substantial adverse impact upon a community in the economic area in which the forest is located;

(C) None of the alternatives already considered provides a timber harvest schedule that achieves the goals of the Program as provided in § 219.4(b).

(2) The harvest schedule of the management alternative selected in accordance with § 219.5(i) provides the allowable sale quantity (the quantity of timber that may be sold from the area of land covered by the forest plan) for the plan period. If the selected harvest schedule is not the base timber harvest schedule for the designated forest planning area, the forest plan will be transmitted to the Chief, Forest Service, for approval. The decision of the Chief may be appealed to the Secretary pursuant to the procedures in § 211.19 of this chapter.

(e) Lands reviewed for Wilderness designation under the review and evaluation of roadless areas conducted by the Secretary of Agriculture but not designated as wilderness or designated for further planning and lands whose designation as primitive areas has been terminated will be managed for uses other than wilderness in accordance with this subpart. No such area will be considered for designation as wilderness until a revision of the forest plan under § 219.11(f). When revising the forest plan, roadless areas of public lands within and adjacent to the forest, will be evaluated and considered for recommendation as potential wilderness areas, as provided in paragraphs (e) (1) and (2) of this paragraph.

(1) During analysis of the management situation the following areas will be designated for evaluation:

(i) All previously inventoried wilderness resources not yet designated;

(ii) Areas contiguous to existing wilderness, primitive areas, or administratively proposed wildernesses, regardless of which agency has jurisdiction for the wilderness or proposed wilderness.

(iii) Areas, regardless of size, that are contiguous to roadless and undeveloped areas in other Federal ownership that have identified wilderness potential; and

(iv) Areas designated by Congress for wilderness study, administrative proposals pending before Congress, and other legislative proposals pending which have been endorsed by the administration.

(2) Each area designated for evaluation under paragraph (1) above will be evaluated in terms of current national guidelines or, in their absence, by criteria developed by the interdisciplinary team with public participation. In the latter case, the criteria will include as a minimum:

(i) The values of the area as wilderness;

(ii) The values foregone and effects on management of adjacent lands as a consequence of wilderness designation;

(iii) Feasibility of management as wilderness, in respect to size, non-conforming use, land ownership patterns, and existing contractual agreements or statutory rights;

(iv) Proximity to other designated wilderness, and relative contribution to the National Wilderness Preservation System; and

(v) The anticipated long-term changes in plant and animal species diversity, including the diversity of natural plant and animal communities of the forest planning area and the effects of such changes on the values for which wilderness areas were created.

(f) The forest plan will provide direction for the management of designated wilderness and primitive areas in accordance with the provisions of Part 293. In particular, it will:

(1) Provide for limiting and distributing visitor use of specific portions in accord with periodic estimates of the maximum levels of use that allow natural processes to operate freely and that do not impair the values for which wilderness areas were created; and

(2) Evaluate the extent to which wildfire, insect, and disease control measures may be desirable for protection of either the wilderness or adjacent areas and provide for such measures when appropriate.

(g) Fish and wildlife habitats will be managed to maintain viable populations of all existing native vertebrate species in the planning area and to maintain and improve habitat of management indicator species. To meet this goal, management planning for the fish and wildlife resource will meet the requirements set forth in paragraphs (1) through (7) of this paragraph and be guided by Chapter 2620, Forest Service Manual.

(1) The desired future condition of fish and wildlife, where technically possible, will be stated in terms both of animal population trends and of amount and quality of habitat.

(2) Management indicator species, vertebrate and/or invertebrate, will be identified for planning, and the reasons for their selection will be given. The species considered will include at least: Endangered and threatened plant and animal species identified on State and Federal lists for the planning area; species with special habitat needs that may be influenced significantly by planned management programs; species commonly hunted, fished, or trapped; and additional plant or animal species selected because their population changes are believed to indicate effects of management activities on other species of a major biological community or on water quality. On the basis of available scientific information, the effects of changes in vegetation type, timber age classes, community composition, rotation age, and year-long suitability of habitat related to mobility of management indicator species will be estimated. Where appropriate, measures to mitigate adverse effects will be prescribed.

(3) Biologists from State fish and wildlife agencies and other Federal agencies will be consulted in order to coordinate planning with State plans for fish and wildlife.

(4) Access and dispersal problems of hunting, fishing, and other visitor uses will be considered.

(5) The effects of pest and fire management on fish and wildlife populations will be considered.

(6) Population trends of the management indicator species will be monitored and relationships to habitat changes determined. This monitoring will be done in cooperation with State fish and wildlife agencies, to the extent practicable.

