DECISION NOTICE
AND
FINDING OF NO SIGNIFICANT IMPACT

TIMBER SUITABILITY AMENDMENT

U.S.D.A. Forest Service
Rio Grande National Forest, Colorado

The Final Environmental Assessment (FEA) for the Timber Suitability Amendment documents the environmental consequences of an action alternative and a no action alternative. The FEA is on file at the Rio Grande National Forest Supervisors Office at Monte Vista, Colorado, and available upon request.

The Decision:

It is my decision to select Alternative 2 which amends the Revised Forest Plan and FEIS and provides for making the appropriate adjustments to the suitable timber lands for Alternative G, the selected alternative of the Forest Plan. This decision will keep the Forest Plan current with more up-to-date information.

Public Involvement and Scoping:

The Forest Service announced the analysis of suitable timber lands in quarterly scoping documents and invited comments. A local radio broadcast also discussed the proposed timber suitability amendment and invited comments. Two Draft EA's were issued in 1999 and sent to interested parties. The public responded and identified issues such as a wide range of alternatives, regeneration of forest stands, landscape linkages, biological evaluation, purpose and need, economics, data inconsistencies, lynx, water quality, archaeological concerns, cumulative effects, riparian areas and wetlands, and old growth. This decision considered those comments and issues received from interested individuals and organizations. The Forest Service response to these comments is documented in Appendix D of the FEA.

The alternatives considered in detail were:

Alternative 1: No Action: No changes would be made to the existing 1996 Forest Plan.
Alternative 2: Make appropriate adjustments to suitable lands and related changes by amending the Forest Plan

My decision is based upon the following:

1. This alternative best fulfills the purpose and need by ensuring that Revised Forest Plan be kept current with best available data. It corrects the suitable lands base by removing acres that were inappropriately included in the Revised Forest Plan. It also adds in appropriate acreage that was fully intended to be included in the suitable lands base but was inadvertently omitted.

2. The amendment of suitable timber lands and related changes do not meet the criteria for significant amendment. Therefore the amendment would not affect goals, objectives and outputs projected by Alternative G in the Forest Plan.

3. There are no new environmental impacts from this amendment beyond those already disclosed in the FEIS for the Revised Forest Plan. The FEA tells me that there would be no direct impacts to resources from this amendment. Indirect and cumulative effects are also described and the increase in suitable lands would result in improved resource management over the National Forest. The Revised Forest Plan and FEIS appropriately disclose the effects of a timber program on various resources.

4. This FEA is responsive to public issues and concerns. The public raised some excellent issues that were incorporated into this analysis. Other issues are broad and were appropriately disclosed in the FEIS for the Revised Forest Plan, to which this FEA is tiered.

5. The Amendment has followed NFMA regulations and Regional Draft protocols in determining suitable timber lands. The Region 2 de-emphasis of FORPLAN usage is consistent with this Amendment.

6. Management flexibility would be improved by the amendment. Managers would be able to consider harvest opportunities over a larger land area, yet still be within management prescriptions that allow timber harvest as a viable multiple use. This does not mean more timber harvest would occur above that projected by Alternative G, the Forest Plan selected alternative.

7. The Amendment would eliminate a standard and all references relative to "suitable-scheduled" lands. This would be consistent with the de-emphasis of FORPLAN usage, and would eliminate an unnecessary restriction.

8. Finally, selecting Alternative 2 to make the necessary amendments, is the best way to keep the Revised Forest Plan alive as an up-to-date and useful document that directs the management of this National Forest.

Alternatives Considered But Not Selected

Alternative 1 was not selected because it does not successfully update and adjust the suitable lands information in the Revised Forest Plan. This alternative would allow continuance of data inaccuracies that would not facilittate meeting Forest Plan goals, objectives and desired conditions set forth in the Revised Plan.

Conformance With Legal Requirements

1. I have determined that this proposed action is consistent with the various requirements of the National Forest Management Act (NFMA) suitable timber lands determination. The Environmental Assessment and analysis is tiered to the Revised Forest Plan FEIS which appropriately addresses the suitable lands criteria on pages 3-160 through 3-165. The amendment would change the maps of suitable land areas, particulary in Figure 3-42 and the selected alternative Figure 3-47. New acreage figures for those lands would be adopted.

2. Location and Size: The proposed amendment affects small acreages, about 8.3 of the suitable timber lands, and about 1 percent of the RGNF.

3. Goals, Objectives, and Outputs: The proposed amendment would have little effect on the Forest's ability to achieve goals, objectives and outputs.

4. Management Prescriptions: The addition of a desired condition statement to the Revised Forest Plan would not alter the intent of that prescription. No changes are proposed in prescription allocations.

Implementation Date:

This decision shall be implementable as of the date of signature of this Decision Notice.

This decision is subject to administrative review pursuant to 36 CFR Part 215.7. Any appeal of this decision must be fully consistent with 36 CFR215.14, Content of an Appeal, including the reasons for the appeal, and must be filed with:

Appeal Deciding Officer, Rocky Mountain Region, P.O. Box 25127, Lakewood, CO 80225-0127 within 45 days of the date specified in the published legal notice, which will be found in the Valley Courier newspaper, published daily in Alamosa, Colorado. For additional information concerning this decision or the Forest Service appeal process, contact Peter L. Clark, Forest Supervisor, Rio Grande National Forest, 1803 West Highway 160, Monte Vista, CO 81144, or telephone (719) 852-5941. Please also send a courtesy copy of the appeal to Peter L. Clark at the address above.

Contact Person: For more information, contact John J. Rawinski, Teamleader, Rio Grande National Forest, Monte Vista, CO 81144 (719 852 5941).

Approved by:

Peter L. Clark

PETER L. CLARK
Forest Supervisor
Rio Grande National Forest

03/02/2000
DATE

2. These acreage adjustments of Alternative 2 have adequately been analyzed and disclosed through this Environmental Assessment, meeting the requirements of the National Environmental Policy Act.

3. The FEA complies with the Endangered Species Act requirements, Native American consultation, and other Federal laws and regulations. It meets the intent of CFR 219.12 which requires that the Forest Service keep up-to-date data bases for the purposes of planning and managing resources.

I have determined through the FEA that this is not a major federal action that will significantly affect the quality of the human environment. Therefore an Environmental Impact Statement is not required. This "Finding of No Significant Impact (FONSI)" determination is based upon the following:

1. The FEA tells me there are no effects to public health or safety.

2. There are no effects to historic or cultural resources, park lands, prime farm lands, wetlands, wild and scenic rivers, or ecologically critical areas.

3. The effects of the amendment are not highly controversial.

4. The amendment does not involve unique or unknown risks.

5. The proposed action does not set a precedent.

6. The proposed action has few cumulative effects. The amendments to the Revised Forest Plan cause no direct impacts to the resources.

7. The proposed action does not affect sites listed or eligible for listing with the Natrional Register of Historic Places nor causes destruction of scientific, culural, or historical resources.

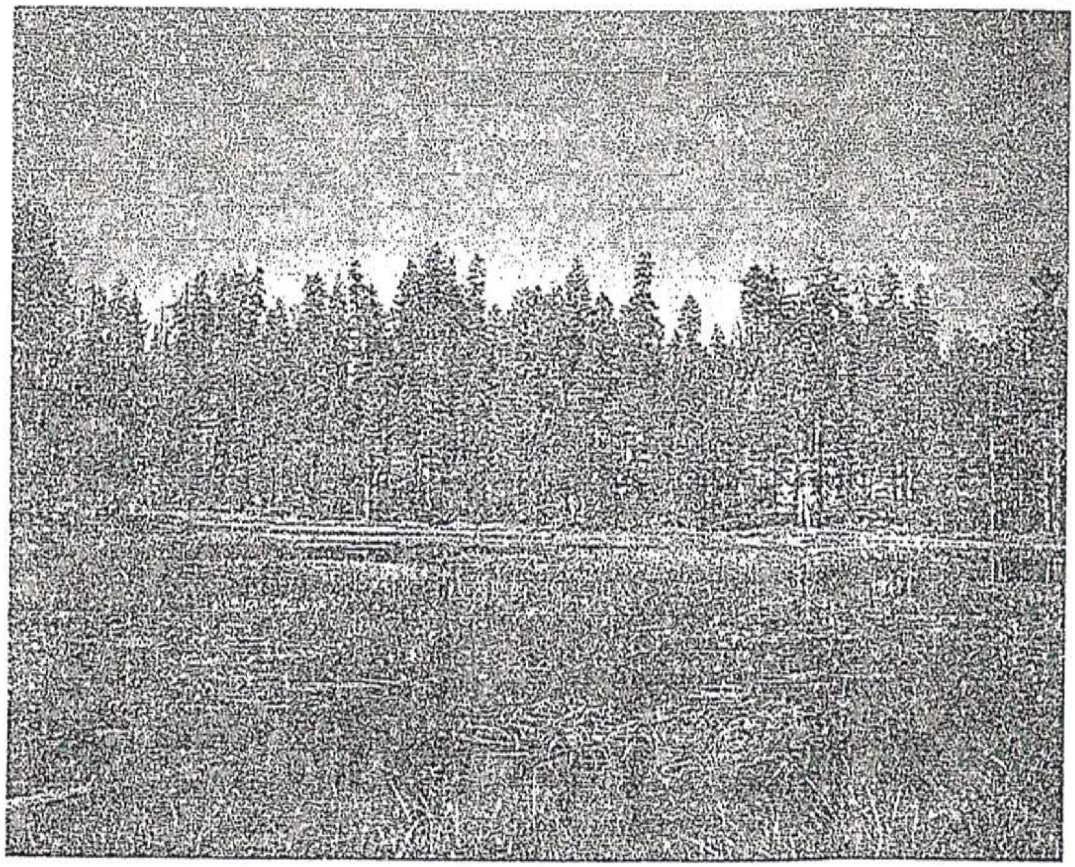
8. Threatened and Endangered Species and Sensitive species have been appropriately analyzed in the FEIS Biological Evaluation for Sensitive Animal Species, Biological Evaluation for Sensitive Plants Species, and Threatened, Endangered, Proposed, Candidate, Sensitive, Special Concern Plants and Significant Plant Communities. This includes a "...not likely to jeopardize..." determination relative to the lynx.

9. The proposed action is not inconsistent with Federal, State or local laws imposed for the protection of resources.

I have determined through the FEA, Appendix A, that this Amendment is not significant and does not require analysis as a full scale Revision would require. This determination is based upon the following:

1. Timing: It is better to address necessary changes to the Plan now since the expected life of the Plan would be 10 to 15 years.

Final Environmental Assessment
Timber Suitability Amendment
February, 2000



Rio Grande National Forest
U. S. Forest Service
Colorado

Timber Suitability Amendment
Environmental Assessment
Rio Grande National Forest
Colorado

Lead Agency: US Department of Agriculture, Forest Service

Responsible Official: Pete Clark, Forest Supervisor
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This Environmental Assessment (EA) is a public document that will provide sufficient evidence and analysis for determining whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI) for the Timber Suitability Amendment. It reveals the direct, indirect and cumulative effects of a proposed action and a no-action alternative.

This document conforms with the requirements of the Council on Environmental Quality (CEQ) regulations (40 CFR, Parts 1500-1508). It includes the purpose and need for the proposal, alternatives to the proposal, impacts of the proposed action and alternatives, and a listing of issues and the Forest Service response to those issues. The proposed action would amend the Revised Land and Resource Management Plan, Rio Grande National Forest, and Final Environmental Impact Statement and the Record of Decision.

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Introduction

During timber project analysis, discrepancies were noted in regard to the suitable timber lands identified in the November 1996 Revised Land and Resource Management Plan (Forest Plan) and Final Environmental Impact Statement (FEIS). Acreage figures and map corrections were needed in the suitable lands data base to make adjustments in soil type omissions, correct technical Wilderness boundary adjustments, and other analytical omissions. The proposed changes are small in comparison to the Forest Plan figures. Suitable timber lands would increase by 8.5 percent over the 1996 Plan level. The proposed increase in suitable timber lands would affect less than 2 percent of the entire Rio Grande National Forest.

Forest Plan monitoring has shown there is a need to amend the 5.11 general Forest and Rangelands Prescription to include a statement that addresses timber management as a desired condition. Each activity that is allowed in 5.11 has a desired condition statement, and adding one for timber management would make it consistent with other acceptable activities in that prescription.

In January 1999, a Draft Environmental Assessment to make acreage adjustments was issued by this office. Since that issuance, new information has become available to the Forest which required new analysis. The new information relates to Region 2 advice relative to suitable timber lands. The R-2 advice would result in the Forest proposing the elimination of one Forest Plan standards related to suitable timber lands. The Forest would no longer require suitable lands to be only those acres "scheduled" by the FORPLAN model. A standard contained in the Forest Plan would be dropped since it refers to "scheduled" lands.

The Forest re-issued this new analysis in the Pre-decisional Draft Environmental Assessment (4/99) to disclose and analyze this new information and a new comment period was established. The Forest received comments on the 4/99 Pre-decisional Draft and has addressed those concerns in this Final EA.

Chapter 1 - The Purpose of and Need for Action

This chapter describes the proposed action, purpose of and need for action, Forest Plan direction, analysis area, Forest Plan management prescriptions, decisions to be made, issues associated with the proposed action, opportunities, and background information.

1.1 The Proposed Action

The Forest Service proposes to amend the Forest Plan by making acreage adjustments in suitable timber lands; by eliminating a Forest Plan standard relative to silviculture, and by adding a statement to 5.11 General Forest and Range Lands Prescription that identifies timber management as a desired condition.

In the Forest Plan, portions of soil types 750M and 460 that were capable of timber harvest were inadvertently omitted from being included within the suitable timber lands base. In the Draft Plan, those acres were included, but they were missed in the Final Plan. Correction of the omission will restore those qualifying acres to the suitable timber land base.

This amendment will also remove acres from the Sangre de Cristo Wilderness that were incorrectly placed into the suitable lands base. Wilderness areas are specifically removed in the timber suitability process (CFR 219.14 (a) (4). An Amendment would correct about 5,000 acres of bisected sites that included some Wilderness portions.

In addition, any acres proposed for addition (due to the data corrections) would not be subjected to FORPLAN modelling and scheduling. There are many reasons for this. One reason is that the FORPLAN model is a strategic model and, as such, has incomplete information. The model is not spatial or geogrphically specific and yet, if the solution is mapped as the suitable timber base, the model would be used to determine finite, spatial results. The Forest has already run into problems with implementing the Plan under this limitation. For example, when a timber manager goes to layout a potential timber sale on the ground, he/she is limited to only those lands that went into the FORPLAN solution (were scheduled). However, the model may have not allocated some areas to timber production that are actually more cost efficient than areas that were scheduled. The stand may be closer to an existing road or have higher volume than used in the model. Harvesting the stand may actually be more feasible, have less impact on the environment, and have a higher return than another stand that happened to be sheduled by the model. The District timber manager would be unable to harvest this stand without a Plan amendment to the suitable-scheduled base. To correct this, a Forest Plan standard would be eliminated that deals with suitable-scheduled lands. Added acres, after passing all required screens including financial efficiency, would be added to the Forest Plan suitable lands.

A new desired condition statement would be added to the 5.11 management area prescription, identifying timber harvest as a desired condition.

Because these adjustments in suitable timber lands are relatively small acreages, there would not be any changes to the Allowable Sale Quantity (ASQ) identified in Alternative G, the selected alternative in the Forest Plan. This means that the environmental effects disclosed by the Forest Plan and FEIS are still valid and correctly estimate environmental consequences, though the actual effects of the timber program may potentially be lower due to the ability to distribute the harvest in a broader area. This EA is tiered to the Forest Plan and adopts all of the discussion of environmental consequences.

1.2 Purpose of and Need for Action

The Forest Service is required by law to keep accurate and up-to-date data bases for the purposes of planning and managing resources over time. The *Code of Federal Regulaions CFR 219.12 (d)* pertains to data and information collection. Each Forest Supervisor shall obtain and keep current inventory data appropriate for planning and managing the resources under his or her jurisdiction.

The Forest Supervisor also has the authority to amend the Forest Plan (CFR 219.10 (f). If a change from a proposed amendment is determined to be significant, the Forest Supervisor shall follow the same procedures as that required for development and approval of a forest plan. If the changes from a proposed amendment are not significant, the Forest Supervisor may implement the amendment following appropriate public notification and satisfactory completion of National Environmental Policy Act procedures.

The ***purpose*** of the proposed action is to make adjustments to the suitable timber lands base and incorporate those changes into the Forest Plan and FEIS to ensure that data bases are accurate and up to date, representing the best available data. Eliminating a Plan standard is necessary to accommodate changes relative to timber suitability and scheduling of lands for timber harvest. Forest Plan monitoring (Report on file at RGNF, 1997) has identified reasons to add a desired condition statement to the 5.11 Management Prescription. The action is *needed* in order to make necessary adjustments for improved resource management purposes.

1.3 Forest Plan Direction

Timber management is an allowable use of National Forest System land and is described in the Forest Plan and FEIS. The direction for timber management is located on p. P-12 of the Forest Plan which identifies the projected level of harvest over the life of the plan. Additional direction is found in the Forestwide Desired Conditions (p. 1-2), Forestwide Objectives 3.1 through 3.4 (p. II-3), Forestwide Standards and Guidelines for Silviculture (pp. III-17 through III-22), and Management-Area desired conditions and standards and guidelines for those Management-Area Prescriptions that allow timber management.

The process for determining suitable timberlands is described in the FEIS for the Forest Plan, (p 3-160 through 3-165). The White Paper *Determination of Tentatively Suitable Timber Lands on the Rio Grande National Forest*, prepared by Bob Tribble (Systems Analyst) in December 1993, is included in Appendix B of this document. The Region 2 Process for identifying suitable timber lands is described in section 1.9.

1.4 Analysis Area/Project Area

The proposed amendment will affect areas of land scattered throughout the Rio Grande National Forest where the data adjustments are needed. Appendix C contains maps showing those affected lands.

1.5 Forest Plan Management Area Prescriptions

Management prescriptions affect suitable timber lands as shown in section 1.9 of this EA. Management areas result in a subtraction of acres in those prescriptions that do not allow timber harvest. Conversely, acres would pass this screen if the management prescription allows timber harvest.

Management area 5.11 needs a desired condition statement relative to timber production. The proposed action would make that change, making the prescription consistent with other uses allowed.

1.6 Decisions to be Made Based on This Analysis

The decision to be made is whether or not to amend the Forest Plan, Record of Decision and FEIS so that more precise information is available regarding suitable timber lands, Forest Plan standards, and Management Area Prescriptions .

1.7 Scoping and the Issues Associated with the Proposed Action

The quarterly scoping document issued from the Rio Grande National Forest contained public notice that this project was being analyzed. It invited comments on the proposed project and received wide distribution. A local radio program invited comments from the listening audience.

There have been two legal notices announcing the availability of the two draft analyses that were published in the paper of record, The Valley Courier. The Forest received written comments on the January 1999 and the April 1999 Draft Environmental Analyses.

The public has expressed issues on the need for a wide range of alternatives, reforestation potential concerns, site-specific soils analysis, landscape linkages, biological evaluation, water quality and soils, roads, economic and social repercussions, archaeological and cultural

concerns, riparian areas and wetlands, cumulative effects, old growth, and range of natural diversity (Appendix D). Many of these issues are beyond the scope of this analysis and are not considered key issues for this amendment. They have been appropriately addressed in the Forest Plan and FEIS to which this analysis is tiered.

The **key issue** to this analysis is whether to make adjustments to the Forest Plan that would improve data bases relative to timber suitability and resource management. Alternatives are developed based on this key issue.

1.8 Opportunities

The proposed amendment would adjust suitable timber land acres and improve the Forest's flexibility to achieve the projected goals, objectives, desired conditions, outputs, and outcomes identified in the Revised Forest Plan. An item identified in the 1997 Monitoring and Evaluation Report would be addressed and resolved in this amendment.

1.9. Background on Timber Suitability Determinations

Determining suitable timber lands is a step by step process that can be confusing. At least one of the letters received during the comment period expressed frustration with this complex process. The Forest included the section below to help clarify this process.

Determining suitable timber lands is basically a process of elimination. The Region 2 Desk Guide direction to Determine Timber Suitability is described below.

1. Begin with all NFS lands
2. Is the land forested? Subtract all nonforest lands.
3. Is the land withdrawn from timber production? Subtract Wilderness Areas
4. Subtract lands not capable of producing industrial wood
5. Is irreversible resource damage likely to occur? Subtract all lands that might result in irreversible damages.
6. Is there reasonable assurance of adequate restocking within five years after final harvest? Subtract lands that cannot reforest.
7. Subtract lands with inadequate response information like limber pine, whitebark pine.

