

United States  
Department of  
Agriculture

Forest  
Service

Southwestern  
Region



# Record of Decision for Amendment of Forest Plans

Arizona and New Mexico



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# Introduction

## Mexican Spotted Owl

The Southwestern Region has been concerned about Mexican spotted owl (MSO) population viability since the early 1980's. In response to this concern, the Regional Forester added this species to his "Sensitive Species List" in 1983. In June 1989, the Regional Forester adopted Interim Directive No. 1 (FSM 2676), which was based on recommendations made by a task force comprised of Forest Service and external parties. As more information was gained, the Region revised and reissued direction in Interim Directive No. 2, June 1990 (FSM 2676). Interim Directive No. 2 expired in December 1991; however, the Regional Forester directed Forest Supervisors to continue implementation of the interim direction until final guidelines could be prepared. An environmental assessment was completed in July 1992, to evaluate the programmatic effects of continuing the interim management direction.

In 1989, the U.S. Fish and Wildlife Service (USFWS) was formally petitioned to list the Mexican spotted owl under the Endangered Species Act. Following acceptance of the petition, a Status Review of the Mexican spotted owl was prepared by USFWS in 1991. The USFWS issued a proposed rule for listing the Mexican spotted owl as threatened in late 1991 and the Forest Service accelerated its effort to prepare a conservation strategy for Mexican spotted owl. The Mexican spotted owl was listed as a threatened species, effective April 15, 1993. Since then, the Forest Service emphasis has shifted from developing a conservation strategy to preclude formal listing, to conducting informal/formal consultation and meeting recovery requirements.

In March 1995, the Fish and Wildlife Service prepared and released for public and agency review a draft Mexican Spotted Owl Recovery Plan. I decided a region-wide amendment of forest plans should be consistent with the final Recovery Plan recommendations. The final environmental impact statement (FEIS) completion was coordinated with the "Recovery Plan for the Mexican Spotted Owl" to facilitate incorporation of final recommendations in the amendment. Alternative G was added to the FEIS in response to the final Recovery Plan information.

## Northern Goshawk

The Southwestern Region has been taking management actions to safeguard the viability of northern goshawk for the last decade. After reviewing the status of northern goshawk in early 1990, the Regional Forester established a task force and a separate scientific committee to review northern goshawk habitat management needs. Based on

information from these two groups, interim guidelines were issued in April 1991, and revised in October 1991. An environmental assessment was completed in October 1991, to evaluate the effects of implementing interim northern goshawk management direction. The revised interim guidelines expired June 6, 1992. The Scientific Committee issued their final management recommendations for northern goshawk habitat management guidelines in November 1991. A supplement to the original environmental assessment was prepared in May 1992, to evaluate the programmatic effects of continuing interim northern goshawk management direction. Another set of interim guidelines was published in June 1992, which guided site-specific project design.

Interim guidelines expired in June 1995. In order to assure continued protection for the northern goshawk until a final decision on this amendment, permanent northern goshawk guidelines were added to the Forest Service Directives System as a Region 3 Supplement in June 1995. The Regional Supplement will be withdrawn from the Directives System as part of this decision on the final region-wide amendment of forest plans.

## Forest Plans

### MSO and Northern Goshawk

Existing Southwestern Region forest plans were completed from 1985 to 1988, prior to the heightened concern for northern goshawk and the formal listing of the Mexican spotted owl as a threatened species. Little information on the habitat needs was available when the original plans were prepared. Consequently, existing plans recognized both species as being sensitive species but plans contained few specific standards and guidelines for their protection. However, existing plans do put priority on habitat needs for threatened, endangered and sensitive species with specific guidelines being implemented via the Forest Service Directives System. Also, a great deal of new information has been amassed on the habitat needs for both species since original plans were completed.

### Silvicultural Systems

Existing forest plans emphasize use of even-aged timber management systems. Uneven-aged management is a permissible system in all existing plans but is not emphasized and there is little guidance for its use. New information indicates even-aged silviculture can conflict with habitat needs for northern goshawk and Mexican spotted owl. The existing forest plan management emphasis needs to be changed.

## **Steep Slope Harvesting**

Four of the existing Forest plans permit timber harvesting on slopes over 40% (usually termed steep slopes). Since the plans were approved, little harvesting has been done on steep slopes but the possibility of steep slope harvesting was a major issue in listing the Mexican spotted owl, since many of the best Mexican spotted owl nesting sites have been located on steeper slopes. In response to the 40% slope concern, the original proposed action was designed to eliminate all steep slope logging. Later interaction with the Mexican Spotted Owl Recovery Team revealed that complete elimination of steep slope logging was not necessary nor desired to protect and recover the MSO.

## **Site-specific Activity Tables**

Existing plans contain informational tables that estimate quantity and timing of site specific activities. The tables were the best estimate of possible activities when the plans were approved. However, since plans were approved, it has been established through appeals and litigation that the plan is a programmatic document. Site-specific activities listed in these tables were not covered in the programmatic environmental analysis and do not constitute one of the key decisions made in forest plans. Actual forest plan implementation has been different than portrayed in the informational tables. Modifications to the tables are handled as corrections (FSH 1909.15, 10-18) rather than amendments. Direction has been given to the field units to publish a schedule of proposed actions four times a year to provide the public with the needed information on project scheduling (Forest Service Handbook FSH 1909.15). These tables need to be eliminated or moved to a forest plan appendix to reduce confusion regarding their apparent status.

## **Public Involvement**

A Notice of Intent to Prepare An Environmental Impact Statement was published in the "Federal Register" on June 24, 1992. The Notice requested comments concerning amending forest plans to incorporate management guidelines for the Mexican spotted owl and northern goshawk. A total of 10 comments were received in response to the Notice of Intent. Two revisions to this notice were published in the "Federal Register" on March 20, 1995, and on May 15, 1995.

On November 4, 1993, a Scoping Report was mailed to over 600 individuals, organizations, state/federal agencies, local governments and Indian Tribes. The Forest Service received 39 responses. The Scoping Report requested the reviewers to provide specific comments on proposed changes to the Southwestern Region Forest Plans, to

identify impacts and issues associated with the proposed changes and suggest alternative standards and guidelines that addressed the Purpose and Need for this proposed action. A 45-day comment period was provided, with comments due on December 30, 1993; however, all comments on the Scoping Report received up to April 1, 1994, were evaluated.

On April 20, 1994, an additional scoping package was mailed that included a discussion of the planning issues, alternatives and a comparison of standard and guideline language for each alternative. Comments were due by May 15, 1994, but were accepted up to final draft environmental impact statement (DEIS) preparation at the end of June 1994. This document was not mailed to the entire mailing list of 600 names. It was sent to all Indian Tribes, all county governments, all congressional staffs, key state and federal agencies (including USFWS), and the organizations and individual respondents to the original Scoping Report (see above). A total of 2 individuals and 11 agencies and organizations supplied comments.