(7) Critical habitat for threatened and endangered species will be determined, and measures will be prescribed to prevent the destruction or adverse modification of such habitat. Objectives will be determined for threatened and endangered species that will provide for, where possible, their removal from listing as threatened and endangered species through appropriate conservation measures, including the designation of special areas to meet the protection and management needs of such species.

(h) Identify lands suitable for grazing and browsing in accordance with criteria in paragraphs (1) through (3) of this paragraph and as guided by Chapter 2210, Forest Service Manual.

(1) The procedures used will include, but not be limited to, the following:

(i) Range condition and trend studies;

(ii) Records of estimated actual use by domestic livestock, feral animals and management indicator species of

wildlife, and estimated percentage utilization of key forage species;

(iii) An estimate of the capability of the rangelands to produce suitable food and cover for the management indicator species of wildlife; and

(iv) An estimate of the present and potential supply of forage for sheep, cattle, and feral animals.

(2) In the analysis of management situation, assess the capability of the planning area to produce forage without permanent impairment of the resources, considering the condition of the vegetation, statutory, and administrative withdrawals, characteristics of soil and slope, and accessibility to grazing and browsing animals.

(3) Alternative range management practices will consider:

(i) Grazing management systems;

(ii) Methods of altering successional stages for range management objectives, including vegetation manipulation as described in § 219.13(c);

(iii) Evaluation of pest problems, and availability of integrated pest management systems;

(iv) Possible conflicts or beneficial interactions among domestic, feral, and wild animal populations, and methods of regulating these;

(v) Physical facilities such as fences, water development, and corrals, necessary for efficient management;

(vi) Existing permits, cooperative agreements, and related obligations; and

(vii) Measures to protect, manage, and control wild free-roaming horses and burros as provided in Part 222, Subpart B of this chapter.

(i) A broad spectrum of dispersed and developed recreation opportunities in accord with identified needs and demands will be provided. Planning to achieve this will be governed by the goals of the regional plan, the requirements of paragraphs (1) through (8) of this section, and be guided by Chapter 2310, Forest Service Manual.

(1) Forest planning will identify:

(i) The physical and biological characteristics that make land suitable for recreation opportunities;

(ii) The recreational preferences of user groups; and the settings needed to provide quality recreation opportunities;

(iii) Recreation opportunities on the National Forest System lands.

(2) The supply of developed recreational facilities in the area of national forest influence will be appraised for adequacy to meet present and future demands.

(3) Alternatives will include consideration of establishment of physical facilities, regulation of use, and recreation opportunities responsive to current and anticipated user demands.

(4) In formulation and analysis of alternatives as specified in § 219.5 (f) and (g), interactions among recreation opportunities and other multiple uses will be examined. This examination will consider the impacts of the proposed recreation activities on other uses and values and the impacts of other uses and activities associated with them on recreation opportunities, activities, and quality of experience.

(5) Formulation and evaluation of alternatives under paragraphs (3) and (4) above will be coordinated to the extent feasible with present and proposed recreation activities of local and State land use or outdoor recreation plans, particularly the State Comprehensive Outdoor Recreation Plan and recreation opportunities already present and available on other public and private lands, with the aim of reducing duplication in meeting recreation demands.

(6) The visual resource will be inventoried and evaluated as an integrated part of the forest planning process, addressing both the landscapes visual attractiveness and the publics visual expectation. As guided by chapter 2380, Forest Service Manual, definitive land areas of the forest will have a visual quality objective assigned as a part of the management prescription to direct management practices and the management of the visual resource.

(7) Off-road vehicle use will be planned and implemented to minimize adverse effects on the land and resources, promote public safety, and minimize conflicts with other uses of the National Forest System lands. Forest planning will evaluate the potential effects of vehicle use off-roads and, on the basis of the requirements of Part 295, of this chapter and be guided by in Chapter 2355, Forest Service Manual, classify areas and trails of National Forest System lands as to whether or not off-road vehicle use may be permitted.

(j) The effects of mineral exploration and development in the planning area will be considered in the management of renewable resources. When available, the following will be recognized in the forest plan:

(1) Active mines within the area of land covered by the forest plan;

(2) Outstanding or reserved mineral rights;

(3) The probable occurrence of various minerals, including locatable, leasable, and common variety;

(4) The potential for future mineral development and potential for withdrawal from development and

(5) The probable effect of renewable resource allocations and management on mineral resources and activities, including exploration and development.

(k) Planning the management of the water and soil resources will be in accordance with paragraphs (1) through (6) of this paragraph, and be guided by Chapter 2510, Forest Service Manual.