The remaining lands are ***Tentatively Suitable Timber Lands (TSTL's)***

1. Start with TSTL's
2. Subtract areas where management objectives limit timber production.
3. Subtract areas where lands preclude timber production, like administrative sites, and management areas of the selected Alternative G that do not allow timber production as a goal.
4. Subtract areas that are highly financially inefficient.

The remaining lands are ***Suitable Timber Lands*** for Alternative G, the Selected Alternative

This Final EA conforms with the criteria and protocol of the R2 process above.

Chapter 2 - The Alternatives Including the Proposed Action

This chapter describes the process used to develop the alternatives, alternatives considered in detail, and the alternatives considered but not studied in detail.

2.1 The Process Used to Develop the Alternatives

The quarterly scoping document issued from the Rio Grande National Forest contained public notice that this project was being analyzed. It invited comments on the proposed project and receives a wide distribution. A radio program also discussed the timber suitability analysis and invited public comment.

NEPA policy requires the use of an interdisciplinary team in order to conduct environmental analysis. Early in the process, the Planning Teamleader organized an interdisciplinary team meeting to discuss this analysis. In April, 1998, the Planning Team leader also met informally with each member of the Forest Planning team and discussed the suitability amendment. Team members provided their input to the process which was then incorporated into this analysis. A number of additional ID Team meeteings were conducted throughout the analysis.

Alternatives that focused on the key issue were developed. In this analysis, a no action alternative and an action alternative were analyzed in detail. The two alternatives address the key issue by either making the proposed changes to the Plan as opposed to not making the changes, which is a baseline for comparison.

The Interdisciplinary Team met on March 11, 1999 and the Team reviewed public responses and issues. The Team also suggested appropriate adjustments and revisions to the process. Soon after that meeting, new information became available and the scope of the alternatives and the analysis expanded. Consultation with planning staff around the Region suggested that the "new information" expanded scope of the suitability issue and warranted issuance of a new draft EA. The new draft EA was referred to as the 4/ 99 Pre-decisional Draft EA.

2.2 Alternatives Considered in Detail

Two alternatives, including the No-Action alternative have been developed in the environmental analysis process to address the key issue. Each alternative presents an option that could be implemented within the framework of Forest Plan direction.

Alternative 1 - No-Action

This alternative would result in no change to the Forest Plan and FEIS. Tentatively suitable timber lands would remain at 745,250 acres as stated on FEIS 3-162. Suitable Timber Lands (STL) would remain at 291,325 acres (ROD, p 19, 5th paragraph). This is the "suitable-scheduled" timber lands of the current Plan. The RGNF would manage it's timber program using these acreages and maps for the life of the Forest Plan under this alternative. No changes would be made to prescriptions or Forest Direction.

Alternative 2

Alternative 2 is the proposed action. This alternative makes a number of adjustments in the Forest data base associated with suitable timber lands. Selection of this alternative would make additions and subtractions from the tentatively suitable land base, ultimately affecting suitable timber lands for the Forest. Alternative 2 features are summarized in the sections below. The added acres would be added to suitable timber lands identified in the Forest Plan.

The following acres are proposed for changes in the TSTL's.

Reason Why Removed	Acres
Wilderness Areas (sites bisected/within by Wilderness Boundary)	5136
Nonindustrial Forest	76
Incapable reforestation	213
Irreversible damage	71
Other	30
Total Acres Removed	5,526

Reason Why Added	Acres
Suitable portions of soil types 750M and 460 Or other minor adjustments	29,821

Alternative 2 proposes that Standard #8, Forest Plan, page III-20, be eliminated from the Plan. The standard currently reads as:

Regulated timber harvest activities will occur on only those lands classified as "Suitable" and "Scheduled" for timber production. On Unsuitable or Suitable but Not Scheduled lands, limited timber cutting may occur for such purposes as salvage, protection or enhancement of biodiversity or wildlife habitat, scenic-resource management, or to perform research or administrative studies consistent with Management Area direction.

This standard generally restricts timber cutting to suitable-scheduled lands. The new amended suitable land base would not be labeled as suitable-shceduled. References to "scheduled" timber lands in the Revised Plan and FEIS, would be eliminated by this amendment.

Alternative 2 would also add an additional statement to the desired conditions of Management Prescription 5.11. It would read as follows:

"*Suitable Timber lands will be managed to provide a sustainable flow of forest products.*"

The following changes would occur if Alternative 2 is selected.

FEIS for the Forest Plan

- FEIS, page 3-162, Figure 3-42 would be replaced with Appendix C maps.
- FEIS, page 3-165, Figure 3-47 would be replaced with Appendix C maps.
- Acreage figures presented in Alternative 2 would be adopted.
- References to "scheduled" timber lands, as described in the Revised Plan, would be eliminated by this amendment.

Forest Plan and Record of Decision

- References to "scheduled" timber lands, as described in the Revised Plan, would be eliminated by this amendment.
- In the ROD, Page 19, 6th parargraph. Amended acreage figure for suitable timber lands would replace the 291,325 shown in that section.
- An additional statement would be added to the desired conditions of Management Prescription 5.11.
- Standard #8 would be eliminated from the Plan

2.3 Alternatives Considered but Eliminated from Detailed Analysis:

One alternative that was considered would make adjustments in suitable lands on a project by project basis. This was dismissed because it would result in a piecemeal approach that would not make necessary changes in a timely manner. Another alternative was considered that would make the appropriate deletions from the suitable base (like Wilderness corrections) but not add in the acres for soil units that could have timber harvest. This was deemed to be a one-sided approach and not consistent with the process that is described in section 1.9.

2.4 Comparison of Alternatives

The following Table shows a comparison of acres before and after the Amendment

Category For RGNF Totals	Alternative 1	Alternative 2
Gross Area	1,961,054	1,961,054
Other Ownership	104,296	104,296
Net RGNF Acres	1,856,757	1,856,757
Nonforest Stands (NFL)	677,059	677,059
Road Acreage in Forest Stands	12,275	

Net Forested Lands	1,167,423	1,179,698
Wilderness Removals	227,046	238,506
Nonindustrial Species	62,172	62,927
Irreversible Damages	37,190	18,904
Reforestation Problems	95,765	79,765
Subtract Roads from remaining lands		10,543
Tentatively Suit. Timber Lands	745,250	769,052
Removals for Mgt Pxns and lands not scheduled	453,925	333,401
Additional Acres Removed for Financial Inefficiency	See above	119,980
Suitable Timber Lands Alt G	291,325	315,671
Percent Increase from 96 For Plan		8.3

Chapter 3 - Affected Environment and Environmental Consequences

3.1 Affected Environment

The Affected Environment for this analysis are those lands that would be removed or added to the tentatively suited timber land base, and suitable timber lands base within the Rio Grande National Forest. The affected lands are scattered throughout the Forest as shown in Appendix C-Maps. For a description of the resources of the Rio Grande Forest, please refer to the Affected Environment described in the FEIS for the Forest Plan.

3.20 Direct, Indirect and Cumulative Effects on Timber Allowable Sale Quantity

This amendment would not result in an increased harvest level above that projected by Forest Plan Alternative G, the selected alternative.

One of the basic features of this amendment analysis was that the Forest would not change the ASQ for Forest Plan Alternative G (the selected alternative). This is very important, because the environmental consequences are based on, among other things, ASQ figures. This suitability analysis is considered a change in acreage that affects opportunity areas. The Amendment would not result in "additional impact" since the ASQ, and resulting acres harvested, will not change, and direct, indirect and cumulative effects have been appropriately disclosed in the Plan FEIS. Tiering this analysis to and adopting the FEIS means that environmental consequences of a timber program based on Alternative G's ASQ, have been properly disclosed.

3.21 Direct, Indirect and Cumulative Effects on Physical Resources

There would be no irreversible or irretrievable commitments of the soil resource from adding in the amended acres to the suitable land base. There would be no impairment of soil productivity by the amendment since no ground-disturbing actions are proposed by this amendment. When projects are proposed, additional soil analyses would be done. Forest Plan standards and guidelines would assure that productivity of the soil resource is maintained or improved. Site-specific soil investigations would continue at the project level to monitor for any potentially hazardous areas.

The addition of suitable timber lands having soil types 750M and 460 was intended for the Final EIS. This can be seen by comparing DEIS TSTL map on page 3-153 with FEIS map of TSTL, page 3-162. In the southern part of the Forest near Cumbres Pass, there is a noticeable difference in TSTL areas. The soils type additions were also clearly referenced in the FEIS, page 3-284, which refers to the white paper by Tribble, 1993.

Other soil effects, including direct, indirect and cumulative effects, are appropriately discussed in the FEIS for the Forest Plan, to which this analysis is tiered. Direct, indirect and cumulative impacts to watersheds from a timber program have been evaluated in the Forest Plan as well.

3.22 Direct, Indirect and Cumulative Effects on Biological Resources

The Supplemental Biological Assessment and Evaluation for Threatened and Endangered Animal Species contained in Appendix F concludes that the information contained in the original Forest Plan Biological Assessment and Evaluation is substantiated and relevant to the proposed Amendment. This includes new information relative to Lynx, and is incorporated into the supplemental Biological Assessment and Evaluation.

There would be inconsequential effects to biological diversity from the amendment (see Appendix F). Amending the suitable base would have low risk to Threatened, Endangered, and Sensitive (plants) or significant plant communities. There would be low risk to old growth forests which would be analyzed at the project level. There would be no bearing on Research Natural Areas or Botanical Special Interest Areas. Please also refer to discussions in the FEIS and Forest Plan for additional discussion of direct, indirect and cumulative effects of a timber program on biological resources.

3.23 Direct, Indirect and Cumulative Effects on the Forest Plan

The direct, indirect and cumulative effects of Alternative 1, No Action, are described below. Alternative 1 direct effects mean that data adjustments to the suitable lands base would not be carried out. Indirect and cumulative effects are that the Forest could still achieve the goals, objectives, and desired conditions outlined in the Plan, but on reduced opportunity areas. No changes would be made for goals, objectives, outputs, management areas, or monitoring in the Forest Plan. Data bases and the Forest Plan and FEIS would not be kept current under this alternative. With the data base not current,

there is the chance that timber harvest might mistakenly occur on lands that should not be suitable. Conversely, timber harvest might not occur in areas that are properly suited to such use. No changes to Silviculture Standard #8 would occur and no changes to the desired condition of Management Prescription 5.11 would occur.

There may have been an error in tabulation of the Forest Plan Suitable and Scheduled acres. The database acreage total for TME (timber management under experienced budget) and TMF (timber management under full budget) produces a total 303,277 road-net acres for Alternative G, the selected alternative. (These acres use the net acres after roads have been subtracted out of the stand). However, it appears road acres may have been mistakenly subtracted again resulting in the Forest Plan ROD figure of 291,325. The figure should have been 303,277 since roads were already removed from that suitable land figure. The amendment would account for those acreage adjustments. The difference in acres would be insignificant and would not have affected the selection of Forest Plan Alternative G.

The proposed action Alternative 2, would amend the suitable acreage figures and maps in the Forest Plan and FEIS, adding about 8.3 percent more suitable timber lands to the base. This affects about 1 percent of the total Forest lands. Alternative 2 would remove acres that should be removed from the suitable base, as well as adding acres that were intended (as shown in the DEIS) to be included as suitable lands. The changes result in a net gain of suitable timber lands where timber harvest might occur although the increase is relatively small compared to the entire suitable land base. The same ASQ under the selected Forest Plan Alternative G would be harvested, but could occur over a more dispersed area. This may actually dilute harvest effects since there is more area available for the Alternative G ASQ.

For alternative 2, a direct effect is to improve the data base and have more accurate information. The Forest would still be able to achieve timber management goals and objectives on a wider base of opportunity areas. One indirect effect of alternative 2 is that more area would be available for timber management purposes, though the expected consequences of a timber program and ASQ have appropriately been described in the Forest Plan and FEIS. This could have the effect of spreading out impacts over a wider area and reducing impacts to concentrated areas.

Under Alternative 2, the Forest would eliminate references in the Forest Plan and FEIS relative to "scheduled" lands. This would be consistent with Regional advice. Elimination of Silviculture standard #8 would give land managers the flexibility to implement projects. Adding a desired condition statement to the 5.11 prescription would more realistically show timber management as an acceptable and potential use of that area. Though the production of forest products is clearly mentioned in the prescription category 5 table (Forest Plan IV-24, and discussed in the "Setting" (Forest Plan IV-25), the statement is needed to be consistent with other land uses that are allowed in this prescription. This needed change was also identified in the 1997 Monitoring and Evaluation report for the Forest.

Alternative 2 best keeps the suitable lands data base current. The suitable lands base is both a data base, and a Forest Plan decision item. The Amendment would facilitate improved resource management using better and more current information.

3.24 Direct, Indirect and Cumulative Effects on Wilderness

The timber stand data was derived by mapping forest and range land cover types. Cover types do not conform to administative boundaries like Wilderness. When the Wilderness layer in the Forest's Geographic Information System was overlain onto the timber stand data, many stands were bisected. Alternative 1 would not correct Wilderness overlay errors. Alternative 2, the proposed action would correct those problems by removing stands that overlap Wilderness.

Wilderness is not allowed by regulations to be included as suitable lands and are specifically removed in the process (CFR 219.14 (a) (4). Alternative 2 would correct those oversights whereas Alternative 1 makes no changes. Alternative 2 would assure that these stands are not considered for timber management purposes, improving resource management information and decisions.

3.25 Direct, Indirect and Cumulative Effects on Financial Efficiency

The Region 2 Desk Guide direction complies with NFMA regulations and describes that a financial efficiency determination be made in the suitable lands process. The IDT recommended that a minimum of 6,000 board feet per acre was needed to conduct an economically efficient timber sale. However, board feet data is not available for all timbered sites so other indicators were used to determine financial efficiency. Based on the recommendations from the forest silviculturist, stand structural stage was the next best indicator of volume for financial efficiency determination. Only stands of pole sized or larger classes were selected as financially efficient. Structural stage was used on "added" acres to test whether they were financially efficient or not. Structural stage was deemed appropriate for this requirement since economics can change relatively quickly.

3.26 Direct, Indirect and Cumulative Effects on Heritage Resources and American Indians

The Final Environmental Impact Statement for the 1996 Revised Land and Resource Management Plan, Rio Grande National Forest addresses requirements of the *National Historic Preservation Act* directing federal agencies to consider the effect of any undertaking on any cultural (heritage) resource property which is eligible or listed on the National Register of Historic Places. An undertaking is defined as any project, activity, or program that can result in the changes in the character or use of eligible or listed heritage resources.

The Environmental Assessment for the Timber Suitability Amendment is considered to be a proposal which does not have the potential to cause changes in the character or use of eligible or listed heritage resources. The proposal addresses noted discrepancies relating to suitable

timberlands and does not result in an increase in the identified Allowable Sale Quantity (ASQ). The Timber Suitability Amendment was initially scoped via the quarterly Rio Grande National Forest Project Update (February 9, 1998, April 10, 1998, November 16, 1998, and April 30, 1999 issues). Copies of the Project Update were sent to all American Indian Tribes with the potential to attach religious and cultural significance to historic properties within the Rio Grande National Forest. In addition, the Environmental Assessment for the Timber Suitability Amendment is considered to be a proposal that does not have the potential to cause changes in the character or use of eligible or listed cultural resources. Inventories and consultation with Native American communities to identify and evaluate the significance of cultural (heritage) resources are done prior to the decision to implement specific projects or activities that could affect cultural (heritage) resources which are eligible or listed on the National Register of Historic Places. Should ground disturbing actions be proposed on lands at a later date, then site specific consultation is done with the Tribes.

3.27 Direct, Indirect and Cumulative Effects on Past, Present or Future Actions

The consequences of the proposed action would not affect past or present actions on the National Forest. The proposed action would make available additional suitable lands which could result in timber harvest in the near future. The El Rosa Timber Sale is a reasonably forseeable project being considered it the proposed action is selected, however the El-Rosa Timber sale is not being decided in this analysis. Other timber sales could occur on other lands added to the suitable base.

3.28 Direct, Indirect and Cumulative Effects on Other Resources

The proposed action should have no consequence to other Federal and State Agencies. There should be no conflicts between the proposed action and the objectives, policies and land use plans of Federal, regional, local, State, and Reservations since the the proposed action in this EA does not result in ground-disturbing activities.

The proposed action causes no irretrievable or irreversible commitment of resources since this is primarily a change in maps and acres contained within the Forest Plan. The changes proposed to the standard and the management prescription would not have any effects on these agencies

There would be no affect to public health or safety. There would be no effects to prime farmlands and parklands since we are analyzing forested lands. There would be no direct effects to floodplains or wetlands since the proposed action does not include wetalnd sites. There would be no impacts to ecologically critical areas since those sites are appropriately protected by the Forest Plan. The proposed action would not affect wild and scenic rivers since those management area prescriptions do not allow timber harvest. The proposed action is not highly controversial. The proposed action does not involve unique or unknown risks. The proposed action does not set any precedents. Forest Plan amendments are allowable measures to keep Forest Plans up-to-date. The proposed action does not create significant

cumulative effects, outside those described in the Forest Plan FEIS. Threatened, Endangered, and Sensitive Species effects are described earlier in this EA. The proposed action would not violate Federal, State or local laws protecting the environment. The intensity of impacts, based on the discussion above, are low.

There may be subsequent needs to make additional amendments to the Forest Plan regarding suitable lands during future project analysis. Amendments are necesary to make minor adjustments and keep the Forest Plan guidance up-to-date.

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Appendix A - Significance Evaluation

A.1 - Forest Plan Amendment Requirements

Forest Service requirements for amending Forest Plans are included in agency regulations and policies. These require that land uses be consistent with Forest Plans and that proposed activities which would be in conflict with the plan be denied, modified (so as to be consistent), or that the Forest Plan be amended. Regulations at 36 CFR 219.10 (f) direct the Forest Service to consider whether a proposed amendment to a Forest Plan would be considered a significant change.

The Forest Service is authorized to implement amendments to Forest Plans in response to changing needs and opportunities, information identified during project analysis, or the results of monitoring and evaluation. The process to consider Forest Plan amendments, review them for significance, document the results, and reach a decision is contained in the Forest Service Manual (FSM) 1922.5 and the Forest Service Handbook (FSH) 1909.12, Chapter 5.32. An assessment of a proposed amendment's significance in the context of the larger Forest Plan is a crucial part of this process. It is important to note that the definition of significance for amending a Forest Plan (36 CFR 219.10 (f) and FSH 1922.5) is not the same as the definition of significance defined by NEPA. Under NEPA, significance is generally determined by whether a proposal is considered to be a "major federal action significantly affecting the quality of the human environment" (40 CFR 1512).

The criteria to be examined in an analysis of the significance of a Forest Plan amendment are detailed in FSH 1909.12, Chapter 5.32, and summarized below. The discussion which follows uses these parameters to evaluate the significance of adopting the proposed Forest Plan amendment.

1. **Timing:** When the change in the Forest plan would take place relative to the planning period and scheduled revisions of the plan.

2. **Location and size:** Location and size of the area affected compared to the size of the overall planning area.

3. **Goals, Objectives, and Outputs:** How, or to what degree, the amendment would affect the long-term relationship between levels of goods and services projected by the Forest Plan.

4. **Management Prescription:** Whether the change would apply only to a specific situation, or to future situations across the planning area. Determine whether or not the change alters the desired future condition of the land and resources or the anticipated goods and services to be produced.

A.2 - Post Decision Review of the Plan

As the Forest Plan moved into the implementation phase following the completion of the Revision process, several areas were analyzed for their potential as a commercial timber sale. During the analysis of the El Rosa Sale area Forest staff noted that much of the area was showing up as unsuitable. There was some confusion since the area had been in the tentatively suitable land base prior to the Revision of the Forest Plan and the area was shown as suitable in the publication of the Draft Environmental Impact Statement and Forest Plan. Between the publication of the Draft and Final planning documents, the

Forest data base was updated. During that process analytical errors in the planning section occurred that resulted in the incorrect classification of some lands as unsuitable for timber management. The error consisted of a failure by data base managers to "flag" those RIS sites where 460 and 750M soil types do not have a high probability of irreversible damage if managed properly. A thorough examination of the data base has uncovered additional errors. Correction of the additions and removals would result in the restoration of additional acres to the suitable timber land base.

A.3 - Proposed Amendment to the Forest Plan

The proposed amendment would correct the data base errors and adjust the tentatively suitable and suitable land base to accurately reflect the direction described in the Revised Forest Plan. The amendment would apply to those areas where data base errors resulted in the incorrect classification of Forest lands. There would be no change in the Allowable Sale Quantity as a result of the proposed amendment. The discussion which follows is framed around the four significance criteria described above.

Timing: The Amendment would remain in effect for the life of the plan (10 - 15 years). Even though this amendment follows closely the recent Revision of the Plan, the changes are relatively minor in regard to the Forest Plan goals, objectives and anticipated goods and services. For this reason, timing would be considered nonsignificant. It is better to address these needs now since the 1996 Plan would be guiding forest management for the next 10 to 15 years.