In August 1994, a draft environmental impact statement was published and mailed to over 300 individuals and 430 agencies and organizations. A Notice of Availability of a Draft Environmental Impact Statement was published in the "Federal Register" on August 19, 1994. A 90-day comment period was provided on the DEIS. The formal Forest Service comment period on the DEIS ended on December 1, 1994. Many comments came in after the close of the formal comment period. All comments received after the comment period expired but prior to May 1, 1995, were considered in the final environmental impact statement. The Forest Service received 418 comments on the region-wide amendment DEIS.

The FEIS was mailed out in October 1995 to over 300 individuals and to over 380 organizations, government agencies, local governments and Indian Tribes. This Record of Decision was delayed to allow the public, governments and Indian Tribes to review the FEIS and Mexican Spotted Owl Recovery Plan, and submit comments to me for consideration in my final decision. Comments were accepted until March 25, 1996. The Forest Service received 476 comments on the FEIS.

## **Summary of Public Involvement on FEIS**

In pursuit of the best public input possible before making the final decision documented in this Record of Decision, a final environmental impact statement that evaluated the programmatic effects of amending Southwestern Region forest plans was completed and filed with the

Environmental Protection Agency. I purposely delayed making this final decision to allow interested parties additional opportunity to provide comments, particularly with respect to Alternative G, the identified preferred alternative.

Many of the comments received on the FEIS were similar to those received on the DEIS. Agency responses developed for the DEIS comments are still applicable to many of the FEIS comments received (see FEIS, Chapter 5, pages 49-54). Some comments received suggested specific wording improvements in the FEIS. Those comments were addressed by issuing an errata sheet to the FEIS (see Appendix A). Other editorial suggestions were also directed to improve the amendment language. Appendices B and C of this ROD reflect the final amendment language in response to those comments. The balance of the FEIS comments related to other concerns, which are summarized and responded to below:

### **Commentor Preference for Alternative E**

As was the case with the DEIS comment period, the preponderance of comments received (393 out of 476) indicated a preference for Alternative E. In fact, the FEIS display of environmental effects does depict environmental advantages associated with Alternative E. I took notice of the environmental effects, but I did not select Alternative E because it was not consistent with the Mexican Spotted Owl Recovery Plan. Formal consultation with the Fish and Wildlife Service was conducted on Alternative G.

### **Timber Estimated Alternative Volumes**

A number of concerns were raised over timber volumes expected under each of the alternatives. As the MSO Recovery Plan was finalized and discussions were held with recovery team members, I realized that initial interpretations of volume in the FEIS may not be accurate. Therefore, I put together a team to validate the expected volumes for each of the alternatives to give me the best estimate possible before I made a final decision. The process record contains complete documentation of the team deliberations. The new analysis did show some adjustments to the numbers were needed, but the original numbers were not significantly different from the new numbers. The results are reflected in the errata sheet which is a part of Appendix A to this ROD.

### **Different Science**

A number of other commentors offered arguments concerning the inadequacy of environmental effects discussions or actual amendment language. Many of those commentors offered up different scientific support for their

suggested changes than was offered by regional resource specialists. My specialists evaluated every comment and wrote a response to the process record. Based on review of my specialists' responses, I choose to rely on information and recommendations they provided for this decision. There was no compelling proof that other information or recommendations offered were better than the science my resource specialists used.

### **Comment Analysis**

Some commentors to the FEIS stated that their respective comments to the DEIS were not evaluated properly. All comments received on the DEIS were logged in and evaluated through a content analysis process. Because of the large volume of comments, all letters from individuals or private groups were not printed in the FEIS. Comments were aggregated into categories and a Forest Service response was developed (see FEIS Chapter 5). We chose not to publish in the FEIS all comment letters received, as a cost-cutting measure. The process record contains complete documentation of all comments received throughout the process and how they were addressed. Comments on the FEIS also went through a similar process of content analysis and the results are included in the record.

### **EIS Supplement**

An agency has great latitude to make adjustments in preparing a final environmental impact statement when responding to comments. The agency can modify alternatives, develop and add new alternatives, improve its analyses, make factual corrections and develop errata pages (40 CFR 1503.4). During preparation of this FEIS, I utilized all of the flexibility afforded me by the 40 CFR regulations.

Agencies shall prepare a supplement to either the draft or final EIS if substantial changes in the proposed action are relevant to environmental concerns, or there are significant new circumstances or information relevant to environmental concerns (40 CFR 1502.9). Alternative G was added to the FEIS in response to comments received from the Mexican Spotted Owl Recovery Team. Alternative D was modified in response to information received from the Arizona Game and Fish Department and New Mexico Department of Game and Fish. In both cases the alternatives added did not result in significant new information relevant to the environmental effects range displayed in the DEIS. Both of the alternatives primarily changed specific wording for the standards and guidelines. I choose to move forward with the FEIS without supplementation to expedite an agency response to the court ordered project injunction in the "Silver v. Thomas" Mexican spotted owl litigation. In my judgment, preparing

a supplement to the FEIS would have added little new information to aid in developing management direction for the Mexican spotted owl or northern goshawk, but would have added additional time for the agency to resolve issues related to the MSO lawsuit. Additional time added to the process would have further prolonged the significant effects to the social and economic status of many of Arizona's and New Mexico's small communities. I am totally satisfied that I have all information relevant to make this decision and I am also satisfied the extensive efforts made to involve and respond to public concern were complete.

### **FEIS Standards and Guidelines**

Some commentors argued that the old growth standards and guidelines were added in the FEIS and the public did not have an opportunity to comment on them. It has been my intent to develop consistent Regional standards and guidelines for old growth that are compatible with protection needed for the Mexican spotted owl and northern goshawk. Presentation of various scenarios to standardize old growth has been a part of this EIS process since original scoping began. The current wording for the old growth standards and guidelines is the result of many comments received during the process.

Other commentors were concerned about the presentation of grazing standards and guidelines with respect to forage utilization. In the DEIS those utilization standards and guidelines primarily applied to Mexican spotted owl and northern goshawk habitat areas. I received many comments on the DEIS that suggested that the utilization standards should be expanded to cover the Region. Considering the fact that controlling grazing utilization was likely to help improve resource conditions everywhere, I decided to

expand the scope of coverage for those grazing standards and guidelines in the FEIS. Careful reading of those standards and guidelines will show that they will apply primarily in areas where the Forests do not have good site specific information to develop a more localized standard. I never intended the region-wide utilization standards to replace better information generated at the site specific level. Additionally, the utilization guidelines were a part of the Forest Service Directives System that guided grazing management on the national forests. By placing these standards and guidelines in Forest Plans, they become more visible and understandable to those concerned about forest management.