(1) Current water uses, both consumptive and non-consumptive, within the area of land covered by the forest plan, including instream flow requirements, will be determined, in cooperation with appropriate government entities.

(2) Existing impoundments, transmission facilities, wells, and other man-made developments on the area of land covered by the forest plan will be identified.

(3) The probable occurrence of various levels of water volumes, including extreme events which would have a major impact on the planning area, will be estimated.

(4) Plans must comply with the requirements of the Federal Water Pollution Control Act, as amended by the Clean Water of 1977, the Safe Drinking Water Act, and all substantive and procedural requirements of Federal, State, and local governmental bodies with respect to the provision of public water systems and the disposal of waste water.

(5) Existing or potential watershed conditions that will influence soil productivity, water yield, water pollution, or hazardous events, will be evaluated.

(6) Measures, as directed in applicable Executive Orders, to minimize risk of flood loss and to restore and preserve floodplain values, and to protect wetlands, will be adopted.

(l) Forest planning will provide for the indentification, protection, interpretation and management of cultural resources on National Forest System lands. Planning for the resource will be governed by the requirements of Federal laws pertaining to historic preservation, and be guided by Chapter 2360, Forest Service Manual, and the criteria in paragraphs (1) through (3) of this paragraph.

(1) Forest planning will:

(i) Provide an overview of known data relevant to history, ethnography, and prehistory of the area under consideration, including known cultural resource sites;

(ii) Identify areas requiring more intensive inventory;

(iii) Provide for evaluation and identification of sites for the National Register of Historic Places;

(iv) Provide for establishing measures for the protection of cultural resources

from vandalism and other human depredation, and natural destruction;

(v) Identify the need for maintenance of historic sites on, or eligible for inclusion in, the National Register of Historic Places; and

(vi) Identify opportunities for interpretation of cultural resources for the education and enjoyment of the American public.

(2) In the formulation and analysis of alternatives, interactions among cultural resources and other multiple uses will be examined. This examination will consider impacts of the management of cultural resources on other uses and activities and impacts of other uses and activities on cultural resource management.

(3) Formulation and evaluation of plan alternatives will be coordinated to the extent feasible with the State cultural resource plan and planning activities of the State Historic Preservation Office and State Archaeologist and with other State and Federal agencies.

(m) Forest planning will provide for the establishment of Research Natural Areas (RNAs). Planning will make provision for the identification of examples of important forest, shrubland, grassland, alpine, aquatic, and geologic types that have special or unique characteristics of scientific interest and importance and that are needed to complete the national network of RNAs. Biotic, aquatic, and geologic types needed for the network will be identified using a list provided by the Chief, Forest Service. Authority to establish RNA's is delegated to the Chief in § 2.60(a) of Title 7 CFR and in § 251.23 of this chapter. Recommendations for establishment of areas will be made through the planning process and according to the guidance for the selection of areas for RNAs and for the preparation of establishment reports as provided in section 4063, Forest Service Manual.

§ 219.13 Management standards and guidelines.

(a) Management of National Forest System lands requires adherence to the planning principles stated in § 219.1; specific management requirements to be met in accomplishing goals and objectives include, as a minimum, those in paragraphs (b) through (i) of this section.

(b) All management practices will:

(1) Conserve soil and water resources, and not allow significant or permanent impairment of the productivity of the land;

(2) Minimize serious or long-lasting hazards from flood, wind, wildfire, erosion, or other natural physical forces unless these are specifically accepted, as in Wilderness;

(3) Prevent or reduce serious, long-lasting hazards from pest organisms under the principles of integrated pest management;

(4) Protect streams, streambanks, shorelines, lakes, wetlands, and other bodies of water as provided under paragraphs (e) and (f) of this section;

(5) Provide for and maintain diversity of plant and animal communities to meet overall multiple-use objectives, as provided in paragraph (g) of this section;

(6) Be monitored and evaluated as required in § 219.5(k) to assure that practices protect soil, watershed, fish, wildlife, recreation, and aesthetic values; maintain vegetative productivity; and reduce hazards from insects, disease, weed species, and fire;

(7) Be assessed prior to project implementation for potential physical, biological, aesthetic, cultural, engineering, and economic impacts and for consistency with multiple uses planned for the general area;

(8) Ensure that fish and wildlife habitats are managed to maintain viable populations of all existing native vertebrate species and to improve habitat of selected species, coordinated with appropriate State fish and wildlife agencies and monitored in cooperation with these agencies, to the extent practicable;

(9) Include measures for preventing the destruction or adverse modification of critical habitat for threatened and endangered species;