Location and Size: The area affected by this Amendment are scattered across the forest. The proposed alternative to amend the Forest Plan represents a net increase of approximately 25,000 acres of suitable timber lands. This would mean an 8.3 percent increase in suitable lands over the 1996 Plan. Compared to the entire Planning area, this amendment affects about 1 percent of the Rio Grande National Forest. The amendment would not affect large acreage compared to the overall planning area (Rio Grande National Forest) and is therefore, not significant.

Goals, Objectives, Outputs: The proposed amendment would have little effect on the Goals, Objectives, and outputs identified in the Forest Plan. The restoration of acres to the tentatively suitable and suitable land base allows greater flexibility in achieving goals. The elimination of Silviculture standard #8 will not change the ASQ, treated acres, not the goals, objectives or outputs of the Revised Forest Plan. Timber harvest would still be done only on suitable timber lands, fully meeting NFMA requirements. Adding a desired condition statement to the 5.11 prescription would give clearer purpose to the objectives of that prescription but does not change the overall intent of that prescription, including outputs.

The proposed changes, while adding some degree of management flexibility, would not have significant effects on the ability of the Forest to achieve it's goals and objectives, and is therefore, not significant. The Plan could still achieve its goals and objectives based on the current suitable timber lands, without any additions of suitable lands.

Management Prescription: No changes are proposed in the delineations and allocations of Management Areas of Alternative G, the selected alternative. The addition of the desired condition statement in management area 5.11, would give clearer purpose to activities allowed under this prescription. The Amendment would not alter the primary emphasis of that prescription. This change is more of a clarification and does not greatly affect the purpose or intent of the prescription.

The Amendment changes would apply from this point forward across the planning area. The suitable lands changes, management prescription and elimination of references to "scheduled lands" would be long term and would be in effect until the next planning effort. The proposed amendment would not result in changes to the anticipated goods and services projected by the Plan. Therefore, the proposed amendment is not significant.

A.4 - Findings and Considerations

The analysis above documents the significance of the proposed Forest Plan Amendment described in A.3 above. Based on considerations for timing, location and size, goals, objectives, and outputs, and management prescriptions; and other provisions of the National Forest Management Act of 1976 (36 CFR 219.10(e) and (f), if adopted, these changes would not constitute a significant amendment to the Rio Grande National Forest Revised Land and Resource Management Plan.

Appendix B - Determination of Tentatively Suitable Timber Lands on the Rio Grande National Forest (A paper done by R. Tribble, December 1993.)

Please note that the acreage figures presented in this paper DO NOT match the exact figures contained in this environmental analysis because they were calculated using a different system. The figures here were calculated using RIS site information and MOSS. The analysis contained in this EA is based on ARC-INFO systems. The intent of including this paper is to:

Demonstrate that careful consideration was given to soil capabilities in determining suitability.

Show that NFMA requirements are properly addressed.

Appendix B - Determination of Tentatively Suitable Timber Lands on the Rio Grande National Forest

Introduction

The purpose of this evaluation is to identify the amount and location of tentatively suitable timber lands. Determining these lands is basically a process of elimination. There are five initial standards which are used to determine whether a particular parcel is suitable or unsuitable for timber production. Those lands which remain suitable after applying the five standards are termed "Tentatively Suitable Timber Lands" (TSTL).

The tentatively suitable timber lands are just that - tentative. Each management alternative will use the TSTL as the starting point for determining the suitable timber lands (STL) for each alternative. The STL will be different for each alternative. The difference in the STL amongst the alternatives is based on the management prescriptions used in the alternative and the financial and economic strategy of the alternative.

This evaluation of timber lands was performed in concert with the National Forest Management Act of 1976 (NFMA), section 219.14 of chapter 36 of the Code of Federal Regulations (CFR), and section 2409.13 of the Forest Service Handbook (FSH).

This report documents the process and results of the evaluation.

Process/Results

There are five criteria used to evaluate all lands on the Rio Grande National Forest to determine whether the lands are tentatively suitable for timber management. These criteria are based on Forest Service regulations located in 36 CFR 219.14 and FSH 2409.13.

The Resource Information System (RIS) database was used to obtain the necessary information for the analysis of timber suitability.

The following is a discussion of each of the five criteria and the application of the criteria on this Forest.

1. Is the land forested?

The first criteria listed in 36 CFR 219.14 considers whether a parcel of land is really forested or not. 36 CFR 219.14 (a)(1) simply states:

> The land is not forest land as defined in 219.3

219.3 states:

> 36 CFR 219.3 Forest Land: Land at least 10 percent occupied by forest trees of any size or formerly having had such tree cover and not currently developed for non-forest use. Lands developed for

non-forest use include areas forcrops, improved pasture, residential, or administrative areas, improved roads of any width, and adjoining road clearing and powerline clearing of any width.

Using these definitions for forested and nonforested lands, the RIS database was queried for all nonforested cover types. The results of the query showed a total of 1,831,207 acres of National Forest lands, with 1,162,213 acres of forested lands.

2. Is irreversible resource damage likely to occur?

The second criteria for removing lands from timber production is found in 36 CFR 219.14 (a)(2). This criteria removes lands from timber production if there will be "irreversible resource damage" to soil productivity or watershed conditions. Specifically, 36 CFR 219.14(a)(2) states:

Technology is not available to ensure timber production from the land without irreversible resource damage to soils productivity, or watershed conditions.

Soils may be damaged by erosion, nutrient removal, compaction, and mass movement (landslides). Of these, erosion, nutrient removal, and compaction may be mitigated on site, but landslides are difficult to mitigate.

Riparian areas and wet soils are special areas, important for a variety of uses, besides timber production. However, under existing technologies, most of the impacts to wet soils and riparian areas on slopes less than 40% could be mitigated. Winter logging, logging on snow or frozen soils, horse logging, and similar activities could be done while protecting resource values. According to the Forest's Soil Scientist wet soils and riparian areas will not be excluded from the tentatively suitable timber land base, based on this criteria.

As a result, only those soil map units having "high mass movement potential" will be listed within this section. Table 1 lists those soils which pose the highest risk for irreversible damages to watershed conditions.

Table 1. High Mass Movement Potential Soil Types on the Rio Grande National Forest

Symbol	Map Unit
305	Cochetopa-Harkness association, 10 to 50 percent slopes
460	Frisco very stony loam, slumped slopes, 5 to 60 percent slopes
465	Gothic-Bowen complex. 5 to 60 percent slopes
750M	Leighcan-Frisco association, moist, 5 to 60 percent slopes (Parts of this unit have experienced timber harvest in the past, and will be included in the suitable land base.)
852	Aeric Cryaquepts-Aquic Cryoboralfs association, 2 to 20 percent slopes
853	Aquic Cryboralfs-Aeric Cryaquept complex, 10 to 45 percent slopes

950	Cryumbrepts-Rock outcrop-Rubble land complex, 20 to 80 percent slopes
970	Gothic-Cryaquepts association, 3 to 30 percent slopes
980	Cirqueland
RO	Rock outcrop and Rubbleland

Justification on why Parts of Soil Units 750M and 460 Should Be Included in the Tentatively Suitable Timber Land Base

Soil Map Units 750M and 460 were originally described in the Chama Basin, and were characterized as having a high mass movement potential. Map unit 750M is Leighcan-Frisco association, moist, 5 to 60 percent slopes. The Leighcan soil comprises 55 percent of the area and Frisco comprises 30 percent of the area. Map unit 460 is Frisco very stony loam, slumped slopes, 5 to 60 percent slopes. Where these two soil units were established, many manifestations of mass movement were in evidence. For example, slumps, hummocky topography, tension cracks, jack-strawed trees, and pistol-butting in trees were observed. Such evidence suggests that soils are actively moving in the Chama Basin, and that these soils should be considered unsuitable lands for timber harvest.

The reasons why the Chama Basin has high mass movement potential is related to many factors including the geology, glaciation, and higher than average precipitation (Robinson, 1992) (McCalpin, 1992) (Stover, 1988). Past glaciation scoured out the valley, leaving over-steepened soils that fail very readily in wet periods. Timber harvest on such sites was deemed risky and the probability of failures was high. Therefore, 750M and 460 soil units in the Chama Basin were wisely removed from the suitable lands base.

The same soil types occur in the Cumbres Pass to La Manga Pass area on the Conejos Peak Ranger District. There are, however, some differences in site features that make these soils less likely to fail under the given environmental conditions. First of all, the extent of glaciation was much less pronounced, and the resulting valleys were not as steep as in Chama Basin. Gentler slopes have better stability and there was less evidence of soil movement in these areas.

On-site investigations have shown the areas to be different from a mass stability standpoint. The Forest's Soil Scientist has traversed many miles across these soil units in both the Chama Basin and upper Rio de los Pinos drainages. Chama Basin soils exhibit "active mass movement" areas, including raw scamps, tension cracks, block slippage, and jack-strawed trees. The soils of the upper Pinos drainage do not exhibit recent active features.

Past timber harvest has occurred in the upper Pinos drainage, and supports the contention that timber harvest can be successfully implemented on these areas with minimal impacts. In many on-site investigations, the Forest's Soil Scientist has witnessed only a few small outslope failures which are not uncommon nor unexpected for this situation. He does not attempt to dismiss the other hazards of these

701	Curecanti-Bendire association, 15 to 45 percent slopes (Pied/Bogr)
710	Roger-Rock Outcrop complex, 5 to 25 percent slopes. (This unit has semi-forested ponderosa pine/Arizona fescue.)
780	Bushvalley-Bowen association, 20 to 60 percent slopes. (This unit has ponderosa pine-Dougla-fir/mountain muhly-Arizona fescue.)
702	Tolman-Bendire association, 2 to 60 percent slopes (Pied/Bogr)
704	Tolman-Bendire-Rock outcrop complex, 15 to 60 percent slopes (Pied/Bogr)
835X	Curecanti Family, 50 to 70 percent slopes, eroded, extremely stony (Pied/Bogr)

On the Rio Grande National Forest, approximately 86,530 acres of forested land has been identified as having conditions which have inadequate assurance of restocking.

4. Is the land withdrawn from timber production?

Withdrawn lands are usually areas specifically chosen for protection or special status by Congress. Generally these lands are Wilderness and Wilderness Study Areas (WSA). This fourth criteria is found in 36 CFR 219.14 (a)(4), which states:

The land has been withdrawn from timber production by an Act of Congress, the Secretary of Agriculture, or the Chief of the Forest Service.

With the passage of the Colorado Wilderness Act of 1993, the RGNF now has four Wilderness areas: the La Garita, Sangre de Cristo, Weminuche, and the South San Juan.

Figure 1 illustrates the location and size of the areas. Each area actually expands beyond the indicated boundary of the Rio Grande NF, and is jointly managed by surrounding Forests and the RGNF.

On this Forest these four Wilderness areas total about 438,300 acres, of which about 237,250 acres are forested.

5. Is the land producing commercially usable timber?

The last criteria is based on direction given in FSH 2409.13-21.3. The Handbook states:

Identify lands that are not capable of producing crops of industrial wood as unsuitable for timber production. The primary criterion for assigning lands to this category, is the fact that the species of trees involved are not currently utilized nor likely to be utilized within the next 10 years. However, this does not preclude formulating an alternative to display management opportunities should a demand develop.

The primary criterion used in making this determination is whether a particular species of tree is currently utilized for commercial or industrial purposes. Presently on the Rio Grande NF the following species are considered noncommercial: Pinyon, juniper, briSTLecone pine, and limber pine. On this Forest there are about 62,320 acres of identifiable stands of pinyon/juniper, bristlecone and limber pine.

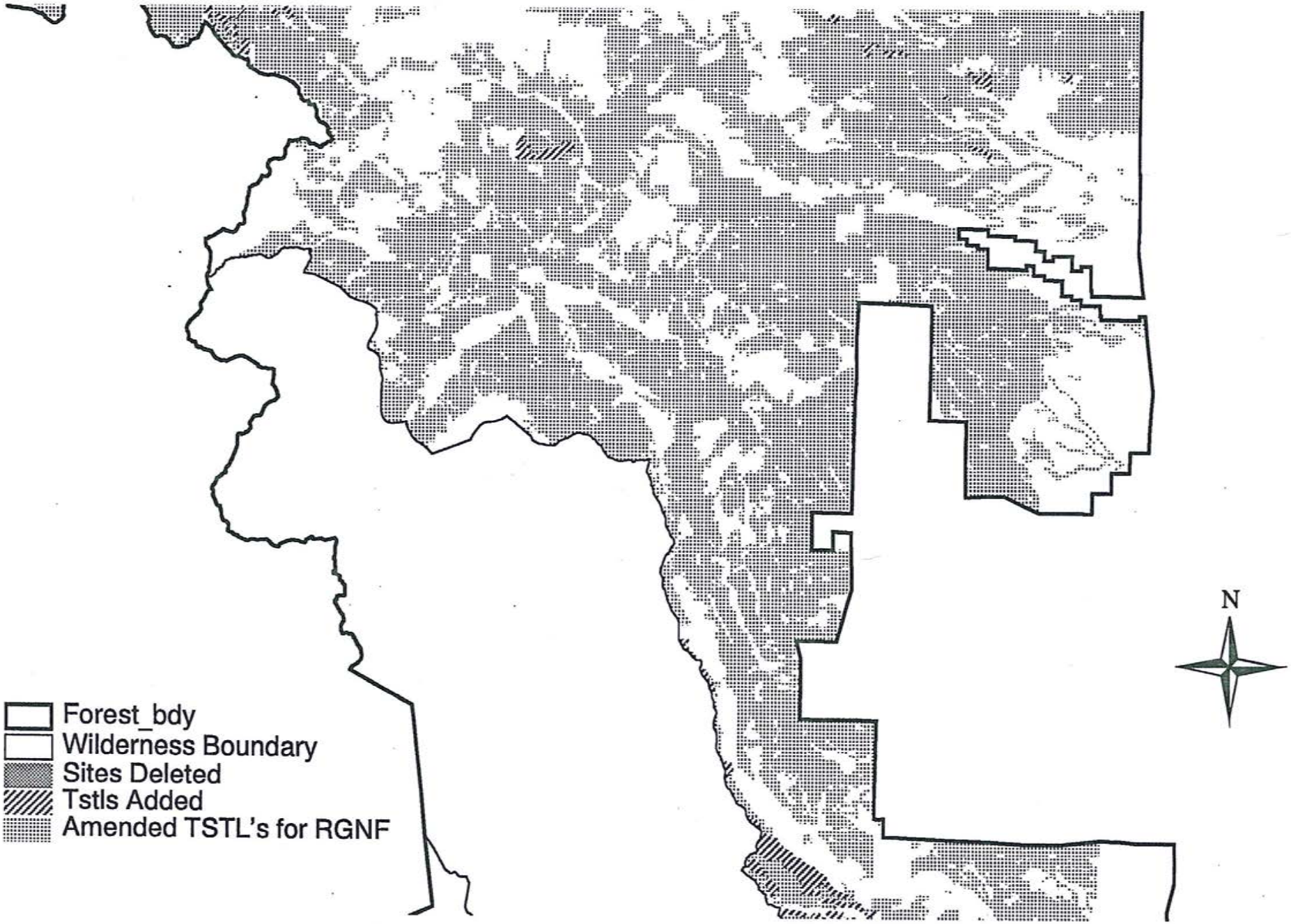
Aspen is generally considered a noncommercial species on the Rio Grande National Forest. On adjacent forests to the west and north, however, there is a commercial demand for aspen. To give more flexibility to analysis and see what the potential for aspen may be if demand increased, aspen stands will be entered into all analysis, but as a separate and distinct component.

Summary

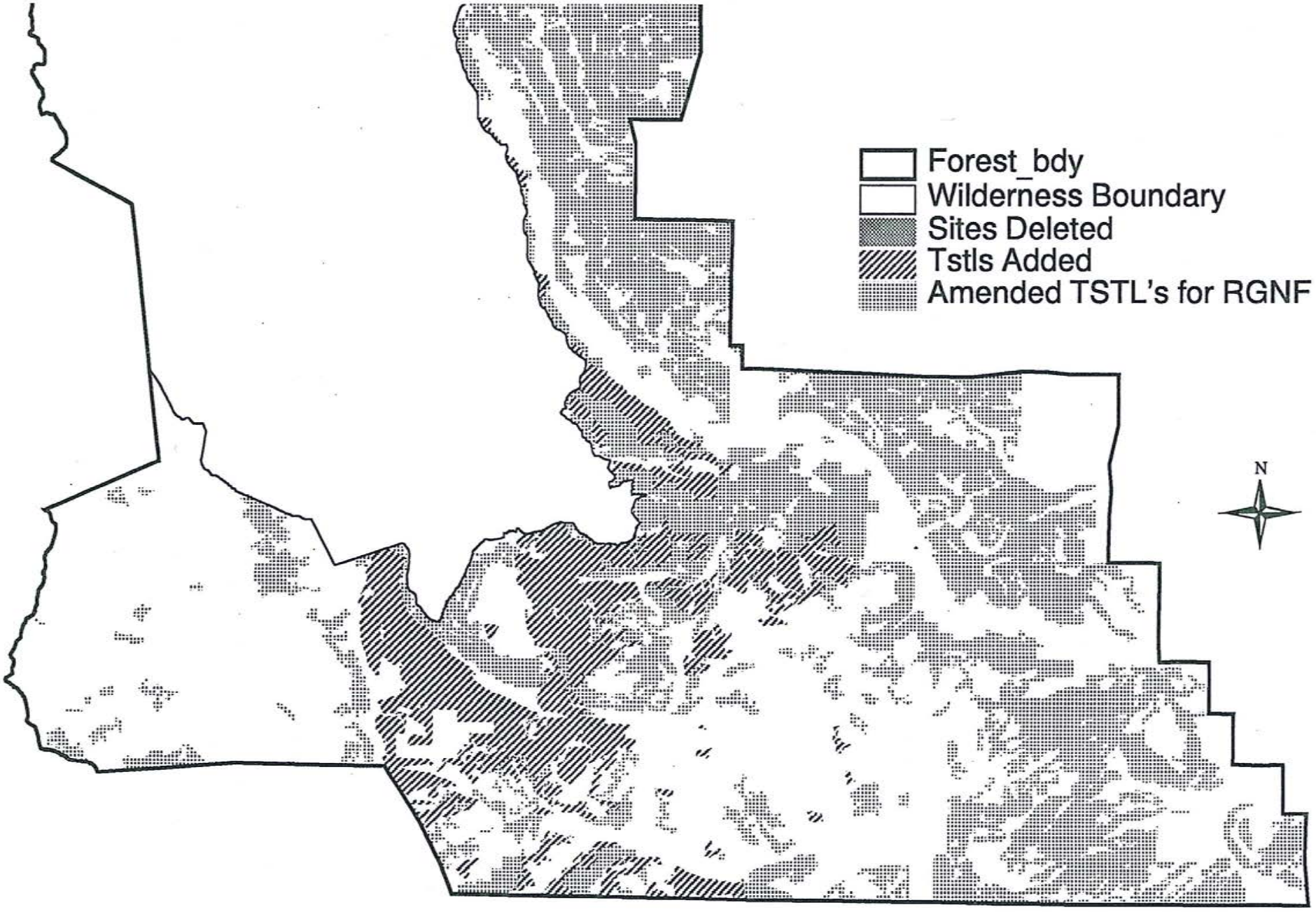
Results from the evaluation show that approximately 40% of the Forest's land base is tentatively suitable for timber management (Figure 2).

There are additional diagrams and figures not shown here that are contained in Tribble's original report. Those figure are available upon request.

Amended Tentatively Suitable Timber Lands - Upper Conejos



Amended Tentatively Suitable Timber Lands - Lower Conjos Area



Appendix C - Maps

This section displays the amended maps for both the "tentatively suitable timber lands" as well as for "suitable timber lands". The maps displayed here provide coverage of the entire Forest so the viewer can see where amended acres affect what particular areas on the Forest. If you are viewing this through our Web site, the maps are not available for viewing since necessary detail was not adequate. You may obtain hard copies of maps by requesting them.

These maps present the site specific information necessary to view the amended changes. Should more detailed maps of specific areas be desired; please contact the Rio Grande Forest Headquarters, 1803 West Hwy 160, Monte Vista, CO 81144, telephone 719 852 5941, attention Pat Prentice or John Rawinski.

soils, such as high landform sediment delivery potential, poor potential for unsurfaced roads, and moderate erosion hazard. These soil limitations can generally be mitigated at the project level. These soils also have some of the highest productivity in terms of site index and good reforestation potential.

It is the professional judgement of the Forest's Soil Scientist that soils 750M and 460 in the upper Pinos drainage and elsewhere be included in the tentatively suitable timber land base for the Revision. Table 2 lists those RIS locations which should be considered unsuitable timber lands. In all other locations, these soils will be considered suitable lands.