### **Steep Slope Logging**

In the "Federal Register" notice listing the Mexican spotted owl, forest plan authorization of steep slope logging on four Southwestern National Forests was cited as one of the key factors for listing the MSO. In an effort to be responsive to that concern, I originally proposed total elimination of logging on slopes over 40%. As the final MSO Recovery Plan was completed, the Recovery Team commented on the FEIS stating that a total ban on steep slope logging was not necessary to protect and recover the MSO. Final standards and guidelines (see Appendix B) reflect the Recovery Team's comments. Each site specific timber sale will comply with the Recovery Plan and obtain consultation input from Fish and Wildlife Service prior to any decision to proceed with steep slope logging. For these reasons, I decided to retain the management flexibility of steep slope logging on the four national forests that had it previous to this amendment. The MSO standards and guidelines will control timber harvest on steep slopes within MSO habitat, and original forest plan standards and guidelines will control timber harvest on steep slopes in other areas.

# Decision

My decision is to implement Alternative G, as described in the Final Environmental Impact Statement for Amendment of Forest Plans and appendices to this Record of Decision. The scope of this decision includes all Southwestern Region National Forests. This decision is not applicable to any forests outside the Southwestern Region. This decision also formally withdraws current Southwestern Region Forest Service Manual direction for guidance of management of the Mexican spotted owl and northern goshawk.

This decision is considered to have a short-term (5 to 10 years) life span. Each of the Region's forest plans are scheduled for revision beginning in 1996. At the rate of two to three forest plans per year, the revision process will be completed by 2003, making this decision obsolete.

Alternative G was developed to respond to the Mexican Spotted Owl Recovery Plan. It was developed in collaboration with the Fish and Wildlife Service (including a Recovery Team member). Standards and guidelines for the northern goshawk were developed in early May 1995, and considered all known information from the Goshawk Interagency Implementation Team recommendations, the joint Arizona Game and Fish Department and New Mexico Department of Game and Fish letter that responded to the draft, and experience gained during implementation of the interim direction. The specific language for standards and guidelines that are associated with this alternative are displayed in Appendix C of this document.

As new information becomes available during implementation, the standards and guidelines (Alternative G) will be adjusted by amendment of forest plans.

# Rationale for Decision

In my judgment, Alternative G meets the desired condition and objectives stated for the proposed action (FEIS Chapter 1). My decision is based on a comparison of desired conditions with the projected effects of the proposed action and alternatives. I also looked at the issues and how well each alternative resolved them. I considered the wealth of public comments (over 950) provided throughout this analysis.

I find Alternative G is the best from a short-term standpoint because it allows some treatment of dense stands. I do not believe Alternative G is best for long-term forest management because it does not substantially reduce the risk of wildfire or insect and disease outbreaks. As previously discussed, this amendment is intended to provide short-term (5 to 10 years) forest plan direction.

Alternative A was not selected because it did not respond to the need for region-wide management direction for the Mexican spotted owl or the northern goshawk.

Alternative C was not selected because I felt the Mexican spotted owl (MSO) direction would be more publicly visible in forest plans rather than in the Forest Service Directives System. Additionally, the MSO direction characterized in this alternative was not entirely consistent with the MSO Recovery Plan.

Alternative D was not selected because I felt the proposed northern goshawk direction depicted in this alternative was more conservative than current scientific information warranted. If the need for a more conservative approach becomes apparent from future monitoring of the species, some of the ideas generated in this alternative's development may become necessary.

Alternative E was the alternative that most commentors to the DEIS and FEIS supported. While this alternative contained some favorable management direction related to the health of the entire ecosystem, I did not select this alternative because the Mexican spotted owl standards and guidelines were inconsistent with the MSO Recovery Plan. Additionally, the northern goshawk direction depicted in this alternative did not completely adopt the scientific information from the report known as "Management Recommendations for Northern Goshawk in Southwestern U.S." (RM-217), which I feel contains the best known information on northern goshawk management in our Region.

Alternative F was not selected for the same reasons Alternative C was not selected. I do believe that the concept of a demonstration area to evaluate an ecosystem approach to management rather than a "single-species"

approach is a good idea. I am willing to pursue this concept by other means than forest plan amendment.

## Desired Condition

The desired condition is for all forest plans to contain the latest information on habitat needs for Mexican spotted owl and northern goshawk with clear standards and guidelines providing primary direction for site-specific project design. Alternative G includes new standards and guidelines for northern goshawk and Mexican spotted owl habitat and satisfies the need for change.

## Objectives

Six objectives were described for this action in FEIS Chapter 1. They provide specific details how this action will contribute to desired condition.

### Alternative G:

- incorporates standards and guidelines for Mexican spotted owl and northern goshawk into the Southwestern Region's forest plans to guide site-specific project design until forest plans are revised (1996 to 2003).
- standards and guidelines for old growth are compatible with requirements for Mexican spotted owl and northern goshawk and are consistent across the Southwestern Region.
- standards and guidelines reflect the de-emphasis from even-aged management silviculture and better represent current forest management.
- standards and guidelines reflect the de-emphasis of timber production from slopes over 40 percent.
- standards and guidelines for the Mexican spotted owl are consistent with the Mexican Spotted Owl Recovery Plan.
- standards and guidelines for grazing management are added to all forest plans.

## Issues

The following public concerns were raised during analysis of the proposed action:

- **Economics:** The amendment of forest plans will affect production levels of goods and services from



the national forests. Changes in production levels will affect jobs and income in several employment sectors.

- **Goshawk and Mexican spotted owl:** The amendment of forest plans will affect the amount, quality, and distribution of these birds' habitat. The amount, quality, and distribution of habitat will in turn affect the degree of risk to population viability of each bird.
- **Ecosystem:** The proposed strategy and alternatives will change forest structure and composition. The incidence of insect and disease will change as will the risk of wildfire, potentially affecting forest structure and composition. Opportunities for manipulation of forest structure and composition will be affected.
- **Commodity production:** The proposed strategy and alternatives will affect traditional commodity production. The amount and mix of timber products, the amount of forage production, and production of minerals and energy are most likely to be affected.
- **Recreation and services:** The proposed strategy and alternatives will affect recreation, recreation special uses, and non-recreation special use opportunities. Recreation construction and expansion will be affected. Access opportunities will be affected.
- **Statutory rights:** The proposed strategy and alternatives may create conflicts with outstanding statutory rights such as mining claims, access to private inholdings, and rights-of-way.