(10) Provide that any existing transportation and utility corridor, and any right-of-way that is capable of accommodating the facility or use from an additional compatible right-of-way, be designated as a right-of-way corridor. Subsequent right-of-way grants will, to the extent practicable, and as determined by the responsible official, be confined to designated corridors;

(11) Ensure that any roads constructed through contracts, permits, or leases are designed according to standards appropriate to the planned uses, considering safety, cost of transportation, and effects upon lands and resources;

(12) Provide that all roads are planned and designed to re-establish vegatative cover on the total disturbed area within a reasonable period of time, not to exceed 10 years after the termination of a contract, lease or permit, unless the road is determined necessary as a permanent addition to the National Forest Transportation System; and

(13) Maintain air quality at a level that is adequate for the protection and use of National Forest System resources and that meets or exceeds applicable Federal, State and/or local standards or regulations, and as further guided by Chapter 2120, Forest Service Manual.

(c) Management prescriptions that involve vegetation manipulation of tree cover for any purpose will:

(1) Be best suited to the multiple-use goals established for the area with all potential environmental, biological, cultural resource, aesthetic, engineering, and economic impacts, as stated in the regional and forest plans, being considered in this determination;

(2) Assure that lands can be adequately restocked as provided in paragraph (h)(3) of this section, except where permanent openings are created for wildlife habitat improvement, vistas, recreation uses and similar practices;

(3) Not be chosen primarily because they will give the greatest dollar return or the greatest output of timber, although these factors will be considered.

(4) Be chosen after considering potential effects on residual trees and adjacent stands;

(5) Avoid permanent impairment of site productivity and ensure conservation of soil and water resources;

(6) Provide the desired effects on water quantity and quality, wildlife and fish habitat, regeneration of desired tree species, recreation uses, aesthetic values, and resource yields; and

(7) Be practical in terms of transportation and harvesting requirements, and total costs of preparation, logging, and administration.

(d) When openings are created in the forest by the application of even-aged silviculture, the provisions of paragraphs (1) and (2) of this paragraph apply.

(1) The blocks or strips cut will be shaped and blended with the natural terrain to achive aesthetic and wildlife habitat objectives to the extent practicable. Openings will be located to achieve the desired combination of multiple objectives. Regional plans will provide guidance on the dispersion of openings, and size variations of openings, in relation to topography, climate, geography, local land use patterns, forest type and other factors. The regional plan will specify the state of vegetation to be reached before a cutover is no longer considered an opening.

(2) Individual cut blocks, patches, or strips will conform to the maximum size limits for areas to be cut in one harvest operation established by the regional plan according to geographic areas and forest types. This limit may be less than, but will not exceed, 60 acres for the

Douglas-fir forest type of California, Oregon, and Washington; 80 acres for the southern yellow pine types of Alabama, Arkansas, Georgia, Florida, Louisiana, Mississippi, North Carolina, South Carolina, Oklahoma, and Texas; 100 acres for the hemlock-sitka spruce forest type of coastal Alaska; and 40 acres for all other forest types except as provided in paragraphs (i) through (iii) of this paragraph:

(i) Cut openings larger than those specified may be permitted where larger units will produce a more desirable combination of benefits. Such exceptions will be provided for in regional plans. The following factors will be considered in determining size limits by geographic areas and forest types: Topography; relationship of units to other natural or artificial openings and proximity of units; coordination and consistency with adjacent forests and regions; effect on water quality and quantity; visual absorption capability; effect on wildlife and fish habitat; regeneration requirements for desirable tree species based upon the latest research findings; transportation and harvesting system requirements; natural and biological hazards to survival of residual trees and surrounding stands; and relative total costs of preparation, logging, and administration of harvest cuts of various sizes. Specifications for exceptions will include the particular conditions under which the larger size is permitted and set a new maximum size permitted under those conditions.

(ii) The size limits may be exceeded on an individual timber sale basis after 60 days public notice and review by the regional forester.

(iii) The established limit will not apply to the size of areas harvested as a result of natural catastrophic condition such as fire, insect and disease attack, or windstorm.

(e) Special attention will be given to land and vegetation for approximately 100 feet from the edges of all perennial streams, lakes, and other bodies of water and will correspond to at least the recognizable area dominated by the riparian vegetation. No management practices causing detrimental changes in water temperature or chemical composition, blockages of water courses, and deposits of sediment will be permitted within these areas which seriously and adversely affect water conditions or fish habitat. Topography, vegetation type, soil, climatic conditions, management objectives, and other factors will be considered in determining what management practices may be performed within these areas or the constraints to be placed upon their performance.