Table 2. Locations where soils 750M and 460 are considered unsuitable for timber production

100101	100102	100103
100104	100105	100106
100107	100201	100202
100204	100205	100206
100207	100208	100209
100210	100211	100212

The Forest's Soil Scientist will continue to conduct on-site investigations relative to timber harvest in these areas, and will recommend avoidance or mitigation if on-site investigations reveal soil problems.

Through the use of soils inventories and the above findings, approximately 20,000 acres of forested land have been identified as having the potential for irreversible damage.

3. Is there reasonable assurance of adequate restocking within five years after final harvest?

The third criteria deals with reforestation and restocking of forested lands. This third criteria is listed in 36 CFR 219.14(a)(3), which states:

> There is not reasonable assurance that such lands can be adequately restocked as provided in 219.27(c)(3).

Forest specialists developed Forest-wide criteria to be used in identifying those sites where restocking could not be assured within five years following a final timber harvest. The criteria used to identify lands incapable in regenerating within five years of final harvest were:

> Elevations above 11,000 ft. with south and southwest aspects
> Elevations below 9,500 ft. with south and southwest aspects
> Areas with greater than 33% rock
> Soils with characteristics which preclude restocking

From a soils standpoint, this would generally include soil map units having shallow and some moderately deep soils. These soils which do not reforest within five years would include many of the semi-forested soil units and the pinyon-juniper units.

One exception is the Hechtman soil, a shallow soil in the spruce-fir zone. In the Soil Scientist's opinion, Hechtman soils seem to reforest fairly quickly on cooler aspects. As such he would keep Hechtman soils in the suitable base.

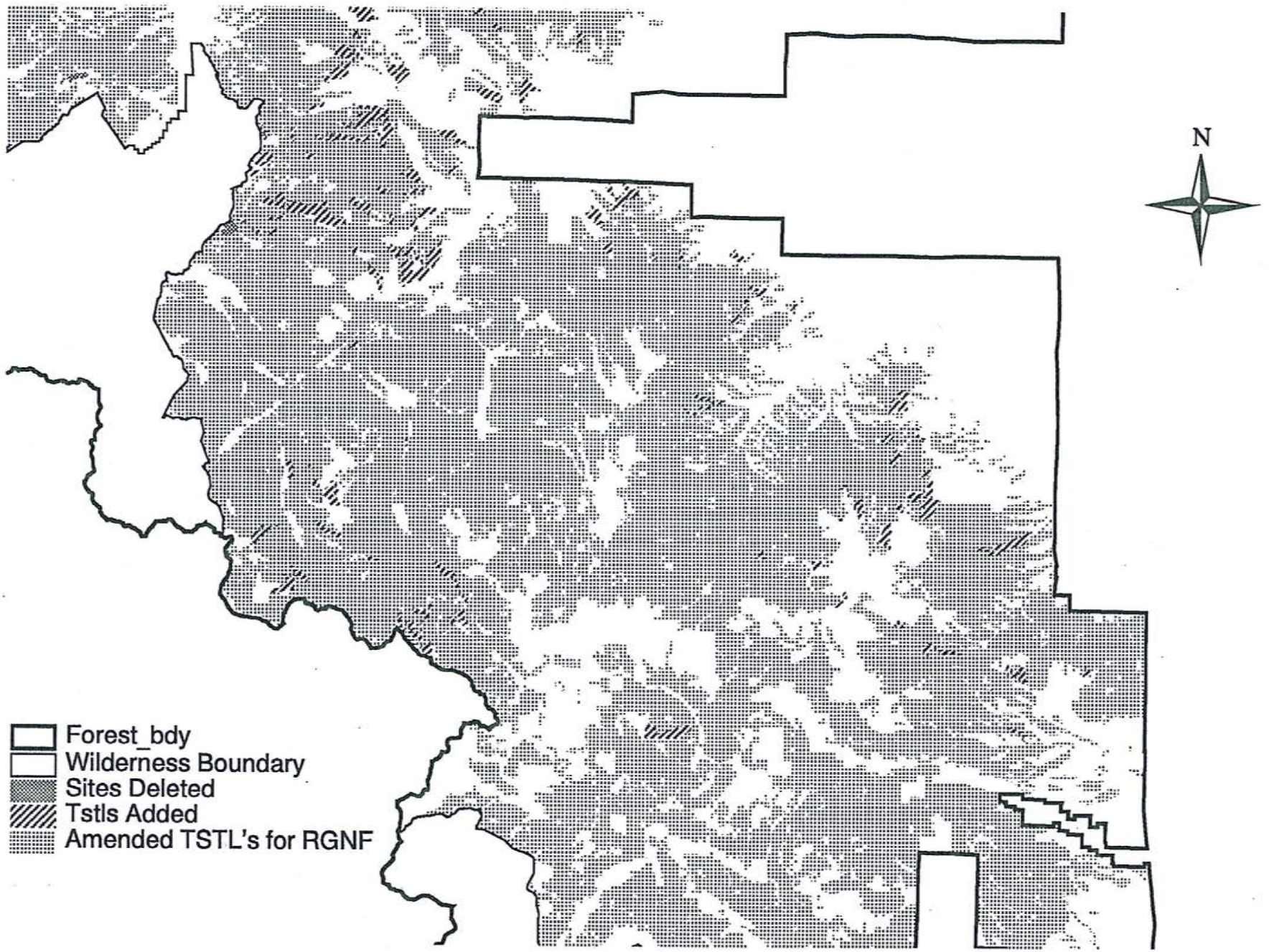
While areas close to timberline are difficult to restock, there are no soil units that are strictly mapped in the timberline edge zone. The Soil Scientist believes that these areas are very slow to regenerate, and that the standard of not cutting within 600 feet of timberline probably best protects these harsh transition zones.

Table 3 lists those soil units which are classified as lands not suitable for timber production due to their inability to reforest because of shallowness to bedrock, low available water capacity, and dry climatic regime.

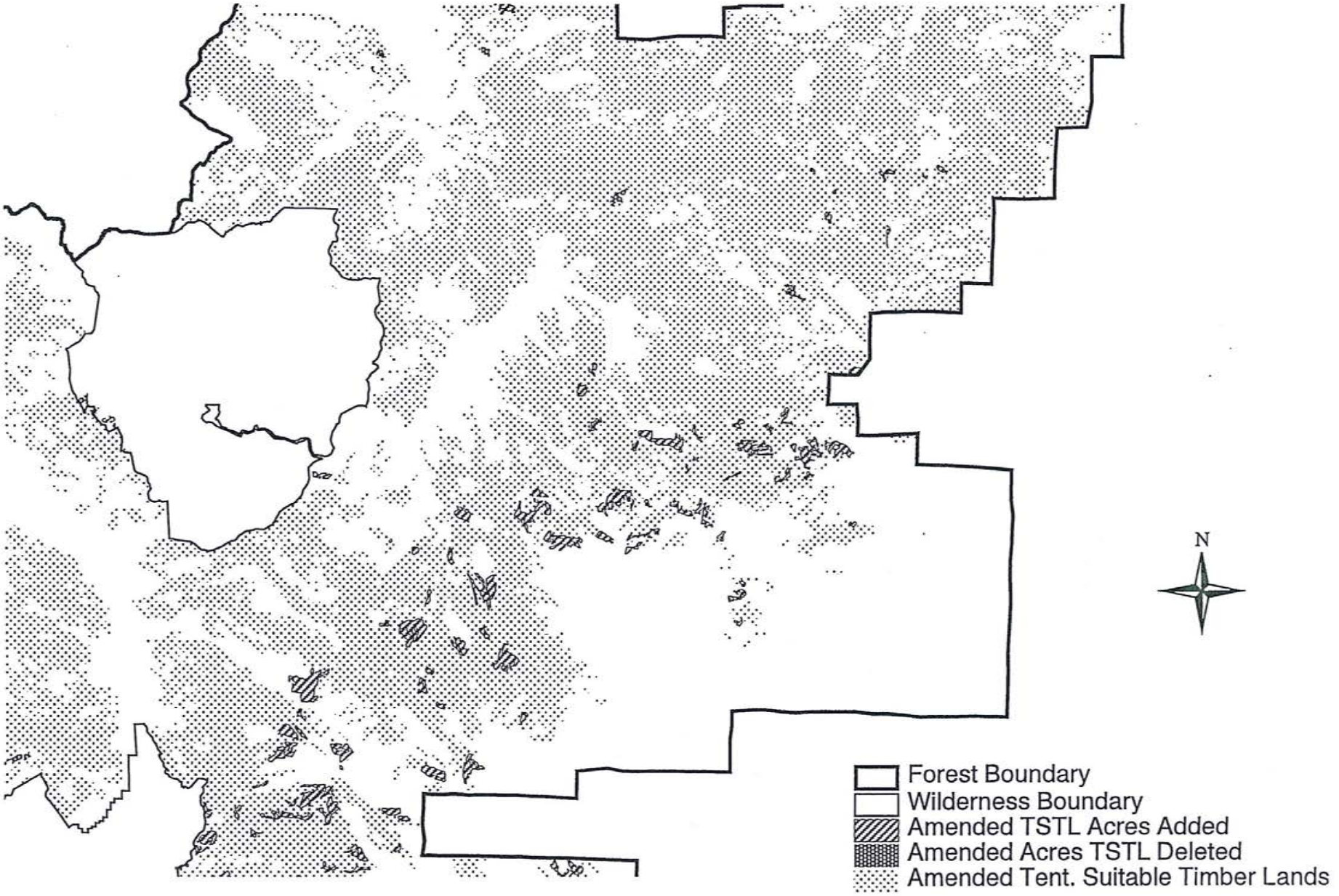
Table 3. Soils With Reforestation Problems

Soil Map Unit Symbol	Soil Map Unit Name
15B	Curecanti Family, 10 to 25 percent slopes, very stoney (Pied/Stipa)
200	Rock Outcrop-Haploborolls, steep-Argiborolls complex, 15-60 percent slopes. (this unit has semi-forested ponderosa pine/Arizona fescue)
252	Alamaditas-Posant association, 15 to 60 percent slopes. (This unit has a semi-forested ponderosa pine/Arizona fescue plant association).
410S	Comodore Family-Eutroboralfs complex, 40 to 65 percent slopes (Pied/Quga) Probably just on San Isabel NF.
504	Comodore very stony clay loam, 5 to 35 percent slopes (Pied/Bogr)
505	Comodore-Rock Outcrop association, 35 to 60 percent slopes (Pied/Bogr)
605Y	Cryoborolls-Rock outcrop complex, 40 to 90 percent slopes, very stony (sparsely timbered Pipo-Psme/Mumo)
611	Alamaditas-Rock Outcrop complex, 15 to 60 percent slopes (Pipo/fear and Pied/Bogr)
615Y	Cryochrepts, extremely stony-Rock outcrop-Rubble land complex, 40 to 90 percent slopes (Pien/Vamy-twinflower)
625S	Comodore Family-Rock outcrop complex, 35 to 65 percent slopes (Pied/Mumo-Bogr)
665	Bushvalley-Rock Outcrop complex, 10 to 90 percent slopes. (This unit has semi-forested ponderosa pine or briSTLecone pine.)
670S	Rentsac Family, 35 to 80 percent slopes, extremely stony (Pied/Quga). Probably just on San Isabel NF.

Amended Tentatively Suitable Timber Lands - South Divide Area



Amended Tentatively Suitable Timber Lands, North Divide District



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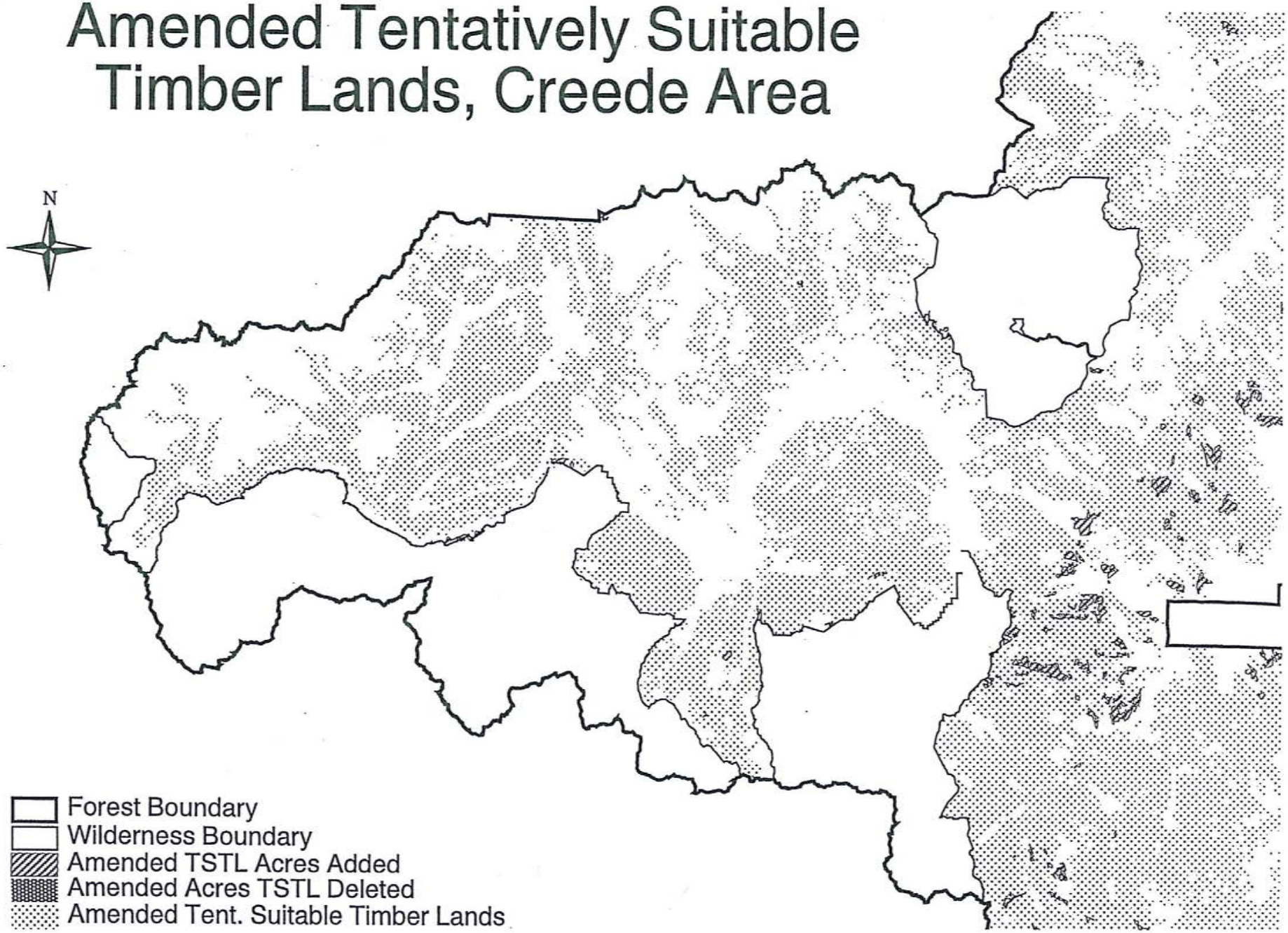