The original objective concerning timber production on slopes over 40 percent has become moot. This objective was originally included because steep slope logging on four Southwestern Region national forests was cited as one of the reasons for listing the Mexican spotted owl. As the final MSO Recovery Plan was completed, the Recovery Team commented on the FEIS, stating that a total ban on steep slope logging was not necessary to protect and recover the MSO.

Alternative G best addresses the goshawk and Mexican spotted owl issue. Alternative E best resolves the ecosystem issue regarding risks from insects, disease, and wildfire. Alternative A best resolves the remaining issues concerning economics, commodity production, recreation, and statutory rights.

Recognizing there are trade-offs in any resource management decision, I selected Alternative G because it was the only alternative which fully met the purpose and need for action, as discussed under "desired condition" and "objectives" above.

Forest plan standards and guidelines in Alternative G are consistent with the Mexican Spotted Owl Recovery Plan and incorporate the intent of the scientific report known as "Management Recommendations for Northern Goshawk in Southwestern U.S." (RM-217). Additionally, Alternative G establishes forage utilization standards for grazing ungulates and establishes old growth management standards and guidelines that are consistent throughout the Southwestern Region.

# Alternatives Considered in Detail

Six alternatives, labeled A, C, D, E, F, and G, are displayed in detail in the FEIS. Each alternative represents a different way to incorporate programmatic management guidance into project implementation, a different emphasis on management tools used and/or a different set of specific management direction (e.g., different wording for standards and guidelines). For specific details on how the standards and guidelines would vary by alternative, review Appendix E of the FEIS.

The original proposed action (Alternative B) depicted in the Scoping Report was dropped from detailed study. The many commentors to the Scoping Report, both internal and external to the agency, suggested wording changes that helped clarify the intent of the amendment. The changes are minor and have been incorporated in Alternative C. The expected environmental effects of Alternative B would not be any different from those expected for Alternative C. Alternative C has been carried forward as an alternative discussed in detail.

## Alternative A

Alternative A is the “no action alternative” required by the National Environmental Policy Act (NEPA) regulations (40 CFR Part 1502.14(d)). This alternative provides a baseline for comparing the other “action” alternatives. It does not meet the purpose of and need for action. In the context of this programmatic environmental impact statement, Alternative A would continue existing forest plan direction for Mexican spotted owl and northern goshawk management. Consultation related to the Mexican spotted owl would be sought on any and all forest management activities deemed to “may affect” the owl. New direction for the two birds would not be added to forest plans until they are revised beginning in 1996 and ending in 2003. Old growth allocation would still vary from forest to forest. Even-aged management would be the emphasized silvicultural tool. Steep slope (slopes 40%+) harvest solely for timber production purposes would still be a possible activity on the Apache-Sitgreaves, Gila, Lincoln, and Santa Fe National Forests, but not on any of the other forests.

## Alternative C

Alternative C would incorporate Mexican spotted owl and northern goshawk management direction into forest plans through the forest plan amendment process described in the National Forest Management Act regulations (36 CFR 219). Old growth standards and guidelines would be the same for every national forest in the Southwestern Region.

The specific areas for old growth allocation (20%) within each management area and old growth block size would be determined during the site-specific Integrated Resource Management analysis conducted for specific projects. Uneven-aged silviculture would be emphasized over other methods. Mexican spotted owl guidance would follow the direction stated in Interim Directive #2 plus dispersal habitat considerations. Northern goshawk guidance would be very similar to that which is presented in the report, “Management Recommendations for the Northern Goshawk in the Southwestern U.S.,” (RM-217).

## Alternative D

This alternative is patterned after DEIS comments submitted jointly by the Arizona Game and Fish Department and New Mexico Department of Game and Fish. The standards and guidelines for northern goshawk management are a verbatim rendition from their comment letter. The input depicted in this alternative is a slight variation from the recommendations developed by the Goshawk Interagency Implementation Team and from information depicted in the report, “Management Recommendations for the Northern Goshawk in the Southwestern U.S.,” (RM 217). Alternative D is exactly like Alternative G with respect to Mexican spotted owl management guidance and silvicultural emphasis. Steep slope logging would be allowed for reasons other than timber production.

## Alternative E

This alternative is patterned after Scoping Report comments received from Applied Ecosystems, Inc. Mexican spotted owl standards and guidelines generally follow Interim Directive #2 like Alternative C, but define smaller core and territory acreages (core areas 300 to 400 acres; territories 750 to 950 acres). The northern goshawk standards and guidelines are similar to those in Alternative C, except there is less acreage with trees over 12" dbh and reduced canopy cover percents in the non-nest portion of the territory. Old growth would be allocated as 10 percent of the area with no specific minimum block size defined. Steep slope logging would be allowed for reasons other than timber production. Alternative E also includes the addition of standards and guidelines to guide ecosystem planning, to address forest health concerns and to guide implementation of other standards and guidelines.

## **Alternative F**

This alternative is an example of an ecosystem approach to management for the Mexican spotted owl. This alternative is like Alternative C except that a demonstration area would be established on the Apache National Forest to test an adaptive ecosystem approach to management of the mixed-conifer type (i.e., primary Mexican spotted owl habitat). This demonstration area stratifies the mixed-conifer type into six ecological zones. Management emphasis for each zone would be in accordance with prescribed standards and guidelines to manage for specific vegetation desired condition in the mixed-conifer rather than the Mexican spotted owl guidelines depicted in Alternative C. For all other areas of the region (including non-mixed-conifer zones on the Apache National Forest), all standards and guidelines as depicted in Alternative C would be implemented in this alternative. This alternative would still rely on the Integrated Resource Management process to make the site specific project design decisions.

## **Alternative G**

This alternative was developed to respond to the Mexican Spotted Owl Recovery Plan (see FEIS Chapter 4 for S&G Team information). Standards and guidelines for the northern goshawk were developed in early May 1995, and considered all known information from the Goshawk Interagency Implementation Team recommendations, the joint Arizona Game and Fish Department and New Mexico Department of Game and Fish letter that responded to the draft, and experience gained during implementation of the interim direction. Old growth standards and guidelines would be the same for every national forest in the Southwestern Region. The specific areas for old growth allocation (20%) within each management area and old growth block size would be determined during the site-specific Integrated Resource Management analysis conducted for specific projects. Uneven-aged silviculture would be emphasized over other methods.

# Environmentally Preferable Alternative

The environmentally preferable alternative is the alternative that will promote the national environmental policy as expressed in NEPA's Section 101. Ordinarily, this means the alternative which causes the least damage to the biological and physical environment. It also means the alternative which best protects, preserves, and enhances historic, cultural, and natural resources.

In the short run, (less than 5 years) the environmental differences between all the alternatives considered in detail would hardly be detectable in a programmatic region-wide context. However, long-term consequences between alternatives are quite different.