(f) Conservation of soil and water resources involves the analysis, protection, enhancement, treatment, and evaluation of soil and water resources, and their responses under management and will be guided by instructions in official technical handbooks. These handbooks must show specific ways to avoid or mitigate damage, and maintain or enhance productivity on specific sites. These handbooks may be regional in scope or, where feasible, specific to physiographic or climatic provinces.

(g) The selected alternative will provide for diversity of plant and animal communities and tree species to meet the overall multiple-use objectives of the planning area. Diversity of plant and animal communities and tree species will be considered throughout the planning process. Inventories will include quantitative data making possible the evaluation of diversity in terms of its prior and present condition. For each planning alternative, the interdisciplinary team will consider how diversity will be affected by various mixes of resource outputs and uses, including proposed management practices. To the extent consistent with the requirement to provide for diversity, management prescription, where appropriate and to the extent practicable, will preserve and enhance the diversity of plant and animal communities, including endemic and desirable naturalized plant and animal species, so that it is at least as great as that which would be expected in a natural forest and the diversity of tree species similar to that existing in the planning area. Reductions in existing diversity of plant and animal communities and tree species will be prescribed only where needed to meet overall multiple-use objectives. Planned type conversion will be justified by an analysis showing biological, economic, social, and environmental design consequences, and the relation of such conversions to the process of natural change.

(h) The management requirements in paragraphs (1) through (7) of this paragraph apply to timber harvest and cultural treatments.

(1) No timber harvesting will occur during the planning period on lands classified as not suited for timber production pursuant to § 219.12(b) (1) through (5) except as necessary to protect other multiple-use values or activities that meet other objectives on such lands if the forest plan establishes that such actions are appropriate.

(2) The selected harvest schedule provides the allowable sale quantity, the quantity of timber that may be sold from the capable, available, and suitable land covered by the forest plan during the planning period. Within the planning period, the volume of timber to be sold in any one year may exceed the average annual allowable sale quantity so long as the total amount sold for the planning period does not exceed the allowable sale quantity. Nothing in this paragraph prohibits salvage or sanitation harvesting of timber stands which are substantially damaged by fire, windthrow, or other catastrophe, or which are in imminent danger of insect or disease attack and where consistent with silvicultural and environmental standards. Such timber may either substitute for timber that would otherwise be sold under the plan or, if not feasible, be sold over and above the planned volume.

(3) When trees are cut to achieve timber production objectives, the cuttings will be made in such a way as to assure that lands can be adequately restocked within 5 years after final harvest. Research and experience will indicate that the harvest and regeneration practices planned can be expected to result in adequate restocking. Adequate restocking means that the cut area will contain the minimum number, size distribution, and species composition of regeneration as specified in regional silvicultural guides attached to the forest plan for each forest type. Five years after final harvest means 5 years after clearcutting, 5 years after final overstory removal in shelterwood cutting, 5 years after the seed tree removal cut in seed tree cutting, or 5 years after selection cutting.

(4) Cultural treatments such as thinning, weeding, and other partial cutting may be included in the forest plan where they are intended to increase the rate of growth of remaining trees, favor commercially valuable tree species, favor species or age classes which are most valuable for wildlife, or achieve other multiple-use objectives.

(5) Harvest levels based on intensified management practices will be decreased no later than the end of each planning period if such practices cannot be completed substantially as planned.

(6) Timber harvest cuts designed to regenerate an even-aged stand of timber will be carried out in a manner consistent with the protection of soil, watershed, fish and wildlife, recreation, and aesthetic resources, and the regeneration of the timber resource.

(7) Timber will not be harvested where such treatment would favor an abnormal increase in injurious insects and disease organisms.

(i) Monitoring will ensure as a minimum that:

(1) Lands are adequately restocked as specified in the Forest Plan;

(2) Lands identified as not suited for timber production will be examined at least every 10 years to determine if they have become suitable; if determined suited such lands will be returned to timber production.

(3) Maximum size limits for harvest areas are evaluated to determine whether such size limits should be continued; and

(4) Destructive insects and disease organisms do not increase following management activities.

§ 219.14 Research.

(a) Research needs for management of the National Forest System will be identified during planning and continually reviewed during evaluation of implemented plans. Particular attention will be given to research needs identified during the monitoring and evaluation described in § 219.5(k). These identified needs will be included in formulating overall research programs and plans which involve private as well as public forest and rangelands.

(b) Research needed to support or improve management of the National Forest System will be established and budgeted at the research station and national levels. Priorities for this portion of the Forest Service Research Program will be based upon the information gathered at all planning levels of the National Forest System.