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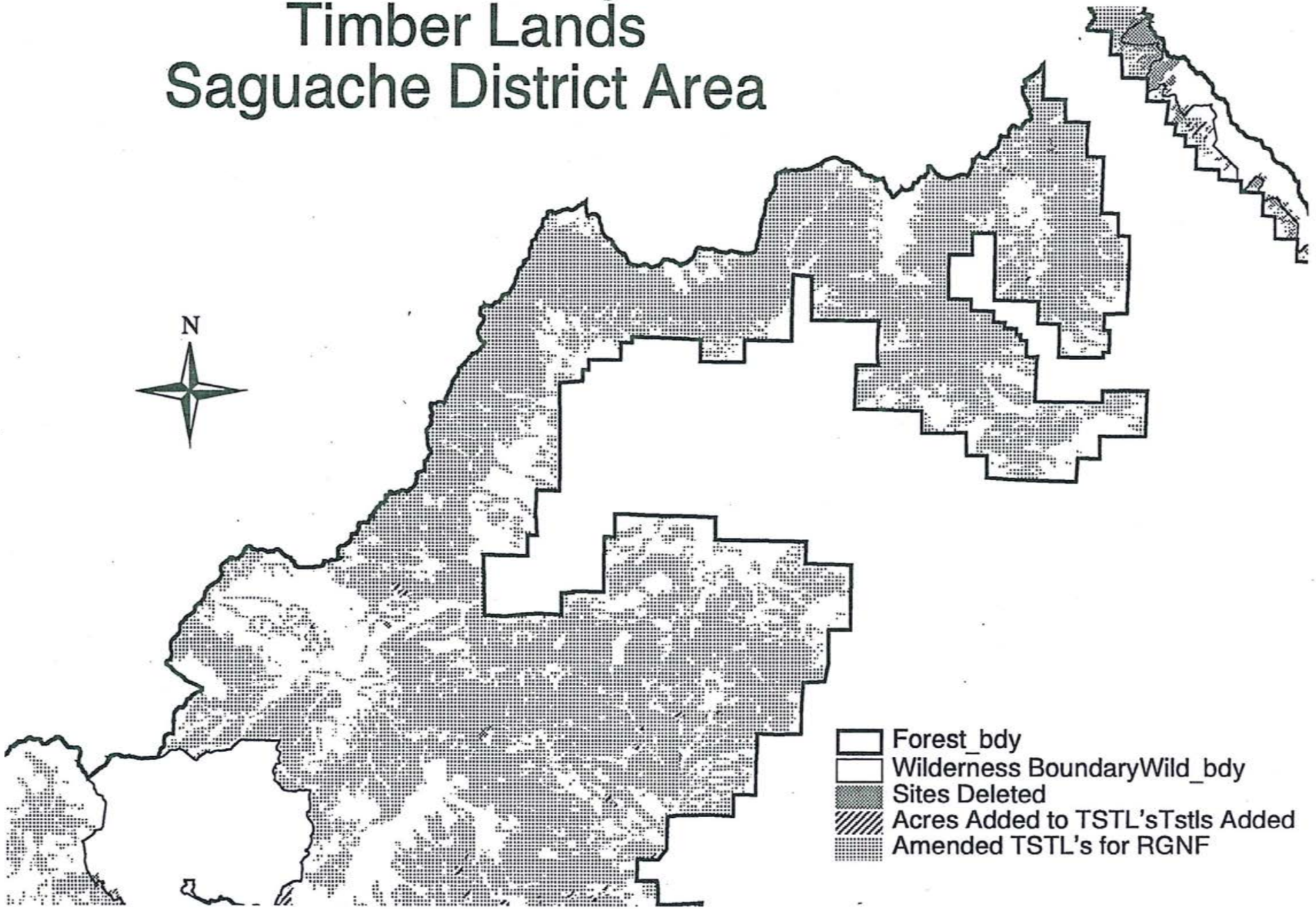
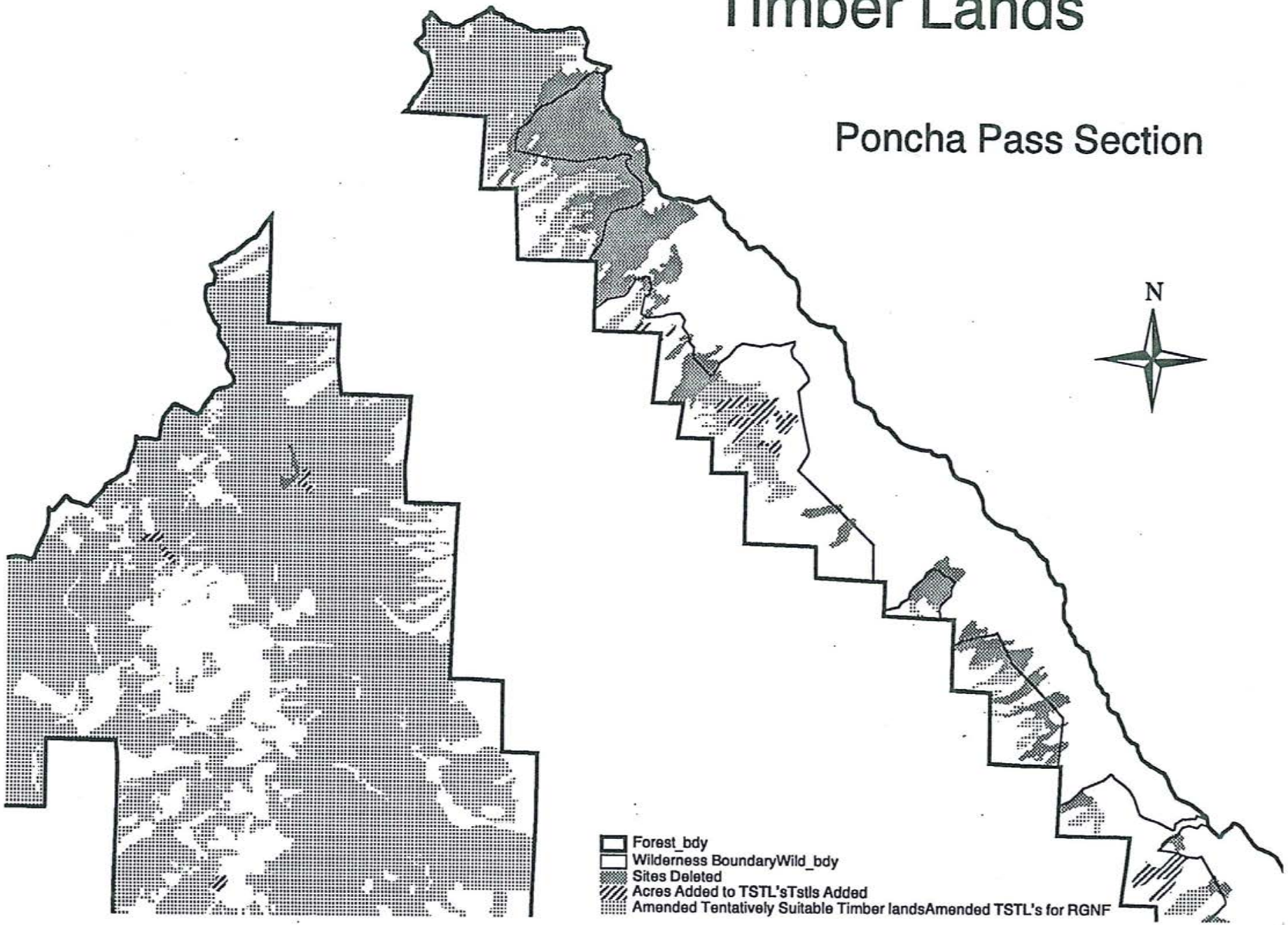
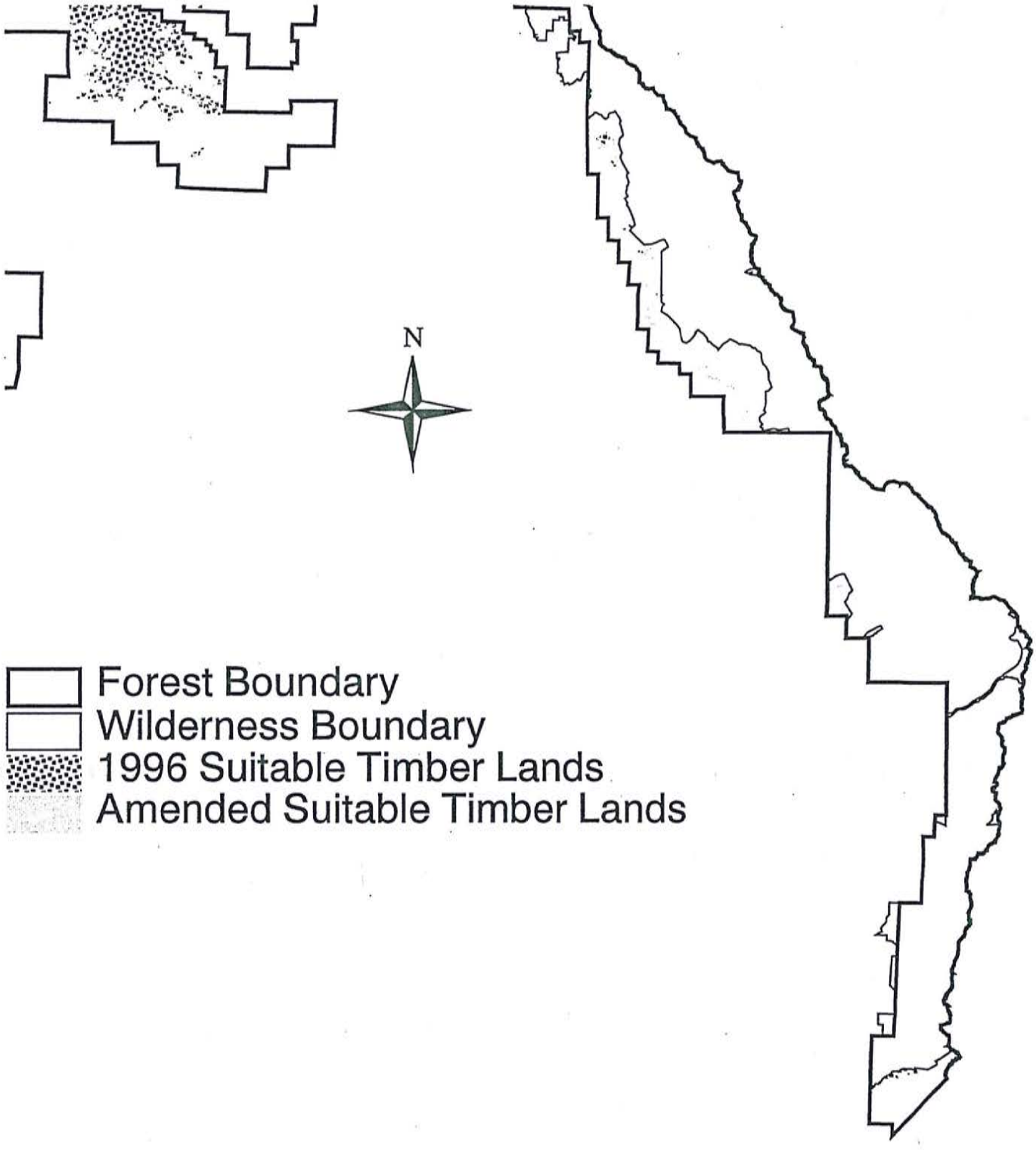


Amended Tentatively Suitable Timber Lands

Poncha Pass Section



Amended Suitable Timber Lands, Southern Sangres



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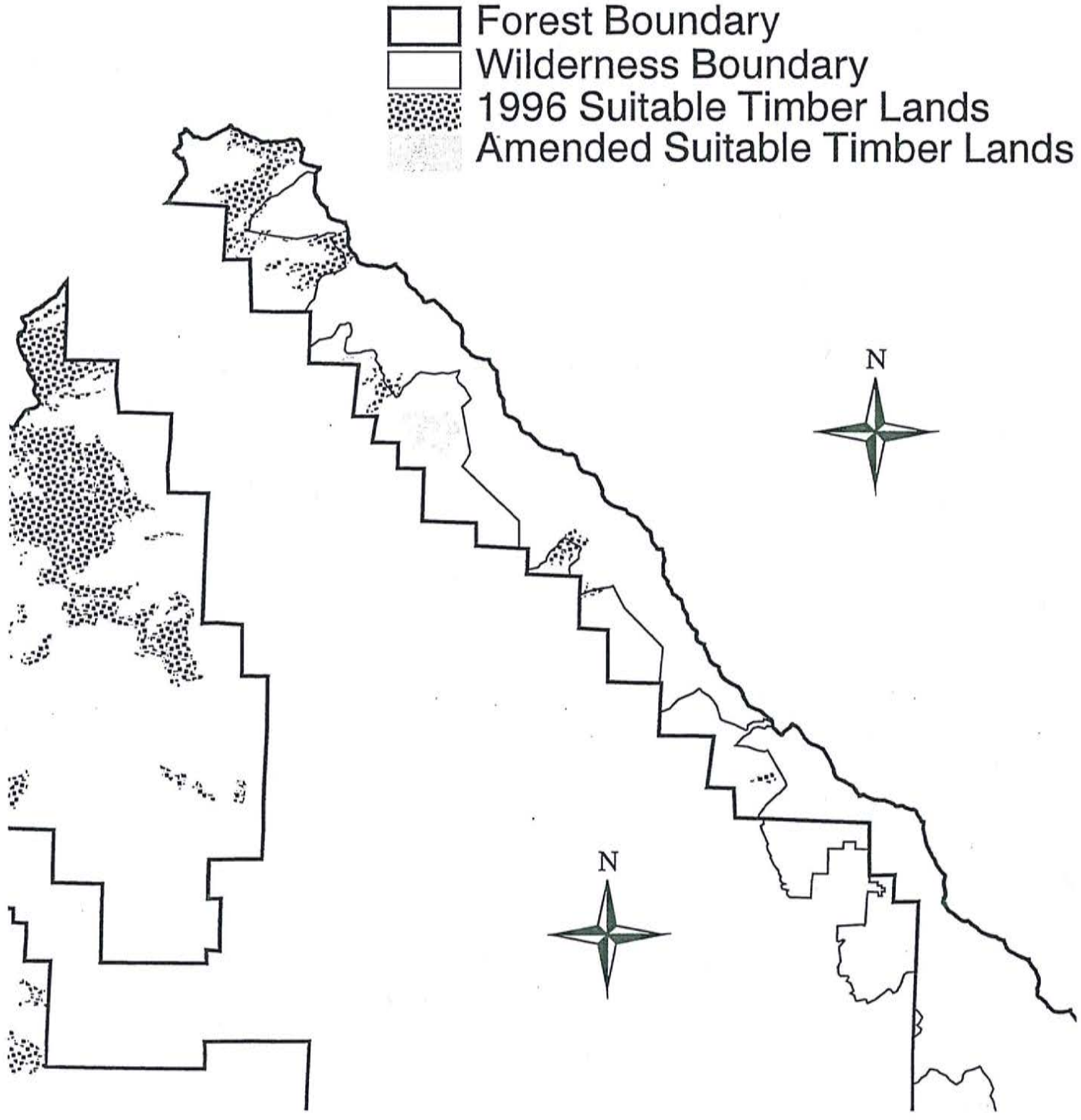

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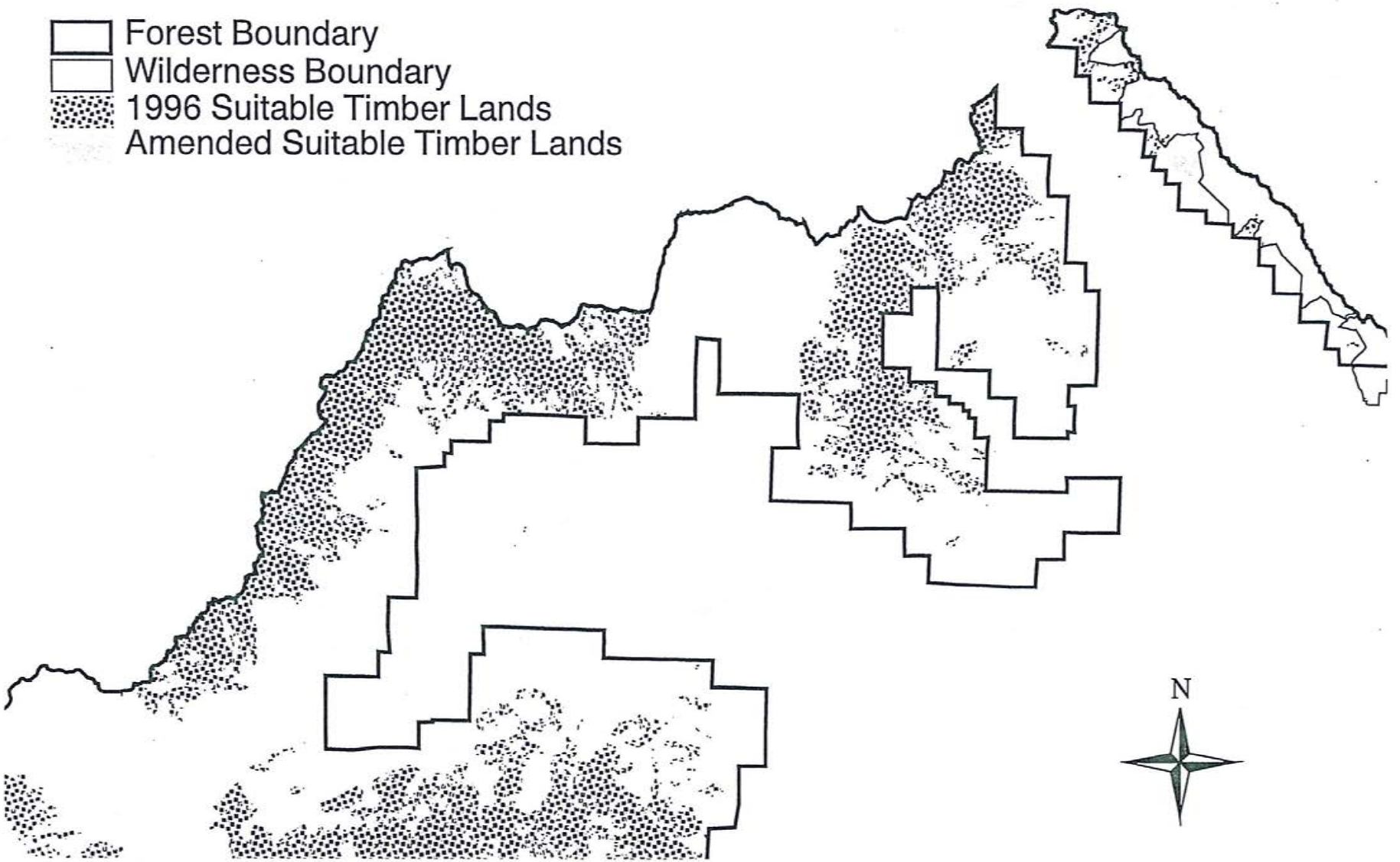

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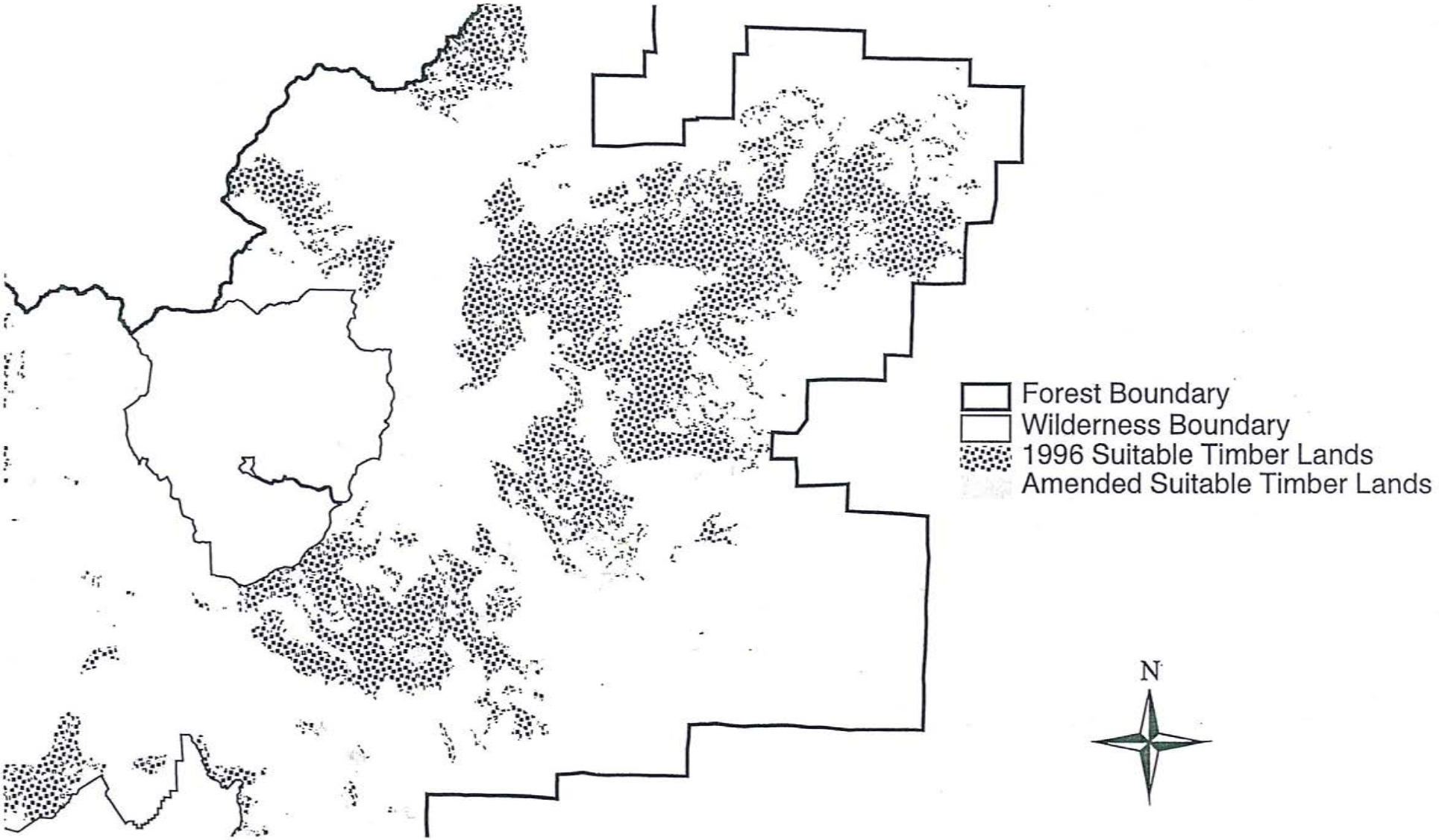

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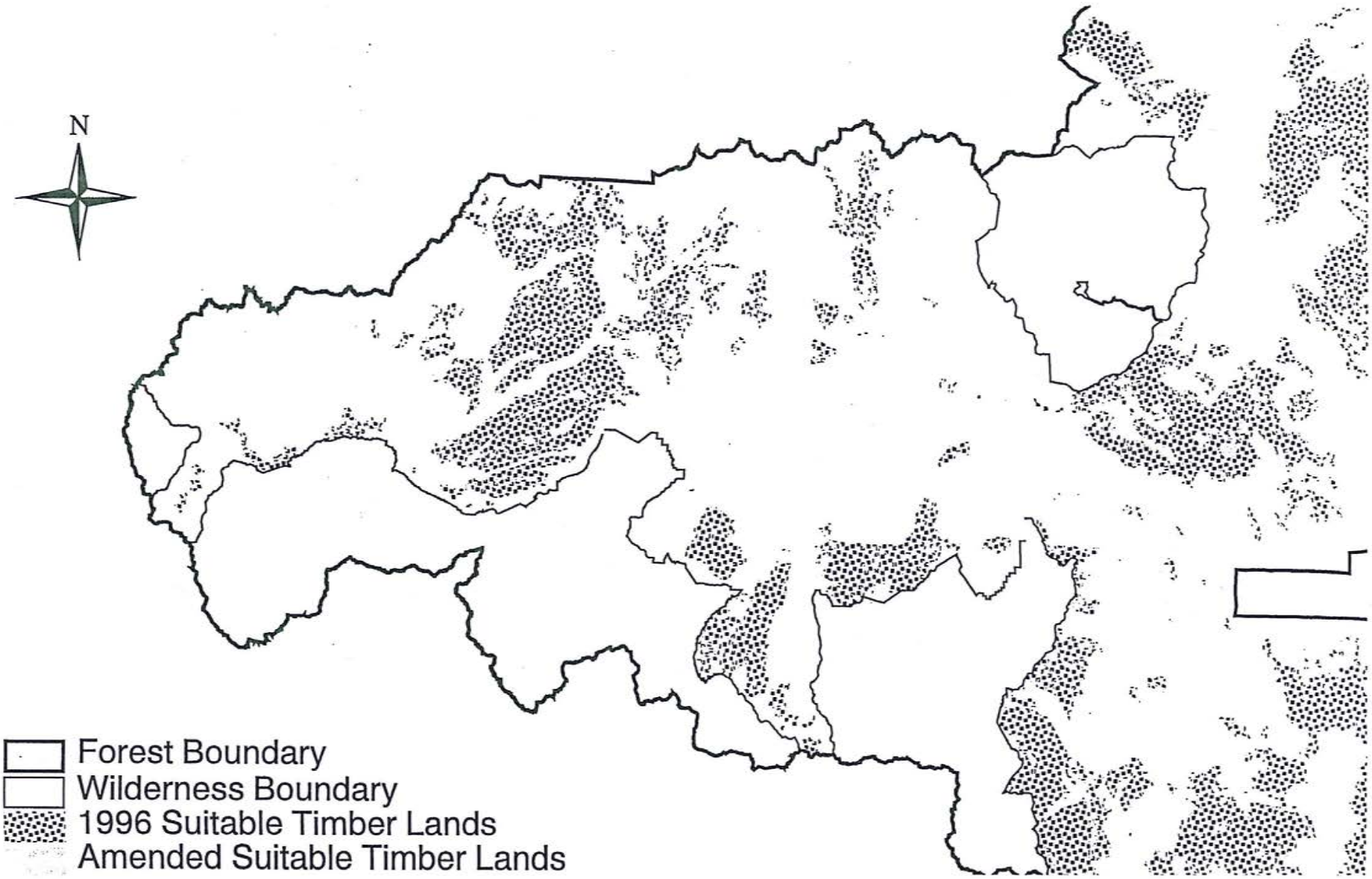