When considering the entire forested ecosystem, Alternative E would be defined as the environmentally preferred alternative. Alternative E has the lowest risk of epidemic insect and disease infections, has the lowest risk to catastrophic fire losses, provides the best balance of vegetation structural stage distribution, is most likely to sustain aspen in the long term, and most likely would provide better habitat for forage-using wildlife species.

When considering other environmental factors, Alternative G also has environmentally preferable attributes. Alternative G provides better habitat conditions for the Mexican spotted owl and northern goshawk than Alternative E. Alternative G is consistent with the Mexican Spotted Owl Recovery Plan objectives, while Alternative E is not. Alternative G also provides utilization standards for grazing animals throughout all ecosystems in the Southwestern Region and provides a more uniform approach to old growth management within the Region.

When managing the resources of the national forests there is never a single clear choice between alternatives. Each alternative has its positive side and its negative side. My purpose in conducting this amendment process was the recognition that the Mexican spotted owl and northern goshawk needed a higher level of protection than was contained in our existing forest plans. While there are several environmental advantages afforded by Alternative E, I feel Alternative G best meets the purpose and need for this action.

# Findings Required By Other Laws

## National Forest Management Act - Significance of Amendment

Under the present planning regulations (36 CFR Part 219), amendments to forest plans can take two forms. Based on an analysis of the objectives, guidelines, and other contents of the forest plan, the responsible official must determine if the amendment would result in a significant change in the plan. If the change is determined to be significant, the same procedure as that required for development and approval of a forest plan must be followed. If the change is determined not to be significant, appropriate public notification and satisfactory completion of NEPA procedures is required (36 CFR 219.10(f)).

There are valid logical arguments on both sides of the significance question. However, the key question is whether the procedural requirements have been adequately met in either case. This paper examines the procedural requirements for significant amendments and assesses the adequacy of the amendment process in meeting the requirements. The procedural requirements for non-significant amendment is not addressed because normal NEPA procedures were followed. However, a discussion of the rationale for why the amendment could be classified as not significant concludes this paper.

Following is a point-by-point comparison of the process requirements in the current planning regulations (36 CFR 219) and what was done in preparing the amendment to forest plans across the region:

- Begin public participation with publication of a notice of intent in the “Federal Register” (36 CFR 219.6[b]). A notice of intent was published June 24, 1992 (Doc. 1) and revised on March 20, 1995 (Doc. 70).
- Provide the public at least 30 calendar days for submitting written comments (36 CFR 219.6(g)). The initial scoping request provided over 50 days for written comment (Doc. 5). A second scoping on issues and alternatives provided 30 days for comment (Doc. 40).
- Draft environmental impact statements must be available for public comment for at least 3 months (36 CFR 219.6(g) 219.10(b)). A draft environmental impact statement was prepared and made available for public comment for over 3-1/2 months (Doc. 55). In addition, a comment period of over 2-1/2 months was provided between publication of the final environmental impact statement and preparation of the ROD.
- Notify tribal leaders and county governments (36 CFR 219.7(b)). All Indian tribes and counties with National Forest lands were notified (Doc. 6, 39, 59, 84).
- Review planning and land use policies of other agencies and display the results in the environmental impact statement (36 CFR 219.7(c)). The environmental impact statement contains an evaluation of the interrelationship of the proposed amendment and other agencies plans and policies (Doc. 54,93).
- Meet with other governmental officials (36 CFR 219.7(d)). A special effort was made to meet with local government officials (Doc. 37, 39, 44).
- Determine the major issues, management concerns, and resource use and development opportunities to be addressed (36 CFR 219.12(b)). This was the objective of the scoping process and was done. The purpose and need for action and major issues are identified in the scoping documents and subsequent environmental documents (Doc. 5, 40, 54,).
- Prepare criteria to guide the planning process (36 CFR 219.12(c)). Criteria were developed and used to analyze and document the effects of the proposed action and alternatives (Doc. 77).
- Use best available data (36 CFR 219.12(d)). The best available scientific data and information on habitat needs for goshawk and Mexican spotted owl were used to develop and evaluate the proposed action and alternatives (Doc. 21, 47A, 46, 64, 75, 88, 82, 87).
- Conduct an analysis of the management situation which includes a summary of problems with existing management direction and expected future forest conditions if current direction were to continue to determine if there is a need to change management direction (36 CFR 219.12(e); FS 1909.12-3.41). The problems with present forest plan standards and guidelines and the need for the proposed changes are contained in the scoping documents and environmental documents (Doc. 5, 54,93).
- Conduct benchmark analysis to define the range within which alternatives can be constructed (36 CFR 219.12(e); FSH 1909.12—3.42). All of the required benchmarks were run for each forest during the initial forest planning process. These benchmarks defined the maximum resource potentials as required. For the

proposed decision to amend forest plans, the original benchmarks were adopted and provide resource potential information adequate for this decision. All of the alternatives are within the original range of alternatives described by initial benchmarks. The initial benchmarks, by forest, for sawtimber and products for the second decade for the minimum level, maximum pnv, and maximum timber benchmarks are shown in the table below in MMBF:

Forest	Minimum Level	Maximum PNV	Maximum Timber
Apache-Sitgreaves	0	175	179
Carson	0	43	42
Cibola	0	31	36
Coconino	0	146	145
Coronado	0	0	0
Gila	0	24	56
Kaibab	0	116	119
Lincoln	0	2	36
Prescott	0	0	8
Santa Fe	0	73	100
Tonto	0	17	18
<b>Totals</b>	<b>0</b>	<b>627</b>	<b>739</b>

There would be no new information relevant to this proposed action and alternatives to be gained from new benchmark runs. The proposal and alternatives are well above the minimum level and well below the maximum levels. Adoption of the initial benchmarks provides adequate information in which alternatives can be developed.

- Formulate a broad range of reasonable alternatives according to NEPA procedures (36 CFR 219.12(f)). In accordance with NEPA, alternatives were developed relative to the proposed action. The alternatives are distributed within the range of resource potential, includes an alternative that reflects the level of output and values prior to any change in management for owls or goshawks (Alternative A), includes an alternative that reflects the current level with existing owl and goshawk policies in place (Alternative C), and even includes an alternative that reflects the most commonly voiced public concerns but does not comply with the owl Recovery Plan (Alternative E).

- Estimate the physical, biological, economic, and social effects of implementing each alternative in accordance with NEPA procedures (36 CFR 219.12(g)). In accordance with NEPA procedures, the effects were estimated for environmental factors relative to the major issues and evaluation criteria established by the interdisciplinary team. Present net value was not used as an indicator of relative values because PNV is directly linked to market outputs and the effect on market outputs is displayed in the environmental impact statement and provides an adequate indicator of the relative differences between alternatives.