(c) An annual report will be prepared at the national level with assistance from Regions and Stations which will include, but not be limited to, a description of the status of major research programs which address National Forest System needs for Research, significant findings, and how this information is to be or has recently been applied.

§ 219.15 Revision of regulations.

The regulations in this subpart will be regularly reviewed and, when appropriate, revised. The first such review will be completed no later than 6 years after the approval date of these regulations. Additional reviews will occur at least every 5 years thereafter.

§ 219.16 Transition period.

(a) Until a forest planning area of the National Forest System land is managed under a forest plan developed pursuant to these regulations and approved by the regional forester, the land may continue to be managed under existing land use and resource plans. As soon as practicable, existing plans will be amended or revised to incorporate standards and guidelines in this subpart. Pending approval of a forest plan, existing plans may be amended or revised to include management requirements not inconsistent with the provisions of the Forest and Rangeland Renewable Resources Planning Act, as amended, and these regulations.

(b) A forest plan may become effective prior to the development and approval of its related regional plan, provided that the forest plan will be reviewed upon regional plan approval, and if necessary, amended to comply with regional management direction. If such an amendment is significant, it will be made pursuant to the requirements for the development of a forest plan.

Appendix F—Regulation Outline and Index

Outline of Rules for Land Management Planning in the National Forest System

Subject

4. Irreversible and irretrievable resource commitments.
5. Effects on minority group and civil rights.
i. Expected real-dollar costs.
ii. Estimate real dollar value of all outputs.
iii. Evaluate local economic effect.
6. Effects on prime farmlands, wetlands and flood plains.
7. Output relationships to production goals.
8. Energy requirements and effects.
9. Direct and indirect benefits and costs.
h. Evaluation of Alternatives.
i. Selection of Alternative.
j. Plan Implementation:
1. Compliance with annual program proposals.
2. Budget allocations.
3. In compliance with 219.9(c) and 219.11(d).
k. Monitoring and Evaluation:
1. Monitoring activities.
i. Actions, effects or resources to be measured and frequency.
ii. Expected precision and reliability.
iii. Time when evaluation is to be reported.
2. Evaluation reports.
3. Changes in management direction.

219.6 Interdisciplinary Approach.
a. Introduction and team functions:
1. Assesses problems.
2. Obtain public views.
3. Coordinate with other agencies.
4. Develop the land and resource management plan and environmental impact statement.
5. Provide an integrated perspective for the responsible official.
6. Establish monitoring and evaluation standards.
b. Interdisciplinary Team Composition.
c. Interdisciplinary Team Member Qualifications:
1. Solve complex problems.
2. Communication skills.
3. Planning concepts, processes and techniques.
4. Conceptualize planning problems and situations.
d. Interdisciplinary Team Leadership.

219.7 Public Participation.
a. Introduction:
1. Understand needs and concerns of public.
2. Inform public of proposed actions.
3. Provide public with an understanding of proposed actions.
4. Broaden the information base upon which decisions are made.
5. Demonstrate the use of public input.
b. Public Participation in the Preparation of the Draft Environmental Statement and Notice of Intent.
c. Public Participation in the Development, Revision, and Significant Amendment of Plans; Media notice:
1. Description of proposed action.
2. Description of geographic area affected.
3. Issues expected to be discussed.
4. Kind, extent, and methods.
5. Times, dates and locations.
6. Forest Service official to be contacted.
7. Location and availability of documents.
d. Means to Effective Public Participation.
e. Public Input Analysis.
f. Public Participation in Monitoring and Evaluation.
g. Summaries of Public Participation Activities.
h. Public Notice of Public Participation Activities.
i. Notifying Interested or Affected Parties.
j. Duties of Responsible Forest Service Official.
k. Copies of Plans to be Available:
1. Assessment and Program.
2. Regional plan.
3. Forest plan.
4. Convenient locations for public review.
l. Supporting Documents to be Available.
m. Three Month Review Period.
n. Fees for Reproducing Materials.

219.8 Coordination of Public Planning Efforts.
a. Introduction & Principles
b. Coordination of Forest Service Planning:
1. Recognition of other agencies' objectives.
2. Assessment of interrelated impacts.
3. Determination of how to deal with these impacts.
4. Conflicts and alternatives for resolution.
c. Notice of Proposed Action and Schedule.
d. Agreements on Procedural Measures with Governors.
e. Meetings and Conferences.
f. Review of Land Use Policies of Other Agencies.
g. Coordination with Adjacent Property Owners.
h. Resolving Management Concerns and Identifying Research Needs.
i. Monitoring Effects on Adjacent Lands.