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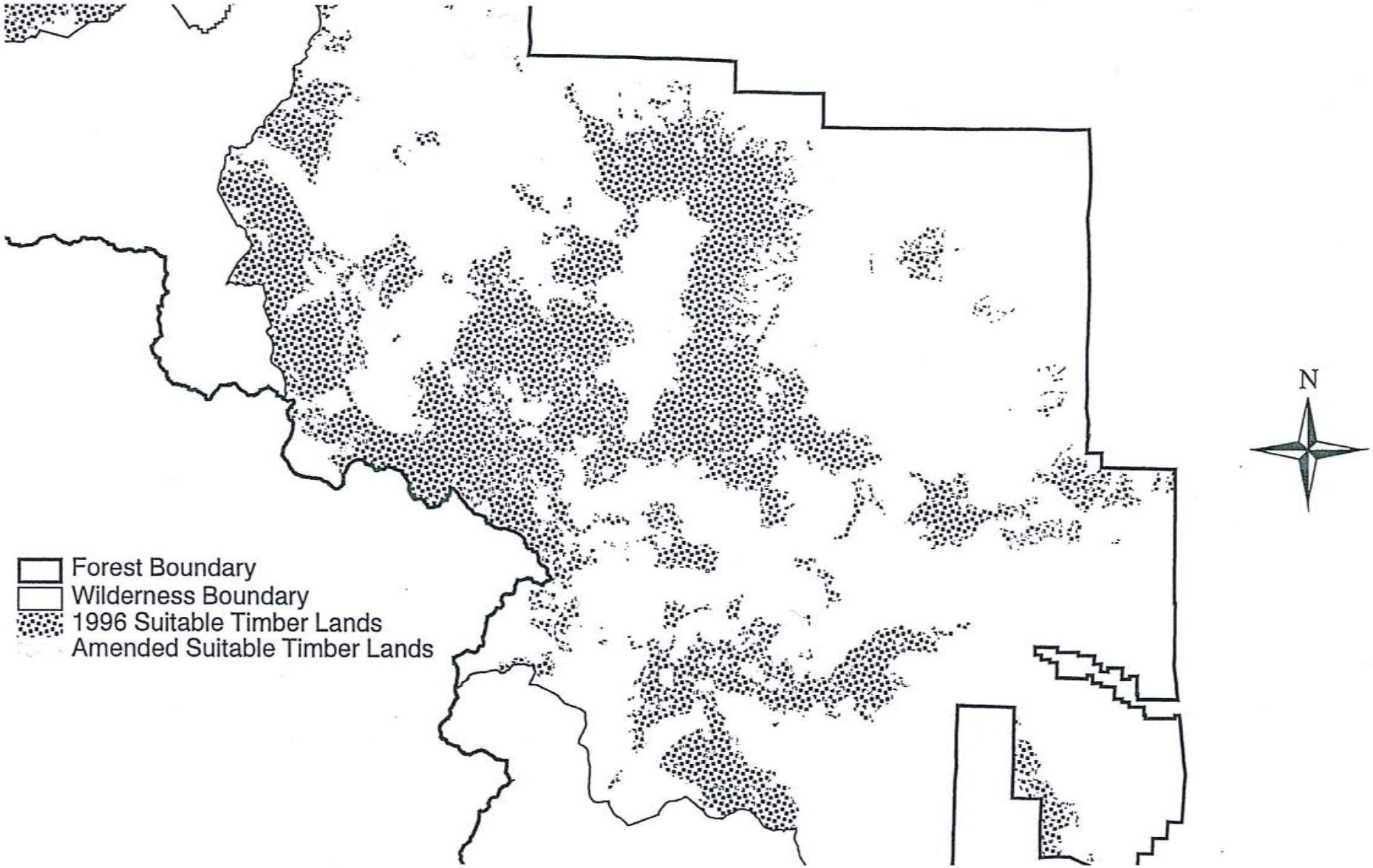

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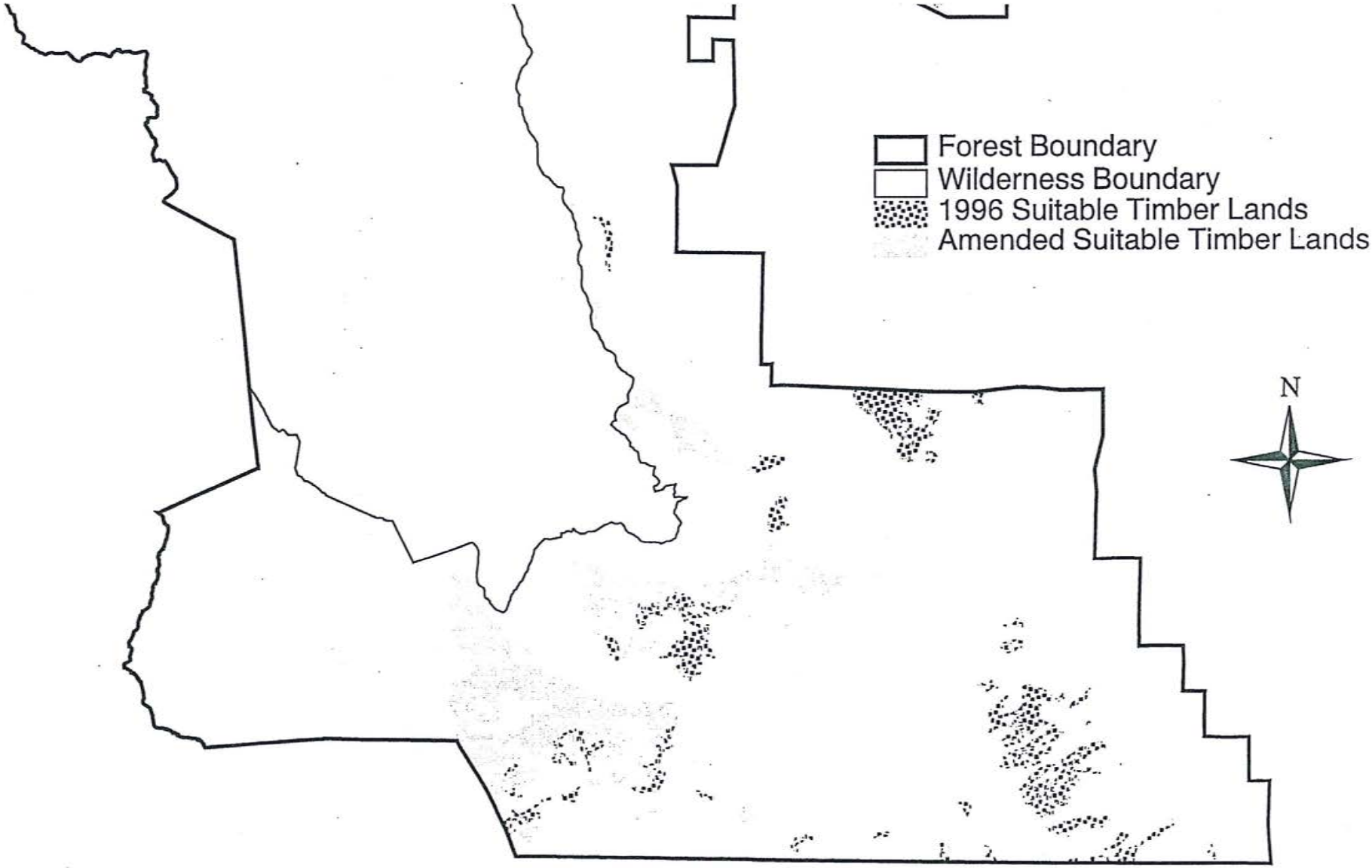

Appendix D
Responses to Scoping and Draft Environmental Assessments

The following comments and issues were raised by the public in response to scoping and requests for comments on the Draft Environmental Assessments.

Issue: Alternatives: The group cited the Council on Environmental Quality directive for federal agencies to *"rigorously explore and objectively evaluate all reasonable alternatives."* The concern raised is that the Forest Service needs to explore several alternatives including a No Action Alternative, which consists of a wide range of timber volumes and harvesting methods. The group encourages the Forest Service to *develop a wide range of alternatives which are based upon the ecological concerns surrounding the project area as well as the economic and social repercussions of this proposed action.* The group feels that *"a wide range of alternatives is needed in order to adequately define the purpose and need, potential impacts, and long term effects of the proposed plan amendment."*
Forest Service Response: The purpose of alternatives is to look at different ways to resolve issues. In this case, the key issue involves whether or not the Forest should make changes to the Plan. The Forest Service is considering two alternatives which would either fix the problem or do nothing relative to the problem. We believe the range of alternatives is sufficient to resolve the key issue.

Issue: Regeneration: *The Forest Service must demonstrate that the timber harvesting is suitable and in compliance with the NFMA 6(g)(3)(ii) which requires "assurance that such lands can be adequately restocked within five years after harvest." In order to determine whether or not regeneration will be able to occur, the Forest Service must conduct site specific soils analysis. The results of the study of soils will assist in the formulation of alternatives as well as in the determination of the likelihood of regeneration.*
Forest Service Response: Some of the adjustments in suitable timber lands (in the proposed action) involve lands and reforestation potential. The adjustments will better help the Forest meet the reforestation intent of that direction. The proposed amendment meets all the requirements of NFMA including regeneration. All soils and sites having problems with regeneration were removed in the subtractive process.

The Rio Grande Forest suitable lands determination process relied heavily upon soils information for a number of NFMA requirements. The Soil Resource Inventory that was completed just prior to the revision of the Forest Plan provided the baseline data for some of the determinations of TSTL. In addition, on-site investigations by the Forest Soil Scientist provided additional insight. Soils were also key in defining regeneration criteria which the Forest used to meet the NFMA requirements. Please refer to Appendix B, where soil factors are incorporated into the suitable lands process, including those soil types where there is/is not reassurance that 5 year stocking requirements would be met.

Issue: Landscape Linkages: *The importance of landscape linkages in the analysis area needs to be assessed in environmental analysis. The Rocky Mountain Regional Guide directs the Forest Service to: Evaluate the need for linkages and corridors to allow organisms to move between areas...The purpose is to provide for interchange of species to conserve genetic and species diversity (Chapter 2: P2). Landscape linkages provide the means for species to move between feeding, resting, and hiding areas. To fully maintain viable populations of area, the Forest Service needs to incorporate landscape linkages into the planning for timber sales.*

Forest Service Response: This analysis is tiered to the FEIS which addresses this landscape linkages under the heading of "Fragmentation and Connectivity" (FEIS 3-97). The addition or deletion of scattered sites over the entire National Forest should have little effect on the Forest Plan analysis which addresses landscape linkages.

Issue: Biological Evaluation: *As a part of the NEPA decision-making process, we expect the ForestService to review the proposed project in sufficient detail to determine if it will effect any species which is listed under ESA, proposed for federal listing, or designated in Region 2 as sensitive (Forest Service Manual, R2 Supplement 2672.4). The Biological evaluation (BE) must include an analysis of the direct, indirect, and cumulative effects of the proposed action under all alternatives on such threatened, endangered, or sensitive species (TES), or habitat types essential to meeting Forest Service objectives.*
Forest Service Response: The Forest has prepared a Biological Evaluation for this amendment which is included in appendix F. In addition, this analysis is tiered to the Environmental Consequences for the Revised Land and Resource Management Plan for the RGNF. The Final Environmental Impact Statement for the Revised Forest Plan (including Appendices) is incorporated by reference. No changes to the allowable sale quantity are being proposed by this amendment so the consequences are appropriately described in the FEIS and Appendices. In addition, Appendix F contains the TE&S consultaion with Fish and Wildlife Service, including discussion of the Lynx.

Issue: Purpose and Need: *NEPA demands that environmental analysis include: "the underlying pupose and need to which the agency is responding in proposing the alternatives..."(40 CFR 1502.13). The National Forest ServiceManagement Act (NFMA) states that National Forest should be managed to promote a renewable resource program which: "must be based on a comprehensive assessment of present and anticipated uses, demands for, and supply of renewable resources from the Nation's public and private forests...through analysis of environmental and economic impacts, coordination of multiple uses and sustainable-yield opportunities..."(NFMA Sec.2(3)).*
Forest Service Response: The purpose and need for this proposed amendment is appropriately described in this environmental assessment as required by the *National Environmental Policy Act and CEQ regulations*. The Revised Forest Plan, to which this analysis is tiered, meets the intent of NFMAas required by laws and regulations.

Issue: Water Quality and Soil: *Any proposed Forest Service action must comply with state water quality standards.*
Forest Service Response: The Revised Land and Resource Management Plan are incorporated by reference and describes how the Forest shall meet the State Water Quality standards. The effects of adding acres to the suitable land base would not result in changed outputs nor effects above those described in the Forest Plan FEIS, since timber allowable sale quantity remains the same as that described in the Plan.

Issue: Roads: *The proliferation of roads in the Rio Grande National Forest is a strong concern of AFR. Until the Forest Service has established a full inventory of roads present on the forest it is impossible to assess the cumulative impacts that any new roads will have on the forest.*

Forest Service Response: No roads are proposed for construction within the scope of this proposed amendment. Roads and their associated impacts for Alternative G are properly anlyzed in the FEIS for the Forest Plan.
Issue: Archaeological and Cultural Concerns: T*he Forest Service should work in compliance with the provisions of the Historic Preservation Act 16 USC 470 (section 106) or with executive order 11593*

2(a) to conduct archaeological reconnaissance. The survey must be completed before any draft NEPA documentation is filed.

The American Indian Religious Freedom Act requires that the Forest Service implement and evaluate its policies in consultation with the native leaders of traditional religions to determine what is necessary to protect and preserve religious sites (42 USC 1996). Native American Communities with interest in the possible cultural sites in the project area should be contacted during the NEPA scoping process to determine whether any of their religious sites will be impacted by the proposed project. Failure to communicate with Native American communities early in the NEPA process concerning possible destruction or alteration of religious sites violates both the American Religious Freedom Act and the fundamental purpose and policy of NEPA.

Forest Service Response: The Forest Service appropriately discuss the environmental consequences of the Amendment with regard to heritage resources and American Indians in the FEA. The FEIS for the Forest Plan addresses the requirements of the *National Historic Preservation Act* which directed federal agencies to consider effects of undertakings on any cultural (heritage) resources. The Suitability Amedment is considered a proposal which does not have potential to cause changes in the character of eligible or listed heritage resources.

The Suitability Amendment was scoped on the quarterly scoping list which is sent to, among others, the various Tribes with historical and religious interests in the Rio Grande National Forest. We invited comments about the proposal and listed the amendment in 4 separate quarterly scoping notices. We received no written comments on the proposal from the Tribes.

Issue:Cumulative Effects: *The environmental analysis for the proposed project must include a specific analysis of the cumulative effects the proposed project would have in relation to past, present, or reasonably foreseeable future actions of the Forest Service, as well as those of other agencies and individuals, in accordance with Forest Service handbook 1909.15, section 15.1 and 40 CFR 1508.25(c).*

Forest Service Response: The environmental analysis for the Revised Land and Resource Management Plan (including cumulative effects) is incorporated by reference for this proposed amendment. These documents have been prepared in compliance with all applicable laws and regulations. This EA discusses direct, indirect, and cumulative effects of the proposed action. In addition, this FEA specifically addresses cumulative effects including past, present and reasonably forseeable actions.

Issue: Riparian Areas and Wetlands: *Riparian areas and wetlands must be identified, mapped, and made in NEPA documents. The Forest Service must determine that wetlands and riparian areas in these soil types can be adequately maintained during timber harvest operation and road construction. The Forest Service must establish what size buffers are needed to protect these resources. In the event that wetlands are located, and activities may be impairing their health, the Forest Service must consult with the Army Corps of Engineers as required by the Clean Water Act.*

Forest Service Response: The environmental analysis for the Revised Land and Resource Management Plan (describing environmental consequences from timber on riparian areas and wetlands) is incorporated by reference for this proposed amendment. The proposed action is not a ground disturbing action so there are no expected impacts to wetlands or riparian areas, beyond those described in the Plan.

Issue: Old-Growth: *Where old-growth is present in the analysis area the Forest Service must insure that the proposed actions will not violate any existing minimum old-growth standards set forth in the forest plan. Furthermore, Old-growth aspen must also be recognized as an essential habitat type for many species (migratory bird species in particular), Old-growth forests and mature forests must be*

distinguished between for analysis purposes. Combining these two structural stages will lead to inaccurate portrayals of habitat availability within the study area.
Forest Service Response: The environmental analysis for the Revised Land and Resource Management Plan appropriately addresses Old Growth (FEIS 3-139-3-148), mature forest classes and the effects of a timber program on old growth forests. It is incorporated by reference.

Issues: The letters also identified several other concerns with the proposed amendment including:

potential "significant impacts to the human environment"

the establishment of public comment periods that are in full compliance with NEPA

the range of Natural diversity for this area, how it is established, and who will be affected by the proposal

new technologies used for this project comply with federal law, thoroughness of GIS data bases and their adequacy for this proposed amendment, and whether or not quantitative data sources are current.

The inclusion of maps of soil types, roads, watershed impairments, past timber harvests, TES habitat, raptor nest sites, virgin forests, fragmentation, old growth, cumulative effects, corridors, and recreati-onalinterest areas.

Forest Service Response: Environmental consequences of a timber program on the various resources are addressed in the Forest Plan and FEIS. The Forest has conducted a significance analysis for this amendment, which is not the same as "significance" defined by CEQ regulations. The Findings of No Significant Impacts (FONSI) will discuss conclusions of this analysis as to "significant impacts".

The comment periods are in compliance with NEPA. The Range of natural diversity has been addressed in the Plan Appendices, Appendix A. New technologies would be used in this analysis. Maps have been improved upon in preparation of the 4/99 Draft and the FEA. Other maps related to the issues mentioned above are contained in the Forest Plan and FEIS.

ARCVIEW analysis is a recent technology and was used in the determination of the suitable lands.

Maps of soil types, roads, and other resources are not included in this analysis since they are adequately depicted in the Forest Plan and FEIS and related files. To duplicate them here would have been redundant of items already available. Maps of the added acres and deleted acres are germaine to this analysis and are shown in segmented views of the entire National Forest.

Issue: *Doesn't NEPA require more than just two alternatives? This EA violates NEPA because it does not contain a wide range of alternatives. We support an alternative which removes unsuitable lands from the timber cutting base.*
Forest Service Response: NEPA requires Agencies to evaluate all reasonable alternatives and explain the reasons for eliminating some alternatives from detailed study. Alternatives must fulfill the purpose and need and address the key issues. A number of letters suggest that an alternative which considers removal of suitable acres but not the addition of acres to the suitable base. The Forest Service did not consider this alternative because it did not meet the requirement to "analyze all reasonable (our emphasis) alternatives...". If we are trying to correct a data base, things need to be adjusted both ways. The

Forest added acres where it was reasonable to do so, as well as took them away where they were inappropriately allocated. That is the same reason we did not consider an alternative that would add suitable acres and not remove those affected in stands near/in Wilderness. We did not feel it was reasonable to correct one way and not the other.

Issue: *The proposed soil types are not appropriate for timber production. This will damage soils, create erosion, and may violate new watershed guidelines.*
Forest Service Response: The Final EA, Appendix B clearly describes the reasons for inclusion of the soil types in question. Erosion can be effectively mitigated using watershed conservation practices, standards and guidelines. Amending the Plan as proposed would have no bearing on the Forest's ability to meet watershed guidelines.

Issue: *We oppose the El-Rosa Timber Sale being planned in this area. This area is critical for the South San Juan Wilderness buffer zones, corridors, and recruitment of old growth.*
Forest Service Response: The El Rosa Timber Sale is not being decided by this analysis.

Issue: *The area (El-Rosa TS area) is important for imperilled wildlife and also TE&S species including possible grizzly bear, re-introduced lynx, boreal owl, boreal toad etc.*
Forest Service Response: The El Rosa Timber Sale is not being decided by this analysis.

Issue: *We oppose adding acres to the Trout Mountain area. Roadless areas need to be protected. I don't want any more timber cutting lands added to the area around Trout Mountain.*
Forest Service Response: Trout Mountain additions involve only a few forested stands to the suitable land base. No suitable acres are allowed in the 3.3 backcountry prescription since it precludes timber harvest. Any acres added to the suitable land base near Trout Mountain are only in management prescriptions that allow timber harvest.