- Identify lands which are not suited for timber harvest (36 CFR 219.14). The original determination was adopted unchanged. The proposed action does not affect timber suitability.

- Include a sale schedule which provides the allowable sale quantity (36 CFR 219.16). Since allowable sale quantity is the maximum amount that may be sold, this proposed action does not affect allowable sale quantity. The selected alternative does not exceed original allowable sale quantities and falls well within the long-term sustained yield capacity. Sustainability is addressed in the environmental effects.

- Provide direction for management of designated wilderness and primitive areas (36 CFR 219.18). Current plans provide this direction and is unaffected by this proposed action.

- Manage fish and wildlife habitat to maintain viable populations (36 CFR 219.19). Habitat needs to maintain viable populations of Mexican spotted owl and northern goshawk are the primary need for change in the plans contained in the proposed action.

- Select management indicator species (36 CFR 219.19 (a)(i)). Indicator species were selected in the initial planning process and no need to change the list of species was identified and original indicator species will continue to be used.

- Consult with state fish and wildlife agencies (36 CFR 219.19(a)(3)). Arizona Game and Fish Department and New Mexico Department of Game and Fish were contacted and they were primarily responsible for Alternative D (Doc. 5, 8, 20, 41, 48, 55, 74).

- Consider effects on habitat, population trends, and access (36 CFR 219.19(a)(2)(4)(5)(7)). Relevant effects were estimated in the environmental impact statement in conformance with NEPA procedures.
- Determine grazing suitability (36 CFR 219.20). No need to change grazing suitability and original suitability determinations were adopted. Effects on forage production were estimated.
- Provide a broad spectrum of outdoor recreation opportunities (36 CFR 219.21). No need to change recreation suitability determinations was identified and the proposed action does not affect recreation suitability. Effects on recreation accessibility and uses were estimated in the environmental impact statement.
- Consider mineral exploration and development (36 CFR 219.22). The effects on mineral exploration and development were considered and included in the environmental impact statement.
- Consider effects on watershed condition, water yield and quality (36 CFR 219.23). Watershed and water yield and quality effects are included in the environmental impact statement.
- Provide for identification, protection, interpretation, and management of significant cultural resources (36 CFR 219.24). No need to change cultural resource direction was identified and the proposed action does not affect current plan direction.
- Provide for establishing Research Natural Areas (36 CFR 219.25). No need to change current RNA's was identified and the proposed action does not affect the present situation.

## Rationale For Non-Significant Amendment

The National Forest Management Act (NFMA) provides that forest plans shall “be amended in any manner whatsoever after final adoption and after public notice, and, if such amendment would result in a significant change in such plan, in accordance with subsections (e) and (f) of this section and public involvement comparable to that required by subsection (d) of this section” (16 U.S.C. 1604(f)(4)).

The Secretary of Agriculture’s implementing regulation indicates the determination of significance is to be “[b]ased on an analysis of the objectives, guidelines and other

contents of the forest plan” (36 CFR 219.10(f)). The Forest Service has issued guidance for determining what constitutes a “significant amendment” under NFMA. This guidance, in Forest Service Handbook 1909.12 - Chapter 5.32, identifies four factors to be used in determining whether a proposed change to a forest plan is significant or not significant. These four factors are timing; location and size; goals, objectives, and outputs; and management prescriptions. An analysis of the factors is presented below.

### Timing

The NFMA requires that forest plans be revised at least every 10-15 years. Southwestern Region forest plans were completed from 1985 to 1988 (i.e., 7 to 10 years ago). As stated in the Forest Service Handbook (FSH 1909.12, Chapter 5.32): “the later the change, the less likely it is to be significant for the current forest plan”. This amendment occurs late in the life span of Southwestern Region forest plans. Southwestern Region’s forest plan revisions are currently scheduled to start as follows: Tonto, Cibola: 1996; Carson, Gila: 1997; Prescott, Coronado: 1998; Kaibab, Lincoln, Santa Fe: 1999; and A-S, Coconino: 2000. The standards and guidelines established by this amendment will be reviewed again during the forest plan revision process.

### Location and Size

The Southwestern Region covers approximately 20.6 million acres. The amendment primarily will affect forest plan outputs from the Region’s lands that are categorized as suitable for timber production (about 3.5 million acres). Additionally, from a timber output perspective, only 1 million acres were projected for treatment in the first decade of forest plans (i.e., about 100,000 acres/year the first decade). However, the Southwestern Region the last 3 years has only averaged treatment of about 35,000 acres per year. Given the short life span for this amendment (2 to 5 years), the amendment should only affect timber outputs on approximately 70,000 to 175,000 acres or about one-half percent of the total regional acreage.

The amendment will have some effect on other forest uses, but the Region is confident that opportunities to fill the needs for most other uses can be found outside areas that may become restricted due to the amendment.

### Goals, Objectives, and Outputs

This amendment is fully consistent with goals of Southwestern Region forest plans. These goals include: 1) improvement of habitat for threatened, endangered and sensitive species; 2) working toward recovery and delisting of threatened and endangered species; 3) prevention

of the listing of sensitive species; 4) production of outputs on a sustained basis while maintaining air, soil, water and biotic resources; and 5) providing a transportation system that meets needs for access, resource protection and user safety by closing and obliterating unnecessary roads.

The allowable sale quantities and suitable timber acres will not be changed by this amendment. Reduced budgets for forest plan implementation and implementation of interim guidelines for management of the Mexican spotted owl and northern goshawk have reduced projected timber volume harvested. The amendment will not further reduce outputs projected in the final 2 to 5 years of current forest plan implementation. Forest plans do not make decisions about levels of outputs and when conflicts between resource protection standards and projected outputs occur, agency policy states outputs must give way. This policy is consistent with stated forest plans goals.

Since adoption of the Southwestern Region's forest plans (1985 to 1988), the Region has averaged less than 75% of the estimated outputs chargeable to allowable sale quantities (ASQ). In 1993 and 1994, the volume chargeable has only been about 30% of projected estimates. The amendment itself has little effect when compared to actual output levels in recent years from pre-amendment implementation of current forest plans.

### **Management Prescriptions**

This amendment does not significantly change the management area designations or management area direction of any existing forest plan other than the addition of standards and guidelines for management of the Mexican spotted owl and northern goshawk. In the Kaibab Forest Plan, some forest management areas are being combined because forest plan implementation experience demonstrated that the original forest management area subdivisions were not needed to adequately implement the forest plan.

The amendment also adds forage utilization guidelines to forest plans. This management direction is not new as it previously resided in the Forest Service Directives System as a Regional Supplement. Putting the utilization guidelines in forest plans will merely make them more visible to the public and land managers.