219.9 Regional Planning Procedure.
a. Regional Plan.
b. Responsibilities:
1. DEIS
2. FEIS
c. Plan Review by Chief:
1. Approve proposal and the environmental impact statement: Issue Report of Decision:
i. State the decision.
ii. Identify alternatives considered.
iii. Specify preferred alternative.
iv. Identify and discuss all factors considered.
v. Means to Avoid Environmental Harm.
2. Disapprove proposal or the EIS.
3. Exclusion from appeal under 36 CFR 211.19; provisions for requests for reconsideration; requests for stays of implementation.
d. Conformity.
e. Amendment.
f. Revision.
g. Planning Records.
h. Regional Plan Content:
1. Major public issues and management concerns.
2. Management situation summary.
3. Management direction—programs, goals and objectives.
4. Distriubtion of regional activities.
5. Management standards and guidelines.
6. Monitoring and evaluation.
7. Appropriate references.
8. Interdisciplinary team members and qualifications.
i. Monitoring and Evaluation:
1. Management practices to be measured and frequency.
2. State and Private Forestry programs.
3. Economic and social impacts.
4. Resource outputs and environmental impacts on areas larger than national forests or states.
5. Research programs.
6. NFS programs.

219.10 Regional Planning Actions.
a. Introduction.
b. Concerns and Issues to be Considered:
1. Efficiency.
2. Timber and Wood fiber.
3. Range resources.
4. Fire management.
5. Disease and pests.
6. Water quality, quantity and soil productivity.
7. Landownership.
8. Recreation.
9. Fish and wildlife habitats.
10. Threatened and endangered species.
11. Mineral exploration and development.
12. Transportation facilities.
13. Visual quality.
14. Rights of way.
15. Cultural resources.
16. Research natural areas.
Wilderness Management Options.
c. Regional Plans Contribute and Respond to the Assessment and Program.
d. Each Regional Plan will Establish Standards and Guidelines for:
1. Tree openings created by even-aged management.
2. Biological growth potential used in determining timber capability.
3. Transportation corridors.
4. Air quality.
5. Unit of measure for expressing mean annual increment.
e. Public Participation and Coordination Activities.
f. Data for Regional Planning.
g. Regional Analysis of the Management Situation.

219.11 Forest Planning Procedure.
a. Forest Plan.
b. Responsibilities:
1. Forest Supervisor.
2. Interdisciplinary Team.
i. DEIS.
ii. FEIS.
c. Approval Process, Plan Review by Regional Forester.
1. Approve proposal and environmental impact statement: Issue Record of Decision.
i. State the decision.
ii. Identify alternative considered.
iii. Specify preferred alternative.
iv. Identify and discuss all factors considered.
v. Means to Avoid Environmental Harm.
2. Disapprove the proposal or the EIS.
3. Transmit base timber harvest schedule departure request to Chief.
4. Appeal of Decision to approve or disapprove forest plan; requests for stay of implementation.
d. Conformity.
e. Amendment.
f. Revision.
g. Planning Records.
h. Forest Plan Content:
1. Major public issues and management concerns.
2. Management situation summary.
3. Long-range policies, goals and objectives, with management prescription.
4. Vicinity, timing, standards and guidelines for practices.