Issue: *Nearly 300,000 acres of lands on the RGNF have a timber management prescription. We strongly oppose changing managemment prescription 5.11 in such a way that an additional 170,000 acres would be available for logging.*
Forest Service Response: There would not be an increase of 170,000 acres available for logging by changing management prescription 5.11. The only change needed in 5.11 is a desired condition statement that describes the timber management goal. Those acres have already been considered in the suitable lands base, and so there is no increase in suitable lands based on adding the desired condition statement.

Issue: *We oppose the proposal to scrap the "suitable and scheduled" management prescription. The effect of this would be to allow logging at any time provided that the ASQ has not been exceeded.*
Forest Service Response: The elimination of "suitable and scheduled" lands is described in the Final EA. The Amendment to eliminate the "suitable and scheduled" references would not result in any more timber harvest than that allowed under Forest Plan Alternative G, the selected Alternative. The Amendment would result in a greater degree of management flexibility in achieving the timber harvest goals.

Issue: *We believe that the two soil types in question have characteristics that make them unsuitable for timber production. High mass movement, poor potential for unsurfaced roads, moderate water erosion hazard, and poor revegetation potential make these soils unsuitable for timber production.*
Forest Service Response: The interpretations you cite are correct, however, soil interpretations were never intended to preclude activities so long as mitigation to overcome soil limitations is available. All of the soil conditions you cite can be effectively mitigated and were not excluded from the suitable land base. Mass movement was used as a criteria in determining suitable lands. We removed from suitable lands only the most sensitive soil types like those occurring in Chama Basin. We made exceptions for similar soils with apparent greater stability, like those in the Upper Rio de los Pinos, where we could effectively mitigate mass movement concerns.

Issue: *The maps supplied in the EA do not make it easy to determine exactly where acres would be added or removed.*
Forest Service Response: The Forest will improve the maps in the Final EA.

Issue: *The areas on the border of the Sangre de Cristo Wilderness outside of Crestone have TSTL's. The conflict from recreationists and economics would surely be unfavorable.*
Forest Service Response: There are acres that qualify in the Sangre de Cristos as suitable timber lands. However, while the sites are deemed productive enough to qualify, the liklihood of a timber sale being proposed on those areas of steep slopes is low.

Issue: *We note that the addition of a statement "Suitable timber lands will be managed to provide a sustainable flow of forest products" would directly conflict with the setting for 5.11 which states"...These areas are ...managed with a multiple use emphasis to achieve a variety of goals... Timber management activities focus on what is retained in the stand and not on wood production." The proposed amendment would obliterate the difference between 5.11 and 5.13.*
Forest Service Response: The distinction between the two prescriptions would be maintained even after adding the desired condition statement. The 5.13 would have a timber production emphasis and would focus on various management needs relative to timber production as a primary use. In 5.11, timber management is still a viable use, however, greater focus and consideration would be given to a balance of resource uses. The statement would not change the intent of each prescription.

Issue: *We oppose removing the suitable and scheduled category of lands because we think it is a good idea for the Forest Service to identify lands most likely to undergo timber management during the life of the Plan. Roadless areas could be entered for timber production.*
Forest Service Response: The Forest Service would still produce maps showing suitable lands which represent "timber harvest opportunity" areas. The maps show potential areas and will not necessarily have timber harvest on them in the next 10 years. Roadless areas (Backcountry 3.3 Areas) do not allow timber harvest and those areas would not contain suitable lands.

Issue: *The Forest Service proposes to eliminate a timber standard that is now inconsistent with Region 2 direction. The direction is "proposed and recommended" not "established". Such amendment should only be proposed after Regional direction has been established.*
Forest Service Response: This FEA describes the rationale for proceeding with the findings contained in the September 24, 1998 letter to the Washington Office regarding FORPLAN usage. The letter itself

can be seen in Appendix E of this FEA. The Region has reasonable assurance that the Handbook changes suggested in the letter will proceed, and the usage of FORPLAN would be de-emphasized if not eliminated in the future. We think it is prudent to proceed toward that goal.

Issue: *The Forest Service memo that shifts away from FORPLAN is a compelling argument that shows that the 1996 Forest Plan is fundamentally flawed. This should result in a full revision of the Forest Plan.*
Forest Service Response: The Forest Plan used the best information available at the time, which included the use of the FORPLAN model. Be aware that the Plan was signed in 1996, so FORPLAN modelling was done prior to that time. The Forest does not believe a wholesale revision of the Plan is necessary due to the latest shift in emphasis.

Issue: *It is not clear why the FORPLAN issue has been raised. The tentatively suitable timber lands base was determined wholly apart from the FORPLAN analysis. Merging these issues could be viewed as capricious.*
Forest Service Response: The determination of tentatively suited timber lands occurs at a higher level in the subtractive process. After tentatively suited timber lands are identified, further subtraction and evaluations are made. The FORPLAN model has been used in determining financial efficiency on stands passing appropriate screens. We do not see any "merging" of issues in this process.

Issue: *The Draft EA purports to correct errors regarding timber suitability in the Revised Forest Plan. Our review of the Planning documents provides no such evidence that such an error occurred. Notice to the public of the change in treatment was neither clear nor adequate.*
Forest Service Response: There are omissions between the Draft EIS and the Final EIS for the Forest Plan. This FEA properly describes those omissions in section 3.21.

Both the FEIS and DEIS describe soils that were eliminated from the tentatively suitable lands base and this is consistent and correct. What is different is that in the report by Tribble, 1993 there is a justification statement on why "parts" of those excluded soil types should be included as tentatively suited timber lands. In the DEIS, the justification for inclusion was properly accounted. In the FEIS, the justification portion was inadvertently ommitted by the Planning shop. The 1993 paper by Tribble is referenced in the FEIS, Soils Section, 3-284, first paragraph. The paper is also clearly referenced in the DEIS, p 3-239, 5th paragraph. The public has been made aware and has had ample opportunity to comment on this report.

Issue: *The Forest Service is actually modifying the geographic area where the Plan standards apply. This is a significant change in the Plan. Appendix A claims that the affected acreage would not be large. However, the addition of acreage...coupled with elimination of a timber standard could result in projects affecting a much larger acreage than if the lands were not added. Thus it may be considered significant.*
Forest Service Response: Appendix A describes the criteria for significance of an amendment. Small modifications of acreages do not qualify the amendment as significant, according to the criteria. In addition, the allowable sale quantity projected by Alternative G would remain unchanged. The effects of that sale quantity on resources is adequately described in the FEIS for the Forest Plan. We do not expect that the implemetation of Forest Plan Alternative G would result in larger acreages being harvested than those analyzed in the Plan.

The concurrent change of the timber standard would not result in larger affected acreas from timber harvest than those projected and analyzed by the Forest Plan and FEIS. The coupling of added acres and elimination of a standard would not result in more acres harvested. The projected ASQ of the Plan would remain constant and affected acreage of that timber program is not expected to increase based on tyhe amended changes.

Appendix E - September 24, 1999 Letter-Proposed Changes to FSH 2409.13, Chapter 20

File Code: 1920/2410 Date: September 24, 1998

Route To:

Subject: Proposed Changes to FSH 2409.13, Chapter 20

To: Director, Ecosystem Management Coordination, WO
Director, Forest Management, WO

Region 2 has recently reviewed handbook direction on defining lands suitable for timber production (FSH 2409.13, chapter 20) and has found some problems in applying two of the criteria.

Direction on identifying Forest Land is found at FSH 2409.13, 21.1. The handbook states "Classify unimproved roads, trails, streams, and clearing in forest areas as forest, if they are less than 120 feet in width." With today's technologies, it is relatively easy to buffer roads, trails, and streams to approximate their width and subtract this from being considered as forested land. Granted this does not result in a great deal of acreage, but does improve our ability to estimate our suitable timber lands. We would like this sentence to be deleted from the handbook.

The other criteria we are concerned with is at FSH 2409.13, 23.3, which states:

> "Management objectives for the alternative or benchmark provide the basis for determining cost efficiency of timber production activities. Lands assigned timber production prescriptions in a FORPLAN solution that maximizes present net value (PNV) are the most cost efficient lands for timber production in meeting the objectives of that particular solution. Lands not assigned a timber production prescription may still be capable of achieving a positive PNV under such a prescription. However, these lands are not the most cost efficient in terms of meeting the objectives of a benchmark or alternative."

We have found several problems with this direction:

- The direction specifically refers to "FORPLAN". This is no longer the state-of-the-art model for Forest Planning.
- The handbook direction was in response to 36CFR 219.14(c)(3), which requires suitable lands to be "cost efficient over the planning horizon." It does not require suitable lands to be limited to those that are the most cost efficient, as directed in the handbook. The handbook is much more limiting than the regulation.
- The statement that, under an objective to maximize PNV, the FORPLAN solution contains the land that is the most cost efficient for timber production in meeting the objectives of the alternative is incorrect. Many benefits that are associated with the objectives of an alternative cannot be quantified,

are not included in the FORPLAN timber model and, thus, are not included in the model's calculation of PNV. In addition, the FORPLAN/Spectrum models built in Region 2 have been timber only models. FORPLAN was not used to model range, recreation, etc. Thus, the model was not looking at trade-offs between timber and other resources in achieving maximum PNV. The handbook direction was written at a time when FORPLAN was being used to model all resources and for allocating timber management area prescriptions. This is no longer the case.

- The FORPLAN model is a strategic model and, as such, has incomplete information. The model is not spatial or geographically specific and yet, if the solution is mapped as the suitable timber base, the direction would have the model determine finite, spatial results. The model knows nothing of juxtaposition or size of sale units or many other conditions on the ground. For example, some areas that are not allocated to timber prescriptions in the model may actually be very cost efficient because of their location (e.g., less than the average amount of road construction may be required) or because of site conditions that are above average (e.g., a stand may have exceptional volume) or many other numerous things that FORPLAN just doesn't know. It is unrealistic to expect FORPLAN to be able to determine exactly where timber harvest should occur.

- The limit on timber harvest is the allowable sale quantity. The ASQ is the maximum that may be harvested over a ten-year period. The suitable acres merely support the ASQ. If, during implementation, it is found that many more or many less acres are required to meet the ASQ than those scheduled by FORPLAN, then there is a problem with the FORPLAN model. The model would need to be corrected and the Plan amended.

- Defining suitable lands as those scheduled by FORPLAN limits the flexibility of the manager in implementing the Forest Plan. Since the ASQ will not be exceeded and all standards and guidelines must be adhered to, it does not make sense to constrain suitable lands for timber management based on cost efficiency as determined by a strategic model.

- The FORPLAN solution is not 100% mappable. Therefore, the suitable and scheduled acres cannot be mapped. Forests that have mapped the solution have shown percentages allocated or mapped all analysis areas that were scheduled as if 100% of the analysis area was scheduled.

For the reasons stated above, we would like to see the handbook direction changed and to have cost efficiency addressed more simply.

We understand new planning regulations could necessitate change in a number of areas of the handbook. However, we don't expect the regulations to get to the level of detail of suitable lands determination addressed in this letter. Therefore, the handbook could be changed regardless of the new planning regulation's final form.

/s/ DeAnn Zwight

DEANN ZWIGHT
Director, Planning

/s/ David A. Anderson

DAVID A. ANDERSON
Director, Renewable Resources

Appendix F - Biological Evaluations and Consultations

USDA Forest Service | **USDI Bureau of Land Management**
San Juan - Rio Grande National Forests | **San Luis Resource Area**

File Code: 1920 **Date:** 3/16/99
Route To:

Subject: Forest Plan Suitability Amendment -- Specialist Review

To: John Rawinski, Forest Soil Scientist

The information below is provided as documentation that I conducted a review of the portions of the 1996 revised Forest Plan FEIS that I was responsible for writing. For the purposes of risk assessment, I am assuming we are proposing to add approximately 30K acres into the tentatively suitable timber land (TSTL) base but keep ASQ constant for Alternative G (the selected Alternative). The sections of the FEIS I wrote were as follows:

1) Biological Diversity Assessment at the Province and Tri-section level
2) TES plants and significant plant communities
3) Old-growth Forests
4) Research Natural Areas
5) Botanical Special Interest Areas

1) Biological Diversity Assessment at the Province and Tri-section level: These two write-ups were broad scale assessments (multi-state) of the ecological and social characteristics of very large areas. These assessments speak to the timber resource in a very general way. Adjustments of TSTL at the scale of this analysis would be inconsequential.

2) TES plants and significant plant communities: This write-up addresses Threatened, Endangered, Sensitive, and significant plant communities. Adjustments to the TSTL base would not create serious risk to any of these plants or communities since the risk was deemed to be low under the selected Alternative (G). An important resource protection measure provided here is that an on-the-ground assessment of these resources is conducted for every proposed ground-disturbing project. As a result, mitigation is used to keep risks to these resources low.

3) Old-growth Forests: This write-up addresses old growth as defined by Mehl (1992) and late-successional forests. An inventory of old growth does not exist for the Forest, so late-successional forest was used as a surrogate for old growth. Adjustments to the TSTL base would not change the risk assessment for late-successional forest. The reason for this is that the TSTL adjustment is low relative to the large amount of late-successional forest available on the Forest. A Standard was placed in the Forest Plan that requires the Forest to inventory for old growth early in the timber sale planning process. Thus, old growth is addressed at the project level and the risks to it are weighed and disclosed to the public at that time.

4) Research Natural Areas: This write-up discusses Research Natural Areas (RNAs). Six RNAs were designated in the Forest Plan. Proposed changes in the TSTL would have no bearing on designated RNAs.

5) Botanical Special Interest Areas: Two botanical Special Interest Areas were designated in the revised Forest Plan. Proposed changes in the TSTL would have no bearing on designated botanical areas.

/s/ Dean H. Erhard

DEAN H. ERHARD

Ecologist

Consultation with Fish and Wildlife Service

SUPPLEMENTAL BIOLOGICAL ASSESSMENT AND EVALUATION FOR THREATENED AND ENDANGERED ANIMAL SPECIES

Timber Suitablilty and Related Amendments for the Rio Grande National Forest Land and Resource Management Plan

This Supplemental Biological Assessment/Evaluation addresses the effects of several Forest Plan Amendments upon Threatened, Endangered, Sensitive (TES) and Proposed to be listed species (Canada lynx).

INTRODUCTION AND BACKGROUND:

The Rio Grande National Forest contains habitat that is used by or may potentially be used by several TES species. A biological assessment/biological evaluation (BA/BE) was written for the preferred Forest Plan alternative on October 18, 1996 pursuant to Forest Servie policy regarding BA's and BE's (FSM 2672.4 and 50 CFR 402.12) and information found under Section 7 of the ESA (16 U.S.C. 1531 et seq.).

The documents concluded that carrying out the preferred alternative would result in a determination of "may adversely impact individuals, but not likely to result in a loss of viability in the planning area" for Sensitive species and a "may effect, but not likely to adversely effect" determination for the Threatened and Endangered species on the Forest.

The documents based their conclusions largely upon the limited environmental consequences resulting from implementing the preferred Forest Plan alternative, use of the Forest Plan's Standards and Guidelines, and the requirement for another analysis prior to project implementation (project specific BA/BE).

Lynx

On July 8, 1998, the U.S. Fish and Wildlife Service (FWS) published a proposal to list the Canada lynx (Lynx canadensis) under the Endangered Species Act of 1973, as amended (Federal Register, Volume 63, No. 130). Because the Canada lynx (hereafter referred to as lynx) is now considered a "proposed" species, Section 7 of the ESA requires that Federal agencies confer with the FWS on any action which is "likely to jeopardize the continued existence of any species that is proposed to be listed or which results in the destruction or adverse modification of critical habitat proposed to be designated for such species (50 CFR 402.10).

At the time the original documents were prepared, the lynx was considered a Forest Service sensitive species and potential project impacts to lynx and lynx habitat were addressed using the most recent scientific information available. The lynx is still considered a Forest Service sensitive species in Region 2. The intent of this supplemental BA/BE is to re-analyize the effects of the proposed amendments to the Rio Grande preferred alternative on TES species and their habitat, and to make a determination of effects based on the latest scientific information available.

PROPOSED ACTION

During project analysis and implementation of the Forest Plan, a number of discrepancies were noted in regard to the suitable timber lands identified in the November 1996 Revised Land and Resource Management Plan and Final Environmental Impact Statement. Acreage figures and map adjustments were needed to make corrections in the suitable lands data base. The proposed changes were necessary to make adjustments in soil type omissions, Wilderness adjustments, and other analytical omissions. The proposed changes affect less than 3 percent of the suitable timber lands. More detailed information regarding the amendments can be found in the Pre-Decisional Draft Environmental Assessment for the Timber Suitability and Related Amendments document

The Forest Service proposes to amend the 1996 Revised Forest Plan by making acreage adjustments in the suitable timberlands database. This amendment will remove acres from the tentatively suitable timber land (tstl) base that were incorrectly included in the tstl base. Some stands in the Sangre de Cristo mountains were found to contain some Wilderness acreage. The Forest proposes to subtract those acres out of the suitable lands base. Conversely, in the 1996 Revised Forest Plan, portions of soil type 750M and 460 were inadvertently omitted from being included within the suitable timber lands base. The omission occurred between the publication of the Draft and Final Environmental Impact Statement for the Revised Forest Plan. Correction of the omission will restore those acres to the tentatively suitable timber land base.

The net changes in acres proposed by this amendment results in an increase in tentatively suitable timber lands of about 2.9 percent (or 22,595 acres). See the table belbw for a breakdown of the proposed acreages changes associated with the amendments.

Category for RGNF Totals	Current	w/Amendment
Net RGNF Acres	1,856,757	1,856,757
Net Forested Lands	1,167,423	1,167,423
Wilderness Removals (1+)	227,046	237,983
Nonindustrial Species (1+)	62,172	62,927
Irreversible Damages (2-)	37,190	18,903
Reforestation Problems (2-)	95,765	79,765
Tentatively Suitable Timber Lands	745,250	767,845 (net increase of 22,595)

(1+) - With the amendment, there is an increase in these acres (Wilderness and Nonindustrial Species) and a decrease in tst lands.

(2-) - With the amendment, there is a decrease in these acres (Irreversible Damages and Reforestation Problems) and an increase in tst lands.

A key assumption to all these adjustments in tentatively suitable timber lands is that there would be no change in the Allowable Sale Quantity (ASQ) identified in the 1996 Revised Forest Plan as a result of this proposed action. This means that the environmental effects disclosed by the 1996 Revised Plan and FEIS are still valid and correctly estimate environmental consequences. The EA for the amendments are tiered to the 1996 Revised Forest Plan and adopts all of the discussion of environmental consequences.

The Rio Grande National Forest has chose to re-issue a Pre-decisional Draft EA (and associated documents such as BA/BE) because of this new information. This EA shall disclose the potential impacts of the proposed action in order to meet requirements of the National Environmental Policy Act (NEPA). The Forest will address the issues and concerns identified by the public during the scoping portion of the process.

SPECIES CONSIDERED

The original BE/BA discussed twenty Sensitive species, two Threatened species and three Endangered species as being likely inhabitants of the Rio Grande National Forest. These species are listed in Appendix A of this document. Information regarding their specific habitat requirements can be found in Appendix F (Biological Evaluation for Sensitive Animal Species) and H (Biological Assessment for Threatened and Endangered Animal Species) of the Rio Grande National Forest's Revised Land and Resource Management Plan.

Within the original BE prepared for the Forest Plan, the twenty sensitive species were grouped into general categories based upon their associated Landtype Associations (forested, snag-dependant, riparian, nonforested, caves, cliffs and waterfalls, lakes, other-multiple habitats and undisturbed landscape groups. The evaluation of the potential consequences focused upon the common habitat groupings. The BA addressed the five T&E species individually.

Due to the proposed listing of the lynx as either an Endangered or Threatened species. They are discussed in greater detail than the other species in this document. This document continues to discuss the effects (direct, indirect and cumulative) upon TES species in the same format as evaluated in the original document; for Sensitive species according to their Landtype Association and the T&E species (including lynx) individually.

CANADA LYNX STATUS, DISTRIBUTION, and HABITAT NEEDS

A variety of the latest available lynx natural history, ecology, status, and distribution factors were considered in this supplemental BA, and a brief summary of these factors is presented below. This BA depends heavily on three important documents. The first document is the "Draft Canada Lynx Conservation Assessment and Strategy" (USDI BLM, USDA FS, USDI NPS, and USDA FWS 1999). The second document is "The Scientific Basis for Conserving Forest Carnivores, American Marten, Fisher, Lynx, and Wolverine in the Western United States" (USDA FS, Gen. Tech. Rep. RM-254, 1994). The third document is the "Draft Strategy for the Conservation and Reestablishment of Lynx and Wolverine in the Southern Rocky Mountains" (CDOW 1998). Additionally, other pertinent references are also mentioned. A variety of lynx habitat risk factors and recommended conservation measures are outlined in the Draft Lynx Conservation Assessment and Strategy, and those applicable to timber harvest will be addresed in the direct, indirect, and cumulative effects sections below.