### **Conclusion**

Based on a consideration of the four factors above, and considering all the Southwestern Region's forest plans as-a-whole, I conclude adoption of this amendment is not

significant in a NFMA context. This amendment is fully consistent with current forest plan goals and objectives. The amendment merely provides added detail on what is needed to implement the original forest plan intent for protection of habitat for threatened, endangered, and sensitive species.

The Forest Service will continue to evaluate the resource issues leading to this amendment. Revision of the Southwestern Region's forest plans is anticipated in the next 2 to 5 years. The revisions will provide an excellent opportunity to review the contents of this amendment. Meanwhile, the public can still be intimately involved in review of specific project proposals that will be developed in the next few years under the additional guidance resulting from this amendment.

## **Endangered Species Act**

The "Biological Opinion Mexican Spotted Owl and Critical Habitat and Forest Plan Amendments" published May 14, 1996, by the US Fish and Wildlife Service, Region 2, Albuquerque, New Mexico states, "The Service finds that implementation of the forest plans, as amended by the new standards and guidelines, is not likely to jeopardize the continued existence of the Mexican spotted owl, and is not likely to destroy or adversely modify the species' critical habitat. Project-level actions and activities planned and implemented under the amended standards and guidelines, taken together, should promote the recovery of the owl." The opinion further states, "Formal consultation on the Mexican spotted owl would not be necessary for a project-level activity if: (1) the project is developed within the amended standards and guidelines for the Mexican spotted owl; (2) a biological evaluation of the project concludes that the project is not likely to adversely affect the owl or its critical habitat; and (3) a copy of the biological evaluation covering the project area is supplied to the Service's Ecological Services office for concurrence."

The Forest Service's Southwest Region initiated formal consultation on the forest plans including this amendment, for all listed species except the Mexican spotted owl prior to issuance of this ROD. In addition, the Forest Service evaluated each program area by project, and reached conclusions that those projects allowed to proceed would not cause irreversible or irretrievable commitment of resources to the extent that reasonable and prudent measures would be foreclosed during the consultation period.



# Implementation

This region-wide amendment to forest plans will be applied through project-level decisions which will include site-specific environmental analysis and public involvement. In any case of project design where there is an apparent conflict between the new standards and guidelines and old standards and guidelines, the new standards and guidelines will take precedence.

I intend for all management activities to be carried out within the bounds and constraints of forest plan standards and guidelines, including those in Appendix C. However, I recognize there are site-specific situations which require Forest Supervisors to deviate from these standards or guidelines. For example, urban interface areas, or areas along primary roads may need to have tree densities reduced as a protection measure against wildfire. In situations such as these, I expect Forest Supervisors to examine alternative stand densities. Should an alternative be selected that deviates from the standards and guidelines in Appendix C, the rationale for the changes will be fully explained in the decision document. If the selected alternative constitutes a change in actions designed to recover the Mexican spotted owl, the responsible official will consult with the Fish and Wildlife Service prior to finalizing that decision.

The region-wide amendment of forest plans will be effective seven (7) days after the legal Notice of Decision

appears in the Albuquerque Journal and the Arizona Republic. All new permits, new contracts, and other new instruments for the use and occupancy of National Forest System lands and resource uses in the Southwestern Region must conform to this amendment.

Forest Supervisors are directed to replace pages per Appendix B of this document for their respective Forest Plans and distribute the new pages to their forest plan mailing lists within 90 days from the date of this decision. Forest Supervisors should also take steps to make the corrections per EIS Appendix C (EIS, pages 133-137) and to add the new Vegetation Treatment Table (EIS, Appendix D, page 138).

As Forest Supervisors develop the new plan pages in response to my decision, I recognize that some adjustments may be needed in the final placement of the amended standards and guidelines in individual forest plans. The Forest Supervisors have the responsibility to incorporate my amendment decision into their respective Forest Plans, but I recognize that they may need to make minor adjustments to make their current forest plans totally compatible with my new amendment language. This decision authorizes those minor changes as long as the language and intent of my amendment remains intact.

# Appeal Rights

This decision may be appealed in accordance with the provisions of 36 CFR 217.3. A written notice of appeal must be filed within 45 days from the date of publication of the legal Notice of Decision in the Albuquerque Journal and the Arizona Republic [36 CFR 217.8]. The appeal must be filed with the reviewing officer:

USDA Forest Service NFS Appeals Staff  
14th and Independence, SW  
P.O. Box 96090  
Washington, DC 20090-6090

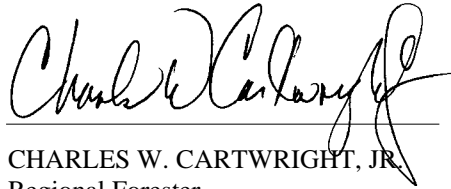
The notice of appeal must include sufficient narrative evidence and argument to show why this decision should be changed or reversed [36 CFR 217.9]. Requests to stay the approval of this region-wide amendment of forest plans will not be granted [36 CFR 217.10(b)].

This amendment will be effective seven (7) days after the legal Notice of Decision appears in the Albuquerque Journal and the Arizona Republic. No site-specific project decisions are made in this document. Those activities identified in the amendment or FEIS are probable activities, and only included to indicate approximate scheduling, practices, and to estimate effects. Final decisions on site-

specific projects will be made after site-specific analysis and documentation in compliance with the National Environmental Policy Act and implementing regulations at 40 CFR 1500.

Anyone interested in more information concerning the region-wide amendment of forest plans or the FEIS should contact:

USDA Forest Service  
Ecosystem Analysis and Planning  
517 Gold Avenue, SW  
Albuquerque, NM 87102  
(505) 842-3212



CHARLES W. CARTWRIGHT, JR.  
Regional Forester  
Southwestern Region  
USDA Forest Service

\_\_\_\_\_ Date

# Appendix A. Errata: Final Environmental Impact Statement for Amendment of Forest Plans

A reference in Chapter One regarding formal consultation with U.S. Fish and Wildlife Service created some confusion.

Page 5, last paragraph is replaced with the following:

*Formal consultation with U.S. Fish and Wildlife Service was conducted on the programmatic effects of this region-wide amendment. Consultation was initiated on the preferred alternative, identified in this FEIS. A final record of decision will not be issued until a biological opinion is received from U.S. Fish and Wildlife Service. Further consultation will occur on site-specific actions as they are proposed and analyzed. Consultation will also be conducted when forest plans are revised in the time period from 1996 to 2003.*

A reference to recommendations made by Carlton Edminster at the Symposium on Restoration Ecology, Flagstaff, Arizona, in 1995 was confusing. Further discussion and clarification was needed.