5. Monitoring and evaluation requirements.
6. Appropriate references to information.
7. Interdisciplinary team members and qualifications.
i. Monitoring and Evaluation.
1. Requirements.
i. Management practices to be measured and frequency.
ii. Expected precision and reliability.
iii. Evaluation reports.
2. Evaluation reports will contain at least:
i. Quantitative estimates of performance.
ii. Documentation of measured effects.
iii. Recommendations for change.
iv. Continuing evaluation.
v. Costs.
3. Interdisciplinary team recommendations.
219.12 Forest Planning Actions.
a. Introduction.
b. Each Plan will Identify Lands Available, Capable, and Suitable for Timber Production.
1. Requirements of timber producing lands.
i. Not legislatively or administratively withdrawn.
ii. Biological growth potential.
iii. Technology available to insure timber production without irreversible resource damage.
iv. Assurance for adequate restocking.
2. Determine potential economic efficiency in commercial timber production.
i. Direct benefits.
ii. Direct costs.
iii. Economic analysis.
3. Each alternative consider costs and benefits of alternative timber management regimes and lands tentatively identified as not suited for timber production if:
i. Land is suitable for uses that preclude timber production.
ii. Silvicultural standards and guidelines cannot be met.
iii. Lands are not cost efficient.
c. Choice of Vegetation Management Practice.
d. Formulation of Harvest Schedule Alternatives.
1. Determinations of the quantity of timber sold during the planning period and departures from the base harvest schedule.
i. Planned sales and future harvests.
ii. Guidelines:
A. Long term sustained yield capacity and base harvest schedule.
B. Departure alternatives to the base harvest schedule.
C. Even-aged stands scheduled to be harvested.
D. Perpetual timber harvest at the long term sustained yield capacity.
iii. Alternatives providing for departures.
2. Selected harvest schedule provides the allowable sale quantity.
e. Non-Wilderness (RARE II) Lands.
1. During analysis of the management situation evaluate the following areas:
i. Inventoried wilderness not yet designated.
ii. Areas contiguous to wilderness, primitive, or administratively proposed wilderness.
iii. Areas contiguous to roadless areas with wilderness potential.
iv. Legislatively or administratively proposed areas.
2. Criteria for wilderness evaluation if not otherwise stated:
i. Wilderness values.
ii. Values foregone.
iii. Feasibility of management as wilderness.
iv. Proximity to other wilderness areas.
v. Long term changes in species, plant and animal diversity community.
f. Direction for the Management of Designated Wilderness and Primitive Areas:
1. Limiting and distributing visitor use.
2. Control Measures.
g. Fish and Wildlife Habitat Management:
1. Desired future conditions.
2. Management indicator species.
3. Consulting other agencies' fish and wildlife Biologists.
4. Access and dispersal problems.
5. Pest and fire management effects.
6. Population trends of management indicator species.
7. Critical habitat for threatened and endangered species.
h. Grazing and Browsing Lands.
1. Procedures used and data obtained.
i. Range condition and trend studies.
ii. Records of actual use.
iii. Management indicator species of wildlife.
iv. Present and potential supply estimates.
2. Analysis of the management situation.
3. Alternative range management practices.
i. Grazing management systems.
ii. Methods.
iii. Evaluation of pest problems.
iv. Conflicts and beneficial interactions.
v. Physical facilities.
vi. Existing permits.
vii. Free roaming horses and burros.
i. Dispersed and Developed Recreation:
1. Forest planning will identify.
i. Physical and biological characteristics.
ii. Recreational preferences.
iii. Recreation opportunities.
2. Supply of recreational facilities.
3. Recreation alternatives.
4. Formulation and analysis of alternatives.
5. Evaluation of alternatives.
6. Land ownership patterns.
7. Off-road vehicle use.
j. Mineral Exploration and Development Consideration and Information Needs:
1. Active mines.
2. Mineral rights.
3. Probable occurrences.
4. Development potential.
5. Probable effect of renewable resource allocation on mineral activities.
k. Water and Soil Management:
1. Current water uses.
2. Existing impoundments, transmission facilities, etc:
3. Water volumes.
4. Legal requirements.
5. Watershed conditions.
6. Protective measures.
l. Cultural Resources:
1. Forest plan will.
i. Provide an overview.
ii. Identify areas requiring more intensive inventory.
iii. Evaluation of sites for the National Register of Historic Places.
iv. Provide protective measures.
v. Maintenance of historic sites.
vi. Identify opportunities for interpretation.
2. Analysis of alternatives.
3. Evaluation of alternatives.
m. Research Natural Areas:
219.13 Management Standards and Guidelines.
a. Introduction.
b. Management Practices will:
1. Conserve soil and water resources.
2. Minimize physical hazards.
3. Prevent pest hazards.
4. Protect water bodies.
5. Provide for and maintain plant and animal diversity.
6. Be monitored and evaluated.
7. Be assessed for NEPA considerations.
8. Maintain fish and wildlife populations.
9. Prevent adverse modification of critical habitat for threatened and endangered species.
10. Provide right of ways and transportation corridors.
11. Ensure appropriate road construction design according to use.
12. Provide that all roads are designed to re-establish vegetative cover.
13. Maintain air quality.
c. Management Prescriptions involving vegetation manipulation of tree cover will:
1. Be best suited for multiple use.
2. Assure adequate restocking within 5 years.
3. Not be chosen primarily because of greatest dollar return.
4. Consider potential effects of residual trees.
5. Avoid permanent impairment of site productivity.
6. Provide desired effects.
7. Be practical in terms of transportation and harvesting requirements.
d. Openings Created by Even-Aged Management:
1. Must be shaped and blended.
2. Maximum size limits.
i. Factors to be considered in determining size limits.
ii. Size limits may be exceeded after 60 days public notice.
iii. Natural catastrophic conditions excluded.
e. Special Attention to Land and Vegetation Near perennial streams, lakes and other bodies of water.
f. Conservation of Soil and Water Resources.
g. Diversity of Plant and Animal Communities and Tree Species.
h. Timber Harvest and Cultural

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