Status and Distribution

The Canada lynx was proposed for listing under ESA in the contiguous United States in 1998. It is fully protected under Colorado state law where it has been listed as a state Endangered Species since 1973. The Forest Service has designated lynx a sensitive species prior to 1994, and thus, the Rio Grande has considered the effects of management actions on individual lynx and the habitats on which they depend.

Lynx have been considered historically rare in Colorado. Available records suggest that lynx populations are presently very low in the southern Rocky Mountains and that historically they were never common in the state. However, because lynx are difficult to detect and have large home ranges, reliable population estimates for the state are not available. Colorado is considered to be the extreme southern edge of the species' North American range. There have been 12 field investigations to detect lynx in Colorado since 1979 and no lynx were confirmed, but 11 sets of tracks were located that appeared to have a high probability of being lynx. There have been only 18 positive records, 55 probable observations, and 64 possible observations of lynx in Colorado since the late 1800's. The last known lynx in Colorado was illegally trapped on the Vail ski area in February 1973. Locally, a track of a lynx was observed in the East Fork of the San Juan Valley on the San Juan National Forest. These tracks were found in spruce-fir habitat above 9,000 feet on a north to northeast aspect (Thompson and Halfpenny 1991). Given the rarity of records and the dispersal capabilities of lynx, it is possible that existing records represent short-term residents or individuals wandering and dispersing, rather than reproductively stable populations; viable populations may never have occurred in historic times in the southern Rocky Mountains.

Habitat Needs

Optimal habitats for lynx in the southern Rocky Mountains are spruce fir and lodgepole pine dominated landscape with deep winter snows that limit mobility of lynx competitors and provide sheltered connectivity corridors during summer. These forest and snow conditions generally occur in relatively narrow bands along mountain sides. Therefore, optimal lynx habitat is naturally fragmented in the southern Rocky Mountains by steep alpine zones and low elevation mountain valleys. Lower quality potential habitats and travel/connectivity corridors include aspen, mixed-conifer, and willow-dominanted riparian corridors. The San Juan Mountains constitute the largest block of contiguous suitable lynx habitat in the state.

Foraging habitat and prey species - The principle prey of lynx in the southern Rocky Mountains is snowshoe hare, and to a lesser extent, red squirrel. Other prey include a wide variety of small to medium size mammals and birds such as grouse, ptarmigan, mice, ground squirrels, beavers, and muskrats (Fitzgerald et al. 1994). Carrion is also consumed when it is available, and based on availability, large ungulate carrion is probably utilized in Colorado. Snowshoe hare populations do not appear to fluctuate in the southern Rocky Mountains, possibly resulting from the naturally patchy occurrences of habitat, and that most available habitats are considered suboptimal in comparison to more northerly boreal forests. Lynx are highly dependent on Snowshoe hare and concentrate their foraging activities in areas with high hare densities. Throughout the lynx North American range, the most significant limiting factor on lynx populations is hare abundance, and hare abundance is primarily dependent on overwinter survival. During winter, hare depend on small-diameter twigs and new growth available above the snow as preferred foods. Security and thermal cover is also important to hare overwinter survival, and dense stands of conifer cover are preferred. The greatest hare habitat potential will occur where winter browse is in close proximity to security and thermal cover.

Red Squirrel densities tend to be highest in late-successional, closed canopy forests with substantial quanities of coarse woody debris, and lower in young stands that lack cone production. The basis of the red squirrels year-round diet is coniferous seeds, but deciduous and coniferous buds are also important components during winter and spring. Dense conifer clumps, especially when associated with snags or fallen logs, provide important shade and protective cover for food caches.

Denning and travel habitat - Although lynx need early succession forests for snowshoe hare habitat, late succession conifer forests are needed for denning, and mid succession forests are needed for travel corridors to provide connectivity between core denning and foraging areas. The common component of denning habitat is large woody debris, either down logs or root wads. Den sites may be located within older regenerating stands (>20 years since disturbance) and in mature conifer or mixed conifer deciduous forests. Stand structure appears to be of more importance than forest cover type. Large amounts of large coarse woody debris provide escape and thermal cover for kittens. Lynx may be sensitive to human disturbance, especially while denning and raising kittens.

Home range - Lynx home range vary by sex, season of year, abundance of principal prey, and latitude. In general, home ranges are larger in southern portions of the species range, larger for males, than females, and larger during years of low prey abundance. It is assumed that in Colorado lynx home range size may be larger and density may be lower than elsewhere in the lower 48 states due to the inherent habitat patchiness and lower prey density of the southern Rocky Mountains. Average lynx home range size is estimated to be 8 to 20 square miles.

ANALYSIS OF DIRECT, INDIRECT, AND CUMULATIVE EFFECTS

Timber management has the potential for both impacting and benefitting habitat for TES species. The objective of forest management projects must address maintenance or improvement of vegetation structure for TES species. In the absence of fire, timber management can be used as a disturbance process to maintain or improve habitat by modifying vegetative structure and creating mosaics of forested landscapes. Although beneficial effects may occur, negative effects may also occur as a result from impacts to foraging, denning/nesting, and travel habitat. The proposed amendments do not result in any change in in the Forest's Allowable Sale Quantilty or in management prescriptions. The potential effects of the various Forest activites are further addressed in the original BE/BA. This document addresses the potential impacts of the proposed amendments upon TES species. The direct, indirect and cumulative effects relative to this proposal are discussed below.

Direct Effects

The direct effects on TES habitats that may result from timber harvesting activities include changes in habitat attributes within predominately late successional forest stands, more specifically;

1) The large tree component that provides overhead cover and serves as future snags and downed woody material may be reduced to the level where habitat may be impacted.

2) Canopy closure provided by multiple canopy layers (vertical coplexity) which provides overhead cover may be reduced.

3) Potential loss of snags as some may be felled due to safety concerns and during the operation.

4) Potential loss of downed woody material by being broken apart or compacted during logging operations.

Sensitive species

Forested group- This group includes the boreal owl, flammulated owl, goshawk, Golden-crowned kinglet, and marten. The original BE concluded that there will be limited impacts to the forested habitats on the RGNF. On a percentage basis, there will be essentially be no change in the amount of late-successional forest, the amount of the RGNF in an undeveloped condition, or the amount of late-

successional forest in an undeveloped condition. The amendments will not change the impacts of timber activities upon the forested group.

Snag-dependant group-The species in this group include the boreal owl, flammulated owl, Lewis' woodpecker, pygmy nuthatch, olive-sided flycatcher, and 3-toed woodpecker. Implementation of the snag standard in timber harvest areas combined with the high snag densities found in the undeveloped areas on the Forest will result in a snag density that will still exceed the 100% potential population level for primary and secondary cavity nesters. The amendments will not change the standard or increase the likelihood that snag loss will become higher with implementation of the amendments.

Riparian group-The species in this group include the boreal toad, tiger salamander, leopard frog, fox sparrow, and white-faces ibis. **Nonforested group** - The species in this group include the burrowing owl, ferruginous hawk and loggerhead shrike, **Caves**-Townsends big-eared bat, **Cliffs and Waterfalls**-black swift, **Lakes** - osprey, and **Multiple and Undisturbed Landscapes** - dwarf shrew and wolverine. Habitat for these species will not be impacted by the proposed amendments as their habitats are not included in those acres being evaluated or if some habitat is involved, are areas in which harvesting will not occur or existing Standards and Guidelines are in place to protect these habitats.

T&E species

Bald eagle- There will be little, if any, impacts to the small number of bald eagles that use the Forest because there are minor amounts of suitable timber lands identified in the lower elevations which make up wintering habitat and none of these acres are affected by the proposed amendments. Also, exising guidelines are in place to protect roosting and nest sites.

Peregrine falcon-There will be minimal adverse consequences to the known peregrine falcon nests on the Forest because there are only minor amoungs of suitable timber lands identified near the nests and these acres are not affected by the proposal. Also, guidelines to protect nest sites exist.

Uncompahgre Fritillary Butterfly-Habitat for this species is typically above that in which timber harvesting activities occur.

SW willow flycatcher-Habitat for this species is rarely impacted by timber harvesting activities. Standards and Guidelines exist protecting riparian areas from activities including timber harvesting.

Lynx

The four potential impacts addressed at the beginning of this section best describe the potential adverse impacts upon lynx and their habitat as the result of timber harvesting. The proposed amendments are meant to better define those lands suitable for timber harvesting and results in a net gain in acres where harvesting may occur but not in a gain in timber harvesting volume. The amendments may mean that less area will be impacted in the future from timber harvesting.

The direct effects are not likely to be significant because all habitat attributes are maintained and well dispersed throughout the Forest. The amendments may result in less potential loss of habitat (due to road construction) as the likelihood of activities occurring in already roaded areas is greater.

Indirect Effects

The indirect effects on TES species and their habitat that may result from timber harvest activities are associated with the effects to potential foraging habitat and consequently prey species resulting from reverting areas to an early successional seral condition.

Sensitive species

Forested and snag dependant species-in the short term- 1-20 years, timber harvesting activities may result in greater production of grasses forbs and shrubs. Fewer snags may be available in some areas for both foraging needs and nesting/denning needs. The amount of cover providing protection from predators and the elements may decrease in the short term in specific areas. Standards and Guidelines exist to ensure proper snag densities remain following treatment. The areas of treatment are scattered over a wide areas of the Forest and over time, have resulted in and will result in a juxtoposition of early and late seral stages providing adequate habitat for these species scattered over the Forest. The proposed amendments will result in even wider dispersal of timber related activities due to the larger amount of acres in which to select areas for treatment.

Riparian group, Nonforested group, Caves, Cliffs and Waterfalls, and Multiple and Undisturbed Landscapes. Habitat for these species will not be impacted by the proposed amendments as their habitats are not included in those acres being evaluated or if some habitat is involved, they are areas in which harvesting will not occur or existing Standards and Guidelines are in place to protect these habitats.

T&E species

For the same reasons as included for Direct Affects, the likelihood of these species being impacted by timber harvesting and more specifically by the proposed amendments is low. In those rare instances where habitats for these species may potentially be impacted, Standards and Guide exist to protect the species from harvesting activities.

Lynx

Upon completion of harvesting, group selection areas will revert to an early successional condition (grass-forb, shrub seedling) for approximately 1-20 years, at which time, habitat for snowshoe hare will be increased across the project areas. In the short term, these areas will be used primarily during summer because snow cover could prevent some use during winter until regeneration is above the snow surface. However, because groups, already have advance regeneration fulfilling the ninimum stocking requirements of the Regional Guide, use by hares will still occur.

Group selection will also result in a slight decrease in red squirrel habitat by removing clumps of potential habitat, but overall, sufficient ssquirrel habitat will be maintained across the landscape. The remaining contiguous forests surrounding the treatments will allow for movement between areas.

Cumulative Effects

The results from past sales have provided some early successional conditions, habitat favored by snowshoe hares. This has resulted in some benefits to lynx by increasing habitat for prey. At the same time, potential impacts have likely resulted from the increased road system associated with harvest activity providing access into lynx habitat by humans and competitors such as coyote, mountain lion, and bobcat. No significant impacts have likely resulted to travelling and denning habitat as continuous forest cover with complex physical structure on the forest floor is present and scattered across the landscape.

Forest wide, only 7% of the spruce-fir cover type (suitable and unsuitable for timber) has been entered for timber harvest. All known disturbances from past activities were identified as part of the Revised Forest Plan.

Non-motorized and motorized use on the Forest probably results in some disturbance. Human recreation activities may impact lynx use of preferred habitats, movements across the landscape, or distribution of potential competitors. The combined type, amount and juxtaposition of human disturbance activities may have an effect on lynx, even if each individual activity is unlikely to have a significant effect. With this in mind, lynx are able to persist in most situations with some level of human activity. However, there is a threshold where human activities decreases habitat quality for lynx, but the precise nature and level at which this threshold occurs is not known. Clearly, areas with less human activity are preferred by lynx, and connectivity among areas with less disturbance becomes increasingly important in a heavily recreated landscape matrix.

In addition to direct disturbance of lynx by human recreation, winter snowmobile and cross country ski use may reduce lynx habitat quality by providing packed travel corridors that enhance movement into lynx habitat by potential competitors. In Colorado, principle lynx competitors are coyotes, bobcats, and mountain lions. Lynx and snowshoe hare are specifically adapted to movement in deep snow conditions. However, deep mountain snow probably limits the movement and range of other competing predators, thereby conferring an advantage to lynx. Winter snowmobile use on the Forest is moderate and is expected to increase in the future. Because of the distance from plowed access roads, cross-country ski use in lynx habitat is low and is not expected to increase significantly in the foreseeable future. During the big game hunting season, an increase in use is present, however, in many years snowfall prevents access to the higher elevations during third rifle season.

Recreational use on main access roads into the Forest generally occurs outside the May-June lynx denning period. In May and June, road access into the upper elevation spruce-fir forests is poor and conditions are not favorable for the area's primary recreational uses: snowmobiling, hiking, hunting, firewood cutting, mountain biking, and cross-country skiing. Therefore, there is little risk of direct lynx mortality from road traffic and little human disturbance during critical denning periods.

There is an enormous amount of cover, and suitable denning and foraging habitat provided by late successional stands within Forest, particularly in Backcountry Prescription and Wilderness areas, therefore, if human disturbance temporarily exceeds lynx tolerance within the analysis area, high quality undisturbed areas lie nearby and are connected by suitable travel corridors.

Livestock grazing occurs within the Forest, however, timbered land within the area is not considered suitable range. Therefore, cattle use of the timbered stands is mostly incidental due to the lack of forage present. Livestock grazing occurs in areas dominated by open parks, and linear riparian corridors with willows present. Indirect effects on lynx may result from potential direct effects from livestock foraging within willow dominated areas, potential hare habitat. Direct effects could result from reducing summer forage or winter browse availability for snowshoe hares. The effects from livestock grazing within riparian/willow dominated areas can be mitigated according to standards and guidelines in the Revised Forest Plan.

A plan that allows prescribed fire to play a more important role in landscape ecology of the San Juan Mountains was approved by the San Juan/Rio Grande National Forests in 1997. This plan, "Prescribed Fire for Resource Benefits" provides a framework for evaluating the risk and likely benefits of allowing natural ignition fires to continue burning. Natural fire-return intervals in Colorado's high elevation spruce-fir forests was probably relatively long (150-300 years), and thus recent human fire suppression activities have likely not greatly influenced lynx presence or persistence on the landscape. However,

fire played an important ecological role for lynx by maintaining a mosaic of forest successional stages that are necessary to ensure long-term persistence of an adequate prey base of hares across the landscape. In the short term, wildland fire probably reduces hare and lynx habitat quality by consuming forbs and shrubs hare depend on for forage and cover, large-diameter fallen logs, overstory canopy cover, and other important surface structural attributes. However, as resprouting within burns and timber blowdown along burn edges occurs, hare forage species regrow, and habitat quality for hare and lynx increases significantly. Therefore, the recently approved prescribed fire plan will allow wildland fire to play a larger role in ecosystem function, benefiting lynx through increased prey abundance.

MITIGATION MEASURES

TES species - Mitigation measures identified in the October 18, 1996 BE/BE will be implemented to reduce potential impacts upon TES species. These mitigation measures include those listed below for lynx and those measures listed in Appendix B. In addition, numerous mitigation measures for other resources such as soils and water also provide for decreasing the potential negative impacts upon wildlife.

Lynx

Mitigation measures identified in the October 18, 1996 BA/BE will be implemented to reduce potential impacts to lynx and lynx habitat. These measures are consistent with standards and guidelines given in the Revised Forest Plan, they include snag protection and recruitment, retention and recruitment of down woody material, retention of slash within some areas to serve as comlex ground structure, the recommended closure of all roads reopened and used for sale administration, management standards to protect riparian areas, and standards protecting aquatic areas by stubble height restrictions,

DECISION AND RATIONALE FOR DETERMINATION OF EFFECTS

Information included in the original Biological Assessment and Evaluation regarding environmental consequences upon Threatened, Endangered, Sensitive and Proposed species is substantiated and relevant to the proposed amendments. New species specific information, particularly for lynx, is incorporated into this supplemental Biological Assessment and Evaluation.

* The amendments do not result in any changes in the Forest's allowable sale quantity.

* The amendments do not result in a change in land allocation (mgmt prescriptions). There will be no change in those activities currently allowed versus those activities allowed following the amendments (ie. motorized recreation, grazing, harvest prescriptions...).

* The Forest's Standards and Guidelines are in place to mitigate potential negative impacts to resources including wildlife.

* Policy requires that prior to any proposed land disturbing activity (ie. timber harvest), specific analyses (Biological Assessments and Evaluations) be completed to address project's potential impacts upon TE&S and proposed species.

* The amendments do not result in any long term negative change in the quantity or quality of habitat available for TES and proposed species.

* The original Biological Assessment and Evaluation previously addressed the proposed amendments (at that time as an alternative).

Sensitive Species-It is my determination that the original Biological Evaluation remains accurate and the Forest Plan amendments regarding timber suitability discrepencies *"May adversely impact individuals, but are not likely to result in a loss of viability in the Planning Area, nor cause a trend towards federal listing or a loss of species viability rangewide."*

Threatened and Endangered Species-I conclude that the Forest Plan amendments will result in a "*May effect, but not likely to adversely effect*" determination for the T&E species on the RGNF and that the original Biological Assessment remains accurate.

Proposed Species (lynx)-It is my determination that the changes resulting from the amendments are *"Not likely to jeopardize the continued existence of the lynx or result in destruction or adverse modification of any proposed critical habitat".*

For specific information regarding analysis of the proposed action, relevant Forest Plan Standards and Guidelines and Environmental Consequences, see the Biological Assessment and Evaluation listed as Appendices H and G in the Final Environmental Impact Statement for the Revised Rio Grande National Forest Land Resource Management Plan.

D de Gomez

Dale Gomez
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9-2-99

Date

REFERENCES CONTACTED:

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APPENDIX A: TES SPECIES LIST FOR THE RIO GRANDE NATIONAL FOREST

SENSITIVE SPECIES
Boreal Toad
Leopard Frog
Tiger Salamander
Boreal Owl
Burrowing Owl
Ferruginous Hawk
Flammulated Owl
Fox Sparrow
Golden-Crowned Kinglet
Goshawk
Lewis Woodpecker
Loggerhead Shrike
Olive-sided Flycatcher
Osprey
Pygmy Nuthatch
3-Toed Woodpecker
White-faced Ibis
Marten
Wolverine

THREATENED SPECIES
Bald Eagle
SW Willow flycatcher

ENDANGERED SPECIES
Peregrine Falcon
Uncompahgre fritillary butterfly
Mexican Spotted Owl

PROPOSED FOR LISTING
Canada lynx

APPENDIX B: ADDITIONAL RELEVANT STANDARDS AND GUIDELINES

-Where new threatened, endangered, proposed , or sensitive species habitat is identified, an analysis shall be conducted to decide if any adjustments in the Forest Plan are needed.

-Areas should be closed to activities to avoid disturbing TES and proposed species during breeding , young rearing, or at other times critical to survival. Exceptions may occur when individuals are adapted to human activity or the activities are not considered a threat.

-As new recovery plans, conservation agreements, conservation strategies, designation of critical habitat, or Regional documents which contain accepted management direction for TES species are developed, the Forest Plan will be reviewed to determine consistency with the new documents. Where appropriate, the Plan will be amended to incorporate the new direction.

-The aquatic habitat should be managed to mimic reference stream conditions.

-A certain amount of stubble height will remain at the end of the growing season depending upon management prescription.

-The standards and design criteria from the Draft Water Conservation practices Handbook will be implemented which have proven to be effective in protecting soil and aquataic resources.

-If a bald eagle winter roost or nest site is discovered, a management plan will be writen to ensure that the necessary habitat components are maintained.

-Discourage land-use practices and development that adversely alter or eliminate the character of the hunting habitat or prey base within ten miles and the immediate habitats within one mile of a peregrine falcon nesting cliff.

-Restrict human activities within one mile of a peregrine falon nest site between February 1 and August 31.

-No ground-disturbing activity shall be allowed in potential Uncompahgre fritillary butterfly habitat unless a survey is conducted to determine the existence of the species.

-In any new Uncompahgre fritillary butterfly populations are discovered, a "no butterfly collecting" regulation will be placed on the area.

-Do not allow any even-aged timber management within canyons considered to have potential habitat for Mexican spotted owls or within one-half mile of the canyon's rim.

-Allow uneven-aged timber management only if the resulting timber stand contains the necessary Mexican spotted owl habitat components.

-Develop a fire strategy within Mexican spotted owl potential habitat that will reduce the risk of losing the habitat to a catastrophic fire.

-If any Mexican spotted owl nests are discovered, limit the amount of human disturbance around the nest through such measures as : special area closures, seasonal restrictions or rerouting of trails.

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