Page 14, 2nd paragraph under “Alternative G” is replaced with the following:

*In the Mexican spotted owl restricted areas, an aggressive fuels management program can be applied. This would be particularly important for treating areas around PAC’s to protect the PAC’s from destruction by wildfire. Mechanical thinnings could reduce dense pole stands (5-9 inch dbh) and sapling thickets (1-5 inch dbh) across the landscape. Thinning in trees of these size classes could reduce the fuel laddering effect and thereby reduce the potential for catastrophic fires. Thinning by use of fire has had only limited success and is not selective in which trees are killed (Sackett, pers. comm.). Edminster recommends stocking levels of 10-15 trees per acre in the 5-9 inch dbh class when applying single tree selection uneven aged management. However, he recognizes that these trees are usually not spread uniformly over an area as they would be in classic single tree selection. Instead of uniform spacing, they tend to be bunched in small dense thickets. He recommends maintaining this clumpy structure in the forest. Since these dense patches of small trees should normally cover only about 10 percent of a stand, the density of trees within the patch*

*would have to be about 100 to 150 trees per acre to give an overall average of 10 to 15 trees per acre for the entire stand. He recommends thinning to this level prior to burning (presented at Symposium on Restoration Ecology, Flagstaff, AZ, 1995).*

Diameter classes associated with the terms “mature forest” and “old forest” needed clarification.

Page 15, paragraph 3, sentence 3 is replaced with the following:

*The six stages are grass-forb/shrub-seedling (0 - 1" diameter breast high (dbh)); sapling forest (1 - 5" dbh); young forest (5 - 12" dbh); mid-age forest (12 - 18" dbh); mature forest (18 - 24 dbh); and old forest (24+ ”).*

Two references were made to statements in the draft MSO recovery plan which were later removed in the final MSO recovery plan. These references needed to be removed from the FEIS.

Page 16, paragraph 3, 4th and 5th sentences are deleted. They begin as follows:

*The MSO Recovery Plan...If the term, “high” ,...*

Page 22, the first complete paragraph is deleted. It begins as follows:

*Under the Mexican spotted owl recommendations...*

Technical review found an error in the evaluation of which alternatives had the closest structural stage distribution to the goshawk recommendations.

Page 24, paragraph 4, sentences 3 and 4 are replaced with the following:

*Alternative A has the closest structural stage distribution to the goshawk recommendations, followed by D and G, then by C and F, and finally E. Alternatives A, D, and G would provide the best vegetation structural stage distributions to provide the habitat diversity needed for the non-TEs wildlife species.*

As the MSO Recovery Plan was finalized and discussions were held with Recovery Team members, we realized that initial interpretations of it were sometimes not accurate. Therefore, we deemed it necessary to put together a team to

re-analyze the effects and make the best estimate possible as to what volumes might be realized under the proposed forest plan amendments. The re-analysis team’s report is part of the project record at Doc. 100.

We also realized we could have been clearer about factors influencing the lower timber volumes. Table 10a and the accompanying interpretation shown below is added to the “Timber Production” discussion in Chapter 3.

Page 30, Table 10 is replaced with the new Table 10 shown below.

Page 31, paragraphs 1 and 2 are replaced with the following:

*In all alternatives, timber production will never return to levels nearing the Region’s allowable sale quantity (442.4 MMBF). None of the action alternatives will harvest the amount of large sawlogs that were harvested in the late 1980’s (see Alternative A, Table 10 ). In Alternative C and F, timber production is expected to be near 160 MMBF per year (16% below 1993 levels). Alternative D will be somewhat less at near 140 MMBF. In Alternative G, timber production would probably stabilize closer to 150 MMBF per year. Alternative E would provide a higher level of timber production than the other alternatives (estimated 260 MMBF per year), but volume harvested would primarily be smaller diameter products rather than large sawtimber. Alternative A represents the average annual projected harvest that was occurring during the late 1980’s (400 MMBF).*

*Alternative A harvests 57 percent of the estimated annual forest growth. Alternative E harvests about 37 percent of the forest growth. Alternatives C, D, F and G harvest 23, 20, 23 and 21 percent of the estimated annual growth, respectively.*

*Table 10a (found on the following page) displays the percentage of the reduction in volume for each alternative by the primary reason for the reduction. These figures were determined by releasing constraints related to spotted owls, goshawks, and old growth, one constraint at a time and comparing the resulting volume with the volume achieved with all constraints in place. The figure in the “other” column is the remaining difference between the no action alternative (alternative A) and the best estimate of volume for each of the remaining alternatives. In other words, it is the volume reduction not accounted for by the goshawk, spotted owl and old growth constraints. The “other” category includes a collection of social, political, and economic values. These values are not easily modeled but are reflected in messages from our partners; local communities, sister agencies, Native American spiritual and tribal government leaders and others and through legislative and judicial actions. Examples of these include protection of: archeological sites, visual quality, water quality, other wildlife, adjacent private lands.*

*The amount of the “other” reduction was determined by examining actual timber sales and comparing the volume actually offered for sale with the volume calculated using the team’s analysis procedures. The difference between actual volume and calculated volume was very consistent.*

**Table 10. Annual Board Foot (MMBF) Volume Estimates for the Southwestern Region by Alternative**

Alternative	Volume Classes			
	Roundwood	Small Sawtimber	Large Sawtimber	Total
A	132	112	163	407
C	62-121 (62)	53-104 (53)	15-96 (49)	150-320 (164)
D	54-104 (54)	46-91 (46)	12-85 (43)	120-280 (143)
E	98-164 (98)	84-140 (84)	21-131 (78)	210-435 (260)
F	62-121 (62)	53-104 (53)	15-96 (49)	150-320 (164)
G	57-106 (57)	48-91 (48)	14-84 (45)	140-290 (150)

*Best estimates of anticipated volumes are in parentheses  
Small Sawtimber includes 9.0" - 11.9" dbh*

*Large Sawtimber includes 12.0" dbh and larger  
Roundwood includes 5.0" - 8.9" dbh*

**Table 10a. Distribution of Volume Reduction by Alternative**

Alternative	Percent Reduction From Alternative A			
	Spotted Owl	Goshawk	Old Growth	Other
<b>C/F</b>	0	22.5	10.8	66.7
<b>D</b>	30.7	0	15.4	53.8
<b>E</b>	17.1	28.6	0	54.3
<b>G</b>	17.6	17.6	8.8	56.0

Page 32, Table 11 is adjusted to reflect the changes made above:

**Table 11. Sawtimber Related Employment and Income Benefits by Alternative**

	Alternatives					
	A	C	D	E	F	G
Jobs	3800	1400	1300	2200	1400	1300
Income (\$M)	\$91	\$34	\$30	\$54	\$34	\$30

